

James and Cobanoglu: Advances in Global Education and Research: Volume 3

GLO CER '19

VOLUME 3

Editors:

Dr. Wayne B. James

Dr. Cihan Cobanoglu

Editors

Dr. Wayne B. James, College of Education, University of South Florida, USA

Dr. Cihan Cobanoglu, ANAHEI & College of Hospitality & Tourism Leadership, University of South Florida Sarasota-Manatee, USA

ADVANCES IN GLOBAL EDUCATION AND RESEARCH

Volume 3

ISBN 978-1-7321275-4-8

****Authors are fully responsible for corrections of any typographical, technical and content errors. Advances in Global Education and Research book series are not copyrighted.***

Editors

Dr. Wayne B. James, College of Education, University of South Florida, USA

Dr. Cihan Cobanoglu, ANAHEI & College of Hospitality & Tourism Leadership, University of South Florida Sarasota-Manatee, USA

ISBN 978-1-7321275-4-8

© ANAHEI Publishing 2019

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed. The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use. The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This imprint is published by ANAHEI Publishing, LLC

The registered company address is: 3934 South East Avenue, Sarasota, FL 34239 USA

TABLE OF CONTENTS

Part 1: Adult Education.....	1
Chapter 1: The Developmental Stages of Teachers: A Critical Analysis	2
<i>Mojgan Rashtchi and Babak Khoshnevisan</i>	<i>2</i>
Part 2: Curriculum and Instruction Development	9
Chapter 2: The Leader in Me: An Analysis of the Impact of Student Leadership on Science Performance	10
<i>Matthew Ohlson¹ and Amanda Pascale²</i>	<i>10</i>
Chapter 3: Examining Pre-Service Teachers' Perceived Approaches to Teaching Evolution.....	19
<i>Ezgi Yesilyurt and Mina Raeisi</i>	<i>19</i>
Chapter 4: Student Cognitive Style and Nonverbal Immediacy: Utilizing This Relationship to Increase Teacher Effectiveness	26
<i>Jane B. Teel</i>	<i>26</i>
Chapter 5: Global Competence and Learning Standards: Designing Engaging Units That Incorporate Both.....	37
<i>Amy Mullins¹ and Amy Wood²</i>	<i>37</i>
Part 3: Education in Other Specialties.....	44
Chapter 6: How Do the US and International Master Students Explore Their Career?	45
<i>Que Nguyet Tran and Tricia Seifert</i>	<i>45</i>
Chapter 7: Impact of Service-Learning in a Science Methods Course: Motivation Conflicts	60
<i>Barbara S. Spector¹, Cyndy Leard², and Debbie Stone³</i>	<i>60</i>
Chapter 8: A Questionnaire Survey on Knowledge, Attitude, Environmental Sensitivity, Self-Efficacy, and Preventive Behavioral Intention of Fine Particulate Matters for Junior High School Students in Taiwan.....	75
<i>Chie-Chien Tseng¹, Hui-Yun Chen², Gwo-Liang Yeh³, Jen-Jen Huang⁴, and Lin-Ju Shi⁵</i>	<i>75</i>
Part 4: Educational Technology	84
Chapter 9: To Integrate Media and Technology Into Language Education: For and Against.....	85
<i>Babak Khoshnevisan</i>	<i>85</i>
Chapter 10: Literacy Meets Augmented Reality (AR): The Use of AR in Literacy.....	93
<i>Sanghoon Park and Babak Khoshnevisan.....</i>	<i>93</i>
Chapter 11: The State of Technology: Linkages Between Kindergarten Teachers' Career Stages and the Stages of Technology Adaption in Turkey.....	100
<i>Özge Özel.....</i>	<i>100</i>

Part 5: Global Competence 109**Chapter 12: Comparing the Post-Secondary Education of the Physically Disabled in the U.S. and England 110***Hawa Allarakhia 110***Chapter 13: Global Learning Benchmark Integration Project at Corbett Preparatory School..... 126***Elaine C. Sullivan 126***Chapter 14: Preparing Globally Competent Students: The K-12 Schooling Challenge..... 136***Karolyn J. Snyder 136***Chapter 15: Language and Intercultural Education..... 150***Nianyu Guo..... 150***Part 6: Higher Education & Educational Leadership 161****Chapter 16: The Necessity of Leadership Training in Higher Education in Vietnam: A Perspective From Students..... 162***Hong Pham Van¹ and Van Pham Thi Trang² 162***Chapter 17: The Impact of Dual Credit Programs on College Persistence and Achievement by Low-Income Students 174***Lana Victoria Short¹ and Daniel W. Eadens² 174***Chapter 18: African Traditional Thought and Soul Force: A Globalization of Community-Based Civil Rights 181***Ruth Miller Lucier 181***Chapter 19: Transitioning of Instructional Designers From Preparatory Programs to the Workplace 186***Christian Olson and Daniel Eadens 186***Chapter 20: Piloting Restorative Justice Practices in Middle School: A Case Study 197***Zorka Karanxha, Michael Bailey, and Sean Dickerson 197***Part 7: Human Resource Development..... 211****Chapter 21: Perspectives on Competency: Leaders and Their Managers 212***R. Douglas Waldo¹, Christine Bellido², and Haley R. Waldo³ 212***Part 8: Inclusive Education 220****Chapter 22: Does Having a GSA in the School Improve the School Experience for LGBTQ Students? 221***Steven D. Hooker 221***Part 9: International Education..... 234****Chapter 23: Educational Access in Ghana 235***Hope Marie Taylor 235*

Chapter 24: Chinese Graduate Students’ Covert Reasons for Studying in Canada.....	242
<i>Glenn Rideout and Sirous Tabrizi</i>	<i>242</i>
Chapter 25: Connecting Best Practices for Teaching Linguistically and Culturally Diverse International Students With International Student Satisfaction and Student Perceptions of Student Learning	252
<i>Clayton Smith, George Zhou, Michael Potter, and Deena Wang</i>	<i>252</i>
Part 10: Pre K-12	266
Chapter 26: Teacher Motivation Profiles: Implications for Teacher Beliefs and Perceptions of the Classroom Environment	267
<i>Jonathan Coker, Sarah Kiefer, and Raven Robinson.....</i>	<i>267</i>
Chapter 27: Longitudinal Impact of Early Childhood Science Instruction on Middle Grades Literacy and Mathematics	279
<i>Charlene Charlene¹, Peter Paprzycki², Susanna Hapgood³, and Joan Kaderavek⁴</i>	<i>279</i>
Chapter 28: Making Connections Between Learning and Leading for Principals in Small Districts and Rural Areas.....	289
<i>Glady Van Harpen.....</i>	<i>289</i>
Part 11: Research Methods in Education	300
Chapter 29: Assessment of Teacher Dispositions With the ETQ2: A Guided-Reflection and Rasch Model Analysis	301
<i>W. Steve Lang¹, Judy R. Wilkerson², and LaSonya Moore³</i>	<i>301</i>

Part 1: Adult Education

The Developmental Stages of Teachers: A Critical Analysis

Mojgan Rashtchi and Babak Khoshnevisan

College of Education
University of South Florida, United States

Abstract

The developmental stages of both pre- and in-service teachers are a long-standing interest for researchers. The related literature is replete in a variety of theories addressing pre/in-service teachers' developmental stages (Fuller & Brown, 1975). This paper sets out to provide a detailed review of the stages which lead to teacher development. Although multiple theories have addressed the issue, they seem not to be completely successful in portraying the stages which end in teachers' competence. To date, the proposed models have predominantly and inherently been hierarchical and linear suggesting that the stages evolve developmentally and linearly. In this way, the reoccurrence of the stages is unlikely. Conversely, Khoshnevisan (2017) posits that the developmental stages of preservice teachers are nonlinear and multilayer. In other words, a teacher may undergo different stages at different times. However, teachers can activate a layer to cater to their needs as the need arises. He further postulates that the model identifies five distinctly different stages. Accordingly, drawing on the model proposed by Khoshnevisan (2017) concerning the developmental stages for preservice teachers, we delineate the model, reiterate its strength, and finally extend the model to International Teaching Assistants (ITAs). To achieve the purpose, we explain how ITAs experience the same stages. We hope that the insights gained from this article can usher the academic path of preservice teachers, ITAs, and teacher educators.

Keywords: developmental stages of teachers, in-service teachers, preservice teachers, ITAs, teacher education

Introduction

The developmental stages of teachers is a topic, which has been widely researched in the teacher education literature. The pertinent literature is brimmed with theories and models that detail different stages that pre/in-service teachers experience until their teacher identity is constructed (Fuller & Brown, 1975). The related theories and models have scrutinized the developmental stages of teachers from different perspectives to shape the landscape of teacher education. As such, both teacher educators and teachers can prognosticate what future holds for them. In this regard, teacher educators can plan when to teach theories, assign field experiences, and finally guide preservice educators to complete their practicum. More often than not, teacher educators fail to plan the mentioned assignments due to the confusion regarding the need for support. Similarly, the same confusion is being witnessed in the related literature regarding the developmental stages of teachers. It then comes as no surprise that both teacher educators and teachers are not fully prepared with what will be unfolded in the following stages. This confusion stems from the theories that undergird the developmental stages of teachers. This article, thus, aims to critically analyze the existing models in the related literature. It then juxtaposes the old models regarding the developmental stages of teachers with the one by Khoshnevisan's model (2017).

Framing the Issue

Teacher education literature has multitudinous theories regarding the developmental stages of teachers. The theories and models not only deconstruct and reconstruct the developmental stages but also, predict how these stages amount to teachers' identities. Amongst the pool of proposed theories and models in the pertinent literature, Fuller and Brown (1975) identified four distinct stages that ultimately culminate in teachers' identity construction. The stages delineated in this proposed model start with pre-teaching stage, where teachers are solely viewed as observers. Being an observer is the conception of the process. The second phase of the process sheds light on the survival issues. Preservice teachers have several presuppositions about the physical classrooms partly formed by the theories they have learned in classrooms and partly by their prior knowledge. It then comes as no surprise that the expectations of preservice teachers do not tally with the realities of classrooms. In the third stage, preservice teachers distance from the learning process and deal with teaching techniques. In this phase, preservice teachers evolve from a novice observer to a professional observer who is seeking for novel and innovative instructional strategies. Last but not least, preservice teachers become preoccupied with the process of learning and develop strategies for individualized teaching. As such, preservice teachers acquire instructional strategies and develop ways to employ those strategies toward individualized teaching. According to the major tenets of this model, the developmental stages of teachers is a linear process and preservice teachers can predict what to expect. However, Khoshnevisan (2017, 2018) in a series of studies proposes a novel model regarding the developmental stages of teachers. The results of the mentioned studies reveal that the developmental stages are not linear and developmental. In short, this new model can portray a rather comprehensive picture concerning these nonlinear and cyclical stages.

Making the Case

Khoshnevisan (2017) proposes a nonlinear and multilayer model to delineate the developmental stages of teachers. This model was first proposed based on his two-year study with ESOL preservice teachers. This model identifies five different phases for the developmental stages of preservice teachers. The distinctive difference of this model with other theories and models is that the stages are not linear. In other words, these stages are not progressive, and a subtle change can trigger a different stage at different levels. To put it simply, preservice teachers may experience all five stages. However, a subtle change—working with other students, another course, or another workplace—might cause the reoccurrence of the same stages towards shaping confidence and professional identity.

Khoshnevisan (2018) posits that

The discoveries, through constant comparative analysis, centered on ESOL preservice teachers' perceptions of their field experience, the teaching strategies they observed, and the developmental stages of preservice teachers. The results of this inquiry coupled with a two-year experience in teacher education implied nonlinear developmental stages for preservice teachers. The findings were inconsistent with prior theories because they did not corroborate linear developmental stages. Conversely, this theory posits nonlinear and multilayer developmental stages. In this sense, preservice teachers might activate a layer at any stage to accommodate their needs. (Khoshnevisan, 2017, para. 4)

As discussed above, this model consists of five distinct stages, which are nonlinear and cyclical. However, for the purpose of this article, I detail them as five stages. This, however, does not mean that these stages are progressive or linear. Succinctly speaking, the first stage is hesitations and

doubts. Preservice teachers step into the profession with uncertainty and doubts. It is evident to some extent since preservice teachers start their career in a professional milieu while they have little or no prior experience. According to Khoshnevisan (2017), this stage starts from the beginning of the developmental stages of teachers. This stage might fade away in the middle of the journey or may span across the process to become a professional teacher. Arguably, there is no certain border amongst the stages and the borderline might look hazy and blurred. From the inception of the first field experience in the course, preservice teachers come to recognize the instructional strategies they had already learned in their ESOL courses. Preservice teachers enroll in teacher education courses and are encountered with a myriad of instructional strategies. However, the first field experience is the preservice teachers' first encounter with the physical classrooms. As such, upon having their first experience, preservice teachers experience the second stage (recognition), which posits that preservice teachers come to recognize the theories they already learned through their courses in action. On this account, "as soon as preservice teachers are encountered with a physical classroom, they understand the hardships of class management. Observing different classrooms and recognizing different techniques they have already studied, preservice teachers enter into the next stage, called recognition" (Khoshnevisan, 2017, para. 5).

Encountering instructional strategies in physical classrooms, preservice teachers absorb more techniques and strategies in action. As such, preservice teachers experience the next stage known as learning new techniques in action (third stage). In-service teachers might employ different instructional strategies in a distinctively different way, which might be innovative or perplexing to preservice teachers. This stage is not a stand-alone stage and works closely with other stages. This stage, nonetheless, has three subcomponents that collectively shape the stage.

Learning new techniques does not take place in and of itself. It rather implicates learning culturally-sensitive strategies and individualized teaching. The former is considered essential in respect to ESOL preservice teachers because culture is an integral part of ESOL teaching. (Khoshnevisan, 2017, para. 5)

Gaining insight into the culturally-sensitive practices and individualized learning coupled with hands-on experiences contribute to shaping a rather comprehensive view, which leads to better practices. Forming this comprehensive view can familiarize preservice teachers with the realities of a physical classroom. This comprehensive view tailors their practices toward more individualized and culturally-sensitive practices. Preservice teachers ultimately come to discern that there does not exist a one-fits-for-all instructional strategy.

Participating in field experiences or completing a practicum can kindle interest in preservice teachers regarding teaching in a physical classroom. Seeking opportunities to teach forms the fourth stage in the developmental stages of teachers. Notwithstanding the theoretical underpinnings and prior knowledge, at this point, preservice teachers, by and large, would like to put the theories into practice to explore the modes operandi of managing a real classroom. In English to speakers of other languages (ESOL) teacher training courses, preservice teachers are being asked to observe a classroom with English language learners (ELLs) to absorb novel instructional strategies and recognize the ones that they have been taught. Collectively, preservice teachers are required to teach in classrooms and gain in-depth knowledge concerning didactic strategies and instructional concerns, which shape the fourth stage.

Fuller and Brown (1975) argue that having completed these stages, preservice teachers can gain mastery of language education. Khoshnevisan (2017b), however, postulates that his research

findings with ESOL preservice teachers imply that even if preservice teachers become in-service teachers and work in a professional milieu, it is likely that the confidence is not built, and they need to work on their confidence and the arsenal of instructional strategies they carry within their toolbox to teach. Building confidence and trust complete the developmental stages of teachers (fifth stage). This cycle, however, cannot be treated as a linear process. Consistent with Khoshnevisan (2017b), Fuller and Brown (1975) reiterate that completing these stages cannot be construed that in-service teachers are not to be faced with hardships in their profession. Khoshnevisan (2017) further delineates that the cyclical tendency of the stages is translated into their evanescent nature. In-service teachers might witness the wax and wane of different stages based on their needs. Accordingly, they may start a course with doubts and hesitations and finish the course with trust and confidence. In other words, they might be sure that they are able to manage the same course upon completing the course. In contrast, they may not have the same trust and confidence in teaching the same course with another group of students or in another setting. We have witnessed multiple experienced teachers who have observed a new course to gain the required instructional strategies. Apparently, they start with doubts and hopefully they build their confidence in teaching the course. In this sense, every experience or even every practice in every day poses a unique challenge to instructional strategies. This corroborates the cyclical nature of the developmental stages of teachers. Similarly, in-service teachers might activate a stage in a nonlinear way. On this account, a preservice teacher may start a new course with doubts and hesitations and jump to another stage to teach a new course. Another teacher may never experience doubts in his practices but needs to go through several stages in a nonlinear way to establish rapport with the students and build trust. There exist innumerable conditions in the developmental stages of teachers that we might not be able to take all of them into account. However, there are qualitative inquiries concerning these stages. As we might not be able to quantify the odds, qualitative inquiry seems to be conducive to this type of research.

Qualitative studies, in contrast to quantitative ones, enable researchers to delve into the perceptions and explore the locus of conceptions in regard to different concepts. Khoshnevisan (2018), to corroborate his model, attempts to provide a pragmatic account of the developmental stages of teachers. Drawing on a 2017 model, Khoshnevisan (2018) gives his introspection concerning his PhD journey. He presents his journey to usher the way of the other PhD students. In his introspection, he expresses that international teaching assistants (ITAs) experience the same stages that ESOL preservice teachers did. In Khoshnevisan's (2017) study, ESOL preservice teachers experienced 5 different stages until they could build trust and confidence to step into the professional club of teachers. Khoshnevisan (2018) reports that he, as an ITA, went through the same stages. He notes that

as a nonnative-English-speaking teacher (NNEST), I encountered multiple issues. Accordingly, I started my teaching profession with hesitations and doubts. Admittedly, I expected to be confident from the outset because of my experience, but I was feeling deep doubts. I started my new occupation in complete hesitation as I was not sure of both the administrative and pedagogical mandates. (Khoshnevisan, 2018, para. 10)

This confirms that like ESOL preservice teachers, ITAs step into the process while they have hesitations. This emanates from both administrative mandates that rule over different educational institutions and the broad variety of international students who are coming from different parts of the world. In this sense, even if he is an experienced teacher in both EFL and ESL contexts, he notes that

I began unlocking the pedagogical and instructional strategies I had accumulated over the years in my repertoire. The repository of my instructional strategies coupled with my formal and informal chats with my colleagues (native-English-speaking teachers and NNESTs alike) paved the way for me to both identify and recognize best practices. (Khoshnevisan, 2018, para. 11)

Khoshnevisan stresses that the role of supervisors and colleagues is key to facilitate the process. Colleagues can transfer their expertise regarding both administrative and educational context. Accordingly, novel ways to gain insight into instructional practices emerge during formal teacher development sessions and informal chats. Notwithstanding the teachers' prior knowledge, it turns out that a new milieu can be threatening to teachers and ITAs as well. He further mentions that professional development days coupled with conference presentations can be helpful to familiarize ITAs to reach a *modus vivendi* to not only survive but also thrive in academia. Additionally, Khoshnevisan acknowledges that preservice teachers and ITAs are different in that ITAs have the whole arsenal of instructional strategies, but preservice teachers.

Yet again, it appears that we—preservice teachers and I—both underwent the same process in that we learned new techniques in action. As such, I experienced a dramatic change in my teaching methods. Accordingly, my teaching strategies matured as the semester advanced. (Khoshnevisan, 2018, para. 13)

According to Khoshnevisan (2018), as the course matures, ITAs can build an unprecedented rapport with international students. The relationship between ITAs and international students is different as they are both international students and face with rather similar hardships studying in American institutions. In this respect, duoethnography is a rather new method where two participants explore the cultural context of their biographical experiences to gain an in-depth understanding of their current perspectives concerning their personal and professional issues. Multiple studies have been conducted employing a duoethnography regarding the hardships that international students have in the US owing to socioeconomic and/or political issues (Khoshnevisan & Mannion, 2017; Khoshnevisan & Abdulwafi, 2018; Khoshnevisan & YazdiSafa, 2019). On this account, it turns out that international students undergo the same stages that can be unlocked through new methods of qualitative approach such as duoethnographies.

The other important determining factor in the developmental stages of teachers seem to be nativeness. the Native-English-Speaking Teacher (NEST) / Nonnative-English-Speaking Teacher (NNEST) dichotomy has recently been problematized. Trent (2016) details that this dichotomy has faced a unique challenge. This has led to a reconceptualization of the related definitions. Alghofaili and Elyas (2017) posit that this destabilization has surfaced false ideas and biases. This NEST/NNEST dichotomy has already been fully scrutinized (Aneja, 2016; Trent, 2016). However, this dichotomy, to date, has not been applied to the developmental stages of teachers. Khoshnevisan (2018) explains that “the result of evaluation forms together with informal chats with my students implied that the NEST/NNEST dichotomy is problematized. My students had trust in me and they did not discriminate against me as an NNEST” (Khoshnevisan, 2018, para. 13). Additionally, the informal chats with NEST and NNESTs confirm that they both have been through the same stages. It is, thus, evident that the developmental stages of teachers do not differentiate between NESTs and NNESTs.

Pedagogical Implications

This article can shed light on the existing theories regarding the developmental stages of teachers. The findings of the studies regarding the multilayer and cyclical nature of the developmental stages of teachers suggest that the model does not differentiate between ESOL preservice and ITAs. Notwithstanding the NEST/NNEST binary, the model posits that both groups of teachers are likely to experience the same stages. The cyclical nature of this model makes the reoccurrence of the stages likely at any stage of the professional life of teachers. Accordingly, both teachers and teacher educators are required to familiarize themselves with the existing stages, so they know what to expect alongside the path towards being professional.

The frequent wax and wane of the stages may disillusion teachers. However, this model proves that the stages are inherently recursive, and a teacher may encounter one or several of these stages in his professional life depending on multiple factors. It is then advisable for teacher educators to familiarize preservice teachers with this model so that preservice teachers can flourish in a less-threatening atmosphere.

Khoshnevisan (2017b) speaks to the significance of field experiences as a catalyst to bridge the theory-practice gap. It then seems to be significant to come to recognize the potentials of field experiences at an early stage of teacher education course. It is recommended that teacher educators provide preservice teachers with such opportunities, so they can portray a realistic picture of the realities of a physical classroom.

Future Directions

It is essential to conduct further research to explore the perceptions and beliefs of other populations such as teachers outside the United States. It is imperative to conduct more research concerning the role of mentors in developing teacher identity and pedagogical competence. Finally, the theory of developmental stages for preservice teachers must await further empirical research to either corroborate or disconfirm the components of this model.

Conclusions

Drawing on the past models of the developmental stages of teachers in the pertinent literature, Fuller and Brown (1975) proposed a linear and developmental model. However, recent studies indicate that the developmental stages of different populations are multilayer and cyclical: ESOL preservice teachers (Khoshnevisan, 2017); international teaching assistants (Khoshnevisan, 2018). It seems that there was a gap in the pertinent literature, which calls for a more in-depth analysis of the models. To achieve that, this article framed the issue and introduced the existing gap in the literature. It then detailed how Khoshnevisan (2018) attended to the gap by proposing a working multilayer model for different populations including NESTs and NNESTs. To make a case for the judicious inclusion of this new model, the authors detailed the model and juxtaposed it to ESOL preservice teachers and ITAs. Finally, the authors presented the pedagogical implications to usher the academic path of teachers and guide teacher educators to know what to expect.

References

- Alghofaili, N. M., & Elyas, T. (2017). Decoding the myths of the native and non-native English speakers teachers (NESTs & NNESTs) on Saudi EFL tertiary students. *English Language Teaching*, 10(6), 1–11.

- Aneja, G. A. (2016). (Non)native speakerhood: Rethinking (non) nativeness and teacher identity in TESOL teacher education. *TESOL Quarterly*, 50, 527–596.
- Fuller, F., & Brown, O. (1975). Becoming a teacher. In K. Ryan (Ed.), *Teacher education: 74th yearbook of the National Society for the Study of Education, Part II* (pp. 25–52). Chicago, IL: University of Chicago Press.
- Khoshnevisan, B. (2018, June). The developmental stages of ITAs: An introspection. *ITAIS Newsletter*. Retrieved from <http://newsmanager.commpartners.com/tesolitaais/issues/2018-06-26/4.html>
- Khoshnevisan, B. (2017a, September). Developmental stages of preservice teachers: A critical analysis. *TEIS News*. Retrieved from <http://newsmanager.commpartners.com/tesolteis/issues/2017-09-25/2.html>
- Khoshnevisan, B. (2017b, February). The first field experience: Perceptions of two ESOL preservice teachers. Paper presented at the meeting of the Tenth International Conference on Language Teacher Education, Los Angeles, CA.
- Khoshnevisan, B. & Abdulwafi, H. (2018, March). Ph.D. under Sanctions, Travel under Ban. Paper presented at the Interdisciplinary Symposium on Qualitative Methodologies, University of South Florida, Tampa, FL.
- Khoshnevisan, B. & Mannion, P. (2017, September). Journeys to and from Asia: An evocative duoethnography. Paper presented at the Graduate Student Research Gallery, University of South Florida, Tampa, FL.
- Khoshnevisan, B., & YazdiSafa, E. (2019, January). To unlock the consequences of Trumps' executive order on My Family: A Duoethnography. Paper presented at the Qualitative Report's 10th Annual Conference, Nova Southeastern University, Fort Lauderdale, FL.
- Trent, J. (2016). The NEST–NNEST divide and teacher identity construction in Hong Kong schools. *Journal of Language, Identity & Education*, 15(5), 306–320.

Part 2: Curriculum and Instruction Development

The Leader in Me: An Analysis of the Impact of Student Leadership on Science Performance

Matthew Ohlson¹ and Amanda Pascale²

¹College of Education and Human Services

²Graduate School
University of North Florida, USA

Abstract

Statewide science assessment scores of more than 50 K-12 schools in Florida that implemented The Leader in Me, a student leadership development process, were examined. The results show that after three years of implementation, students scored statistically significantly higher on the state science assessment. Further examination of the multi-year data and related research reveal similarities (collaboration, problem-solving, and creative thinking) between best practices for effective science teaching and learning as articulated in the best practices for science classrooms embedded in the Next Generation Science Standards and the leadership components embedded in The Leader in Me. These similarities may provide insight into the value of student leadership development for improving science achievement. The findings also shed light on the influence of instructional practices of teachers on creating engaging and effective learning environments.

Keywords: science instruction, leadership development, whole school transformation, next generation science standards, organizational improvement

Introduction

Throughout the nation, public schools are being held accountable to demonstrate gains in student achievement (Ravitch & Kohn, 2014). To this end, schools are increasingly looking for formative assessment strategies to meet accountability demands. One such strategy is to invest in administrative, teacher, and student leadership development to encourage effective teaching that aligns with content specific active learning strategies for students. Alignment of administrative, teacher and student leadership development has been shown to facilitate a collaborative culture of learning and increased levels of motivation, trust, and commitment (Darling-Hammond, 1998). Research suggests that whole-school leadership development can lead to improved individual and community outcomes and greater training impact (Dufour & Dufour, 2010; Fishman, Marx, Best, & Tal, 2003).

Traditionally, school improvement and student achievement initiatives have focused primarily on instructional resources. Yet, in recent years, corporate leadership principles and training models developed and refined in the private sector have migrated into the field of education. Increasingly, philanthropic and educational organizations are using programs such as Covey's (1989) 7 Habits of Highly Effective People as source material for leadership programs, higher education leadership courses, and professional development experiences at all levels. For example, A. B. Combs Elementary School in Raleigh, North Carolina, began integrating Covey's leadership principles and training into school policies, curriculum, and teacher professional development. After integration, school improvement was evident, and A. B. Combs received accolades such as the

National Magnet School of Excellence, National Model School of America, National Title I Closing the Achievement Gap Award, and National School of Character Award. Previous research has demonstrated the impact of Covey's The Leader In Me (TLIM) process on outcomes such as student attendance, discipline referrals, and student achievement in math and language arts (Dow & Ohlson, 2011; Hatch & Anderson, 2012); however, none have examined how these programs impact student performance in science. This exploratory study examines TLIM's impact on student science performance based on the analysis of more than 50 TLIM Florida K-12 schools. The data analysis compares student science performance prior to the implementation of TLIM to performance during the first three years of TLIM implementation. In the discussion of these findings the leadership development strategies infused throughout the TLIM process are compared to the best practices for science classrooms embedded within the Next Generation Science Standards (NGSS) (Quinn, Schweingruber, & Keller, 2012). This comparison component outlines the possible commonalities between student leadership development and practices essential for learning science to provide powerful implications for educators.

Literature Review

TLIM Model and Purpose

The TLIM process is an educational initiative developed by Franklin Covey Education based on the foundation of Dr. Stephen Covey's 7 Habits of Highly Effective People (1989). TLIM is a comprehensive, school-wide process of leadership development dedicated to transforming the leadership culture and performance of students and staff including teachers, administrators, and support personnel. TLIM works in collaboration with the academic, behavioral, and culturally-based initiatives common in today's schools (Boody, Lasswell & Robinson, 2014). The process has shown gains in areas of building collaborative school culture, improving academic achievement, and promoting the development of 21st century skills. The TLIM model also provides students with a variety of learning opportunities to discover, develop, and refine their personal leadership skills (Biggar, Dick, & Bourque, 2015).

TLIM Leadership Program

TLIM starts with a core, three-year process wherein which faculty members are trained in the elements contained in the seminal leadership text, 7 Habits of Highly Effective People (Covey, 1989). The staff participates in various professional development opportunities focused on infusing leadership throughout school policies and practices and creating a culture in which leadership for all is encouraged and supported. From there, the school community learns the most effective ways to integrate leadership throughout classroom teaching and learning. Instructional practices are aligned with local, state, and national standards while students are encouraged to design, complete, and assess their own projects. The leadership-infused curriculum prompts students to solve and analyze relevant problems, collaborate with peers and engage in projects that offer students authentic, hands-on experiences. Examples of past projects include student-led leadership speeches given during Leadership Day celebrations, LEGO Robotics demonstrations showing how animals adapt to their environments, applying Rube Goldberg's engineering design to learning core curricular objectives, and learning about business principles through simulating a community storefront within classrooms. Performance monitoring is commonplace with students as they track their progress with individual data notebooks that include personal and academic goals. The 21st Century Leadership and Life Skills framework suggests that to be successful in today's modern society, it is essential to possess and develop certain skills. The 21st Leadership

and Life Skills integrated throughout the TLIM process are (a) leadership, (b) responsibility, (c) accountability, (d) problem solving, (e) adaptability, (f) communication, (g) initiative and self-direction, (h) creativity, (i) cross-cultural skills and (j) teamwork. The intent of this study was to understand how these principles align with NGSS best practices for science classrooms (Quinn, Schweingruber, & Keller, 2012), and to explore if gains were made in science performance over the time the TLIM was implemented.

Methods

Evaluation

The purpose of this exploration was to determine the extent to which the TLIM leadership process impacted learning in science at the more than 50 Florida schools in which TLIM was implemented. The goal was to determine if significant gains in science performance were made over the three-year span the TLIM program had been in place in these schools. To assess performance gains, the starting point was an analysis of test score data from the Florida Statewide Science Assessment. Scores were evaluated a total of four times: prior to TLIM intervention to serve as a baseline, and again in years one, two and three following TLIM implementation. The data collection process was intentionally designed to use the intervention year as the point of focus to determine growth over time. This design strategy helps to isolate the intervention and reduce the variability associated with changes in the science assessment, the assessment format, testing conditions and resources available to students and teachers. It also reduces the issues associated with various lengths of implementation of TLIM process and eliminates the comparison of schools just beginning the intervention with those schools where the process has been in place for years. Because of high variability among schools, even those that have been matched, a baseline measure of each school prior to the program implementation was used as a control for comparison purposes. This approach offers the most powerful possible illustration of the process being examined and the potential impact of long-term implementation.

Data Analysis

Scores for the statewide science assessment range from 140-260. Score ranges are provided by the state and assigned a corresponding level between 1-5. Science achievement scores for this study were calculated as the percentage of students receiving a passing individual score on the statewide science assessment. These percentages were entered into the SPSS statistical software package for analysis. First, descriptive statistics were run for all variables to understand the nature of the data. Table 1 includes means and standard deviations of the variables in the dataset.

Table 1. Descriptive Statistics: Science Assessment Pass Rate Per School

Time	Mean (%)	Std. Deviation
Pre-Intervention	42.97	12.62
Year 1	44.68	12.66
Year 2	46.79	12.07
Year 3	49.65	11.83

Second, the appropriate data analysis design was determined. In order to measure the impact of the TLIM process over several time periods, the within-subjects repeated measure design of ANOVA was selected. Initial data assumptions for use of ANOVA statistics were verified. ANOVA assumes one dependent variable that is measured continuously and a within-subjects

factor that has at least three categorical levels. The following null hypothesis was established to guide the analysis.

$$H0_{AchSci}: achsci_{pre} = achsci_{y1} = achsci_{y2} = achsci_{y3}$$

With initial assumptions met and null hypotheses established, analysis proceeded. A one-way repeated ANOVA test was conducted for the dependent variable, percentage of students in each school who passed the science achievement test. The Bonferroni adjustment was selected for follow up comparisons between levels as it is considered one of the most appropriate post hoc tests for one-way repeated ANOVA designs (Maxwell & Delaney, 2004).

Upon examination of Mauchly's Test of Sphericity, it was determined that the sphericity assumption was violated for the dependent variable, percentage of students in each school who passed the science achievement test, $X^2(5) = 50.779$, $p = .000$. With sphericity not assumed, the results of the Greenhouse-Geisser calculations, which adjust the degrees of freedom to reduce error, are reported in the Findings section below.

Findings

A one way-repeated measure of ANOVA with Bonferroni post hoc tests was conducted to determine if the TLIM schools saw significant gains in science performance during the three-year implementation of the TLIM program intervention. The student achievement in science model was significant overall: $F(2.464, 91.161) = 5.629$, $p = .003$, partial $\eta^2 = 0.13$. The follow-up tests revealed that a significant difference in the mean pass rates on the science achievement test occurred in year three after implementation ($M = 49.66$; $SD = 11.83$, $p = .014$), where the mean pass rates increased by 6.684 percent from the pre-intervention year ($M = 42.97$; $SD = 12.62$).

Conclusions

Given the significant gains in science performance during the three-year span of implementation of TLIM in more than 50 Florida schools, how the TLIM program might have aided in this improvement was of interest. To explore this, the 21st Century Leadership and Life Skills framework that is integrated throughout the TLIM process (i.e. leadership, responsibility, accountability, problem solving, adaptability, communication, initiative and self-direction, creativity, cross-cultural skills and teamwork) was compared to the best practices for science classrooms within the NGSS. These standards include (a) authentic understanding across a variety of content areas (cross-curricular), (b) asking meaningful questions to analyze/solve problems, (c) defining problems, (d) thinking critically to design/develop solutions to relevant challenges, (e) using hands on activities to carry out investigations, (f) planning based on established goals, (g) analyzing evidence/data, (h) evaluating evidence/data, (i) using critical, computational and creative thinking, (j) constructing explanations, (k) effectively communicating information and (l) utilizing a variety of resources (human, data, etc.).

The cross-reference comparison between the best practices for science classrooms within the NGSS (Quinn, Schweingruber, & Keller, 2012) and the 21st Century Leadership and Life Skills integrated throughout the TLIM process yielded a 92% alignment. That is, the instructional practices and student learning dispositions for eleven of the twelve best practices for science classrooms were consistent with the components of leadership development within the TLIM

process. Table 2 illustrates the alignment between the best practices for science classrooms within the NGSS and the 21st Century Leadership Life Skills embedded in the TLIM program.

Table 2. Alignment of NGSS Best Practices and TLIM 21st Century Leadership and Life Skills

NGSS: Best Practices for Science Classrooms	TLIM: 21st Century Leadership and Life Skills
Using critical, computational and creative thinking	Creativity, problem solving, adaptability, accountability
Effectively communicating information	communication
Planning based on established goals	Responsibility, accountability, problem solving
Asking meaningful questions to analyze/solve problems	Creativity, initiative and self-direction, teamwork, problem solving

In sum, the high percentage of alignment corroborated that the gains in science performance could be attributed, in part, to the TLIM process in the sample of schools.

Implications and Future Research

The Urgent Need for Improved Science Performance in Our Schools

Improving student achievement in science represents an urgent need for educators and policymakers. The US economy is growing STEM-related jobs 1.7 times faster than any other industry, and research suggests that this growth is expected to continue (Carnevale, Smith, & Strohl, 2013; Langdon, McKittrick, Beede, Khan, & Doms, 2011). Furthermore, 93% of parents feel that it is necessary to make science education a priority, but only one in five college students believe their K-12 education prepared them extremely well for college courses in science (Microsoft, 2011).

On a national level, this sense of urgency has caught the attention of policymakers and educational leaders looking for effective strategies to meet the science educational needs of the future workforce. Even for students who pursue a variety of career fields, an understanding of the scientific process and knowledge base is becoming increasingly important in areas of business, healthcare, and public policy including renewable energy, conservation efforts, health, and safety (Lee & Buxton, 2010). Consequently, preparing students with the skills necessary to acquire and excel at jobs in science fields is important for their personal outcomes and the competitiveness of the nation as a whole.

Yet, despite the pressing need to provide quality science educational opportunities for students, emphasis upon reading and mathematics skills has resulted in less time, energy, and resources dedicated to science instruction. In fact, recent reports show that 44% of districts across the country have cut the amount of instructional time for science in elementary schools. These policies and practices have challenged schools to implement scientific teaching and learning practices that are cross-curricular, incorporated across multiple content areas. Therefore, it is crucial to find teaching and learning tools such as collaboration, problem solving and critical thinking that encompass science education best practices and can be implemented in a cross-curricular, efficient, and engaging manner with students. Compounding these challenges is the lack of support given to state and district stakeholders when seeking these cross-curricular, experiential programs and resources that effectively meet these growing demands of the 21st century learner. In light of these obstacles, the findings of the study suggested that policy-makers and administrators consider approaches such as TLIM to encourage holistic student development which can have long-term effects on student success.

Effective and Engaging Experiential Teaching and Learning Practices

In a classroom environment, students learn best through engaging experiential learning activities (Monroe-Ossi & Ohlson, 2016). In numerous ways children learn best when acting like scientists, by exploring their environment, asking good questions, learning from mistakes, testing hypotheses in action, and persistently adapting their plans in order to come up with various solutions (Ramirez, 2013). Effective science teaching and learning goes beyond mere information delivery or transfer of knowledge to encompass an entire systemic shift in how learning happens. It is not about the subject, but about the learning process of inquiry, imagination, questioning, problem solving, creativity, invention, and collaboration (Berkowicz & Myers, 2015).

Additionally, children need clear and consistent guidance, access to comprehensive materials, and opportunities to have an active voice in order to extend their learning. Discussion and engagement in their own learning encourages children to think about their experiences, listen to the experiences of others and reflect on their ideas, while building vocabulary and language structures (Worth, 2010). When considering science-specific instruction, teachers must employ instructional practices such as intentionally teaching science vocabulary, providing space and materials to explore science topics and integrating science into other content areas such as literacy that foster children's science development (Albert Shanker Institute, 2009).

Student Performance

The gains in science performance (7%) in the 3rd year of the TLIM process, along with the high percentage alignment with the TLIM 21st Century Leadership and Life Skills and the NGSS best practices in science classrooms, suggest that introducing leadership programs may be beneficial for academic performance. However, in the current high stakes, high accountability climates of education, interventions are too often implemented, but pulled within a year or two. It is important to note that, in this instance, gains were not seen until the third year of implementation. Often schools and districts suffer from an abundance of initiatives and fail to see a process through completely in order to experience its full impact on teaching and learning gains. Research shows that schools should focus on a small number of ambitious goals and be given 3-5 years to implement the selected process with fidelity (Levin & Fullan, 2008; Murray & Richardson, 2003). The significant gains experienced after allowing the TLIM process to permeate the teaching and learning environment serve as another powerful example of the importance of allowing a process to unfold before determining impact on student outcomes.

In addition, the significant gains made in science demonstrate the need to fully examine the strategies and skills students learn as part of the TLIM process and how these skills, including problem solving, collaboration, planning and creativity may facilitate success in content areas other than science.

Alignment Between TLIM and Science Instruction Best Practices

Within TLIM, there is a significant emphasis placed on the process of student leadership development. The characteristics of effective leadership in this context include numerous areas of overlap with the characteristics of effective science teaching and learning, including communication, collaboration, creative and critical thinking and adapting to overcome obstacles (Berkowicz & Myers, 2015; Ramirez, 2013). The most engaging and effective elementary science instructors build upon prior knowledge, foster collaborative discussion and provide opportunities

for hands-on experiences and exploration (Harlen, 2001; Worth, 2010). Berkowicz and Myers (2015) state that science can infuse essential 21st century skills such as critical thinking and collaboration into real-world scenarios and opportunities for authentic problem solving. These skills are directly aligned with the TLIM leadership development categories and subcategories and illustrate the need to integrate these practices within classrooms. The “unpacking” of the TLIM process and associated skills will help determine the most effective ways to produce students who are equipped to navigate the challenges of an academic and professional shift towards science and science-based careers.

Policy and Practice Recommendations

Despite the gains in science performance and alignment with the NGSS instructional best practices, TLIM is not meant to serve exclusively as an academic intervention. Considerable research is needed to show the true impact of TLIM in other schools, in other content areas and between student demographic groups. Yet, this comprehensive study of more than 50 schools in Florida does illustrate the significance of leadership development and the importance of allowing time for the full impact of educational initiatives to take hold. These results show the impact that leadership development programs such as TLIM can have upon creating learning environments that promote advanced reasoning, collaborative problem solving, and engaged learning. This study also provides encouraging data to support the implementation of effective teaching and learning practices found within TLIM and NGSS best practices. Finally, the findings further illustrate the importance of examining the effectiveness of school transformation programs after implementation has taken place for at least three years. Based on the findings of this study, the researchers recommend the following policies and practices:

- When implementing the TLIM process or other whole-school transformation initiatives, allow 3-5 years of implementation before drawing conclusions about the impact on teaching and learning outcomes.
- Establish a small number of ambitious goals (increase in student achievement in a certain content area, decrease in discipline referrals, increase in student engagement, etc.).
- Monitor associated outcomes as well as fidelity of implementation.
- Evaluate students’ ability to demonstrate the 21st Century Leadership and Life Skills embedded in the TLIM process, including creativity, adaptability, and problem solving, as these show direct alignment with the NGSS best practices.
- Collect data through classroom walkthroughs, lesson plans, and student work analysis to determine if instructional practices and artifacts allow students to show creativity, communicate their ideas, and collaborate with their peers to solve problems.
- Create and support a teaching and learning environment where students have the opportunity to demonstrate the 21st Century Leadership and Life Skills integrated in the TLIM process.
- Professional development: Train school community members (faculty, support staff, community stakeholders) in the 21st Century Leadership and Life Skills and support their implementation of these skills.
- Instructional resources: Invest in resources such as texts, technology, and tools to allow students to practice and demonstrate the 21st Century Leadership and Life Skills to meet the demands of the NGSS and college and career pathways in the science fields.
- Encourage school-wide events: Schedule leadership days and encourage students to give speeches, showcase their talents, present data notebooks, and share their experiences as

leaders. Host and encourage students to participate in science fairs (<https://www.whitehouse.gov/science-fair>) and “hands-on” science with NGSS aligned activities (<https://www.siemensstemday.com/>).

Opportunities for Future Research

Future research is paramount in determining the long-term impact of TLIM in relation to overarching educational outcomes as well as the significant challenges facing our nation in terms of academic and career success in science. First, it is imperative that student achievement in mathematics and language arts be examined, as many of the skills addressed in TLIM and NGSS correspond to the skills needed to be successful in these subject areas as well. Further, analysis of the relationship between students attending a TLIM school and graduation rate, the percentage of students attending postsecondary institutions, and demographic (gender, race, poverty levels) analysis of student academic achievement should be done to further elucidate the long-term impact of attending TLIM schools. Finally, additional research should seek to determine the relationship between attending TLIM schools and entering science-based careers or majors in college.

References

- Albert Shanker Institute. (2009). *Preschool Curriculum: What’s In It for Children and Teachers*. Washington, DC.
- Berkowicz, J., & A. Myers. (2015). *The STEM Shift: A Guide for School Leaders*. Thousand Oaks, CA: Corwin Press.
- Biggar, R., Dick, S., & Bourque, A. (2015). *The leader in me evaluation report*. Picard Center, University of Louisiana at Lafayette.
- Boody, R., Lasswell, T., Robinson, V., & Reade, M. (2014). *December 2014 Leader In Me Impact Report*. Retrieved from http://www.theleaderinme.org/uploads/Documents/results/Cedar_Valley_Research_TLIM.pdf
- Carnevale, A.P., Smith, N., & Strohl, J. (2013). *Recovery: Job Growth and Education Requirements through 2020*. Washington, D.C.: Georgetown Public Policy Institute.
- Covey, S. R. (1989). *The 7 Habits of Highly Effective People*. New York, NY: Free Press.
- Darling-Hammond, L. (1998). *Teachers and teaching: Testing policy hypotheses from a national commission report*. Educational researcher, 27(1), 5-15.
- DuFour, R., & DuFour, R. (2010). The role of professional learning communities in advancing 21st century skills. In Bellanca, J. (ed.), *21st century skills: Rethinking how students learn* (pp.77-95). Bloomington, IN: Solution Tree.
- Fishman, B. J., Marx, R. W., Best, S., & Tal, R. T. (2003). Linking teacher and student learning to improve professional development in systemic reform. *Teaching and teacher education*, 19(6), 643-658.
- Harlen, W. (2001). *Primary Science: Taking the Plunge. How To Teach Science More Effectively for Ages 5 to 12*. Portsmouth, NH: Heinemann.
- Langdon, D., McKittrick, G., Beede, D., Khan, B., & Doms, M. (2011). *STEM: Good jobs now and for the future* (ESA Issue Brief #03-11). US Department of Commerce
- Lee, O. & Buxton, A. (2010). *Diversity and Equity in Science Education: Research, Policy, and Practice*. Multicultural Education Series. New York, NY: Teachers College Press.
- Levin, B., & Fullan, M. (2008). *Learning about system renewal*. Educational Management Administration & Leadership, 36(2), 289-303.
- Maxwell, S.E., & Delaney, H.D. (2004). *Designing experiments and analyzing data: A model comparison perspective*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Microsoft. (2011) *STEM Perceptions: Student & Parent Study*. Parents and Students Weigh in on How to Inspire the Next Generation of Doctors, Scientists, Software Developers and Engineers Retrieved March 20, 2019 at <https://news.microsoft.com/download/archived/presskits/citizenship/docs/STEMPerceptionsReport.pdf>
- Monroe-Ossi, H & Ohlson, T. (2016). *Exploring programming and robotics in early childhood classrooms*. Denver, CO. Proceedings of the International Society for Technology in Education, Denver CO. Retrieved 03/20/2019 from https://conference.iste.org/uploads/ISTE2016/HANDOUTS/KEY_100471886/OhlsonISTE2016.pdf.

- Murray, E. J., & Richardson, P. R. (2003). Fast forward: A new framework for rapid organizational change. *Ivey Business Journal*, 67(6), 1-5.
- Quinn, H., Schweingruber, H., & Keller, T. (Eds.). (2012). *A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas*. Washington, DC: The National Academies Press
<https://doi.org/10.17226/13165>. .
- Ramirez, A. (2013). Save Our Science: How to Inspire a New Generation of Scientists. TED Conferences.
- Ravitch, D., & Kohn, A. (2014). *More than a score: The new uprising against high-stakes testing*. Haymarket Books.
- Worth, K. (2010). Science in early childhood classrooms: Content and process. In *Early Childhood Research and Practice, Collected Papers from the SEED (STEM in Early Education and Development) Conference* (Vol. 10). Retrieved 3/20/29 from <http://ecrp.illinois.edu/beyond/seed/worth.html>.

Examining Pre-Service Teachers' Perceived Approaches to Teaching Evolution

Ezgi Yesilyurt and Mina Raeisi

The College of Education
University of Nevada, Las Vegas United States

Abstract

The purpose of this study is to examine pre-service teachers' perceived approaches to teaching evolution. The participants were 65 pre-service teachers in a teacher education program at a large urban public university in the Southwest United States. We developed the Approaches to Teaching Evolution Scale (ATES) to explore their teaching approaches. The ATES instrument was designed on a 5-point Likert type scale ranging from strongly disagree (1) to strongly agree (5). The instrument includes 30 questions which address two dimensions: teaching controversy and evolution content. The descriptive analysis revealed that approaches to teaching evolution apparently varied among pre-service teachers. For instance, although more than half of the pre-service teachers agreed or strongly agreed that they would not adopt the avoidant approaches, more than half of the teachers declared that they would focus only on students' learning but not on their acceptance of it. As for addressing social controversy with regard to evolutionary theory in classroom settings, this study indicated that nearly half of the pre-service teachers seemed to prefer to discuss the controversy within the social context and from different vantage points as well. This study is a first attempt to develop a quantitative measure of approaches to teaching evolution. The ATES instrument could be useful in identifying teachers' approaches to teaching evolution and provide a further understanding of their potential classroom implementations regarding evolution education.

Keywords: evolutionary theory, pre-service teachers, quantitative research, teaching approaches

Introduction

Science education reform efforts have highlighted the importance of evolutionary theory by stressing the need for students to develop a comprehensive understanding of evolution (American Association for the Advancement of Science, 2006; National Academy of Science [NAS], 1998; National Science Teachers Association, 2003). On the other hand, evolutionary theory is not adequately addressed in science classrooms (e.g., Berkman & Plutgers, 2011; Smith, 2010). Specifically, substantial proportions of science teachers ignore and undermine the science education standards (Smith, 2010). One-third of teachers devote less than 3 days of instructional time to teach evolution (Glaze & Goldston, 2015). Recently, Berkman and Plutgers (2011) indicated that 60 % of 926 biology teachers in the U.S. who were designated as uncertain about teaching evolutionary theory preferred simply to avoid teaching evolution. It is, therefore, necessary to examine teachers' approaches to teaching evolution to reveal the reasons for their avoidant approaches and the trends in teaching approaches adopted by teachers.

Literature Review

Several researchers conducted case study analyses and review of the literature to identify how teachers cover evolution in their classrooms. Griffith and Brem (2004), for example, examined 15

biology teachers' experiences of teaching evolution. The authors pointed out three teaching approaches regarding evolutionary theory (a) "scientist" teacher separates teaching evolution concepts and the application of those concepts to social and personal life; (b) "selective" teacher choose to teach topics that do not lead to conflict, and (c) "conflicted" teacher asks students that they do not change their beliefs. Besides, Hildebrand et al. (2008) identified four instructional approaches. "Avoidant approach" which is similar to "selective teacher" is adopted by teachers who prefer to omit evolution altogether, to reduce the time spent teaching evolution or to omit only controversial topics such as human evolution to avoid the controversy. "Dogmatic Corrosive" approach which is similar to the Griffith and Brem's "scientist" teacher who focuses solely on the scientific aspect of evolutionary theory and do not let students discuss controversial aspects of it. "Dogmatic" teachers teach evolution as "absolute truth" and ignore or avoid discussing students' personal or religious beliefs. Griffith and Brem (2004) argued that "scientist" or "dogmatic" teacher might prefer to teach topics which are covered in exams and prefer not to spend time discussing the controversy. Another type of corrosive approach is "passive-corrosive" approach focuses merely on students' learning of evolution but not on students' acceptance of it. "Passive" teacher like "conflicted" teacher tells students "they do not have to believe it" (p. 1048). Hildebrand et al. stressed that this type of approach belittles the value of science as a way of knowing and "passive teacher" tends not to teach evolution as a unifying theme. Teaching about controversy approach is used by teachers when they allow students to share their thoughts, opinions, and beliefs about the controversy surrounding evolution. Hildebrand et al. pointed out that if teachers do not manage these discussions carefully, this approach leads to further misunderstandings. "Proactive, pro-social management" approach is adopted when teachers do not avoid discussing the controversy and teach the science as a way of knowing to help their students to distinguish science from non-science.

In the same strand, Hermann (2008) conducted a literature review to examine instructional approaches to teaching evolution as a controversial issue. Hermann proposed four different instructional approaches: avoidant, advocacy, affirmative neutrality, and procedural neutrality approaches. An advocacy approach is adopted when the teacher focuses merely on scientifically accepted notions without including alternative views of evolutionary theory. This approach is similar to Griffith and Brem's (2004) scientist teacher and Hildebrand et al.'s (2008) dogmatic corrosive approaches. The affirmative neutrality approach is adopted when the teacher presents the alternative viewpoints of evolutionary theory without discussing their own views. This approach is mostly aligned with the traditional lecture approach. On the other hand, the procedural neutrality approach which is similar to Hildebrand et al.'s (2008) teaching controversy approach occurs when the teacher gives their students opportunity to discuss their own views of evolutionary theory.

In a multiple case study, Borgerding et al. (2015) investigated the teaching approaches of three pre-service teachers. The study revealed that the teachers adopted different instructional approaches to teaching evolution due to several factors including their own learning experiences, state exams and standards, their views of teaching and learning, and perceptions about the conflict between science and religion. One of the teachers who experienced personal conflict was considered as "conflicted" teacher because he did not want to change or influence students' views about the credibility of evolutionary theory. The other teacher who expressed her concerns about the exam and standards expectations focused merely on the scientific views without discussing the alternative viewpoints. That's why she was considered as "scientist" teacher. The third teacher

who had concerns about students' resistance to learning evolution wanted the students to learn evolution but not necessarily to accept it as a valid scientific explanation.

In the related literature, there is a lack of quantitative measure for the analysis of teachers' approaches to teaching evolution. Researchers analyzed teachers' approaches either through conducting classroom observations, interviews or simply asking their preferences concerning whether evolution and/or creationism should be taught in science classrooms (e.g., Deniz & Sahin, 2016; Nehm & Schonfeld, 2007). Therefore, it becomes difficult to examine the teaching approaches of larger samples. In a study, Berkman and Plutzer (2011) developed several questions concerning teachers' instructional approaches to teaching evolution as a part of the National Survey of High School Biology Teachers. However, the scale did not address all teaching approaches that the related literature has revealed. Hence, there is a need to develop a comprehensive quantitative instrument to investigate teachers' approaches to teaching evolution along with the underlying reasons. Therefore, building on the works of Griffith and Brem (2004), Hildebrand et al. (2008), Hermann (2008), Borgerding et al. (2015) and Berkman and Plutzer (2011), we attempted to develop the Approaches to Teaching Evolution Scale (ATES).

Methods

In this section, sample, data collection and data analysis procedures will be discussed.

Sample

The participants were 65 pre-service teachers (12 male, 53 female) in a teacher education program at a large urban public university in the Southwest United States. Their ages ranged from 17 to 58 years with a mean of 25.51 years. 30.8 % of the participants reported that they had not taken a biology course before, 47.7 % of them had taken 1-3 biology courses, and only 4.6 % of participants had taken 7-9 biology courses. 60% of them stated that they had discussed evolution in the courses.

Data Collection and Data Analyses

The ATES instrument was designed on a 5-point Likert type scale ranging from strongly disagree (1) to strongly agree (5). The instrument includes 30 questions divided into two dimensions: teaching controversy and evolution content. The first dimension assesses the approaches to teaching controversy including avoidant, corrosive, teaching about the controversy and proactive management approaches. The second dimension assesses the approaches to teaching evolution concepts such as microevolution (natural selection), macroevolution topics (origin of species, human evolution, etc.), and preferences to teach intelligent design and/or creationism. The instrument was administered to pre-service teachers during Fall 2018 semester. The data were analyzed through using SPSS version 25.0. Descriptive statistics were used to examine pre-service teachers' approaches to teaching evolution.

Findings

Descriptive statistics were performed by calculating means and percentages of responses to each of the thirty ATES items (see Table 1). Responses were on a 1-5 scale, ranging from "strongly disagree" to "strongly agree". The descriptive analysis revealed that approaches to teaching evolution apparently varied among pre-service teachers. More than half of the pre-service teachers

agreed or strongly agreed that they would not adopt the avoidant approaches (e.g., omitting evolution from the curriculum; spending less time to teach it, etc.) only because of the possibility of conflicts between students and conflicts with their own personal beliefs. On the other hand, 45% of them declared that they would avoid making statements which they think might be offensive by parents' school administrators, etc. As for the corrosive approaches which are adopted by teachers who prefer to focus only on scientific aspects of evolution (teaching evolution as absolute truth), more than half of the pre-service teachers in that they preferred to focus only on what is acceptable to discuss regarding evolution based on school and state regulations. Also, within this category, passive corrosive approaches encompass the preferences to focus merely on students' learning of evolution but not on students' acceptance of it (Hildebrand et al., 2008). Science educators and researchers have long concurred that the objective of evolution instruction is not only to develop students' understanding of evolution but also to improve their acceptance of it (e.g., Glaze & Goldston, 2015; Smith 2010). In this regard, in this study, approximately 40% of the pre-service teachers supported the idea that students do not need to change their beliefs when they learn evolution. In line with that, more than half of the teachers declared that they would focus only on students' learning but not on their acceptance of it.

As for addressing social controversy with regard to evolutionary theory in classroom settings, this study indicated that nearly half of the pre-service teachers seemed to prefer to discuss the controversy within the social context and from different vantage points as well (e.g., scientific, religious points of views). It is important to note that more than half of the pre-service teachers reported that they would provide students with an opportunity to discuss their own views of evolution alternative to the scientific view. This kind of discussion could encourage students to explore their own beliefs and could be very fruitful (e.g., Sinatra et al., 2003; Smith, 2010); however, it should be handled carefully because it easily leads to misunderstandings among students. In this case, the understanding of the nature of science becomes important. Teachers should guide students to develop a scientific view and interpret alternative views from a scientific perspective if they are willing to bring this kind of discussion into their classroom. Although most teachers reported that they would discuss the social controversy from different points of view, they seemed to be reluctant to share their own views of evolution and personal beliefs during the discussion. When it comes to proactive, pro-social management approaches, 73% of the participants preferred to teach science as a way of knowing to help students distinguish science from other ways of knowing and non-science. In line with that, 80 % of them reported that they would not avoid discussing social controversy but acknowledge the social context of the controversy by acknowledging the value of science as a means of understanding.

As for pre-service teachers' approaches to teaching evolution content, 40% of the pre-service teachers reported no opinion while only 34% of them agreed to teach evolution as a big (unifying) theme. However, many scholars and national science standards have stressed the importance of evolution as a central unifying theme in biology and underlined that "nothing in biology makes sense except in the light of evolution" (Dobzhansky, 1973, p.125). Apparently, teachers did not have an idea about how to address this core topic and connect with other life science concept. With regard to teaching "controversial" topics, pre-service teachers in this study seemed to understand the importance of human evolution and origin of species in the understanding of evolutionary theory since 73% of them agreed to include these topics in biology instructions. On the other hand, nearly 30% of the participants seemed to prefer to teach creationism and/or intelligent design. Nearly 34% of them thought that creationism/intelligent design should be taught as an alternative

to evolutionary theory and almost 30% of them thought that it is possible to offer an excellent science/biology course for students that includes no mention of Darwin or evolutionary theory.

Table 1. The Means and Percentages of Responses to Each of the 30 ATEs Items

Approaches	Statements	Strongly Disagree	Disagree	I don't know/No opinion	Agree	Strongly Agree	Mean
Avoidant Approaches	1. If I do teach science, I will omit evolution from the curriculum to avoid the possibility of conflicts between students	38.5%	21.5%	10.8%	12.3%	16.9%	2.48
	2. If I do teach science, I will spend less time to teach evolution to avoid the possibility of conflicts between students	32.3%	29.2%	6.2%	16.9%	15.4%	2.54
	3. If I do teach evolution, I will present only the noncontroversial topics in evolution, to avoid the potential conflict that may arise by teaching human evolution or origins of life.	29.2%	24.6%	10.8%	23.1%	12.3%	2.65
	4. If I do teach evolution, I will present only those aspects of evolution that I feel would not create conflict	33.8%	23.1%	9.2%	24.6%	9.2%	2.52
	5. If I do teach evolution, I will present only the topics that are not contrary to my personal beliefs	41.5%	23.1%	7.7%	12.3%	15.4%	2.37
	6. If I do teach evolution, I will deliberately avoid making statements that might be deemed offensive by students' parents/school administrator/ school board members etc.	13.8%	16.9%	24.6%	30.8%	13.8%	3.14
	7. If I do teach evolution, I will deliberately avoid making statements that might be contradicted with students' personal beliefs	21.5%	18.5%	24.6%	27.7%	7.7%	2.82
Corrosive Approaches	8. If I do teach science, I will focus only on what is acceptable to discuss in my classroom, given by regulations and mandates of my school and state	7.7%	10.8%	27.7%	40%	13.8%	3.42
	9. If I do teach evolution, I will teach evolution as "absolute truth" and ignore or avoid discussing students' personal or religious beliefs	13.8%	18.5%	26.2%	24.6%	16.9%	2.83
	10. If I do teach evolution, I will convince students that they won't need to change their beliefs	13.8%	18.5%	26.2%	24.6%	16.9%	3.12
	11. If I do teach evolution, I will try to convince my students for the credibility of evolution	10.8%	20%	32.3%	27.7%	9.2%	3.05
	12. If I do teach evolution, I will focus merely on students' learning of evolution but not on students' acceptance of it as a scientific theory	15.4%	15.4%	15.4%	40%	13.8%	3.22
	13. If I do teach evolution, I will draw a line between teaching evolutionary principles, and the application of those principles to social and personal issues	10.8%	18.5%	24.6%	36.9%	9.2%	3.15
Teaching about Controversy Approaches	14. If I do teach evolution, I will not avoid discussing the controversy rather I will help student learn and acknowledge the social context of the controversy without acknowledging the value of science as a means of understanding	6.2%	18.5%	27.7%	27.7%	20%	3.37
	15. If I do teach evolution, I will present evolution from a variety of vantage points without emphasizing which vantage point I support (i.e., scientific, religious points of views)	6.2%	3.1%	16.9%	36.9%	36.9%	3.95
	16. If I do teach evolution, I will provide students with an opportunity to discuss views of evolution alternative to the scientific view	7.7%	7.7%	20%	38.5%	26.2%	3.68
	17. If I do teach evolution, I will share my personal experiences related to evolution with my students	13.8%	27.7%	33.8%	20%	4.6%	2.74
	18. If I do teach evolution, I will defend evolution and provide students opportunities to drawn their own conclusions	10.8%	12.3%	32.3%	36.9%	7.7%	3.18
Proactive, pro-social management Approaches	19. If I do teach evolution, I will teach science as a way of knowing to help my students distinguish science from other ways of knowing and non-science	4.6%	1.5%	20%	52.3%	21.5%	3.85
	20. If I do teach evolution, I will not avoid discussing the controversy rather I will help student learn and acknowledge the social context of the controversy but by acknowledging the value of science as a means of understanding	4.6%	3.1%	15.4%	60%	16.9%	3.82
	21. If I do teach evolution, I will explicitly address religion/science distinctions	12.3%	18.5%	32.3%	26.2%	10.8%	3.05

Approaches	Statements	Strongly Disagree	Disagree	I don't know/No opinion	Agree	Strongly Agree	Mean
Approaches to Teaching Evolution Content	22. If I do teach evolution, I will teach it as a big idea for the content of the course	4.6%	21.5%	40%	32.3%	1.5%	3.05
	23. If I do teach evolution, I will teach it as a distinct content area	3.1%	16.9%	30.8%	41.5%	7.7%	3.34
	24. If I do teach evolution, I will teach human evolution and origins of species	3.1%	4.6%	20%	52.3%	20%	3.82
	25. If I do teach evolution, I will teach only natural selection excluding human evolution and origins of species	10.48%	40%	23.1%	18.5%	7.7%	2.72
	26. If I do teach evolution, I will only cover what state standards and/or curriculum expect me to cover in evolution	6.2%	23.1%	27.7%	30.8%	12.3%	3.20
	27. If I do teach about creationism or intelligent design, I will emphasize that this is a valid, scientific alternative to Darwinian explanations for the origin of species	12.3%	13.8%	40%	24.6%	9.2%	3.05
	28. If I do teach creationism or intelligent design, I will emphasize that almost all scientists reject these as valid accounts for the origin of species	12.3%	18.5%	32.3%	29.2%	7.7%	3.02
	29. If I do teach creationism or intelligent design, I will acknowledge them as valid religious perspectives, but which are not appropriate for a science class	4.6%	21.5%	36.9%	30.8%	6.2%	3.12
	30. I believe it is possible to offer an excellent science/biology course for students that includes no mention of Darwin or evolutionary theory	24.6%	26.2%	20%	16.9%	12.3%	2.66

Another important finding in this study was that for each item, nearly 30% percent of teachers declared that they had no opinion, or they don't know how to teach evolution. This percentage seems low, but it is not negligible.

Conclusions

Learning and teaching about evolution has long been problematic in science education (e.g., Glaze & Goldston, 2015; Smith, 2010). Science education programs should put special emphasis on the areas that are shown to be problematic for teachers. It is, therefore, necessary for teacher educators to be aware of teacher candidates' perceived approaches to teaching evolution so that they can address the areas that need improvement. This study provided the preliminary results based upon the ATES indicating that there were variations among pre-service teachers' approaches to teaching evolution. In order to understand the underlying reasons for advocating particular approaches, future research should focus on the factors causing this variation. The factors such as understanding and acceptance of evolutionary theory, religious beliefs, understanding of nature of science, etc. should be examined to reveal whether or not these factors influence the particular teaching approaches. Besides, this study is a first attempt to develop a quantitative measure of approaches to teaching evolution. The ATES instrument could be useful in identifying teachers' approaches to teaching evolution and provide a further understanding of their potential classroom implementations regarding evolution education. In addition, the ATES instrument could be used as an assessment tool by teacher educators, PD or workshop providers to examine the effects of their programs on approaches to teaching evolution. The assessment of their approaches could also highlight the areas that need improvements so that trainers could adjust their programs accordingly by addressing those areas.

References

- American Association for the Advancement of Science. (2006). Statement on the teaching of evolution. Retrieved from <https://www.aaas.org/sites/default/files/migrate/uploads/0219boardstatement.pdf>.
- Berkman, M., & Plutzer, E. (2011). Defeating creationism in the courtroom, but not in the classroom. *Science*, 331, 404 – 405.^{[1][SEP]}

- Borgerding, L. A., Klein, V. A., Ghosh, R., & Eibel, A. (2015). Student teachers' approaches to teaching biological evolution. *Journal of Science Teacher Education*, 26(4), 371-392.
- Deniz, H., & Sahin, E. A. (2016). Exploring the Factors Related to Acceptance of Evolution among Turkish Preservice Biology Teachers and the Relationship between Acceptance and Teaching Preference. *Electronic Journal of Science Education*, 20(4).
- Dobzhansky, T. (1973). Nothing in biology makes sense except in the light of evolution. *The American Biology Teacher*, 35(3), 125-129.
- Glaze, A. L., & Goldston, M. J. (2015). US science teaching and learning of evolution: A critical review of the literature 2000–2014. *Science Education*, 99(3), 500-518.
- Griffith, J. A., & Brem, S. K. (2004). Teaching evolutionary biology: Pressures, stress, and coping. *Journal of Research in Science Teaching*, 41(8), 791-809.
- Hermann, R. S. (2008). Evolution as a controversial issue: A review of instructional approaches. *Science & Education*, 17(8-9), 1011-1032.
- Hildebrand, D., Bilica, K., & Capps, J. (2008). Addressing controversies in science education: a pragmatic approach to evolution education. *Science & Education*, 17(8-9), 1033-1052.
- National Academy of Sciences. (1998). *Teaching about evolution and the nature of science*. Washington DC: National Academy Press. ^[11]_[SEP]
- National Science Teachers Association. (2003). NSTA position statement: The teaching of evolution. Retrieved from <http://www.nsta.org/about/positions/evolution.aspx>.
- Nehm, R. H., & Schonfeld, I. S. (2007). Does increasing biology teacher knowledge of evolution and the nature of science lead to greater preference for the teaching of evolution in schools?. *Journal of Science Teacher Education*, 18(5), 699-723.
- Sinatra, G. M., Southerland, S. A., McConaughy, F., & Demastes, J. W. (2003). Intentions and beliefs in students' understanding and acceptance of biological evolution. *Journal of Research in Science Teaching: The Official Journal of the National Association for Research in Science Teaching*, 40(5), 510-528.
- Smith, M. U. (2010). Current status of research in teaching and learning evolution: II. Pedagogical issues. *Science & Education*, 19 (6-8), 539-571.

Student Cognitive Style and Nonverbal Immediacy: Utilizing This Relationship to Increase Teacher Effectiveness

Jane B. Teel

College of Education
Auburn University, United States

Abstract

This study investigated undergraduate students' assessment of their nonverbal immediacy behaviors as measured by the Nonverbal Immediacy Scale-Self Report and their perceptual and ordering qualities as measured by the Gregorc Style Delineator. In addition, the study investigated the relationship between the immediacy behaviors and cognitive style and the demographic information of age, gender, and major. The data were analyzed using a multiple regression stepwise procedure. Results of the analysis indicated that there is a relationship between the level of student immediacy and cognitive styles. Students with a low level of nonverbal immediacy have a higher preference for sequential ordering. The findings of this study indicate that as teachers observe the level of students' nonverbal immediacy in the classroom they can be more aware of the variety of cognitive styles and the need to use a combination of teaching methods to engage all students. The use of various methods of teaching is critical to student engagement and to the creation of an active learning environment.

Keywords: immediacy, active learning, learning styles, nonverbal communication

Introduction

"The central objective of educational systems in U.S. cultures is student recognition, recall, and short- and long-term learning. The role of the teacher in educational systems is to create learning environments in which the probability of the desired achievements is enhanced" (Richmond, 2002, p.65). Student learning is a primary function in the postsecondary classroom education. Important research is in the area of the instructor and student connection and the outcome of this connection (Violanti, Kelly, Garland, & Christen, 2018). Understanding the connection between undergraduate students' nonverbal immediacy behaviors and their cognitive styles adds to this research. "Cognitive learning interest educators and researchers in a variety of disciplines, including business, communication, education, psychology, and sociology. Its relevance is becoming more salient as educators strive to improve learning across multiple mediated communication platforms" (Violanti, et. al, p. 252).

While verbal messages serve to convey the content of the message, nonverbal messages establish the relationship (Mottet, Beebe, Raffeld, & Paulsel, 2004). Research during the last 30 years has revealed that affective and cognitive learning increases with students whose teachers display nonverbal immediacy (Daniel, 2000; Talley, 2018). Although significant research has focused on teachers' nonverbal immediacy, there is little research in the area of students' nonverbal immediacy (Christophel, 1990; Baringer & McCroskey, 2000; Chesebro, 2003; Hoyer, 2011). There is a lack of research that examines the relationship between students' nonverbal immediacy behaviors and cognitive styles in higher education. If a relationship exists between a student's nonverbal immediacy and their style of thinking and processing, the observable nonverbal

immediacy and demographic factors such as age, gender, and major could serve as a means of cognitive style identification.

Cognitive styles relate to individuals preferred methods of ordering and converting information (Messick, 1976). In addition, cognitive styles “are conceptualized as stable attitudes, preferences, or habitual strategies determining a person’s typical modes of perceiving, remembering, thinking, and problem solving” (Messick, 1976, p. 5). The cognitive elements of learning style are inner controls of information processing (Keefe, 1988). Keefe states that “each learner has preferred ways of perception, organization, and retention that are distinctive and consistent. These characteristic differences are called cognitive style” (Keefe, 1987, p. 7). According to Gregorc (1982), individuals learn through concrete or abstract experiences in either a random or a sequential way which leads to four mediation channels: Concrete Sequential, Concrete Random, Abstract Sequential, and Abstract Random.

Pashler, McDaniel, Rohrer, and Bjork (2009) were enlisted to review learning style assessment instruments and the need to design instruction to coordinate with the preferred learning style. They found that the validation of learning-styles-based instruction needed experimental results following specific criteria. However, they did not find substantive use of experimental methodology to test the validity of learning styles applied in education. Therefore, Pashler, et. al did not find evidence of “incorporating learning style assessments into general educational practices” (p. 105). Newton (2015) conducted a review of learning styles literature from 2013-2015. The papers were dominated by the VAK (33%) and Kolb (34%) Learning Style Inventories. Only one paper that used the Gregorc Style Delineator was included in this review. Although Newton does not support the use of learning style assessments, he determined that the majority of the studies endorsed the use of Learning Styles to identify learner preferences.

The purpose of this study was to determine if a relationship does exist between college student nonverbal immediacy behaviors and cognitive style. The understanding of students having varying cognitive styles provides support for the need to use a variety of teaching methods which also encourages the creation of active learning settings where student engagement and learning is enhanced.

This study was guided by the following research questions:

1. What is the relationship between gender and nonverbal immediacy and cognitive learning styles?
2. What is the relationship between age and nonverbal immediacy and cognitive learning styles?
3. What is the relationship between major/college and nonverbal immediacy and cognitive learning styles?
4. What is the relationship between participant’s level of nonverbal immediacy and their cognitive learning style preference?

Literature Review

Nonverbal Communication

Nonverbal communication is the base from which nonverbal immediacy builds. Moore, Hickson, and Stacks (2010) conclude that nonverbal communication is the portion of the communication

process that involves the sending and receiving of messages that are not words or part of our language system. Nonverbal communication is further defined as the action of one person conveying meaning to another person or persons through nonverbal messages (Richmond & McCroskey, 2004). Nonverbal behavior “refers to actions as distinct from speech. It thus includes facial expressions, hand and arm gestures, postures, positions, and various movements of the body or the legs and feet” (Mehrabian, 1972). Nonverbal messages are generally unintentional and uncontrollable and “remain outside of our conscious awareness” (Mottet & Richmond, 2002, p. 49).

Nonverbal Immediacy

This study was based on the principle of immediacy which was drafted by Albert Mehrabian and supported by numerous studies (Richmond, Gorham, & McCroskey, 1987; Rodriqueux, Plax, & Kearney, 1996; Witt, Wheelless, & Allen, 2004; Finn & Schrodt, 2012). Mehrabian (1971) developed the immediacy principle on the belief that “people are drawn toward persons and things they like, evaluate highly, and prefer; and they avoid or move away from things they dislike, evaluate negatively, or do not prefer” (Mehrabian, p. 1). Nonverbal immediacy includes behaviors such as making eye contact, smiling, gesturing in a positive manner, and forward leaning of body (Frymier, 1993). When an individual uses consistent eye contact, close physical proximity, movement and gestures, head nodding, and positive facial expressions, and vocal variety this is rated as having high immediacy. The absence or very limited use of these behaviors is classified as low immediacy.

According to Mehrabian (1971), immediacy is presented in approach or avoidance behaviors. Examples of approach behaviors are leaning toward another individual, touching, turning body position toward another, and eye contact. Avoidance behaviors are the opposite of approach including leaning away, lack of touch, turning body position away, and little eye contact during communication. Generally, individuals “select positions that increase stimulation from those objects that we prefer or like and try to shut off stimulation from others that do not interest us” (Mehrabian, 1971, p. 4). Anderson (1979) built upon the Mehrabian concept and advanced the concept of teacher nonverbal immediacy. Numerous nonverbal behaviors are associated with the immediacy principal. Among those behaviors are: reduction in proxemic distance, increases in touch, increases in eye contact, positive facial expressions, increases in gestures, bodily relaxation, purposeful body movements, positioning of head and body toward others, head nodding, and vocal expressiveness (Anderson, Anderson, & Jenson, 1979).

In the higher education classroom, research in the field of immediacy has focused on teacher nonverbal immediacy. An immediate teacher is one who smiles often, uses extensive eye contact, has an animated delivery style, and is relaxed and vocally expressive during class lectures and discussion (Burroughs, 2007). Open body position is also very important to demonstrate to students that the teacher is receptive and approachable (Richmond & McCroskey, 2004). Over the past thirty years a significant number of studies have addressed the issue of teacher immediacy (Anderson, 1979; Gorham, 1988; Thweatt & McCroskey, 1998; Sanders & Wisemann, 1990; Witt, et al., 2004; Violanti, Kelly, Garland, & Christen, 2018). Teacher immediacy is one factor that seems to be relevant to teacher effectiveness and student learning (Mehrabian, 1969). A positive relationship between teacher immediacy and students’ perceived learning has been found (Anderson, Norton, & Nussbaum, 1981; Plaz, Kearney, McCroskey, & Richmond, 1986; Christophel, 1990; King & Witt, 2009).

Although extensive research has focused on teacher immediacy there is a major gap in the student immediacy research (Baringer & McCroskey, 2000; Daniel, 2000; Hoyer, 2011). According to Mottet and Richmond (2002), students send various nonverbal messages in a classroom setting including interest and attention or lack of interest and boredom. To convey interest, students make eye contact with the instructor while leaning forward, and nodding their head. To convey lack of interest and boredom, students slump in their chairs, close their eyes, and show no facial expression. A study by Mottet, Beebe, Raffeld, and Paulsel (2004) determined that students can help reach their instructional and interpersonal goals by using nonverbal immediacy behaviors and teachers do prefer nonverbally responsive students. According to Baringer et al. more research is needed to determine what comprises student immediacy and its effect on teachers. In addition, Daniel stated that research is needed to determine if a relationship exists between nonverbal immediacy and learning styles and to determine the effect of immediacy on cognitive learning.

Cognitive Style and Learning Styles

Keefe (1987) defined cognitive style as one element of the broader category of learning styles. The distinct and consistent characteristics of perception, organization, and retention that are employed by each learner are known as their cognitive style. Rayner and Riding (1997) claim that cognitive style is both the way in which individuals process information as a whole or in parts and represents thinking in words or pictures. Hashway (1998) affirms that cognitive styles are both the way individuals organize and process information. Cognitive style is “a fairly fixed characteristic of an individual, in contrast to strategies which are the ways that may be used to cope with situations and tasks. Strategies may vary from time to time and may be learned and developed. Styles, by contrast, are static and are relatively in-built features of the individual” (Riding, Glass, & Douglas, 1993, p. 268). Sternberg (1997) describes cognitive style as a person’s way of thinking, remembering, or problem solving. The characteristics of cognitive style include perception, thinking and judgment and are well balanced and potentially lifelong characteristics in learning and non-learning situations (Cook, 2005).

According to Messick (1976) cognitive learning is a habitual means of information processing; however, “they are not simple habits in the technical sense of learning theory for they are not directly responsive to principles of acquisition and extinction” (p. 6). Research indicates that cognitive style affects numerous aspects of education including student’s academic choices, student’s academic development, the manner in which students learn and teachers teach, and how students and teachers interact in a learning environment (Witkin, 1976). Sims and Sims (1995) define cognitive learning as knowledge learning.

According to McCroskey (2002), the cognitive domain of learning can be divided into three levels. In the lowest level, learning focuses on gaining knowledge on a specific element of information such as definitions or historical dates. McCroskey further specifies that learning at the middle level refers to methods of learning principles and more expansive principles. Cognitive learning at the highest level focuses on “the ability to interpret, analyze, and synthesize the knowledge acquired at the lower levels with new information that the learner will confront in later life” (McCroskey, p. 4). Student learning in the basic college courses begins at the lower level and only progresses to the higher levels as the student engages in upper level course participation and instruction in a specific subject area.

Active Learning

Bonwell and Eison (1991) identify active learning as doing and thinking. Their examples of doing are discussions, in-class writing, cooperative learning, role-playing, simulation, peer teaching, etc. According to Fink (2003) students who acquire information in an active learning environment rather than a passive environment both learn and retain the information longer. Significant research indicates that active learning positively influences student learning (Bonwell, et. al; Lumpkin, Achen, & Dodd, 2015). Lom (2012) supports the value of active learning strategies within traditional lectures to enhance student learning. Some of the relevant active learning strategies that can be incorporated are: reader's theater, think-pair-share, roundtable, jigsaw, short in-class quizzes, and minute papers (Lom). Effective teachers include activities from each of the three types of active learning which are: experience, information and ideas, and reflective dialogue. Fink's recommended in-class activities related to learning experiences include debates, role-playing, simulations, and dramatizations. One-minute papers and learning portfolios are examples of reflective dialogue assignments and reading before class encourages the introduction of information and ideas.

Methods

For this study, a multiple regression with stepwise procedure was the statistical measure used to analyze the data. The relationship between the four cognitive style preferences of Concrete Sequential (CS), Abstract Sequential (AS), Abstract Random (AR), and Concrete Random (CR) and seven predictor variables were analyzed. The seven predictors or independent variables were Nonverbal Immediacy Scale-Self Report scores, age, gender, college, the interaction between Nonverbal Immediacy Scale- Self Report scores and age, the interaction between Nonverbal Immediacy Scale-Self Report scores and gender, and the interaction between Nonverbal Immediacy Scale-Self Report scores and college. The dependent variable was the cognitive style preference.

Sample

The participants in this study included 188 students enrolled in a public university in the southeastern United States. The participants were enrolled in an undergraduate public speaking course. Participation in the study was voluntary and the participants received extra credit in their public speaking course for participation in the study.

The demographic information for this study was obtained by using a demographic questionnaire designed by the researcher. The group was comprised of 115 (61%) females and 73 (39%) males. The age of the participants ranged from 19 to 32. The mean age was 20.75 (N = 188). One hundred and four students (55%) were Liberal Arts students and 84 (45%) were Non-Liberal Arts students.

Data Collection

Participants completed a demographic questionnaire and two instruments in this study. The demographic questionnaire collected the following information from each participant: age, gender, and major. The Nonverbal Immediacy Scale-Self Report (NIS-S) developed by Richmond, McCroskey, and Johnson (2003) was used to measure nonverbal immediacy. The Gregoric Style Delineator (GSD) developed by Anthony F. Gregorc (2009) was used to identify cognitive style preferences.

Data Source

The Nonverbal Immediacy Scale (NIS-S) contains 13 different nonverbal components that are rated by researchers to be the essential components (Richmond, et al., 2003). The survey consists of 26 statements related to nonverbal immediacy that are answered according to the level the respondent believes most accurately reflects his or her nonverbal communication behaviors. The responses to each statement are based on a five-point Likert scale: 1=Never; 2=Rarely; 3=Occasionally; 4=Often; 5=Very Often. The respondents selected only one response for each statement.

Immediacy can be categorized as high or low. High immediacy for females is determined by a summed score of greater than 112 and low immediacy by a score of less than 92. High immediacy for males is a score of greater than 104 and low immediacy is a score of less than 83.

The Gregorc Style Delineator (GSD) is a self-report instrument based on mediation ability theory (Gregorc, 1982). Respondents rank ten sets of four words to indicate the best descriptor of their thinking and learning. Each instrument is summed and a score of 27-40 indicates high learning style, a score of 16-26 indicates average learning style, and a score of 10-15 indicates low learning style (Gregorc, 1984a). The Gregorc Style Delineator, used frequently with college students to determine their cognitive style, focuses on two types of mediation ability preferences: perception and ordering. Gregorc developed the four learning style preferences: Concrete Sequential (CS) (instinctive, methodical, and deliberate); Abstract Sequential (AS) (intellectual, logical, analytical, and correlative); Abstract Random (AR) (emotional, psychic, perceptive, and critical); and Concrete Random (CR) (intuitive, instinctive, impulsive, and independent) (Gregorc).

Findings

Research Question 1: Gender and Nonverbal Immediacy and Cognitive Styles

A statistically significant relationship was found between gender and Abstract Sequential (AS) and Abstract Random (AR) style preference. Gender predicted Abstract Random style preference at a statistically significant level, $t = -4.384$, $p < 0.001$. Gender predicted Abstract Sequential style preference at a statistically significant level, $t = 3.274$, $p < 0.001$. The Abstract Sequential mean score of males was higher than the mean score of females. The Abstract Random mean score of females was higher than the mean score of males. No significance was found between gender and Concrete Sequential (CS) or Concrete Random (CR) style preferences. The interaction between Nonverbal Immediacy Scale-Self Report scores and gender did not significantly predict Abstract Random, Abstract Sequential, Concrete Sequential, or Concrete Random style preferences.

Research Question 2: Age and Nonverbal Immediacy and Cognitive Styles

A statistically significant relationship was indicated in this study between the interaction of NIS-S scores and age and the Concrete Sequential (CS), Abstract Random (AR), and Concrete Random (CR) style preference. The interaction effect of NIS-S score and age predicted Concrete Sequential style preference at a statistically significant level, $t = -3.923$, $p < 0.001$. The interaction effect of NIS-S scores and age statistically significantly predicted Abstract Random style preference, $t = 3.120$, $p = 0.002$. The interaction effect of NIS-S scores and age predicted the Concrete Random style preference at a statistically significant level, $t = 2.849$, $p < 0.005$.

In the three age groups of 20, 21, and 22-year olds and above students, the students with low nonverbal immediacy had higher Concrete Sequential preference than did the students with high nonverbal immediacy. All 19-year old participants in this study were in the intermediate and high level of nonverbal immediacy. The 19-year old students with intermediate nonverbal immediacy had a higher preference for the Concrete Sequential style than the students with high nonverbal immediacy. Therefore, among all four age groups, the lower the level of nonverbal immediacy the higher the preference for Concrete Sequential style.

The interaction effect of NIS-S scores and college also predicted Abstract Random style preference at a statistically significant level, $t = 3.523$, $p = 0.001$. 19 and 21-year old participants' preference for Abstract Random learning style increased as their level of nonverbal immediacy increased. 19 and 21-year old students with high nonverbal immediacy also indicated a high preference for the Abstract Random style. 20-year old students had an average preference for the Abstract Random style. However, an increase was noted in Abstract Random preference as their level of immediacy increased from low to intermediate. The 22-year old and above students demonstrated an average preference for the Abstract Random style with only a moderate change between levels of immediacy.

The interaction effect of NIS-S scores and age predicted the Concrete Random style preference at a statistically significant level, $t = 2.849$, $p < 0.005$. No change in 19-year old students was indicated between the intermediate and high nonverbal immediacy and the students' average preference for Concrete Random style. In the three groups of 20, 21, and 22-year old and above students, as the students' level of nonverbal immediacy increased from low to intermediate, their preference for Concrete Random style also increased. 20 and 21-year old students maintained approximately the same preference for Concrete Random style as their nonverbal immediacy increased from intermediate to high. 22-year old students' preference for Concrete Random learning style decreased as their nonverbal immediacy level increased. The 22-year old students with low and high nonverbal immediacy behaviors demonstrated the same lower preference for Concrete Random style. Among the four age groups, only the 20-year old participants with intermediate and high levels of nonverbal immediacy indicated a high preference for Concrete Random style. The interaction between NIS-S scores and age did not significantly predict Abstract Sequential. A significant relationship was not found between the predictor of age and Abstract Random, Abstract Sequential, Concrete Sequential, and Concrete Random.

Research Question 3: Academic College and Nonverbal Immediacy and Cognitive Learning Styles

College predicted Concrete Sequential style preference at a statistically significant level, $t = -3.667$, $p < 0.001$. The Concrete Sequential mean score for Non-Liberal Arts students was higher than for Liberal Arts students. College did not significantly predict Concrete Random, Abstract Sequential, or Abstract Random style preference.

A significant relationship was found between Abstract Random and Concrete Random style preference and the interaction between NIS-S scores and college. The interaction effect of NIS-S scores and college predicted Abstract Random style preference at a statistically significant level, $t = 3.523$, $p = 0.001$. The interaction effect of NIS-S scores and college also predicted Concrete Random style preference at a statistically significant level, $t = 2.170$, $p < 0.031$. As the Liberal Arts students' level of immediacy increased so did their preference for Abstract Random and Concrete Random style. However, only the Liberal Arts students with high nonverbal immediacy

had a high preference for Abstract Random and Concrete Random style. The Non-Liberal Arts students had an average preference for Abstract Random and Concrete Random style. Within the average range, the Non-Liberal Arts students with low nonverbal immediacy had the lowest preference for Abstract Random and Concrete Random style. The students with high nonverbal immediacy demonstrated a slight increase in Abstract Random and Concrete Random preference. The students with intermediate nonverbal immediacy indicated the highest preference for Abstract Random and Concrete Random style although their preference was still within the average range. The interaction between NIS-S scores and college was not a predictor of Abstract Sequential or Abstract Random style preference.

Research Question 4: Nonverbal Immediacy and Cognitive Learning Style Preference

Nonverbal Immediacy Scale-Self Report (NIS-S) scores predicted the Abstract Sequential style preference at a statistically significant level. The Abstract Sequential mean score of low immediacy participants was higher than the Abstract Sequential mean score of high immediacy participants.

The interaction of Nonverbal Immediacy Scale-Self Report (NIS-S) scores and age was a predictor of Concrete Sequential, Abstract Random, and Concrete Random style preferences. The interaction effect of NIS-S score and age predicted Concrete Sequential style preference at a statistically significant level, $t = -3.923$, $p < 0.001$. For the Concrete Sequential style preference in all four age groups, the lower NIS-S scores or level of nonverbal immediacy the higher the Concrete Sequential style preference.

The interaction effect of NIS-S scores and age statistically significantly predicted Abstract Random style preference, $t = 3.120$, $p = 0.002$. For the Abstract Random style preference, 19-year olds with intermediate level of nonverbal immediacy indicated an average preference for Abstract Random. The 20-year olds at all levels of nonverbal immediacy had an average preference for Abstract Random. 21-year olds with a low level of nonverbal immediacy demonstrated an average preference for Abstract Random and those with a high level of nonverbal immediacy indicated a high preference for Abstract Random. The 22-years old and above at all levels of nonverbal immediacy noted an average preference for Abstract Random; however, the preference did increase as the nonverbal immediacy increase from low to intermediate.

The interaction effect of NIS-S scores and age predicted the Concrete Random style preference at a statistically significant level, $t = 2.849$, $p < 0.005$. For the Concrete Random style preference, 19-year olds average preference displayed an average preference for Concrete Random and no change was indicated as the level of nonverbal immediacy changed. For the 20- year olds had an average preference for Concrete Random style with a low level of nonverbal immediacy and a high preference for Concrete Random with intermediate and high nonverbal immediacy. An average preference for Concrete Random was indicated by 21-year olds at all levels of nonverbal immediacy. However, a small increase in Concrete Random preference was noted from the low level of nonverbal immediacy to intermediate and from intermediate to high nonverbal immediacy.

The interaction of Nonverbal Immediacy Scale-Self Report (NIS-S) scores and college was a predictor of Abstract Random and Concrete Random style preferences. The interaction effect of NIS-S scores and college predicted Abstract Random style preference at a statistically significant level, $t = 3.523$, $p = 0.001$. The interaction effect of NIS-S scores and college predicted Concrete Random style preference at a statistically significant level, $t = 2.170$, $p < 0.031$. As the Liberal

Arts students' level of immediacy increased so did their preference for Abstract Random and Concrete Random style. However, only the Liberal Arts students with high nonverbal immediacy had a high preference for Abstract Random and Concrete Random style. The Non-Liberal Arts students had an average preference for Abstract Random and Concrete Random style. The interaction of Nonverbal Immediacy Scale-Self Report (NIS-S) scores and gender was not a predictor of the four cognitive style preferences.

Conclusions

Based on this study, students with a low level of nonverbal immediacy demonstrate a high preference for the Abstract Sequential style preference. Among all four age groups of traditional college students, the lower the level of nonverbal immediacy the higher the preference for Concrete Sequential style. With age as the moderator, Nonverbal Immediacy Scale Self-Report scores predicted Concrete Sequential, Concrete Random, and Abstract Random style preferences. However, only with the Concrete Sequential style preference did a consistent relationship exist. Students with a low level of nonverbal immediacy have a higher preference for sequential ordering. This study also indicated that as the age of participants increased the mean scores in the Concrete Random and Abstract Random style preference decreased.

In addition, the findings of this study indicate that gender has some relationship to ordering when the perception is abstract. Males indicated a higher preference for the Abstract Sequential style and females for Abstract Random. Non-Liberal Arts students scored higher than Liberal Arts students on the Concrete Sequential subtest of the Gregorc Style Delineator. As the Liberal Arts students' level of immediacy increased so did their preference for Abstract Random and Concrete Random style. The Non-Liberal Arts students with low nonverbal immediacy had the lowest preference for Abstract Random and Concrete Random style although their preference remained in the average range.

Recommendations include providing college educators with nonverbal immediacy behaviors and cognitive styles orientation and training in the academic environment. Traditional aged college students and adult learners respond to varying types of instruction for most effective learning.

As teachers observe the level of students' nonverbal immediacy in the classroom they can be more aware of the variety of cognitive styles and appropriate use a combination of teaching methods to engage all students. The use of a various methods of teaching is critical to student engagement and to the creation of an active learning environment. According to Fink (2003) students who acquire information in an active learning environment rather than a passive environment both learn and retain the information longer. Significant research indicates that active learning positively influences student learning (Bonwell & Eison, 1991; Lumpkin, Achen, & Dodd, 2015).

Teacher education programs strive to produce the best educators. This study has provided an association between cognitive styles, nonverbal immediacy behaviors, and active learning. Perhaps it is time to include immediacy instruction in the curriculum of teacher education programs, as well as, in professional development programs. Understanding nonverbal immediacy behaviors of students may be an area of teacher instruction that has been underutilized.

References

- Anderson, J. F. (1979). Teacher immediacy as a predictor of teaching effectiveness. *Communication Yearbook*, 3, 543-559.
- Anderson, J. F., Anderson, P. A., & Jensen, A. D. (1979). The measurement of nonverbal immediacy. *Communication Research*, 7, 153-180.
- Anderson, J. F., Norton, R. W., & Nussbaum, J. F. (1981). Three investigations exploring relationships between perceived teacher communication behaviors and student learning. *Communication Education*, 30, 377-393.
- Barenger, D. K. & McCroskey, J. C. (2000). Immediacy in the Classroom: Student immediacy. *Communication Education*, 49, 178-186.
- Bonwell, C. C. & Eison, J. A. (1991). *Active Learning; Creating Excitement in the Classroom*. ASHE-ERIC Higher Education Report No. 1. Washington, D.C.: The George Washington University, School of Education and Human Development.
- Burroughs, N. F. (2007). A reinvestigation of the relationship of teacher nonverbal immediacy and student compliance-resistance with learning. *Communication Education*, 56, 453-475.
- Chesbro, J. L. (2003). Effects of teacher clarity and nonverbal immediacy on student learning, receiver apprehension, and affect. *Communication Education*, 52, 135-147.
- Christophel, D. M. (1990). The relationship among teacher immediacy behaviors, student motivation, and learning. *Communication Education*, 39, 324-340.
- Cook, D. A. (2005). Learning and cognitive styles in web-based learning: Theory, evidence, and application. *Academic Medicine*, 80 (3), 266-278.
- Daniel, T. R. (2000). Determining the impact of nonverbal immediacy on cognitive learning and affective perceptions in a postsecondary technical learning environment. *Dissertation Abstracts International*, 62(02), 532A.
- Fink, L. D. (2003). *Creating significant learning experiences: An integrated approach to designing college courses*. San Francisco: Jossey-Bass.
- Finn, A.N. & Schrodtt, P. (2012). Students' perceived understanding mediates the effects of teacher clarity and nonverbal immediacy on learner empowerment. *Communication Education*, 61 (2), 111-130.
- Frymier, A.B. (1993). The impact of teacher immediacy on student motivation: Is it the same for all students? *Communication Quarterly*, 41, 454-464.
- Gorham, J. (1988). The relationship between verbal teacher immediacy behaviors and student learning. *Communication Education*, 37, 40-53.
- Gregorc, A. F. (1982). *An adult's guide to style*. Columbia, CT: Gregorc Associates.
- Gregorc, A. F. (1984a). *Gregorc style delineator: Development, technical and administration manual*. Columbia, CT: Gregorc Associates.
- Gregorc, A. F. (2009). *Gregorc style delineator (4th ed.)*. Columbia, CT: Gregorc Associates.
- Hashway, R. M. (1998). *Developmental cognitive styles*. San Francisco, CA: Austin & Winfield.
- Hoyer, K. E. (2011). *Teacher and student immediacy: Interactive outcomes on students' learning (Unpublished master's thesis)*. San Diego State University, San Diego, CA.
- Keefe, J. W. (1987). *Learning style theory and practice*. Reston, VA: National Association of Secondary School Principals.
- Keefe, J. W. (Ed.). (1988). *Profiling and utilizing learning style*. Reston, VA: National Association of Secondary School Principals.
- King, P. & Witt, P. (2009). Teacher immediacy, confidence testing, and the measurement of cognitive learning. *Communication Education*, 58, 110-123.
- Lom, B. (2012). Classroom activities: Simple strategies to incorporate students-centered activities within undergraduate science lectures. *The Journal of Undergraduate Neuroscience Education*, 11, A64-A71.
- Lumpkin, A. L., Achen, R. M., & Dodd, R. K. (2015). Student perceptions of active learning. *College Student Journal*, 49 (1), 121-133.
- McCroskey, J. C. (2002). Learning goals and objectives. In J. L. Chesbro & J. C. McCroskey, (Eds.), *Communication for teachers* (pp. 3-7). Boston, MA: Allyn & Bacon.
- Mehrabian, A. (1969). Significance of posture and position in the communication of attitude and status relationships. *Psychological Bulletin*, 71, 359-372.
- Mehrabian, A. (1971). *Silent messages*. Belmont, CA: Wadsworth.
- Mehrabian, A. (1972). *Nonverbal communication*. Chicago, IL: Aldine-Atherton.
- Messick, S. (Ed.). (1976). *Individuality in learning*. San Francisco, CA: Jossey-Bass.
- Moore, N. J., Hickson, M., & Stacks, D. W. (2010). *Nonverbal communication (5th ed.)*. New York: Oxford University Press.

- Mottet, T. P., Beebe, S. A., Raffeld, P. C., & Paulsel, M. L. (2004). The effects of student verbal and nonverbal responsiveness on teachers' liking of students and willingness to comply with student requests. *Communication Quarterly*, 52, 27-38.
- Mottet, T. P. & Richmond, V. P. (2002). Student nonverbal communication and its influence on teachers and teaching. In J. L. Chesbro & J. C. McCroskey (Eds.), *Communication for teachers* (pp. 47-61). Boston, MA: Allyn & Bacon.
- Newton, P. M. (2015). The learning styles myth is thriving in higher education. Retrieved from <https://www.frontiersin.org/articles/10.3389/fpsyg.2015.01908/full>
- Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2009). Learning styles. *A Journal of the Association for Psychological Science*, 9, 105-119.
- Plax, T. G., Kearney, P., McCroskey, J. C., & Richmond, V. P. (1986). Power in the classroom VI: Verbal control strategies, nonverbal immediacy and affective learning. *Communication Education*, 35, 43-55.
- Rayner, S. & Riding, R. (1997). Towards a categorization of cognitive styles and learning styles. *Educational Psychology*, 17, 5-29.
- Richmond, V. P. (2002). Teacher nonverbal immediacy: Uses and outcomes. In J. L. Chesbro & J. C. McCroskey, (Eds.), *Communication for teachers* (pp. 65-82). Boston, MA: Allyn & Bacon.
- Richmond, V. P., Gorham, J. S., & McCroskey, J. C. (1987). The relationship between selected immediacy behaviors and cognitive learning. *Communication Yearbook*, 10, 574-590.
- Richmond, V. P., McCroskey, J. C., & Johnson, A. D. (2003). Development of the Nonverbal Immediacy Scale (NIS): Measures of self- and other-perceived nonverbal immediacy. *Communication Quarterly*, 51, 504-517.
- Richmond, V. P. & McCroskey, J. C. (2004). *Nonverbal behavior in interpersonal relations* (3rd ed.). Boston: Pearson Education.
- Riding, R. J., Glass, A., & Douglas, G. (1993). Individual differences in thinking: Cognitive and neurophysiological perspectives. *Educational Psychology*, 13, 267-279.
- Rodriguez, J. I., Plax, T. G., & Kearney, P. (1996). Clarifying the relationship between teacher nonverbal immediacy and student cognitive learning: Affective learning as the central causal mediator. *Communication Education*, 45, 293-305.
- Sanders, J. A., & Wiseman, R. L. (1990). The effects of verbal and nonverbal teacher immediacy on perceived cognitive affective and behavioral learning in the multicultural classroom. *Communication Education*, 39, 342-353.
- Sims, R. R. & Sims, S. J. (1995). Learning enhancement in higher education. In R. R. Sims & S. J. Sims (Eds.), *The importance of learning styles* (pp. 1-24). Westport, CT: Greenwood Press.
- Sternberg, R. (1997). *Thinking styles*. New York: Cambridge University Press.
- Talley, S. (2018). Predicting student learning: The roles of rapport, immediacy, learning alliance, and citizenship behavior. *Electronic Theses & Dissertation*. 1733. <https://digitalcommons.georgiasouthern.edu/etd/1733>.
- Thweatt, K. S., & McCroskey J. C. (1998). The impact of teacher immediacy and misbehaviors on teacher credibility. *Communication Education*, 47, 348-358.
- Violanti, M. T., Kelly, S. E., Garland, M. E., & Christen, S. (2018). Instructor clarity, humor, immediacy, and student learning: Replication and extension. *Communication Studies*, 69 (3), 251-262.
- Witt, P. L., Wheelless, L. R., & Allen, M. (2004). A meta-analytical review of the relationship between teacher immediacy and student learning. *Communication Monographs*, 71, 184-207.
- Witkin, H. A. (1976). Cognitive style in academic performance and in teacher-student relations. In Messick, S. (Ed.), *Individuality in learning*. San Francisco, CA: Jossey-Bass.

Global Competence and Learning Standards: Designing Engaging Units That Incorporate Both

Amy Mullins¹ and Amy Wood²

¹ Bluffton University, United States

² Tiffin City Schools, United States

Abstract

This article explores the notion of integrating global competence into student learning. An analysis of the relationship between learning standards and the tenets of global competence is presented. Not only is there a correspondence between learning standards and the underpinning elements of global competence, but global competence enhances the fundamental aspects of learning standards. The constituent parts of a global lesson, four domains and four quality components are defined. The process of creating a fifth grade language arts unit that originates with learning standards and incorporates global competence is delineated. However, the process and notion of creating global units that are grounded with learning standards is applicable to all grade levels.

Keywords: curriculum, student learning, competence

Introduction

It has never been more evident that we live and work in a global society. The students teachers are preparing in the classroom today are likely to be working with people from other countries and cultures (Friedman, 2005; Stewart, 2007). As the use of technology rises the possibility of today's student eventually working on international teams conducting scientific research or voting on relevant global issues increases (Stewart, 2007). Students must be familiar with and have a disposition and understanding of the many issues and nuances of other cultures (Friedman, 2005; Mansilla & Jackson, 2011; Reimers, 2006 ;). Using more than a million data points, Mapping the Nation (2014), a live info-graphic database funded by the Longview Foundation tracks the globalization of America. This source estimates that, "Ninety five percent of consumers live outside of our borders; nationally jobs tied to international trade have grown on average, more than 100% over the past twenty years; and one in five jobs is tied to international trade. Cultural and linguistic diversity is evident in cities, suburbs, and most rural communities."

Schools are not meeting the challenge of preparing students to understand and act upon global challenges (Reimers, 2006). Though students must become globally competent in our schools if they are to become culturally competent employees (Friedman, 2005). In a Framework for State Action on Global Education, the Partnership for 21st Century Skills, a coalition that includes the U.S. Department of Education, has broadened its definition of the essential elements for 21st century readiness to include global competence, noting that, "In today's economy and world, global knowledge and international understanding needs to move from optional to foundational for our students" (2014, pg. 4). This emphasizes what the data has made obvious; that globalization has transformed the way Americans must prepare to work, learn and think in the immediate future. Schools must adapt their program offerings and instructional methods so that students graduate with the competencies they need to successfully participate in a globally connected world (Reimers, 2009).

Literature Review

The Council of Chief State School Officers (CCSSO) and the Asia Society Partnership for Global Learning have constructed a definition for global competence that serves to guide educators in developing pedagogical tasks that build students' global capacities, detailing it as "the capacity and disposition to understand and act on issues of global significance" (Mansilla & Jackson, 2011, p.xiii). The methods that teachers can implement to realize these qualities in students have been developed in the field through the work of Asia Society. Asia Society's Partnership for Global Learning initiative has resulted in the development of International Studies Schools Network (ISSN) across America where educators deliberately teach students to become globally competent by aligning many of their classroom activities to four basic elements, or "domains," investigate the world, recognize perspectives, communicate ideas and take action. Students must become globally competent to adequately comprehend, participate and respond to global events (Reimers, 2009).

Driving the development of creating global competence in students is the research process involved in investigating the world with a focus on a topic of global or local significance. Each subsequent layer of the "four domains" is dependent upon the exploration of this global topic. It is through the analysis of a global issue that students begin the academic and personal journey of an understanding of the interconnectedness of the world.

Investigate the World

Globally competent students investigate the world beyond their current environment. They are engaged in generating global knowledge through investigating other cultures, developing questions, analyzing, synthesizing and drawing conclusions about global issues. For example, students may study a specific poet and analyze how the author's personal experiences and literary choices communicate their personal perspective and how the author conveys social and cultural perspectives (Council of Chief State School Officers' EdSteps Initiative & Asia Society Partnership for Global Learning [CCSSO, EI & AS], 2011).

Recognize Perspectives

According to CCSSO, EI & AS (2011), the notion of recognizing perspectives includes students identifying and articulating their own perspective and demonstrating an understanding of different perspectives with an understanding that situations, events and phenomena influence perspectives. This domain involves students understanding that perspectives influence human interaction. The notion of recognizing perspectives requires students to think critically about influences concerning perspectives and analyze information and resources. Students recognize that factors such as poverty, gender, age and ethnicity impact one's perspective.

Communicate Ideas

Students who are globally competent have the capacity to differentiate to their audience and adjust their disposition to communicate effectively. They understand that audiences may perceive the same information differently. Therefore, a key element of communicating ideas is to listen effectively to diverse people and implement the most appropriate media for communication (CCSSO, EI & AS, 2011). This requires students to effectively voice their ideas through various mediums such as debates, speeches, documentaries and written narratives.

Take Action

Lastly, students that are globally competent identify opportunities to take action and advocate for improving conditions locally and globally. Students transcribe their findings and options as they discover creative approaches to take action individually or collaboratively. Students that take action are striving to contribute to or improve a situation or phenomena (CCSSO, EI & AS, 2011). For example, students may create a documentary about an issue of global significance and share it with the community or post it on the Internet.

Schools are faced with the challenge to make the philosophical and pedagogical changes needed to prepare students for the ever-changing global environment that currently exists. The charge to prepare students for the future will largely fall upon the classroom teacher. Asia Society's Partnership for Global Learning (n.d.) explains that if educators are to prepare their students to succeed in the global marketplace, students must emerge from high school prepared for work and civic roles in a globalized environment, where students will need the ability to compete, connect, and cooperate on an international scale. Teachers then, must be able to create classroom environments where they integrate strategies that engage students in global learning. A deliberate effort must be made to integrate global content into the curriculum. To accomplish this, teachers must understand the components of globalizing classroom instruction that will help them develop appropriate learning experiences for students, integrated with the CCSS they are required by their school systems to teach. This work begins with understanding the four domains of competence and how teaching students to be globally competent supports the anchor standards of the CCSS.

The creation of the CCSS was an effort grounded in the notion that the purpose of academic content standards, particularly in Language Arts and Math, is to prepare students for college or a career in the global marketplace. The CCSS attempt to internationalize math and Language Arts benchmarks, that is, to make them comparable to the standards of nations leading in the global marketplace, with the goal that American students will graduate with skills that will allow them not only to compete with their American peers, but in the global marketplace as well.

Students are citizens not only of our county, but of the world. Global issues like poverty, access to clean water, contagious disease, nuclear energy, and conserving natural resources impact all citizens and require that students work together as such to solve these complex and interconnected problems. These real-world issues present in the classroom as engaging topics that teachers can use as entry points in teaching students about the world of the 21st Century through the demands of the CCSS.

Embedded in the CCSS is the basic teaching of 21st century skills such as critical thinking, collaboration, communication and even creativity. These skills are an essential ingredient for solving real world problems. The components of global competence support the skill development and rigorous core content that underpins the CCSS. It is appropriate and urgent for teachers to create classroom level experiences that will help students develop global competence as part of teaching the CCSS. An Educational Policy Improvement Center study indicated that students who “master global competencies in English Language Arts would be expected to significantly increase mastery of the Common Core State Standards” (2013, para. 4). This study also found that the alignment of the CCSS with the International Study Schools Network's (ISSN) recommended components of global competence was significant. In Language Arts, all areas of the CCSS are related to global competence. In Math, all CCSS are related to at least 3 domains of global competence. Together with the shift of implementing the CCSS, Asia Society's protocol for

creating global lessons provides a purposeful pathway for teachers to accomplish the important work of globalizing the curriculum for students.

Methods

Similar to the backward design model, the methodology for creating units that integrate global and learning standards is a process that involves several essential steps. These steps are implemented systematically and involve collaboration through brainstorming, a fine tuning protocol, graphing and recording the framework of the unit.

Identify Learning Standards

The first step in creating a global unit involves the teacher identifying the learning standard that will underpin the lesson. For example, a fifth grade teacher from Ohio may select the following Ohio learning standard, “compare and contrast stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics (NGA Center & CCSSO, 2010, pg. 44).” After choosing the learning standard the teacher would then create a summative assessment. Most units are designed for several weeks and include a handful of learning standards often across disciplines.

Brainstorming

Next the teacher participates in a process that involves brainstorming elements of the unit including summative assessment, essential questions, enduring understanding, activities and formative assessments. In pairs teachers take turns, as one teacher verbally describes aspects of the module the other teacher scribes. This allows the teacher to focus on the module without using cognitive effort toward writing or typing. After the teachers take turns they exchange notes and work individually to develop a framework for their unit.

Fine-Tuning Protocol

After identifying the learning standards and brainstorming, teachers engage in a fine-tuning protocol. The fine-tuning protocol assists teachers through providing insight in developing elements of a unit as they collaborate in triads. Each teacher in the triad takes a turn explaining each preliminary idea for the unit. While one teacher explains the unit, the other two teachers must listen without interruption. After that teacher has concluded the explanation, the other two ask clarifying questions and then provide rounds of cool (suggestions for improvement) and warm (positive) feedback. When the teachers provide cool and warm feedback the teacher that presented may not speak. Finally, the teacher that presented has a few minutes to reflect and jot down notes. Each phase of the fine-tuning protocol has a specific time limit and must be followed with fidelity.

Graphic Organizer

Next, the teacher reviews the unit and makes adjustments. To gain a clear picture of the unit, the teachers create a graphic organizer charting aspects of the unit such as the activities, days needed, materials, formative assessments and the summative assessment. Each graphic organizer is designed based the unique needs of the teacher. For example, a graphic organizer may be created using a laptop including columns for days needed, activities, materials, formative assessments and summative assessment. In contrast, another graphic organizer may be created using large chart

paper and sticky notes to indicate days needed, activities, formative assessments and summative assessment.

One-Pager

The last phase in creating a unit is the one-pager. The one-pager is a summary or overview of the unit containing information including the author, grade level, subject, description, essential questions, enduring understandings, learning standards, formative assessments and summative assessment. In addition the one-pager includes a description of how the summative assessment includes student choice, authentic activities, global significance and opportunities for exhibition to a real-world audience (SAGE). The format of the one-pager is designed to assist teachers in quickly previewing a unit and is conducive to creating collections that can be shared between colleagues.

Findings

Global units include four quality components, this involves student-centered activities, authentic learning experiences, clear expectations and the opportunity for mastery. These quality components are characteristics of each lesson as they are integrated throughout a global unit.

Student Centered

First, a quality global lesson is student centered. This means that the instructor differentiates the activities and teaching strategies to meet the individual needs of the students. An element of student centered learning is choice, provided several options to reach the desired outcome. In addition to providing choice, the instructor utilizes multiple teaching strategies to accommodate diverse learning styles. Instruction should be differentiated to meet the needs of each student. Information should be presented to facilitate various ways of learning. Lastly, student's interest should be considered when developing tasks.

Authentic Tasks

In addition to including the element of student centered, quality global lessons are authentic, providing students to engage in meaningful work that real professionals do. An authentic task is not abstract or disconnected from reality, but rather purposeful and situated in real-world context resulting in authentic products. An authentic learning experience for students in the content area of math could include designing and determining the appropriate dimensions for a garden. Perhaps in the content area of English language arts students engage in writing a poem or book review.

Clear Expectations

Providing students with clear expectations is the third quality component of a global lesson. Unless the instructor communicates the expectations clearly, it is difficult for students to become motivated and put forth their best effort. Clear expectations allow students an opportunity to self-assess and have ownership of their learning. If students know what they are working toward and how their efforts regarding the task at-hand will contribute to the culminating product they will be more invested in their work. For example, providing students with tools such as checklists, rubrics and models of the task, support clear expectations.

Multiple Opportunities

Lastly a quality global lesson provides students the opportunity for mastery. It takes time and deliberate practice to master specific skills. Often students need more than one opportunity to master the content that is presented in a lesson. When teachers provide students appropriate feedback and multiple instances to grapple with content, they facilitate the opportunity for mastery.

Conclusions

The process for creating global lessons that incorporate learning standards is similar for both pre-service and practicing teachers. Teachers that want to integrate global competence into their lessons often initially create a unit the first year and each year thereafter add a few more. The following are suggestions for getting started.

Examine a unit of study and explore how it could be transformed with a world view. For example, a language arts unit that explores story elements may be transformed to represent diverse cultures and multiple points of view.

Explore the Council of Chief State School Officers web-site (www.edsteps.org/ccsso/SampleWorks?Matrices420.pdf) where you will find sample lessons and matrices that outline performance outcomes in each content area for developing global competence.

Consult the Asia Society website (www.asiasociety.org/education) for resources including lesson plans, how-to-guides and publications. The Asia Society website includes information concerning the International Studies Schools Network (ISSN)

Establish an exchange for sharing global units. Create a portal for teachers to upload and preview global units.

Implications

Today's students live in an interconnected world and as a result must develop global competence. Students who are globally competent have developed essential skills such as the ability to investigate other cultures, recognize the perspectives of others, communicate their ideas and take action to promote positive change in the world. These skills prepare students to participate and compete in the global marketplace. However, many classrooms are not prepared to facilitate instruction that fosters the tenets of global competence. Through utilizing the process of creating a unit that incorporates both learning standards and global competence, teachers can gradually be prepared to provide instruction that support students in becoming globally competent citizens.

Future Research

As previously stated, schools are faced with the challenge of preparing students to engage in and to be productive in a society that requires a disposition that is understanding of other cultures and global issues (Reimers, 2006). More teachers need to be trained and prepared to deliberately incorporate global competence into units. Future research should focus on how to support teachers in their efforts to create and implement engaging units that incorporate learning standards and global competence.

References

- Asia Society Partnership for Global Learning. The International Studies Schools Network; Excellence, Equity, and Innovation in a Global Era. Retrieved from www.asiasociety.org/education
- Council of Chief State School Officers' EdSteps Initiative & Asia Society Partnership for Global Learning. (2011). Educating for global competence: Preparing youth to engage in the world. New York, NY: Authors
- Educational Policy Improvement Center. Asia Society performance outcomes and the common core state standards: areas of greatest alignment in math. Retrieved from <http://sites.asiasociety.org/pglonline/wpcontent/uploads/2013/07/math.pdf>
- Educational Policy Improvement Center. Asia Society performance outcomes and the common core state standards: areas of greatest alignment in ELA. Retrieved from <http://sites.asiasociety.org/pglonline/wp-content/uploads/2013/07/ela.pdf>
- Friedman, T. (2005). The world is flat: A brief history of the twenty-first century. New York: Farrar, Straus, and Giroux.
- Longview Foundation and Asia Society. (2014). [Live infographic series describing the globalization of America; linking the global to local, October 24, 2014]. Mapping the nation. Retrieved from <http://mappingthenation.net/infographics.html#sthash.5Pg36V4Q.dpuf>
- Mansilla, V., & Jackson, A.W. (2011). Educating for global competence: Preparing our youth to engage in the world. New York, NY: Asia Society.
- National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). Common Core State Standards for English language arts and literacy in history/social studies, science, and technical subjects. Washington, DC: Authors.
- Partnership for 21st Century Skills. Framework for state action on global education. (2014, September 10). Retrieved from Partnership for 21st Century Skills website: <http://www.p21.org/news-events/press-releases/1495p21-releases-framework-for-state-action-on-global-education-framework>
- Reimers, F. (2009). Global competence is imperative for global success. *The Chronicle of Higher Education*, 55, 29-32.
- Reimers, R. (2006). Citizenship, identity and education: examining the public purposes of schools in an age of globalization. *Prospects*, 36.
- Stewart, V. (2007). Becoming citizens of the world. *Educational Leadership*, 64, 8-14

Part 3: Education in Other Specialties

How Do the US and International Master Students Explore Their Career?

Que Nguyet Tran and Tricia Seifert

College of Education, Health, and Human Development
Montana State University, United States

Abstract

The purpose of this qualitative study was to explore the experiences of four US and international master-level student's career decision making processes. The study was framed using a social cognitive career self-management model, career-life span, and self-authorship. The findings show students' self-efficacy beliefs are stronger at graduate level than when they were in undergraduate level to explore career horizon, regardless of gender, age, nationality, and majors. Faculty and mentor interactions play a key contextual support role for students to identify their career goals and job search behaviors as well as professional networking. Family support indirectly influences on either the US or non-US students' career decision. Local cultural insights have effects on US students' job landing expectations, while international students face with more challenging contexts to an international career. Students' self-efficacy directly influence their career exploration goals and adaptive career behaviors such as job applications and director-level-jobs as their outcome expectations. International students pay attention to new software self-learning, while US students prioritize networking for their career preparedness. Implications for institutions to support student's career development are discussed.

Keywords: graduate students, self-efficacy, social cognitive career theory, career self-management, vocational theory, self-authorship

Introduction

The US labor market is changing with more emphasis being placed on advanced degrees. Between 2014 and 2024, the Bureau of Labor Statistics expects the number of jobs that typically require a master's degree and a 12.2 percent increase for jobs that typically require a doctoral or professional degree (Bureau of Labor Statistics, 2017). In the US, at the national level, the graduate applications grew at an average of 4% annually from Fall 2007 to Fall 2017, while the master and doctoral degree production of the same period increased 2.7% and 4.4% respectively (Okahana & Zhou, 2018). Furthermore, US institutions are one of the study-abroad destinations for international students who made up 5.5% of all students in U.S. higher education and contributed to \$42.4 billion to the U.S. economy in 2017 (International Institute of Education, 2018). Many researches have focused on either US or US-based international students' career decision-making at the undergraduate level. Previous experiences with the host country and the initial motivation to study abroad have some influence on international students' post-graduation overseas career (Adamuti-Trache, 2018; Albert, 2018; Nilsson et al., 2016). For US students, long time and aspiration involved in their final career decisions (Willner et al., 2015). However, very little research has explored the career decision process at the master level and cross-disciplines as well as in rural context. To fill the above- mentioned research gap and building on the social cognitive career self-management model (Lent & Brown, 2013) career-life period (Super, 1996) and the self-authorship theory (Malgoda, 2008), this qualitative study aims to explore the career decision experiences of US and international graduate students in the US.

Institutions often have career service offices for undergraduate, but the extent to which these same services are used by graduate students is limited. The change in college student demographics coupled with the labor market forces have created a condition in which institutions have become vital resources for career preparation and decision making. In the US, the Generation Z students (born between 1995-2010) believe that college is critical to starting a career and they are very career-minded (Loveland, 2017), and the work outcome is the top main reasons why US people choose higher education (Gallup, 2018). According to National Association of Colleges and Employers (NACE), career readiness is the attainment and demonstration of requisite competencies that broadly prepare college graduates for a successful transition into the workplace.

Hirschi (2018) has indicated that the academic literature in vocational psychology and career research “has been remarkably silent on the 4th industrial revolution”. Digitalization and automation due to the technology advances are influencing the future nature of occupational choices, career development, and career counselling (Hirschi, 2018; Autor, 2014; Autor & Salomons, 2018). Weaver & Osterman (2017) stated that demand of highly specialized skills has the greatest probability of incurring long-term vacancies. Due to the rapid technological changes influencing the labor market, it is important to understand graduate students’ perceptions of career preparedness in order to support them on campus. Additionally, what factors may influence graduate student perceptions’ job outcomes and how those factors may explain their career preparedness. It is for these reasons, this study endeavors to assist faculty, administrators, and institutional leaders to design appropriate support programs for graduate students’ career development.

The purpose of this qualitative case study described the processes of career exploration and planning of U.S. and international students as well as contextual support influences on their career preparation path at a land grant university in the Pacific Northwest. This study focuses to understand how US and international master students explore their career, and how contextual supports and barriers influence their’ adaptive career behaviors and outcome expectations. The master students are the focus of this study because they are the bridge between undergraduate and doctoral levels, and they have flexibility to choose career after two years of the program completion rather than longer time commitment toward a PhD degree. The career decision processes can be investigated and explained by self-efficacy beliefs of one’s own capability to provide level of performance, what factors engage and motivate people for self-directed career behaviors such as networking, job-search behavior, and set goals related to such behaviors as well as the perceived desirability or outcome expectations. The external conditions such as economics, culture, family, work also will be considered how these students make their decisions.

Theoretical Framework

The Social Cognitive Career Theory (SCCT) framework initially consisted three components explaining interest development, choice-making, and performance and persistence in educational and vocational context (Lent, Brown, & Hackett, 1994) that focused primarily on content questions, or the destination where people end up occupationwise. The social cognitive career self-management model (CSM) (Lent & Brown, 2013) addresses the process, how they get there or how they manage new challenges. This study is framed using the interpretative framework of the CSM. The model contextualizes students’ descriptions of their career development process (Lent & Brown, 2013), explaining career self-management across the life span of Super’s theory (1996). Besides the career-life span theory (Super, 1996), this study also used self-authorship as an interpretative framework (Magolda, 2008) to identify students’ self-efficacy in their career stages.

The CSM also can be applied to understand how and why people might or might not choose to work in new occupations and enter emerging industries, and how to assist individuals in such career choices (Hirschi, 2018). The current study investigates each individual student's self-efficacy beliefs and outcome expectations engage adaptive career behaviors (goals) and enact these behaviors (actions) such as planning, information-gathering, deciding, goal-setting, and job searching. Self-efficacy is defined as "... people's judgements of their capabilities to produce designated levels of performance" (Bandura, 2001). Lent et.al. (2016) showed strong self-efficacy and positive outcome expectations toward career behaviors motivate people to set goals related to such behaviors. Also, these authors mentioned the contextual support and barriers put into actions and resulted various career outcomes. The CSM model suggests factors interrelate and the decision to engage in career exploration and planning (Figure 1) and in job search (Figure 2).

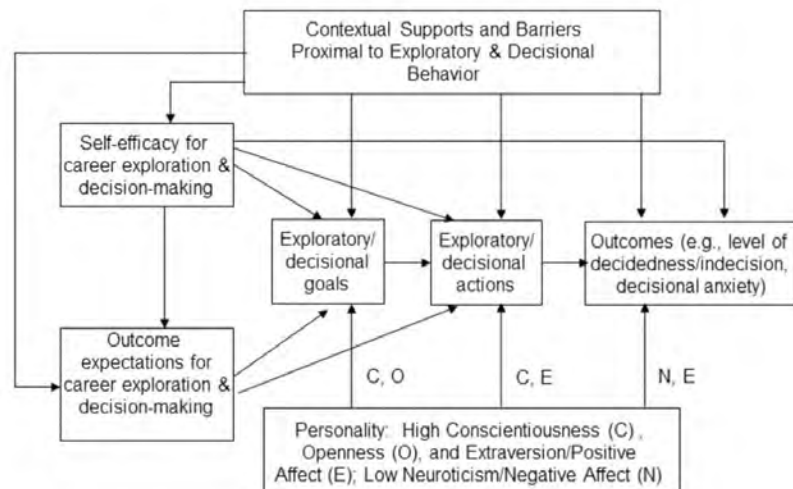


Figure 1. Model of career self-management as applied to career exploration and decision-making behaviors

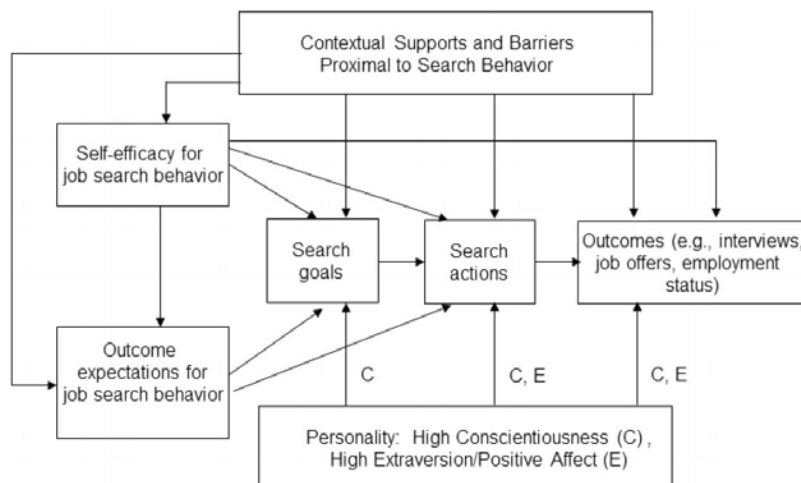


Figure 2: Model of career self-management as applied for job search behavior

In the CSM model, self-efficacy and outcome expectations promote directly adaptive career behaviors (actions) and indirectly goals, through the mediating effects of personal goals (i.e. goals

to actions). For example, self-efficacy is the strongest influence for engineering undergraduate students toward graduate school intention such as master's program or a PhD program (Borrego et al, 2018). Additionally, the contextual and personality factors may promote goals, actions, and outcomes directly, while moderating (i.e. strengthen or weaken) the relation of goals to actions, and the relation of actions to outcomes.

Literature Review

“Person inputs” including gender, ability, race/ethnicity, self-efficacy beliefs or personal capabilities, and social interactions such as support and barrier are key pillars to build the SCCT (Lent & Brown, 2017). Many studies have used SCCT as a framework to explain the relationship between intra-individual positive affect, social support, self-esteem and career decision-making self-efficacy, career choice anxiety (Park et al., 2018), to design career counselling intervention strategies for international students in response to their career development needs (Bulgan & Çiftçi, 2018), and to identify self-efficacy influence on engineering graduate education intention (Borrego et al., 2018). Previous studies investigated students' career decision-making based on the SCCT for different levels of student (i.e. Ph.D, master, undergraduate level), various majors (e.g. life sciences, business, computer sciences, psychology), and in different contexts such as the US, the UK, Scotland, South Korea (Schnoes et al., 2018; Bozionelos et al., 2015; Alshahrani et al., 2018; Park et al., 2018). The graduate students may have working experiences before they enroll in the master program such as military services (Vance, 2015) or they want a career shift in the career decision-making. At professional level, Mendez et al. (2017) measured career mentorship for engineering underrepresented minority faculty, while Bennett & Hennekam (2018) studied the creative industries workers in the Netherlands and Australia. The SCCT has explained interconnected models of academic and career interest development, choice making, and performance. The expansion of SCCT to career self-manage (Lent & Brown, 2013) can be applied to understand how career-making process efficacy or the journey to explore student's career in a more digital and automated economy (Hirschi, 2018).

Self-Efficacy

Self-efficacy in the CSM is process efficacy that refers to perceived ability to manage specific tasks necessary for career preparation (Lent & Brown, 2013). Career choice and self-efficacy are prominent for occupation selection theme which is one of five key themes (i.e. employee attitudes and motivations, occupation selection, career orientations, work-family, and mentoring) the Journal of Vocational Behaviors has published more than two recent decades (Byington et al. 2018). Career decisions are influenced by academic experiences, internships, research, and other factors. A strong-sense of self-efficacy can help students persist and be related to positive outcomes (Marra et al, 2009). Self-efficacy is a key factor for veteran students and engineering students to make their decision of graduate education (Vance, 2015; Borrego et al., 2018). In the empirical study of life-science doctoral students in the US, their self-efficacy beliefs in career decision making was increased after interning (i.e. adaptive behaviors) and they were less likely to pursue postdoc positions which culturally considered “default postdocs” career after PhD program (Schnoes et al., 2018). The internship opportunities provided doctoral students a “clearer sense of direction” as the experiences required them to “earnestly appraise their interests, abilities, and expectations”. In terms of gender and discipline toward career goals, Smith and Gayles showed women in engineering form their career decisions based on undergraduate experiences, alignment of self-knowledge and occupational knowledge, and gender differences (Smith & Gayles, 2017). A comprehensive meta-analysis of sources of self-efficacy and outcome expectations in science,

technology, engineering, and mathematics (STEM) fields (Sheu et al., 2018) tested direct learning experiences (including mastery learning, verbal persuasion, affective state) and vicarious learning in relationship with STEM self-efficacy. They found in their two-source model that four types of STEM-related learning experiences are applicable to boost student self-efficacy across a wide age range, but not gender or race/ethnicity. The findings can be considered for educational and career interventions for STEM workforce development using SCCT framework. Roche et al. (2017) tested the CSM to apply to your people's anticipated multiple role management and found that self-efficacy mediated the relationship of conscientiousness and intentions to balance their work-family roles.

Outcome Expectations

Self-efficacy & outcome expectations are related to each other as individuals expect to receive positive outcomes in performing tasks for which they feel competent (Lent, 2005). Roche et al. (2017) found self-efficacy and outcome expectations were moderately and positively related to each other in their model of testing the CSM. Outcome expectations beliefs about the consequences of performing particular behaviors or courses of action (Lent & Brown, 2013). Self-efficacy and outcome expectations were found to mediate the relationship of conscientiousness and intentions to balance their multiple life roles, and female had stronger intentions than male. Additionally, international master students in the UK who held stronger self-efficacy in terms of "dealing with the challenges of living and working in a foreign country" and expected better overall outcomes to work overseas were more positive toward an international career (Bozionelos et al, 2015). Moreover, Lim and Soon identified seven criteria evaluated by students graduating in economics (Lim & Jan-Jan, 2006) ranking long-term career prospect as the most important criteria, followed by job security, working environment, salary, opportunity to learn, applicability of degree and flexible work schedule.

Goal Setting

Goal-setting training may help undergraduate job seekers successfully find employment in job search clarity (Côté et al., 2006). Jiang and Loui conducted a large on-line survey with seniors and first-year undergraduate students to understand factors that influence students' decision to pursue graduate school over professional careers (Jiang, 2012). Students who had positive undergraduate research experience and who "felt attached" to their department would enter graduate school. Graduate students have different career approaches from undergraduate students. For example, veteran students have strong aspiration and intention to enroll at graduate school as their post-military career (Vance, 2015) because veteran students have high degree of self-efficacy. For doctoral students, the graduate student internships in career exploration program course within 20 hours effectively introduced them to a wide range of available careers and promoted realistic ideas about those careers (Schnoes et al., 2018). Paço et al. (2017) investigated obstacles European STEM PhDs wishing to become entrepreneur including pedagogy and the training content of management, communication, negotiation skills for exploring a new professional path of becoming entrepreneurs out of the only academic/researcher professions. The students could cultivate entrepreneurial spirit, competence, and behavior when they accessed to entrepreneurial environment surrounding the university and the real-entrepreneurs-involved-entrepreneurship program conception (i.e. contextual support).

Social Support and Barrier

In the CSM, contextual supports and barriers operate through several pathways: directly promote goals and actions, moderate the relation of goals to actions, or indirectly relate to goals via linkages to self-efficacy (Lent & Brown, 2013). Social support is found to be related to self-efficacy, outcome expectations, and exploratory goals (Lent et al., 2016). External factors such as career prospects, social support, and variations in the labor market can influence students' career decision making (Bozionelos et al., 2015; Park et al., 2018; Wang et al., 2018). Social support refers to the surrounding environment, such as family, peers and teachers (Alshahrani et al., 2018; Park et al., 2018; Garcia et al., 2015). The doctoral students' perceptions of their faculty support (i.e. contextual support) for their participation in the internship program have significant form of social persuasion in students' career development (Schnoes et al., 2018). Garcia et al., (2015) found that parents and teachers influence career optimism via increasing self-efficacy beliefs. Family considerations influenced veteran's decision to attend graduate school as well as self-efficacy, goal-setting and achievements are decisive influencers to their success as post-military career (Vance, 2015).

Studying international graduate students in the UK, Bozionelos et al, 2015 pointed out that graduate experience in the host country, employment opportunities overseas versus at home, quality internships, and adjustment are contextual factors influencing student career decision-making after graduation, while perceived family pressure to return does not moderate the relationship of self-efficacy and outcome expectancy with student's interest to work abroad. Improving career prospects (i.e. career opportunities) is a very important factor for prospective students in their decision making-process before studying abroad (Nilsson & Ripmeester, 2016). Employability and employment outcomes are rated higher than research reputation by international students in their decision to select institutions for study (Tran & Soejatminah, 2018). Thus, international students may have more influential contexts than the domestic students when they consider their career decision making. The present study is exploring how US and international students have been influenced by different contexts in their career exploration while they are pursuing a master-degree program in the same US land-grant western institution.

The researcher aims to learn individual US and non-US students to seek understanding of the world in which they live and work. Studies applied SCCT for quantitative methodology (Alshahrani et al., 2018; Borrego et al., 2018; Park et al., 2018; Bozionelos et al., 2015) and specifically applied CSM (Lent et al., 2016; Roche et al., 2017; Ireland and Lent, 2018). A few qualitative approach studies using SCCT are Vance (2015), Schnoes et al., (2018), Bennett and Hennekam (2018). The current qualitative approach will provide additional understanding of master-level students' characteristics and their career exploration processes.

Methods

The present study uses qualitative approach with a social constructionist paradigmatic lens. Social constructionism is an appropriate lens to explore career decision making processes as these processes are formed through interactions with others. The case-study method attempts to capture the perspectives of different participants (Yin, 2018), so it is the most appropriate approach to investigate individual cases (i.e. each master student's story) and compare their different processes decision-making topic (between US and international students) in a US very-high-research-activity institution. The interpretive framework expects to provide patterns of meaning among cases. Each

participating student is interviewed one-on-one ranged from 45-60 minutes, and the interviews were digitally recorded.

Participants

Four master students (two men and two women) including two US citizens and two international students were recruited by maximum variation sampling including criterion, convenience, and snow-ball sampling strategies that provide a diverse group of participants based on their gender, nationality, stage of master program, and major. Each student is given a pseudonym. They are in the range of 24-28 years old, and all are single. Two white US students, one female in-state and one male out-of-state student, are in the higher education program and they are in different stage of the program. A female Asian international student experienced the US undergraduate education before pursuing the master program, while the male Asian international student came to the US for the master program.

Prior to beginning this study, the data collection procedure was approved by Institutional Research Board (IRB). Informed consent and permission to record the interviews were obtained from the interviewees. Notes were taken during the interviews to record mean Students' demographic information is listed in Table 1.

Table 1. Demographic Information of Interviewees

Characteristic	A	B	C	D
Gender	Male	Female	Female	Male
Age	26	25	24	28
Race/Ethnicity	White	White	Asian	Asian
Graduate major	Education	Education	Agriculture	Applied Economics
Stage of the master program	One more course to graduate	First semester	First semester	In thesis stage to graduate
Desired job	Director-level	Athletic Students-related	Global issues – food security	Global impacts – policy analysis
Desire place to work	US and short-term overseas	Big 10 and short-term overseas	International	International

Data Collection

Data collection comprised a semi-structured interview, guided by an interview protocol to solicit student perspectives on their career exploration, including self-efficacy, goal-setting, job search behaviors, outcome expectations, and contextual support and barriers.

Data Analysis

Data analysis included reviewing the narratives to determine answers to the research questions. The coding scheme was created by theoretical codes in the qualitative software NVivo (version 12, QSR International). To ensure the trustworthiness of the study, steps were taken to verify credibility, transferability, and dependability which were suggested by Korstjens & Moser (2018). Data triangulation was applied in the data collection process. The researcher sought informants through convenient and snow-ball sampling, and a pilot conversation with a few graduate students different from the sample to refine the interview guide for the in-depth interviews in the same venue at different times with the informants. Empirical evidence on key aspects of the study such as data collection methods and students' contexts, behaviors, and experiences was collated to

increase the transferability of the findings. Data analysis began as soon as each interview was conducted.

Qualitative theme analysis was used to analyze the interview data using First Cycle coding then Second Cycle approach of Miles et al. (2018). A two-step analytical process was undertaken. Step 1 aimed to understand in-depth graduate students' previous experiences, motivation and perception of career self-preparedness to answer US and international master students explore their career. Step 2 was to answer how contextual supports and barriers influence their' adaptive career behaviors and outcome expectations. Analysis consists of making a detailed description of the case and its setting (Creswell & Poth, 2018, pp 206), while Yin (2014) advanced a cross-case synthesis as an analytic technique when the research studies two or more cases, so similarities and differences among the cases can be seen (Creswell & Poth, 2018, pp 206). To validate the findings, member checking was utilized when participants reviewed their interview transcripts and confirmed accuracy.

Findings

Based on the data analysis, all students indicated that (a) previous academic and working experience influenced their decision to enroll at graduate level, (b) graduate education experience increased their self-efficacy and outcome expectations to explore their career, (c) faculty and mentor interactions helped students have a clearer career goals and adaptive career behaviors, and (d) family support, to varying degrees, relates to their confidence of career goal-setting and job exploration.

First, previous academic experience influenced both US and non-US students' graduate education enrollment because they experienced difficulties to enter the labor market with a bachelor's degree and lack of working experiences. Student B expressed: "when I pulled the job sounds amazing and a location that I want to be at, and the pay rate I want, it would be three or five years of experience". These students observed a plenty of master's degree-required-job opportunities as a student explained "I probably needed a master's degree to really get some opportunities". The international male student had tendencies to pursue doctoral studies as his father did, however, he chose to study the graduate course based on his previous working experience that he recognized his needs to fill the gap of knowledge and skills, "rigorous quantitative methods [in economics] really appealed me", he said.

Second, graduate education experience increases these students' self-efficacy to explore their career such as student A stated "I know what I am good at, and what I am not good at, so I use my education to increase skills that I wouldn't normally have or I consider myself lacking" or "I like being challenged". In addition, students found they had more direct interactions with faculty than at undergraduate level to ask about their career path or professional advices. They could learn academic career path from faculty to reflect on their career preparation. Participant A shared: "They (i.e. faculty) are more than willing to share their insight so I learned from them." These students also communicated frequently with peers outside of classroom while they are on campus to explore their career. Students who work on campus as a full-time employee or a graduate assistant at functional offices have more confidences to gain their professional experiences to posit themselves to the prospective employers. Three students who held US-undergraduate-degrees realized that they hardly get a job without working experience, whereas the international male student has higher confidence to continue either a doctoral program or have a job in industry. Student A recognized his strengths in leadership, advising, or international component that he

might have impacts on students, or student D viewed himself to work at the scope of a think-tank. Either male or female students emphasized to look for job at director-level upon their master completion. In addition, the graduate students aware skillset they need to prepare for their employability as they have self-regulated learning of new software to enhance their competence. As a result of increased self-efficacy and clear position they aim to work after graduation, student A expected “correlated” compensation that he concerns in his career landing choice (e.g. public vs. private institutions) or student D believes “pretty good wage with economic degree”.

Third, all four participants acknowledged clearer career goals of what they want to change or impact in their future job landings. Student A used to be interested in being a secondary history teacher, but now with his graduate education and two and a half year working in the office of admission and office of international programs as a graduate assistant, he aims to work in higher education setting because “I want to use my skills for student success... a more traditional path, like a director of international admissions.” Moreover, faculty and mentor interactions make significant contribution to students’ career exploration for both US and international students, because students have individual and frequent conversations with. Students reflected faculty’s career path in academic environment or mirrored mentor’s role to direct their career. Faculty also helped to extend students’ social capital through attending conferences or seminars. In addition, mentor’s motivation and guide are important to suggest a map for students to explore their career such as “you do some research to figure out programs that you want to go on, do some research about who you want to follow”, stated by student B. Notably, this student was self-motivated to apply forty five jobs during the second half of last year and got three interviews in the field she wants to work. The international student C indicated her professor “helped me to think about the global issues...encouraged students to go to the career fair and to collaborate research with other people” whenever they have lab meetings weekly.

As students’ have confidence in their competence and clear outcome expectations that have driven their actions to achieve their goals. Specifically, US students “plan to explore” such as using internet or social media to access information of job postings or professionals in the field they intend to work in the future, while international students prepare for their employability by “learning or using new skillset or software”. For instance, student D applied for a vacancy of statistical programmer that required STATA and R software skills that he is proficient at. Moreover, compensation is one of outcome expectations to make their career choice. For example, there is difference of pay rate in education sector between private and public institutions or “get a pretty good paying job with the economics degree”, mentioned by student D.

Last, family support plays an indirect role in master students’ career decision, regardless of gender and nationality. An international student expressed “They (i.e. parents) tried to stop me to go into that route (i.e. agriculture), but I choose what I interested and beneficial more people”, whilst the US student shared “they (i.e. parents) really never told me, here's life, this is how it's gonna be. You have to work for what you want.” The finding shows consistency with previous study for master international students in the UK (Bozionelos et al., 2015) that parents do not influence on their career decision. Students at graduate level have less direct family influence unlike undergraduate students (Park et al., 2018) in their career decision-making self-efficacy.

Cultural aspects in the decision-making process is a surprising finding from the US students’ perspectives which reflect context for their decisions in the CSM. The out-state student prefers working in the western area than the midwestern home region due to “people are helpful and friendly here, while job is job in my hometown”, and he found “out-of-comfort zone to learn and

identify different ways of communicating and working”. Also, the US students’ personal preference of nature influences their decision-making process, whereas the international students did mention their preferences of international organizations for their job landings. This finding is fascinating as an international researcher’s perspective to understand the US diverse regional cultural differences. This finding is a contribution to the CSM model because the US region’s cultural value was not studied and compared as a context construct influencing student’s career adaptive behavior and decision-making process.

Discussion

The graduate education experiences enhanced US students’ stronger confidence to prepare for their post- graduation employability rather than their undergraduate experience. These graduate students have strong self-efficacy beliefs to complete their course work, plan and work on thesis, build skillsets necessary such as computer skills or leadership skills, and connections via faculty interactions, professional event participation, or follow professionals through their personal social media channels. Their self-efficacy has been enhanced and strengthened at graduate education with self-motivation for their career preparation. This findings among traditional US and non-US students aligns with Vance’s finding (2015) for veteran students, or engineering students (Borrego et al., 2018) to enroll master programs. Students’ perception also aligns with Bureau of Labor Statistics (2017) forecast of master’s degree requirement between 2014 and 2024 when more jobs demands higher degrees. Four students of this study conversed with peers and observed faculty to prepare for their career, however, they did not have “professional advisor” or “career counsellor” at graduate level as they had at undergraduate level. International students face numerous challenges such as psychological and sociocultural adjustment, language barriers, financial problems, etc when they study overseas that may significantly influence their career needs and career decision-making processes (Bulgan & Çiftçi, 2018). International students in this study showed consistency with Bozionelos et al.’s study in the UK of which adjustment to the international study experience among international master students had a significant moderating effect on the relationship between self-efficacy and interest in international career. Both US and non-US students showed their positive self-efficacy to “take risks” and “being challenged” to explore career as they have experienced a professional role as employees on campus or held graduate assistant positions. The CSM model (Lent & Brown, 2013) indicated the self-efficacy influences students’ career exploration goals and actions.

According to the CSM (Lent & Brown, 2013), the stronger self-efficacy and outcome expectations, the more direct influence toward student’s adaptive behaviors through the mediating effects of personal goals. These students have clear goal of position or who they want to become after completing the master program such as admission director, athletic director, or economics policy analyst. The international students recognized wider career prospects as they experienced international learning and living environment that differs their perceptions of employment at their origin-countries. Based on the career goal intentions, graduate students engaged more activities on campus, exchanged their concerns with faculty, proactively learnt new skills, or plan to explore employment opportunities that offered during the graduate studies.

The contextual support (i.e. faculty, professional societies) promotes student’s career goals and actions directly (Lent & Brown, 2013) during their processes of career exploration in the CSM. Previous study indicated faculty play a key role in students’ career development through internship (Schnoes et al. 2018) or entrepreneurial-experienced lecturer (Paco et al., 2017). International students need to deal with more contexts than domestic students, including adjustment to

international study and self-efficacy to interest in working abroad in the UK context (Bozionelos et al. 2015). The male international student in this study shared stresses he did overcome to adjust with the new learning and living environments in the first of the two-year master program. However, he mirrored faculty and peer to shape his career goals and consolidated his competences in his career planning and preparation. The domestic students also acknowledged faculty support and encouragement to model and consult when they needed advices. The out-of-state student faced similar challenges to adjust in the new environment as international student experienced in building social networking.

Location to work in the US is a concern for the US students, rather than the international students, because the US students grounded culturally, while international students must deal with more external factors or context of the host country. Even though international students have clear career goal, they must depend on the legal framework of employment in the US which is totally contextual decisive factor. The male international student in this study has two routes after completing this level: to pursue a doctoral study or to work in industry of which optional practical training is an option or employer agrees to pay for their working visa. As mentioned by other studies, international students' lack of bargaining power and of knowledge about the employment market as well as workforce regulation in Australia (Tran & Soejatminah, 2018), or job insecurity and visa sponsorship restrictions in the US (Adamuti-Trache, 2018).

Based on Super's career-life span theory (1996), all four students are in their middle and late 20s years old, their adaptive career behaviors are understandable in their exploration stage of life. This is consistent with CSM using adaptive career behaviors across the life span (Lent & Brown, 2013). In addition, three students who had full-time working experiences, they are in the stage of becoming the author of one's life according to the theory of self-authorship (Magolda, 2008), that reflects their stronger self-efficacy. Student who has not got any full-time working experience determined the first stage of Magolda's theory, which is "following formula", that is to follow her professor. According to Magolda (2008), three elements of self-authorship are trusting the internal voice, building an internal foundation, and securing internal commitments, which relevant to self-efficacy that "refers to personal beliefs about one's ability to perform particular behaviors or courses of action" (Lent & Brown, 2013).

Graduate students' career needs and concerns are diverse for both domestic and international students. Besides academic faculty and peer support, students' self-efficacy and outcome expectations need to be analyzed to match their strengths and coping mechanisms with future job opportunities in order to better career preparedness. An intervention at institutional level, therefore, is needed to support graduate students' success such as professional counselling services, so students and counsellors could work on setting short-term goals, open discussions to for career-related-different issues to aim at increasing self-efficacy and reaching positive outcome expectations, use technology to perform self-assessment, or building e-professional profiles. In the condition of the ongoing fast changes in the economy and technology, counsellors own the human skills to navigate and evaluate internet-based career information, incorporate such information into a sense of self to support for student's self-awareness increase, and add value to the career choice process for the foreseeable future (Bulgan & Çiftçi, 2018, Lent, 2018; Hirschi, 2018).

The main purpose of this study was to describe master-level students' processes of their career exploration and adaptive career behaviors using the CSM theoretical framework. Both US and international students have strong self-efficacy and outcome expectations toward their career as they are in master level. There is no difference in terms of faculty or mentor-student interactions

as contextual support for US and non-US students at this study's setting. However, there is different self-efficacy beliefs influencing on career goals and actions upon students' gender and their stages of master program. Noticeably, international students paid attentions to new software self-learnings to prepare for their career, while the domestic students prioritized to develop networking.

Limitations

This study, like any other research, has certain limitations. First, due to the study's exploratory case-study design, the data were collected mainly through in-depth interviews with a small sample of master-level students. This limitation may prevent a full understanding of all master students at different majors and nationalities. Second, the study's samples are at 20s, so master-students at different ages such as 30s or 40s may have different self-efficacy in their career exploration as suggested by Lent et al. (2016) that different groups of students may have different self and career knowledge. Third, only a single setting, a rural-western Rocky Mountain-very high-research institution, was investigated. Destinations differ considerably in their economic and social factors which are external context that influence students' exploration by comparison of different job markets and may also differ students' learning experiences such as internship or community-services opportunities to strengthen self-efficacy. Fourth, this study investigated students' self-efficacy and outcome expectations based on their learning experiences at graduate level and previous working experiences to identify their career goals and actions, the future longitudinal research design is highly recommended to obtain any changes in students' self-efficacy and outcome expectations between graduate education period and their professional development period. Finally, geographically cultural values and participants' insights vary that an international doctoral student aware in the US. Thus, the future research could use other research methods or other settings to verify the results of this study and explore if any other contexts affecting both US and international students to explore their careers.

Conclusion

The CSM is appropriate to seeks answer for this study's research questions. Graduate education enhances four US and international master-level students' self-efficacy and outcome expectations to compete in the labor market. Faculty and peer interactions play a key role as contextual support for graduate students in this study because they could question, observe academic career paths, and build networking on campus or through participation at professional conferences for career preparedness. Strong self-efficacy and outcome expectations promote students' actions such as job planning, job search, or job application, and set high career goals either at their early or nearly finishing stage of their master program. Family support has indirect influence in these students' career decision, regardless of gender and nationality. Cultural value posits in two US students' prospective job landing, while the other two international students face challenge of employment regulations to work in the US as their international career interest. The CSM, the study concept and the exploratory case-study approach can be transferable in other settings such as urban-located, two-year, or private colleges of which also host international students.

Conflict of Interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Acknowledgements

We thank Dr. Christine Rogers Stanton and Dr. Carrie Myers for assistance with qualitative methodology for comments that greatly improved the manuscript.

References

- Adamuti-Trache, M. (2018). International Students' Experiences in the US Workforce: Gender Differences in Labor Market Outcomes. In *Global Perspectives on International Student Experiences in Higher Education* (pp. 273-288). New York: Routledge.
- Alberts, H. C. (2018). Post-Graduation Plans of International Students. *Global Perspectives on International Student Experiences in Higher Education: Tensions and Issues* (pp.259-272). New York: Routledge.
- Alshahrani, A., Ross, I., & Wood, M. (2018). Using social cognitive career theory to understand why students choose to study computer science. *Proceedings of the 2018 ACM Conference on International Computing Education Research*. ACM, New York.
- Autor, D. (2014). Polanyi's paradox and the shape of employment growth. (Vol. 20485): National Bureau of Economic Research Cambridge, MA.
- Autor, D., & Salomons, A. (2018). Is automation labor-displacing? Productivity growth, employment, and the labor share. *Brookings Papers on Economic Activity*.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual review of psychology*, 52(1), 1-26.
- Bennett, D., & Hennekam, S. (2018). Self-authorship and creative industries workers' career decision-making. *Human Relations*.
- Borrego, M., Knight, D. B., Gibbs Jr, K., & Crede, E. (2018). Pursuing Graduate Study: Factors Underlying Undergraduate Engineering Students' Decisions. *Journal of Engineering Education*, 107(1), 140-163.
- Bozionelos, N., Bozionelos, G., Kostopoulos, K., Shyong, C. H., Baruch, Y., & Zhou, W. (2015). International graduate students' perceptions and interest in international careers. *The International Journal of Human Resource Management*, 26(11), 1428-1451.
- Bulgan, G., & Çiftçi, A. (2018). Career Counseling for International Students: Using the Framework of Social Cognitive Career Theory. In *International Student Mobility and Opportunities for Growth in the Global Marketplace* (pp. 203-213). IGI Global.
- Bureau of Labor Statistics, U.S. Department of Labor. (2017). 37 percent of May 2016 employment in occupations typically requiring postsecondary education. *The Economics Daily*. Retrieved from <https://www.bls.gov/opub/ted/2017/37-percent-of-may-2016-employment-in-occupations-typically-requiring-postsecondary-education.htm>
- Byington, E., Felps, W., & Baruch, Y. (2018). Mapping JVB: A 23-year review. *Journal of Vocational Behavior*.
- Côté, S., Saks, A. M., & Zikic, J. (2006). Trait affect and job search outcomes. *Journal of Vocational Behavior*, 68(2), 233-252.
- Creswell J.W & Poth C.N. (2018). *Qualitative inquiry and research design: choosing among five approaches*. 5th ed. Thousand Oaks: Sage.
- Gallup. (2018). Why Higher Ed? Top Reasons U.S. Consumers Choose Their Educational Pathways. Retrieved from <http://www.stradaeducation.org/consumer-insights/why-higher-ed/>
- Hirschi, A. (2018). The fourth industrial revolution: Issues and implications for career research and practice. *The Career Development Quarterly*, 66(3), 192-204.
- International Institute of Education. (2018). Open Doors 2018. Retrieved from <https://www.iie.org/Research-and-Insights/Open-Doors/Open-Doors-2018-Media-Information>
- Ireland, G. W., & Lent, R. W. (2018). Career exploration and decision-making learning experiences: A test of the career self-management model. *Journal of Vocational Behavior*, 106, 37-47.
- Jiang, A., & Loui, M. C. (2012, October). What should I do next? How advanced engineering students decide their post-baccalaureate plans. In *2012 Frontiers in Education Conference Proceedings* (pp. 1-6). IEEE.
- Korstjens, I., & Moser, A. (2018). Series: Practical guidance to qualitative research. Part 4: trustworthiness and publishing. *European Journal of General Practice*, 24(1), 120-124.

- Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior*, 45(1), 79-122.
- Lent, R. W. (2005). A Social Cognitive View of Career Development and Counseling. In S. D. Brown & R. W. Lent (Eds.), *Career development and counseling: Putting theory and research to work* (pp. 101-127). Hoboken, NJ, US: John Wiley & Sons Inc.
- Lent, R. W., & Brown, S. D. (2013). Social cognitive model of career self-management: Toward a unifying view of adaptive career behavior across the life span. *Journal of Counseling Psychology*, 60(4), 557.
- Lent, R. W., Ezeofor, I., Morrison, M. A., Penn, L. T., & Ireland, G. W. (2016). Applying the social cognitive model of career self-management to career exploration and decision-making. *Journal of Vocational Behavior*, 93, 47-57.
- Lent, R. W., & Brown, S. D. (2017). Social cognitive career theory in a diverse world: Guest editors' introduction. *Journal of Career Assessment*, 25(2), 3-5.
- Lent, R. W. (2018). Future of work in the digital world: Preparing for instability and opportunity. *The Career Development Quarterly*, 66(3), 205-219.
- Lim, H. E., & Jan-Jan, S. (2006). Job selection criteria and job sector preference of economics student: an ordered logit model analysis. *International Journal of Business and Society*, 7(1), 53.
- Loveland, E. (2017). Instant Generation. *Journal of College Admission*, 235, 34-38.
- Magolda, M. B. B. (2008). Three elements of self-authorship. *Journal of College Student Development*, 49(4), 269-284.
- Marra, R. M., Rodgers, K. A., Shen, D., & Bogue, B. (2009). Women engineering students and self-efficacy: A multi-year, multi-institution study of women engineering student self-efficacy. *Journal of Engineering Education*, 98(1), 27-38.
- Mendez, S. L., Martin Conley, V., Keith, R. S., Haynes, C., & Gerhardt, R. (2017). Mentorship in the engineering professoriate: exploring the role of social cognitive career theory. *International Journal of Mentoring and Coaching in Education*, 6(4), 302-316.
- Miles, M. B., Huberman, A. M., & Saldana, J. (2018). *Qualitative data analysis: A methods sourcebook*. Sage publications.
- NACE. (2017). Employers rate career competencies, new hire proficiency Retrieved from <http://www.naceweb.org/career-readiness/competencies/employers-rate-career-competencies-new-hire-proficiency/>
- Nilsson, P. A., Ripmeester, N. (2016) International student expectations: career opportunities and employability. *Journal of International Students*, 6(2): 614-631
- Okahana, H., & Zhou, E. (2018). *Graduate enrollment and degrees: 2007 to 2017*. Washington, DC: Council of Graduate Schools.
- Park, I. J., Kim, M., Kwon, S. W., & Lee, H. G. (2018). The relationships of self-esteem, future time perspective, positive affect, social support, and career decision: A longitudinal multilevel study. *Frontiers in psychology*, 9, 514.
- Paço, A., Ferreira, J., & Raposo, M. (2017). How to foster young scientists' entrepreneurial spirit? *International Journal of Entrepreneurship*, 21(1).
- Roche, M. K., Daskalova, P., & Brown, S. D. (2017). Anticipated multiple role management in emerging adults: A test of the social cognitive career self-management model. *Journal of Career Assessment*, 25(1), 121-134.
- Schnoes, A. M., Caliendo, A., Morand, J., Dillinger, T., Naffziger-Hirsch, M., Moses, B., ... & O'Brien, T. C. (2018). Internship Experiences Contribute to Confident Career Decision Making for Doctoral Students in the Life Sciences. *CBE—Life Sciences Education*, 17(1), ar16.
- Sheu, H. B., Lent, R. W., Miller, M. J., Penn, L. T., Cusick, M. E., & Truong, N. N. (2018). Sources of self-efficacy and outcome expectations in science, technology, engineering, and mathematics domains: A meta-analysis. *Journal of Vocational Behavior*, 109, 118-136.
- Smith, K. N., & Gayles, J. G. (2017). "Setting Up for the Next Big Thing": Undergraduate Women Engineering Students' Postbaccalaureate Career Decisions. *Journal of College Student Development*, 58(8), 1201-1217.
- Super, D. E., Savickas, M. L., & Super, C. M. (1996). A Life-Span, Life-Space Approach to Career Development. In D. Brown, L. Brooks, & Associates (Eds). *Career choice and development: Applying contemporary theories to practice* (3rd ed., pp. 121-178). San Francisco, CA: Jossey-Bass.
- Tran, L., & Soejatminah, S. (2018). International Students as a Vulnerable Army of Workers: Work Experience and Workplace Treatment. In *Global Perspectives on International Student Experiences in Higher Education* (pp. 289-303). Routledge.
- Vance, C. D. (2015). Decision-making considerations for mid-career army officers to pursue master's degrees. *Adult Learning*, 26(3), 109-115.

- Wang, H., Davis, S., Atkins, L., & Clements, L. A. (2018). WIP: An Exploratory Study of NSF-supported Scholars' Career Readiness. 2018 ASEE Southeastern Section Conference. American Society for Engineering Education, Daytona Beach Shores, Florida.
- Weaver, A., & Osterman, P. (2017). Skill demands and mismatch in US manufacturing. *ILR Review*, 70(2), 275-307.
- Willner, T., Gati, I., & Guan, Y. (2015). Career decision-making profiles and career decision-making difficulties: A cross-cultural comparison among US, Israeli, and Chinese samples. *Journal of Vocational Behavior*, 88, 143-153.
- Yin, R. K. (2018). *Case study research and applications: Design and methods*. 6th ed. Thousand Oaks, Sage:2018

Impact of Service-Learning in a Science Methods Course: Motivation Conflicts

Barbara S. Spector¹, Cyndy Leard², and Debbie Stone³

¹College of Education
University of South Florida

²Independent Consultant

³The Florida Aquarium

Abstract

This paper describes a flipped classroom course (Perkins, et. al, 2017) constructed in keeping with the holistic paradigm inherent in the Next Generation Science Standards (NGSS Lead States, 2013), into which a service-learning project was integrated that required learners to engage in open-ended inquiry. This service-learning innovation partnered a university with an informal science education institution (ISEI); and provided opportunity for prospective science teachers to respond to a real-world problem, employ scientific (systematic) inquiry, demonstrate autonomous learning, and blur the lines between school and community. This initiative was introduced in response to the university's emphasis on engaged scholarship. What happened when the initial service-learning plan met reality (including a hurricane) is described. The service-learning model surfaced a conflict between intrinsic and extrinsic motivation as a driver for prospective teachers' learning. The emergent conflict highlighted the way grading in higher education limits learners' risk taking, inhibits creativity during open-ended inquiry consistent with doing scientific research, discourages productivity, constrains autonomous learning, and causes stress.

Keywords: service-learning, informal science education institutions, holistic paradigm, motivation, grading, science methods course

Introduction

The term engaged scholarship is used by universities "to describe a host of practices cutting across disciplinary boundaries and teaching, research, and outreach functions in which scholars communicate to and work both for and with communities" (Barker, 2004 p.124). Service-learning (S-L) is a form of engaged scholarship in which students acquire necessary knowledge and skills to meet core curriculum requirements through the production of a project/product that can be used by a community member to solve a real-world problem or meet a need. Service-learning is recognized as a strategy that "considers the needs of adult learners and uses the appropriate method and resources to facilitate meaningful learning and discovery" (Kleinhesselink, et al. 2015 p. 2) through the following practices:

- Reforming the role of teacher or instructor as a *facilitator* of knowledge rather than a *controller* of knowledge.
- Ensuring that learning by doing is at the center of discovery.
- Engaging the learner in ongoing critical reflection on what is being experienced for effective learning.
- Ensuring that learners help to direct and shape the learning experiences.

- Ensuring that new knowledge, concepts, and skills are linked in meaningful ways to the learner's personal experiences. (Kleinhesselink, et al. 2015 p.2).

The practices above align with the shift in science education from a didactic, reductionist, mechanistic paradigm to a holistic constructivist, inquiry, practice-based paradigm (see Table 1) making the incorporation of service-learning in a science methods class for middle school teachers a natural progression. As students take control of their own learning, they progress through an iterative cycle involving research, experience, and reflection while completing intermediate tasks that help them gain knowledge and skills to be used in their end product.

Service-learning requires a community partner. While there are many options for community partners, informal science education institutions (ISEIs), such as an aquarium or museum, are ideal candidates because they provide a novel setting in which prospective teachers are introduced to the idea of free-choice learning. This context helps mitigate resistance to the paradigm shift in science learning, because visitors engage in the actions required by the paradigm shift automatically. Attendees find themselves directing their learning through their choice of activities and subject matter. In this environment intrinsic motivation, evidenced by interest and curiosity, drives the learning. Prospective teachers are thus introduced to free-choice, student-centered learning helping them to broaden their effective science teaching perspectives. In addition, prospective teachers can recognize how learning opportunities designed for ISEIs can be adapted for classroom use (Spector, Burkett, & Leard, 2012).

Table 1. Comparison of Paradigms in Science Education

Question	Didactic, Reductionist, Mechanistic Paradigm	Holistic, Constructivist, Inquiry, Practice-based Paradigm
What does I teach mean?	An authority (instructor textbook) transmits-(tells- learners) ideas-(thoughts)- they must be able to reproduce	An authority facilitates learners to ask questions systematically, to seek input, gather and organize data, analyze and synthesize data (process data) to construct answers to their questions
What does I learn mean?	Guess what is in the teacher's head and give the teacher what he/she wants to hear: and, or, I give back precisely what the authority told me	Learner makes sense of input (data) from his/her experiences by constructing meaning and is able and empowered to act based on that meaning
What is the job of a student?	Commit to memory what was transmitted	Process input: Select and process data to construct answers to their questions Integrate thinking, feeling, and acting (thus empowering meaning making). Engage in reflection (about input processed) and metacognition (thinking about thinking processes)
What is the job of the teacher?	Transmit information	Facilitate students' construction of meaning
How does the class function?	Individuals compete with each other	Individuals cooperate and collaborate with all others sharing expertise as a community of practice/learners
What is the function of assignments?	Assignments are tests of students' ability to replicate information from an authority into a product	Assignments are experiences that provide sources of input for data and opportunities to process data to construct meaning and test meaning made with peers
How is instruction organized?	Around basics first	Around sensitive and intellectually complex phenomena
Who evaluates what?	Authority evaluates students' performance with grade indicating the extent to which the learner's assignment product matches a list – rubric-developed by the teacher	Learner evaluates sense being made, identifies where there are gaps in the sense being made, asks questions about the gaps, and seeks more data until gaps are filled
Who primarily directs the learning process?	Teacher	Student
What kind of learning occurs?	Passive	Active
What kind of learner emerges?	Dependent	Autonomous

Source: Adapted from Spector, 2016 pp.22-23

Literature Review

This literature review focuses primarily on the concepts of motivation in human nature and the part of the paradigm shift in science education focused on grading, which is the same paradigm shift in grading visible in all of schooling. These related areas support and are supported by the unexpected outcome of this study revealing students experienced conflict between intrinsic and extrinsic motivation during the course herein. In addition, there are comments about service-learning and informal science education institutions, the context for this study; and inquiry and autonomy which are part of the paradigm shift addressed in this study.

Motivation

McGregor in 1957 suggested two opposing theories of human motivation labeled X and Y. Theory X indicated humans won't work unless they perceive an ax is held over them (extrinsic motivation). Theory Y suggested humans will work for personal satisfaction (intrinsic motivation). Reminiscent of Theory X, Skinner (1957), with his theory of behaviorism, later insisted humans only enact behaviors in response to an environmental reward (extrinsic motivation) the same way a rat responds to food at the end of a maze. Supporting Theory Y, Kohn (1999) noted that humans seek to overcome challenges and seek new levels of complexity. Strong's (1996) description of the evolutionary-biological basis for human curiosity supports that. He indicated humans are naturally curious, and curiosity cannot be satisfied. It just keeps shifting to a new question emerging from the answer to a prior question. (This is the basis for the nature of science, emphasized in the Next Generation Science Standards (NGSS) (2013). Similarly, current psychological research is focused on positive psychology that again reflects Theory Y. Yet most of society's institutions, especially schools, employ a grading system based on an inherently punitive evaluation system reminiscent of Theory X that was functional in an industrial-based society and has not been transformed to meet the needs of the knowledge-based society well in place by 1990.

"Education is complex and nuanced. Grades are simple and arbitrary" (Tomar, 2019 p. 1). The idea that learning is something one does for a prize, an extrinsic reward, derives from Skinnerian psychology and is so entrenched in all sectors of our society that to question it is almost heresy. Grading in schools is even translated to grading in popular culture e.g. news reports saying the country earned a C in responding to the An Ocean Report (Ocean Commission, 2004).

Grading and Grade Inflation

Tomar (2019) stated, "Grades are a symptom of an educational philosophy that treats intellectual and artistic diversity as inconveniences to be classified rather than as virtues to be cultivated. ... [Further,] Grades are inevitably subjective ... Ultimately grades are an over simplification of what students are capable of learning and doing" (p.8). Additionally, grading frequently has negative consequences such as, stress that is counter-productive to thinking; individuals sensing defeat or inadequacy; production of resentment rather than responsibility; enactment of damage control and minimal effort; increased cheating; damage to teacher-student and peer- to-peer relationships; and more.

The Washington Post and the Chronicle of Higher Education (as cited in Tomar, 2019) documented that grade inflation is rampant in colleges from elite institutions such as, Harvard to numerous other institutions. "...more than anything the very real trend of grade

inflation dashes to pieces the notion that each letter grade carries a clear and useful meaning” (Tomar, 2019 p.10). In spite of what we know are often the varied negative effects of this punitive grading model and the meaning of an A grade being unequal at best and meaningless at worst due to the subjectivity of grades and grade inflation, the grading system prevails in most educational institutions.

Shifting Paradigms in Education

Kohn (1999) argues that a child’s misbehavior, and by extension lack of performance in a school, is best interpreted as a teachable moment, a problem that should be solved by the child and the adult together rather than an infraction that calls for a punishment. He contends this is more respectful, more humane, and in the long haul more effective at helping children develop a sense of responsibility. In keeping with this argument, there is a slow education movement expanding globally since its origin in England in 2012, and a no-grades movement afoot in education K-16 to help educators reimagine how they assess learning. Both these movements are consistent with Theory Y and the principles and practices of the paradigm shift in science education.

Slow education is an emergent philosophical approach to teaching and learning in which learners pursue their own interests and are enabled to be absorbed in, and care about, their work. They reflect on their work and self-assess their progress without the pressure of tests and targeted standards. Slow cultivates attributes not currently addressed by standards-based schools such as, those “attributes crucial to the cultivation of the virtues and the formation of moral agents: creativity, critical thinking, resilience, motivation, persistence, humor, reliability, enthusiasm, civic-mindedness, self-awareness, self-discipline, empathy, leadership, and compassion” (Holt, 2002). Students become empowered and autonomous, equipped to reason for themselves and to be flexible. The interactions of learners with teachers are highly valued as is learning for its own sake. Curiosity and creativity are encouraged, which runs counter to the current culture of education dominated by mechanistic concepts and bureaucracy. Slow is a reaction to highly structured, test driven curricula aimed at fostering the learner’s productive contribution to the economy.

The goal of the no-grades movement is to steer students away from passive learning and into a more active role in their schooling. The focus is on the learning process rather than the score, the pressure of performance is replaced by an environment where students feel free to make mistakes, continuously self-evaluate, and develop deeper understanding (Stoltzfus, 2018).

The no-grades movement is a response to the complexity and nuances of education that are not visible with just a letter grade. Teachers Throwing Out Grades Facebook group had 8,000 members exchanging their stories and ideas in 2018. Higher education institutions such as Brown University, Antioch College, Bennington College, New College of Florida and others have dispensed with traditional grades.

There have been a variety of approaches tested to replace traditional A-F grades. Classrooms throughout the world are using a variety of observation-feedback-iteration procedures and learners’ self-assessment to report learning instead of grades. There is an emphasis on evaluating self-directed projects which challenge students. The intent is for teachers to “learn how to effectively assess academic performance, and students would become independent learners, driven by curiosity and inspiration rather than by the empty promise of a “good” grade or the threat of a “bad” one” (Barnes, 2018). Self-regulation, self-assessment, self-evaluation, and self-advocacy should drive students’ learning and performance. Students are in the best position to know what

they have learned and evaluate their own understanding and progress. When they are not under the pressure of grades, they are free to make their evaluations honestly (Sackenstein, 2016). The autonomous learner resulting from such schooling experience would have the skills and dispositions necessary for life-long-learning, a necessity in this contemporary world in which the only constant is change.

In 2019, Tomar raised the following question about grades for evaluation at the college level: “College is, by its nature, intended to inspire students to a higher level of discourse, knowledge, and personal growth. Shouldn’t it be incumbent upon us to be equally as imaginative, effective, and inspiring in the way we evaluate these endeavors?” (p. 2)

The no-grades movement emerging in education has its foundation in a paradigm shift in psychology from Skinnarian behavioristic to more humanistic (what it means to be human) and positivist theories. The paradigm shift in psychology is consistent with the paradigm shift in the rest of society (illustrated by science education) from a mechanistic paradigm (factory management) to a holistic paradigm which includes a reward system consistent with underlying assumptions of what it means to be human. This shift is also consistent with the change in science education reflected in NGSS.

Aspects of the preceding reimagined approaches to education that are all student-directed were observed in the course studied herein. This course combined service-learning, inquiry, autonomy, and informal science education institutions in a science methods course. They relate to the societal paradigm shift this way: There are many models for service-learning. They exist on a continuum from teacher-directed to student-directed. There are many models of inquiry. They, too, exist on a continuum from teacher-directed to student-directed, often described as closed-ended (parameters given by teacher) to open-ended (no parameters given by the teacher). Models of learning also exist on a continuum from teacher-directed, which results in dependent learning, to self-directed, which results in autonomous learning. Required science education in a traditional formal school setting is on the teacher-directed end of a continuum with informal, free-choice, science education at the student-directed end.

Informal Science Education Institutions (ISEIs)

When a person has choice, his/her intrinsic motivation then drives the decision making for learning. The individual is inclined to take ownership of a task/project and derive a sense of pride in accomplishment. ISEIs are referred to as “free-choice” institutions. Attendees of all ages voluntarily engage in learning, because the available activities are attractive to them. An individual’s intrinsic motivation (desire, interest, curiosity) drives the learning.

Service-Learning

An underlying premise of all service learning models is learners in a formal course are constructing knowledge and skills that can be used to assist a community entity to meet a need or solve a real problem, rather than hypothetical one, identified by a community member or jointly by a community member and the course learner. Real-world problems are open-ended. They are labeled problems because there are no directions to bring a person to a satisfactory solution. There are no pre-existing guidelines, protocols, procedures, or rubrics showing how to resolve them as there are in typical hypothetical problems commonly used in schools.

Inquiry

An underlying assumption of a science methods class is students are expected to “do science,” meaning enact scientific inquiry, which is systematic, into the natural world. The natural world is in essence a sealed black box. (That is one reason science is tentative.)

It does not tell a person the “right” answer. Authentic scientific inquiry is therefore open-ended and creative. It is not a mechanistic step-by-step recipe to get to one right answer typically found in didactic science classrooms.

Scientific inquiry is also a systematic strategy for learning to teach science, especially the nature of science and the scientific enterprise. The primary skill science methods students should develop, therefore, is a systematic way to inquire as an approach to solve a problem or meet a need. It is thus reasonable to expect science methods students to use systematic inquiry to solve a service-learning problem.

Autonomy

Challenges in authentic settings do not come with rubrics, intermediary benchmarks for the process, or intermediate time deadlines given to guide a student’s approach. Learning in authentic settings values personal experience, entails making judgments about conduct, virtue, and balance. In order to address a real need in an authentic setting, one engages in systematic inquiry and identifies gaps in one’s own knowledge or skills required to address the challenge (need or problem). Then one pursues the information needed. Actions of an autonomous learner include identifying gaps in one’s own skills and knowledge in pursuit of a goal or problem solution, constructing the missing knowledge or skill, and developing one’s own criteria for success. The goal of all learning should be self-reliant children and adults with the capacity to meet an authentic need.

Methods

Sample

Data sources included the products students produced for the aquarium; participant observation by the first author, the instructor, and the third author, the community partner; emails among all the participants; students’ bi-weekly journals and responses to each other; and students’ service-learning logs, class exit memos, and anonymous university end of course evaluation forms.

Data Collection

Data collection took place through participant observation and review and analysis of course products. Students were observed at the aquarium by the professor and community partner representative while following a professor-initiated prompt, as well as, during student led learning. They were further observed during class meetings while engaging in small and large group activities, discussions, and during free time. Students were observed in both venues during their peer interactions, interactions with the professor and the community partner, as well as their engagement with content. Data were also collected from bi-weekly reflective journals submitted electronically and other class assignments including intermediate tasks, the service-learning end project/product, and class exit memos. The professor also noted topics and concerns derived from

meetings with individual students. Both the professor and community partner discussed, reviewed, and analyzed the end projects for emergent themes and the way the projects evidenced the paradigm shift.

Data Source

The class was composed of thirteen students preparing to be middle school science teachers. Seven were earning credit toward a Masters-of-Arts degree in teaching for a second career, including three who had some teaching experience. Six were earning undergraduate credit and teaching credentials for their first career. All had either majored in biology or chemistry. Some had never been to the Florida Aquarium, others went as children, while one visited the aquarium to educate her own children. She noted, “I have been to the aquarium recently, but I am eager to go and see it in a new perspective.

Empirical Model

This was an emergent design, qualitative evaluation study in the tradition of symbolic interaction (Jacobs, 1987). The first author wrote a detailed narrative describing events during the course implementation. An iterative process was then used by each author and among the authors to triangulate varied data sources. The instructor and the community partner discussed interpretations to reach consensus. The second author served as a critical friend reviewing the data, suggesting interpretations, and contributing to writing the manuscript.

This study addresses the emergent questions from a previously published study responding to the question, “What was the impact of service-learning in a science methods course for prospective middle school teachers? (Spector, Stone & Leard, 2019). The emergent questions were, “How did learners respond to the paradigm shift in science education? What caused stress for learners? What motivational conflicts emerged?”

The course focused on combining the previous research in which prospective teachers learned in a novel setting (Spector, Burkett & Leard, 2012) with the university’s emphasis on promoting service-learning. It was structured as an open-ended inquiry into the question, “What is science teaching in the middle school consistent with the NGSS?” Class was scheduled to meet once a week for three hours for fifteen weeks.

The community partner for service-learning was the Florida Aquarium. The expectation was prospective teachers learning to employ characteristics of free-choice venues would be willing and able to make school science more attractive to middle school youngsters, thus increasing youngsters’ interest, ownership, and learning success. The Florida Aquarium would benefit by adding new learning opportunities preservice teachers would devise and forward its mission.

The initial service-learning plan resulted from a university workshop in which the professor participated. Here is the plan from the course syllabus approved by workshop leaders:

You will receive credit on your transcript for service learning.

- Step 1
The Vice-President of Education of the Florida Aquarium will be the guest presenter in one class session to share the aquarium's mission, culture of the organization, and introduce options for involvement in newly developing projects.
- Step 2
The full class will explore the Florida Aquarium to ascertain onsite learning assets and the way they match middle school science education requirements. Specific procedures and tasks will be assigned to foster maximum benefit from the exploration.
- Step 3
Methods students will interact with the decision-makers in the Florida Aquarium project(s) on site for a minimum of (hours TBA), and in class for a minimum of 3 hours. Additional contact time will be via other communications vehicles, such as Skype and email. (This is subject to modification based on students' outside work schedules and the availability of aquarium personnel.)

Keep an ongoing log of impressions and interactions with aquarium personnel on and off the site. Post this log in your bi-weekly journal as appropriate.

Final project options:

- Create a scenario, (script, paper, video, or other medium) describing an ideal continuum from formal to informal science education of a middle school youngster. The class will develop criteria for evaluation as a group based on your experience with the Florida Aquarium.
- Create a miniature-learning center for your future (or current) middle school science classroom based on your learning opportunity in the Florida Aquarium. The designs for miniature learning centers will be given to the aquarium for use as they see fit. The class and the Florida Aquarium personnel will develop criteria for evaluation as a group based on your experience with the Florida Aquarium.

[During the implementation of this plan the options for the final products became broader than described above.]

Reciprocity

The Florida Aquarium acquires multiple perspectives and expertise from prospective and in service teachers as input to their decision-making and building of two projects they are beginning to develop. This expands their working development team.

Students' assets developed in this course useful to the Florida Aquarium include, but are not limited to, knowledge of

- The national and state science education standards,
- Characteristics of middle school students,
- Ability to design age-appropriate learning experiences
- Understanding of scaffolding needed for specific knowledge in the projects
- Ability to create a continuum from formal to informal science learning

They also serve as a critical public audience responding to ideas for the projects being designed for use by the public.

The service-learning project with the Florida Aquarium is intended to provide a sense of urgency to learn much of the fundamental material in this course. The course is front-loaded with input material in the Virtual Resource Center (VRC) on Canvas, a computer-based course management program. These materials will serve as references for decision-making with the Florida Aquarium team.

Students Learn First Hand

- a) How decisions are made in this informal science education institution (ISEI), which exemplifies many other regional ISEIs,
- b) Ways to use the assets of an informal science education institution to attain scientific and technological literacy while teaching in a formal school setting and the thinking process to create hands-on, active learning environments in a classroom,
- c) Ways to work collaboratively with other professionals as a team developing learning opportunities (a skill essential in a middle school),
- d) To value the role of service-learning in a formal learning institution. (Spector, 2017, p. 1-4)

Students derived their initial input describing how to teach science in the middle school from studying multi-media materials housed in a virtual resource center (VRC) in Canvas. They were assigned specific items to analyze and synthesize in bi-weekly journals as preparation for classroom discussion during the first third of the semester. Various group configurations were used in class discussions ensuring all students had opportunity to interact with each other. The entire VRC was available throughout the semester.

Class management strategies used were intended to encourage the learners to generate and test multiple options, accept mistakes and failure of an option to be fruitful as a natural step in problem solving, as something to learn from, not something to generate negative emotions. The strategies were (a) the absence of grading while solving a problem, and (b) learners using their own success making sense of ideas to establish their own criteria for grading.

The professor introduced the rationale for service-learning and the service-learning plan during the first-class session as part of the syllabus discussion. The syllabus indicated students would determine their own criteria for grading the projects toward the end of the semester. They, therefore, did not have to be concerned about potentially making mistakes that would lower their grades. She also said mistakes are how a person learns. In the second-class session, the Vice President for Education of the Florida Aquarium came to class to describe characteristics of the aquarium and its diverse functions. During the next class session, three hours were spent exploring the aquarium and interacting with education staff while discussing types of projects/products that could suit the needs of this partner organization. Back at the university, students generated ideas for useful products, shared them in class, obtained feedback from their peers in this community of practice, and revised their ideas. This cycle recurred four times before the final product was presented to the class. Part way through the semester, each student submitted at least three ideas for projects/products to the Vice President for Education for her to identify potential product feasibility and her preferred product before the student chose the final product to be developed. As students develop their products, they encountered the need to revisit content areas in the VRC. For

example, when questions were put into an activity or evaluation tool being developed, students referred back to the questioning strategies items described in the VRC. In essence, the service-learning project was the driver for actions and learning throughout the course. The class again gave feedback once products were completed, prior to the entire group participating in criteria development for grading. Once the criteria were unanimously accepted, some students tweaked their products before submitting them to the aquarium. The aquarium Vice-President came to the last class session and discussed the process and products with students. At the close of each course in the university, students complete anonymous evaluations of the course using a brief Likert scale form consistent with the mechanistic paradigm and including space for comments.

Findings

1. The Service-Learning Initiative Established a Context That Allowed the Conflict in Student Motivation for Learning to Surface

Characteristics of the context included the shift from a mechanistic to a holistic paradigm with open-ended inquiry in an authentic free-choice setting the general population visits for recreation. Students consistently volunteered comments throughout the semester indicating they were delighted with the freedom to work on tasks of their own choosing for the aquarium; to explore their own interests; to determine with whom to work, or work individually; and to work as a community of practice in which their aquarium projects were enhanced by their peers' constructive feedback at varied stages of development. Simultaneously, they bemoaned the absence of a rubric and guidelines to guarantee an A grade. When the aquarium representative committed to using all the products at the end of the semester, all students were elated! The end of course anonymous university evaluations, however, were low.

2. Students Expected and Tried to Enact Behaviors Consistent With the Mechanistic Paradigm

They explicitly stated their desire for "how to directions" and parameters for the aquarium projects in order to earn an A grade for the semester. They were directed to the virtual resource center for materials to inform the "how to" dimension, told it was their choice for how much went into a project; and were reminded they would establish their own grading criteria for their aquarium products as a group when the products were completed. Anonymous student course evaluations at the end of the semester indicated many students found the lack of an instructor designed rubric guaranteeing an A grade extremely stressful.

Preservice teachers learned early in their own lives to define learning as something one does for a prize (Skinnarian posture), rather than as intrinsically valuable. This resulted from things like the smiley face sticker in kindergarten for learning something. Their intention was to pass this on to the next generation without examining why they do it. Questioning it made them grossly uncomfortable yet, their experience told them that they enjoyed the freedom to choose and collaboratively work to improve a product when they did not have to guess what was in the teacher's head and conform to a formula rubric or grade scale. This is consistent with Theory Y, the no-grades movement, and the slow education movement.

3. Students' Unmet Expectations for Course Structure Were a Source of Stress

Students were expecting and wanted a close-ended, structured course in which the instructor predetermined explicit actions students should enact in order to earn an A grade. This typified

courses in which they were successful in the past. By contrast, this course was open-ended, generative (organic), driven by students' decisions in response to events as they occurred while attempting to meet authentic needs of an outside client organization with whom they were partnered. The novel setting of the aquarium released students from the "teach to the test" mentality present in most schools today to which students objected and replaced it with more freedom to be creative and explore.

Even at the end of the course, however, some students still expressed frustration of not meeting their original didactic course expectations. A few still expressed dissatisfaction with course because of the open-ended collegial community of practice process used, which emulated a real-world consulting situation, not the artificial world of a school classroom. The overall average numeric course evaluations were low in the anonymous course evaluations at the end of the semester.

4. Adapting to Real-World Conditions Was a Source of Stress

Hurricane Irma approached the area the second week of the semester doing significant damage in its path. Time for recovery demonstrated the way environmental episodes must be accommodated in education because they disrupt plans. The time aquarium personnel were able to interact with students was severely limited. This included a delay in feedback to the first round of suggestions students submitted for potential projects. Some students proceeded developing projects and others elected to hold off, thus allowing them shorter development time once they received feedback. The aquarium's needs and individual class members' needs in response to the hurricane made setting intermediate progress benchmarks impractical. Several students, however, indicated there should have been intermediate benchmarks established with time frames throughout the semester for each step in the process. In the end of course anonymous evaluations, some students found it difficult to adjust to the reality of an authentic situation and expressed their frustration. Further, the iterative nature of real-world problem solving, where evidence drives the process was viewed by one student this way: "The entirety of the semester had no clear road map." It was meant as a negative comment.

5. The Real-World Setting Encouraged Creativity

The service-learning model involving a paradigm shift facilitated creative application of ideas learned in the course by providing a real-world setting with an authentic need that was inherently open-ended. (This is in contrast to a hypothetical situation commonly used in classrooms.) It enabled freedom of choice for the learners. Functioning in a holistic paradigm uses real-world problems as the context for learning. Real-world problems are problems because they do not have any prescribed procedures or processes to effectively respond to a need. One must generate and evaluate options to successfully address the problem. Academic rubrics and artificial timelines, therefore, are not likely to be helpful. The absence of a rubric enabled the learner the freedom to go beyond a teacher imposed specific criterion. Use of a rubric would have limited learner's level of creativity to that which is consistent with the rubric. This is in contrast to a learner reaching the maximum he/she is capable of doing. Additionally, learners perceived differing from a rubric by being creative and thinking out-of-the-box as risk-taking regarding one's grade.

6. Balancing Freedom and Life Responsibility Contributed to Stress

Students who were intrinsically motivated and able to work independently recognized the responsibility of trying to determine how much effort (time) to invest in the aquarium project.

Conflict between their degree of interest in learning a particular topic and navigating the university system in order to get a grade, license, or degree arose. They were conflicted about setting priorities for their time while trying to balance life responsibilities (family, work, relaxation) with their interest in learning. In this case some students reverted back to the mechanistic paradigm in which they preferred to be told exactly what they were to do. This would release them from the responsibility of making a decision about how much time to invest in the open-ended project.

7. All Students Benefited From Collaboration

Those who chose to work in teams expressed surprise at the impact of collaboration with colleagues. They experienced the collaboration with classmates as highly productive, effective, and enjoyable. In addition to contributing to content, students recognized the development of interpersonal skills. They expressed the hope to be in a school setting where they will be able to collaborate with other faculty, which is one of the characteristics of teaching in a true middle school. They all indicated they intended to collaborate ISEIs in their future classrooms and expressed surprise and pleasure in knowing there were numerous ISEIs available and willing to work with teachers.

8. All Students Recognized the Advantages of Developing a Community of Practice

Functioning in the holistic paradigm enabled students to use presentations of the intermediate and final products they generated for class as fodder to stimulate whole group discussions, rather than as products to be graded. This led to a community of practice in which learners made their thinking visible, helped each other refine their products, subsequently, using each other as resources. They expressed pleasure at receiving and giving feedback, thereby helping each other enhance their products.

9. Concerns About Grades Hampered Productivity

Students perceived expressing their own ideas as risk-taking. Some students were hampered by interpreting thinking outside-of-the-box and expressing their creativity as risk-taking. This perception of risk limited their willingness to improvise, invent, and explore new ideas. The perception of risk inhibited their capacity to function as autonomous learners when solving the problem or meeting the need. These students insisted the professor give explicit guidelines, e.g., rubrics, to follow. Unfortunately, real-world problems do not come with guidelines. Authentic needs require innovative thinking and testing of ideas. Additionally, such learners did not understand the positive role of failure in forwarding problem-solving. Doing what they considered was possibly making a mistake generated strong negative emotions that further inhibited willingness to think out-of-the-box.

One student refused to continue working at one point without having explicit criteria for the final project. Exploring a variety of self-generated options for potential usefulness was perceived as a waste of time. The student illustrated mechanistic paradigm thinking where projects that look the same, fulfilled the same criteria are rewarded, and those that are different will not be rewarded.

10. Extrinsically Motivated Students Were Reluctant to Let Go of the “Only One Right Answer” Idea

There was a difference in respond to the course structure based on the degree to which participants were intrinsically or extrinsically motivated. Students who were more intrinsically motivated took the opportunity to think outside-of-the-box and invested time and effort in developing a creative product. It seemed easier for them to accept the idea that diversity in products does not mean inferior or wrong. In contrast, those who were more extrinsically motivated were reluctant to pursue their own ideas. They continued to seek “the one right answer” by asking for directions describing exactly what to do to make their products meet some authority derived criteria. A further explanation for the apparent difference in motivation may be the difference in an individual’s inherent need for certainty in contrast to an inherent need for novelty (Robbins, 2006).

11. Extrinsically Motivated Students Had Difficulty Translating Their Experience to a Classroom Setting

Even though an entire class session was dedicated to introducing the holistic paradigm as the current desired state for all science education, two students did not translate the holistic approach used for the informal science education institution to their future in a classroom. They made negative remarks in their anonymous end of semester evaluations indicating they didn’t learn anything about teaching science in middle school: “I learned a lot about theory, but very little about how to apply it to an actual classroom.” It appeared they did not realize what they learned and used to construct a learning opportunity for the aquarium’s middle school audience was the same thinking and doing process they would need to use for any middle school classroom.

12. Intrinsically Motivated Students Shifted Paradigms More Readily Than Extrinsically Motivated Students

Intrinsically motivated students demonstrated characteristics of the holistic paradigm early in the semester: They stopped asking about grading as soon as they were told they would set their own criteria for success later in the semester. They overtly expressed pleasure with the freedom to make their own choices for products and processes and not conform to a professor’s rubric; explored multiple options before selecting their final project/product; and collaborated with others in a variety of ways, including voluntarily testing their self-constructed meanings with others. Further, they engaged in reflection and metacognition continuously self-assessing their emerging product and studying new resources as the need to know surfaced. Discussions of ways their product would work in formal school settings, as well as in the aquarium, were on- going.

Conclusion

The learning in this course experience was framed by the service-learning task. It illustrated students’ struggle to transition from dependent to autonomous learners, which requires accepting there is no one right answer to solve a problem, engaging in formative self and group assessment, and ultimately self-evaluation for a grade. This struggle is inherent in making the required shift from a didactic, reductionist, mechanistic paradigm to a holistic, constructivist, inquiry, practice-based paradigm.

Preservice teachers learned early in their own lives to define learning as something one does for a prize (Skinnarian posture) rather than as intrinsically valuable. This resulted from things like the

smiley face sticker in kindergarten for learning something. Their intention was to pass this on to the next generation without examining why they do it. Questioning it made them grossly uncomfortable yet, their experience told them that they enjoyed the freedom to choose and collaboratively work to improve a product when they did not have to guess what was in the teacher's head and conform to a formula rubric or grade scale. This is consistent with Theory Y, the no-grades movement, and the slow education movement.

Student produced final projects were significantly diverse. The diversity and excellent quality of products produced by class members for use by the aquarium indicated students had an opportunity to experience the core principles necessary for teaching middle school students and experienced a variety of ways to enact those principles. Further, a student survey in class at the end of the semester indicated students perceived they did have the opportunity to meet the original science methods course objectives delineated prior to the integration of service-learning.

The students producing meaningful useful products when not given grades or intermediate process steps and timelines is consistent with the philosophy and findings in the no- grades movement and the slow education movement. Students produced more creative products when focusing on functioning in the Theory Y environment of the Florida Aquarium than when focusing on the test-driven environment of today's middle schools. Each time they switched their attention to grading, which is consistent with Theory X, they became stressed, frustrated, and angry. Those emotional responses inhibited their ability and willingness to take creative risks exploring ideas and options. Students became stressed when they focused on not knowing if they were meeting the professor's expectation for an A grade. That is consistent with theory X and limited student's progress in learning and producing meaningful products.

The desired paradigm shift in science education reflects values of education movements based in Theory Y. If society is to benefit from innovations such as the slow education movement and the no-grades movement, institutions educating middle school teachers will need to enable prospect teachers to resolve the motivational conflicts they currently experience as learners. Having students partner with informal science education institutions for service-learning is a promising strategy to accomplish this.

References

- Barker, D. (2004). The Scholarship of Engagement: A Taxonomy of Five Emerging Practice. *Journal of Higher Education Outreach and Engagement*. 9(2), 123-134.
- Barnes, M. (2018). 10 Big ideas in education. *Education weekly*. Retrieved, March, 2018
<https://www.edweek.org/ew/collections/big-ideas-in-education/index.html>
- Holt, M. (2002). It's Time to Start the Slow School Movement. Retrieved, Dec, 2018
http://courses.educ.ubc.ca/socials/Articles/Maurice_Holt_Slow_Schools.pdf
- Jacobs, E. (1987). "Qualitative research traditions: A review". *Review of Educational Research*, 57(1), 1-50
- Kohn, A. (1999). *Punished by rewards: The trouble with gold stars, incentive plans, A's, praise, and other bribes*. Boston, Houghton- Mifflin.
- Kleinhesselink K, Schooley S, Cashman S, Richmond A, Ikeda E, McGinley P, Editors. (2015) *Engaged faculty institute curriculum*. Seattle, WA: Community-Campus Partnerships for Health.
- Perkins, R., Santos Green, L. & Banas, J. (2017). *The flipped college classroom: conceptualized and re-conceptualized*. New York, Springer.
- McGregor, D. (1957). The human side of enterprise. *The Management Review* 46 (11), 22-28.
- Robbins, T. (2006). Why we do what we do. TED talk Retrieved, Jan, 2007
https://www.ted.com/talks/tony_robbins_asks_why_we_do_what_we_do
- NGSS Lead States. (2013). *Next Generation Science Standards: For States, By States*. Washington, DC: The National Academies Press.

- Sakenstein, S. (2016). A Recovering Perfectionist's Journey to Give Up Grades. TEDxYouth@BHS Retrieved, Jan 2019
https://www.youtube.com/watch?v=_61kL5jeKqM
- Skinner, B. F. (1957). Verbal Behavior. Brattleboro VT, Echo Point Books & Media.
- Smith, S. J. (2018). Slow down and smell the eucalypts: Blue Gum Community School and the slow education movement. *Journal of Global Education and Research*, 1 (1), 16-34. <https://doi.org/10.5038/2375-9615.1.1.1006>
- Spector, B. (2016). Constructing meaning in a science methods course for prospective elementary teachers: A case Study. The Netherlands. Sense Publishers.
- Spector, B. (2017). Service-learning plan. Tampa, University of South Florida Office of Community Engagement and Partnerships
- Spector, B., Burkett, R., & Leard, C. (2012) "Derivation and implementation of a model teaching the nature of science using informal science education venues." *Science Educator*. 21(1) 51-61.
- Spector, B., Stone, D. & Leard, C. (2019). Service-learning in a science methods course: A retrospective case study. *Impact: The Journal of the Center for Interdisciplinary Teaching & Learning*. Boston, (July).
- Stoltzfus, K. (2018). The no-grades movement. *Education Weekly*. Retrieved, March, 2018
<https://www.edweek.org/ew/articles/2018/01/10/no-students-dont-need-grades.html>
- Strong, P., Spector, B. & LaPorta, T. (1996). On the Nature of Science: What Are Its Roots and Characteristics? Orlando, National Science Teachers Association Annual Conference.
- Tomar, D. A. (2019). Eliminating the grading system in college: The pros and cons. *The Quad* Retrieved, Jan, 2019
<https://thebestschools.org/magazine/eliminating-grading-system-college-pros-cons/>
- Turner 2019
- U.S. Commission on Ocean Policy (2004). *An Ocean Blueprint for the 21st Century*. Final Report. Washington, DC.

A Questionnaire Survey on Knowledge, Attitude, Environmental Sensitivity, Self-Efficacy, and Preventive Behavioral Intention of Fine Particulate Matters for Junior High School Students in Taiwan

Chie-Chien Tseng¹, Hui-Yun Chen², Gwo-Liang Yeh³, Jen-Jen Huang⁴, and Lin-Ju Shi⁵

Collage of Education,
¹²³⁵National Taiwan Normal University, Taiwan

⁴Yung-Ching Senior High School, Taiwan

Abstract

The purposes of this study were to investigate the knowledge, attitude, self-efficacy, environmental sensitivity, and behavioral intentions on fine particulate matters prevention for junior high school students, and to find out what material are needed for the teaching modules of preventing fine particulate matters (PM2.5). A total of 1066 junior high school students from 39 junior high schools in Taiwan participated in this study. 768 effective questionnaires were collected and the effective rate was 72.04%. The main results of the study were as following: (a)The students' knowledge of PM2.5 were good (70.2%, above middle level). Attitude and environmental sensitivity were towards positive with high self-efficacy and positive behavior intentions of fine particulate matters prevention; (b)Students in middle-high family social status had higher score in PM2.5 knowledge than students in middle-low and low group; (c)Compare to 8th and 9th grade students, 7th grade students performed better in attitude, environmental sensitivity, self-efficacy, and behavior intentions of fine particulate matters prevention. This is because 8th and 9th grade students in junior high school feel more pressure from closer high school entrance exam, less efforts were put on affective environmental education. Therefore, their attitude, environmental sensitivity, self-efficacy, and behavior intentions declined; (d)Female students had higher behavior intentions of fine particulate matters prevention than male students; and (3)Students that had been participated in environmental activities performed better in knowledge, attitude, environmental sensitivity, self-efficacy, and behavior intentions of fine particulate matters prevention than those without experience.

Keywords: knowledge, attitude, behavioral intention, junior high school students, fine particulate matters, environmental sensitivity

Introduction

In 2012, fine particulate matters (PM2.5) became an official item of Air Quality Index in Taiwan. Ambient air PM2.5 concentrations needed to be monitored and published on internet for all 76 monitoring stations every hour. The awareness of air pollution from fine particulate matters was awoken since then. The Environmental Protection Agency promoted the Clean Air Action Plan 2015-2020 including support education projects for fine particulate matters prevention (Taiwan EPA, 2015). Although environmental education curriculum had been developed for Grade 1-9 Curriculum Guidelines of environmental education (CIRN, 2017), emerging issues such as PM2.5 did not have proper contents and teaching materials for school teachers. There are very few educational research projects aimed for air pollution teaching material design not to mention teaching intervention research (Liao, 2016). In 2015, Ministry of Education promoted a campus air pollution warning flag project in the elementary schools. Color flags were raised twice a day

to represent the air quality (mainly PM_{2.5} concentration) in the morning and afternoon (Ministry of Education, 2015). Students can realize how serious the air pollution just by watching what color of flag in the air. Outdoor activities will be called off if purple flag is in the air. As the life skills of air pollution prevention in elementary schools had seen progress, air pollution prevention education in junior high schools and high schools still hang in the air. It is necessary to investigate the current situations of junior high school students' knowledge, attitude, environmental concerns, self-efficacy, and behavior intentions of fine particulate matters prevention. Further steps can be taken to design proper teaching materials to fulfill the needs of the students.

Methods

Required Sample Size Calculation

The study population are junior high school students registered in year 2016 in Taiwan. The total number of students were 687,204 (Department of statistics, 2017). The required sample size of this study were 1066 according to formula from Dillman (2000). The number of samples required in each city (or county) were decided based on the percentage of the students in each city (or county) to the total student number in Taiwan. The number of classes required in each city (or county) were then calculated from the above number of samples required in each city (or county) divided by 30 as there are usually 30 students enrolled in one class. Schools in each city (or county) were randomly selected and one class was randomly selected from each school. A total of 39 classes (1170 students) participated this study. We contacted each school and explained the purpose of this study. Questionnaire survey was proceeded after approval from school administration office. Every student participated in this study were asked to sign an informed consent form by both student and their parents.

Research Framework and Instrument

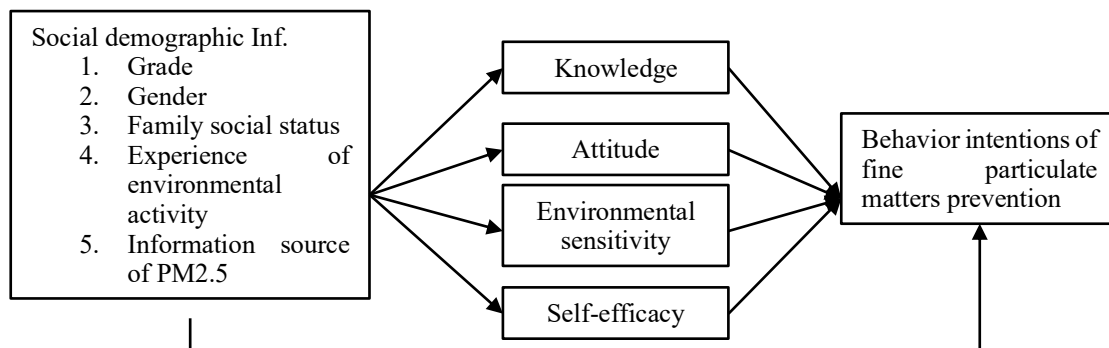


Figure 1. Research framework of students' preventive behavior intentions of PM_{2.5} in Taiwan.

A self-designed questionnaire (Cheng, 2016; Chou, 2018) constructed with five dimensions (knowledge, attitude, self-efficacy, environmental sensitivity, and behavior intention) and social demographics information was employed. Questionnaire's content validity was conducted by six experts in environmental health, environmental education, and science education. Reliability test was conducted for 27 students in a class of junior high school in Hsinchu, Taiwan. The results of the reliability test showed a good internal consistency in knowledge (Kuder-Richardson, KR-20, 0.894), attitude (Cronbach's α value 0.959), environmental sensitivity (Cronbach's α value 0.868), self-efficacy (Cronbach's α value 0.839), and behavior intention (Cronbach's α value 0.932).

Knowledge on fine particulate matters included 18 questions in five sub-dimensions: basic understanding, health effects, sources of fine particulate matters, preventive methods, and government standard and policy. Each correct answer got one point, wrong answer or choice "I don't know" got zero point. Attitude dimension included 12 questions in three sub-dimensions: (1) willingness to give up convenience, to devote time and money for environment, (2) locus of control on fine particulate matters prevention, (3) attitude to take action on fine particulate matters prevention. Use Likert's 5 point scale to show the level of agreement from one point for very much disagree to five points for very much agree. Environmental sensitivity dimension included 5 questions. It reflected the level of one's concern about environmental issues. Use Likert's 5 point scale to show the level of concern from one point for not concern at all to five points for very concern. Self-efficacy dimension included 4 questions. It reflected the participants' degree of assurance to prevent or reduce fine particulate matters emission. Also use Likert's 5 point scale, where one point is very much unlikely, and five points is very likely. Behavior intentions of fine particulate matters prevention included 9 questions in two sub-dimensions: (1) reduce fine particulate matters emission, and (2) prevent exposure to high fine particulate matters environment. Use Likert's 5 point scale to show the participants' possibility to take preventive actions, where one point is very much unlikely, and five points is very likely. Social demographic information included: grade, gender, experience of environmental activity, information source of fine particulate matters, both parents' occupation and level of education.

Procedure

The questionnaire survey had been approved by Research Ethics Committee of National Taiwan Normal University on Oct. 25, 2017 (REC No. 201708HS007). After acquire agreement from each randomly selected school, researchers companied with the classroom teachers to explain the study's purpose and procedures to students. The students will bring home the consent forms and bring it back with signatures of both student and their parents. The teacher will conduct the questionnaire test after the students hand in the consent forms. Students that did not return a signed consent form will not participate the questionnaire test. During the survey, the students were prohibited to discuss the questionnaires with each other and were encouraged to complete the questionnaire honestly. Questionnaires were collected anonymously and mailed back to the researchers for data analysis.

Statistical Analysis

Data coding and file building were conducted using SPSS 23.0. For this study's purpose, the data was analyzed using mean, standard deviation, percentage, t-test, analysis of variance (ANOVA), Pearson product-moment correlation coefficient and logistic regression to investigate the significances of variables, such as social demographic information, knowledge, attitude, environmental sensitivity, self-efficacy, and behavior intentions of fine particulate matters prevention. The statistical significance value of α is set at 0.05, using a two-tailed test.

Students' family socioeconomic status can be determined from Lin (2005) based on Hollingshead's book: Two factor index of social position (1957), where parents' occupation and educational level were weighted separately and classified into five level: low, low-middle, middle, middle-high, and high.

Findings

Social Demographic Information

The social demographic information of the students participated in this study are shown in Table 1. A total of 768 effective questionnaires was collected with a respond rate of 71.3%. 45.1% of the respondents are male and 54.9% are female. This percentage (male students) is lower than the percentage of male students nationwide in Taiwan (52.3% male and 47.7% female in 2017). 41.1% of the respondents are in 7th grade, 25.8% are in 8th grade, and 33.1% are in 9th grade. The students in 7th, 8th, and 9th grade in 2017 in Taiwan were 31.9%, 32.8%, and 35.2%, respectively. Students' family social status from level I (low) to V (high) are 20.5% (I, low), 32.5% (II, low-middle), 25.9% (III, middle), 18.8% (IV, middle-high), and 2.3% (V, high). Over one half (56.4%) of the students did not have any experience in environmental activity. Environmental educator believed that students' participation in environmental activities played an important role to shape a future pro-environmental citizen (Torkar, 2014). A recent cross-sectional study for high school students' preventive behavior intentions of fine particulate matters in Taiwan reported the similar result (63.5% without environmental experience) (Chou, 2018). Among the channel of PM2.5 information, TV is the most students acquire from in 74.6%, followed by school (63.0%), internet (56.5%), family/friends (42.4%), newspaper/magazine (34.9%), and activities other than school (28.9%). 4.6% of the respondents never heard about PM2.5. School is not the top channel students acquire their environmental knowledge is not surprising. Previous studies surveyed Taiwanese students from junior high schools, high schools and universities showed the similar results (Chen, 2009 ; Huang, 2012 ; Chen and Wu, 2014 ; Pan, et.al., 2017). It is interesting to know that although environmental education was included into Grade 1-9 Curriculum Guidelines in 2008 in Taiwan (CIRN, 2017), there is no fixed hour for environmental education cause in elementary or secondary schools. The contents of environmental education were included in different causes (i.e. science, social science, health and physical education) and taught by teachers with different backgrounds. Therefore, students may not have the impression that they learned their environmental knowledge from classroom.

Table 1. Students' Social Demographic Information, Knowledge, Attitude, Environmental Sensitivity, Self-efficacy, and Behavior Intentions (n=768)

Variables		n	%
Gender	Male	346	45.1
	Female	422	54.9
Grade	7th	316	41.1
	8th	198	25.8
	9th	254	33.1
Family social status	I (low)	151	20.5
	II (low-middle)	239	32.5
	III (middle)	190	25.9
	IV (middle-high)	138	18.8
	V (high)	17	2.3
Experience of environmental activity	No	378	56.4
	Yes	292	43.6
Where do you learn about PM2.5	Never heard	35	4.6
	School, teacher	491	63
	Activities other than school	222	28.9
	TV	573	74.6
	News paper, magazine	268	34.9
	Internet	434	56.5
	Family, friends	326	42.4

Table 2. presents the averaged scores and ranking of each sub-dimension of knowledge, attitude, environmental sensitivity, self-efficacy, and behavior intentions of fine particulate matters prevention. The percentage of correction of knowledge is 70.72%, which is higher than author's previous surveys for high school students (68%) (Chou,2018) and college students (52%) (Cheng, 2016). This is because PM2.5 became an item of air quality index in Taiwan at 2012. Since then, flags in different colors will be raised everyday in elementary schools to notify how serious the air pollution is on that day. Junior high school and high school students have been watching the air pollution flag raising when they were in elementary schools, therefore, they were familiar with the standard and related policies, while college students lacked of such experiences, thus could not answer these questions well. Standard and policy ranked first in sub-dimensions of knowledge also confirm the above explanation. Students' attitude of PM2.5 prevention are positive while preventive attitude is the highest in three sub-dimensions. The averaged score of locus of control is 3.37 means students' belief are more internal control on PM2.5 prevention. Students had good scores in environmental sensitivity (4.05) and showed their concerns on PM2.5 issues. The averaged scores of self-efficacy in 3.91 is also consistent with students' belief of internal control. The behavior intentions of fine particulate matters prevention are positive and scored high in both sub-dimensions.

Table 2. Students' Knowledge, Attitude, Environmental Sensitivity, Self-efficacy, and Behavior Intentions of Fine Particulate Matters Prevention. (n=768)

Variables	Item	Score range	Total scores	Averaged score	% of correction	Rank
Knowledge about PM2.5	18	18		12.67	70.72%	-
Basic understanding	3	3		2.13	71.07%	3
Health effects	4	4		2.77	69.53%	4
Sources of PM2.5	4	4		3.02	75.85%	2
Preventive method	3	3		1.66	55.47%	5
Standard and policy	4	4		3.1	77.95%	1
Attitude	12	12~60	45.3	3.78	75.50%	-
Willingness to give	4	4~20	15.68	3.92		2
Locus of control	4	4~20	13.47	3.37		3
Preventive attitude	4	4~20	16.16	4.40	1	1
Environmental sensitivity	5	5-25	20.26	4.05	81.04%	
Self-efficacy	4	4-20	15.64	3.91	78.20%	
Behavior intentions of fine particulate matters prevention	9	9~45	35.56	3.95	79.02%	-
Emission reduction	5	5~25	19.67	3.94		2
Prevent exposure	4	4~20	15.89	3.97		1

Table 3. List all the questions in knowledge about PM2.5. The ranking and the percentage of "I don't know" of each question can give us more details about what is lacking of in current PM2.5 preventive education. Two questions of preventive methods sub-dimension had the highest percentage of "I don't know". It showed that a lot of students did not know volatile organic matters will derive to PM2.5 (question #14) and planting indoor can help to absorb suspended particles (question #13). Two other questions of health effect sub-dimension ranked 15th and 16th. Many students didn't know PM2.5 is carcinogenic and had been announced by World Health Organization as class I carcinogen (question #7). While "PM2.5 will cause human cough and difficulty breathing" is easy to understand because PM2.5 is an air pollutant, it is more difficult to imagine that PM2.5 will affect heartbeat (question #6).

Table 3. Students' Scores on Each Question of Knowledge About PM2.5. (n=768)

Sub-dimension (% of correction)	Question	Incorrect (%)	Correct (%)	I don't know (%)	Rank
Basic understanding (71.07%)	1. Air pollutants includes gas pollutants and particulates.	53 (6.9)	522 (68.1)	192 (25)	14
	2. PM2.5 means the particle is smaller than 2.5µm.	67 (8.8)	524 (68.5)	174 (22.7)	13
	3. The "haze" in news report is actually PM2.5.	71 (9.3)	586 (76.6)	108 (14.1)	9
Health Effect (69.53%)	4. PM2.5 are small enough to penetrate alveolar.	47 (6.2)	607 (79.5)	110 (14.4)	7
	5. PM2.5 will cause human cough and difficulty breathing.	26 (3.4)	665 (86.7)	76 (9.9)	2
	6. Exposure to PM2.5 can cause irregular heartbeat.	108 (14.2)	438 (57.7)	216 (28.3)	15
	7. PM2.5 is list as carcinogen by WHO.	101 (13.2)	415 (54.4)	247 (32.4)	16
Sources of PM2.5 (75.85%)	8. There are direct discharged PM2.5 and derivative PM2.5.	52 (6.8)	533 (69.7)	180 (23.5)	12
	9. PM2.5 is created through combustion process.	42 (5.5)	617 (80.7)	106 (13.9)	5
	10. Two-stroke motorcycle and diesel cars discharge more PM2.5.	75 (9.8)	553 (72.2)	138 (18.0)	10
	11. Coal-fired power plant will discharge PM2.5.	28 (3.7)	620 (80.8)	119 (15.5)	4
Preventive method (55.47%)	12. Take bus or subway can reduce PM2.5.	35 (4.6)	674 (87.9)	58 (7.6)	1
	13. Indoor planting can absorb PM2.5 and clean the air.	173 (22.7)	320 (41.9)	270 (35.4)	17
	14. Detergent, fragrance, essential oil, and nail polish will vaporize and increase PM2.5.	253 (33.1)	280 (36.6)	231 (30.2)	18
	15. EPA will release air quality index(AQI) every hour which includes PM2.5.	32 (4.2)	549 (72.2)	179 (23.6)	11
Standard and policy (77.95%)	16. EPA classified air PM2.5 into 10 levels. Each level has its representative color and flag.	51 (6.6)	596 (77.7)	120 (15.6)	8
	17. When PM2.5 reaches yellow flag, sensitive group needs to watch out and reduce their outdoor activities.	43 (5.6)	626 (82.2)	93 (12.2)	3
	18. When PM2.5 reaches red flag, healthy people should also reduce outdoor activities.	72 (9.4)	609 (79.7)	83 (10.9)	6

Table 4. presents students' knowledge, attitude, environmental sensitivity, self-efficacy, and behavior intentions of fine particulate matters prevention in different social demographic variables. Female students had a higher behavior intentions of fine particulate matters prevention than male students, but did not show significant difference in knowledge, attitude, environmental sensitivity, and self-efficacy. Ban et al. (2017) reported a higher behavior intentions of fine particulate matters prevention of female resident in a PM2.5-polluted city. Previous study (Chou, 2018) by author surveyed in high school students in Taiwan showed similar outcomes. Students in 7th grade had higher scores in attitude, environmental sensitivity, self-efficacy, and behavior intentions of fine particulate matters prevention than 8th and 9th grade students. But no significant difference between 7th, 8th, and 9th grade students was found in knowledge of PM2.5. A previous nationwide survey on teachers and students' environmental literacy by Taiwan EPA provided some supportive evidences (Liu, et. al., 2015). In that report (Liu, et.al., 2015), students' environmental attitude and behavior declined with increasing age. Elementary school students (5th and 6th grade) had the highest environmental attitude and pro-environmental behavior. The 5th and 6th grade students performed better than junior high school students. Junior high school students were better than

high school students and high school students out scored college students in attitude and pro-environmental behavior. Our study also found students' attitude, environmental sensitivity, self-efficacy, and behavior intentions dropped in higher grade students, while their knowledge did not. This may reflect our blind spot in environmental education, which is: always focus on knowledge but disregard affective education in classroom. Knowledge of PM2.5 had significant difference in family social status. Students in middle-high group had higher knowledge scores than students in middle-low and low group. Family social status did not have statistical difference in students' attitude, environmental sensitivity, self-efficacy, and behavior intentions of fine particulate matters prevention. Our study found that students with environmental activity experiences outsourced in every aspects than those without environmental activity experiences. It reveals that environmental activities can increase students' life experiences and lift up their environmental sensitivity and attitude, thus, promote their pro-environmental behaviors. Other researches (Bradley, Waliczek, & Zajicek, 1999; Chou, 2018) provided similar conclusion.

Table 4. Knowledge, Attitude, Environmental Sensitivity, Self-efficacy, and Behavior Intentions of Fine Particulate Matters Prevention in Social Demographic Variables.

	Variables	Category	n	Averaged score	t/F	P value	Posterior comparisons
PM2.5 Knowledge	Gender	Male	346	12.52	-0.995	0.320	
		Female	422	12.8			
	Grade	7th	316	12.75	1.378	0.253	
		8th	198	12.96			
		9th	254	12.36			
	Family social status	I (low)	151	12.17	2.453	0.045*	IV> II、 I
		II (low-middle)	239	12.32			
		III (middle)	190	12.86			
		IV (middle-high)	138	13.38			
		V (high)	17	12.35			
Attitude	Experience of environmental activity	No	378	12.28	-3.581	0.000***	Yes > No
		Yes	292	13.3			
	Gender	Male	346	44.81	-1.868	0.062	
		Female	422	45.71			
	Grade	7th	316	46.11	4.116	0.017*	7th > 8th
		8th	198	44.64			7th>9th
		9th	254	44.82			
	Family social status	I (low)	151	45.44	0.36	0.837	
		II (low-middle)	239	44.82			
		III (middle)	190	45.33			
		IV (middle-high)	138	45.45			
		V (high)	17	45.94			
Environmental sensitivity	Experience of environmental activity	No	378	44.62	-3.682	0.000***	Yes > No
		Yes	292	46.49			
	Gender	Male	346	20.29	0.164	0.87	
		Female	422	20.24			
	Grade	7th	316	21.14	14.397	0.000***	7th > 8th
		8th	198	19.76			7th>9th
		9th	254	19.56			
	Family social status	I (low)	151	20.31	1.188	0.315	
		II (low-middle)	239	20.08			
		III (middle)	190	19.91			
		IV (middle-high)	138	20.75			
		V (high)	17	19.47			
Self-efficacy	Experience of environmental activity	No	378	19.78	-3.712	0.000***	Yes > No
		Yes	292	20.88			
	Gender	Male	346	15.42	-1.916	0.056	

	Variables	Category	n	Averaged score	t/F	P value	Posterior comparisons
Behavior intentions of PM2.5 prevention	Grade	Female	422	15.82	13.031	0.000**	7th > 8th 7th>9th
		7th	316	16.23			
		8th	198	15.34			
		9th	254	15.13			
	Family social status	I (low)	151	15.54	0.53	0.713	
		II (low-middle)	239	15.76			
		III (middle)	190	15.43			
		IV (middle-high)	138	15.7			
		V (high)	17	15.18			
	Experience of environmental activity	No	378	15.26	-3.342	0.001**	Yes>No
		Yes	292	15.98			
	Gender	Male	346	34.9	-2.685	0.007*	Female >Male
		Female	422	36.1			
	Grade	7th	316	36.45	6.085	0.002*	7th>8th, 7th>9th
		8th	198	35.15			
		9th	254	34.78			
		I (low)	151	35.64	0.288	0.886	-
	Family social status	II (low-middle)	239	35.42			
		III (middle)	190	35.46			
		IV (middle-high)	138	35.63			
		V (high)	17	34.06			
	Experience of environmental activity	No	378	34.9	-3.442	0.001**	Yes>No
		Yes	292	36.5			

Note: *p<0.05 ; **p<0.001 ; ***p<0.000

Conclusion

Based on a questionnaire survey for junior high school students in Taiwan, the authors conclude the following findings:

1. The students' knowledge of PM2.5 were good (70.2%, above middle level). Attitude and environmental sensitivity were towards positive with high self-efficacy and positive behavior intentions of fine particulate matters prevention.
2. Students in middle-high family social status had higher score in PM2.5 knowledge than students in middle-low and low group.
3. Compare to 8th and 9th grade students, 7th grade students performed better in attitude, environmental sensitivity, self-efficacy, and behavior intentions of fine particulate matters prevention. This is because 8th and 9th grade students in junior high school feel more pressure from closer high school entrance exam, less efforts were put on affective environmental education. Therefore, their attitude, environmental sensitivity, self-efficacy, and behavior intentions declined.
4. Female students had higher behavior intentions of fine particulate matters prevention than male students.
5. Students that had been participated in environmental activities performed better in knowledge, attitude, environmental sensitivity, self-efficacy, and behavior intentions of fine particulate matters prevention than those without experience.

Suggestion

1. TV and internet has become major environmental information sources for students. This study found junior high school students in Taiwan missing a few important knowledge about PM2.5 (preventive methods, health effects, etc.). We suggest our government to

develop more environmental education materials on TV or internet. This will help those students with higher motivation of self-learning.

2. More environmental activities should be held by schools, organization, or government. Since strong evidence showed students' positive environmental beliefs will be raised through personal experiences of environmental activities, government should create more opportunities for our students.
3. Integrate current separate environmental education material into one curriculum. Provide more hours for environmental education. This will give teachers to design more comprehensive causes for environmental education. Limited cause hour and separated topics can only do knowledge present in classroom which students can learn from internet already.

References

- Ban, J., Zhou, L., Zhang, Y., Brooke Anderson, G., & Li, T. (2017). The health policy implications of individual adaptive behavior responses to smog pollution in urban China. *Environ Int*, 106, 144-152.
- Bradley, J. C., Waliczek, T. M., & Zajicek, J. M. (1999). Relationship between environmental knowledge and environmental attitude of high school students. *The journal of environmental education*, 30(3), 17-21.
- Chen, C-Y. and Wu, T-L. (2014). A Study on the Relationship between Adolescents' Green Marketing Perception and Green Consumption Attitude, The social development of Southern Taiwan, National Pingtung University, P.423-442.
- Chen, L-M. (2009). The study of Environmental Literacy of the junior high school students in Pingtung area of Taiwan, Master thesis, National Taitung University, Taiwan. DOI:10.6836/NTTU.2009.00018
- Cheng, L-Y., Yeh, G-L., Tseng, C-C., Huang, j-J., & Yeh, M-H. Z. (2016). Preventive behavioral intentions of fine particulate matters and related factors for collage students of two university in Taipei area. *Health Promotion and Health Education Journal*, 40, 1-24.(in Chinese)
- Chou, W-L., Tseng, C-C., Yeh, G-L., Huang, j-J., & Shi, L-J. (2018). A study on the preventive behavioral intention and its related factors of fine particulate matters for senior high students. *Chinese Journal of Science Education*. 26(2), 123-147. (in Chinese)
- Curriculum and Instruction Resource Network (CIRN), (2017). Grade 1-9 Curriculum Guidelines for environmental education. Retrieved in 12-30-2017 from: <https://cirn.moe.edu.tw/WebContent/index.aspx?sid=9&mid=137>
- Department of statistics, Ministry of Education, Taiwan, Republic of China. Retrieved September 1st, 2017 from: https://depart.moe.edu.tw/ed4500/Content_List.aspx?n=9BDB7BA0E989FF4F
- Dillman, D. A. (2000). *Mail and internet surveys: The total design method*. New York, NY: Wiley.
- Hollingshead, A. B. (1957). *Two factor index of social position.*, New Haven, CT: Yale University Press.
- Huang, Y-M., (2012). A study of water resource and environmental literacy at junior high schools in Sinjuang district, Master thesis, National Taipei University, Taiwan.
- Liao, Wen-Ting (2016). Effectiveness of PM2.5 Education among College Students of an Education University in Taiwan, Master thesis, National Taiwan Normal University. Taipei, Taiwan.
- Lin, S. C. (2005). *Sociology of Education* (4th ed.). Taiwan: Chuliu Press.
- Taiwan Environmental Protection Agency (2015). *Clean air action plan, 2015-2020*) <https://air.epa.gov.tw/Download/UpFile/2015/CleanAir.pdf> retrieved in 12-24-2017.
- Liu, S.-Y., Yeh, S.-C., Liang, S.-W., Fang, W.-T., Tsai, H.-M. (2015). A national investigation of teachers' environmental literacy as a reference for promoting environmental education in Taiwan. *The Journal of Environmental Education*, 46(2), 114-132.
- Ministry of Education (2015). *Campus air pollution warning flag project*, Retrieved in 12-30-2017 from: <https://ws.moe.edu.tw/Download.ashx?u=..pdf>
- Pan, S-L., Chou, J., Wu, C-T., (2017). The Investigation of Environmental Literacy and Factors Influencing Environmental Action: The Status of Taiwanese University Students, *Journal of Environmental Research*, 13(1), 35-65. (in Chinese)
- Torkar, G. (2014). Learning experiences that produce environmentally active and informed minds. *Wageningen Journal of Life Sciences*, 69, 49-55.

Acknowledgement

This work was funded by Ministry of Science and Technology, Taiwan, R.O.C. (MOST 105-2511-S-003-034-). The authors want to give thanks to all the teachers participated in this survey.

Part 4: Educational Technology

To Integrate Media and Technology Into Language Education: For and Against

Babak Khoshnevisan

College of Education
University of South Florida, United States

Abstract

Advanced technology has extensively plagued education. The role of technology in education is key and researchers have harnessed different educational technologies to facilitate the learning process: animated pedagogical agents (Khoshnevisan, 2018a); augmented reality (Khoshnevisan and Le, 2018); audiotaped dialogue journals (Rashtchi and Khoshnevisan, 2008) to name but a few. Additionally, emerging technologies, by and large, enhance comprehension and increase the cognitive attainment of learners. Research indicates that technological tools, media, and emerging technologies can be harnessed to facilitate the learning experience and motivate learners (Ibáñez, Di Serio, Villarán, & Kloos, 2014; Singhal, Bagga, Goyal, & Saxena, 2012). This is, however, not to say that researchers unanimously concur with this statement. Accordingly, in this article, I first introduce the contradictory opinions of different researchers towards the incorporation of media and technology in language education. I then critically analyze their statements while chronologically take them into account. I finally give recommendations regarding the incorporation of technology in the learning process.

Keywords: affordances, technology, language education, constraints, media

Introduction

The need for the use of media and technology in education is a long-standing debate in the educational literature. In other words, whether media and/or technology-infused pedagogy makes technology-mediated learning more or less influential is critically analyzed. With ongoing technological advances, researchers have adopted different forms of media and technology to facilitate the process of education for learners. This, however, comes as no surprise that multiple researchers have—both theoretically and practically—taken determining factors into account. Chronologically, media, multimedia, web 2.0, and finally emerging technologies such as animated pedagogical agents and augmented reality have been adopted in multiple studies (Khoshnevisan, 2018a; Khoshnevisan, 2018b; Khoshnevisan and Le, 2018). The contradictory results of these technology-infused studies prompted the author to critically analyze the findings of the pertinent literature so pedagogical implications for educators can be suggested. In what follows, the author presents the most prominent findings of research to portray a rather comprehensive and chronological analysis of the role of media and technology in education.

Background

Clark (1983) posits that learning emanates from pedagogy and instructional design principles rather than the medium used in classrooms. Accordingly, the medium exploited by researchers is less important than the pedagogy (Kozma, 1994). Clark (1983) puts forth an analogy to delineate the idea by asserting that media are, “...mere vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our

nutrition,” (p. 445). This quote reiterates that media might change the delivery methods of the content or instructional strategies. Similarly, Clark (1994) notes that learning is immensely impacted by the content and instructional strategies employed by educators than the media type. Nonetheless, media does not inform the learning process. As an illustration, Canvas is a known learning management system (LMS) through which instruction is delivered. Canvas has been widely and extensively exploited by educators. This is, however, not to say that Canvas can influence student achievement or learning by and of itself. On this account, many educators invest much time to craft a quality course on Canvas. It indicates that Canvas inherently does not amount to a better course. To develop a quality course, Canvas might be a *sine quo non* in online and hybrid courses. However, the content embedded by instructors coupled with instructional strategies utilized can be determining factors on students’ achievement. These factors are included in the community of inquiry model proposed by Anderson et al. (2001).

Anderson et al. (2001) proposed a framework to unleash the potential of online teaching and harness the benefits. This framework implies three pillars to capture the difficulties and offers guidelines by which teachers can make the most of their online instruction. The three pillars are as follows:

- Teaching presence
- Cognitive presence
- Social presence

According to this framework and subsets of the three pillars, the content of the course leads to social presence, teaching presence, and ultimately cognitive presence, which can be translated to cognitive attainment. It then appears that content outweighs the medium of instruction.

Clark VS Kozma

Clark (1983) argued that money would be wasted on doing research in the impact of media on learning. This, however, does not mean that there is no positive correlation between the medium of instruction and students’ achievements. In this regard, Kozma (1994) points out that the impact of media—or technology—on students’ learning had not been fully explored and that it is a fertile field of study deserving more attention and research. Building up on the arguments based on Clark (1983, 1994) and the other against-media-effect adherents, there exists two major reasons why Clark reiterates that media will never influence learning. For one thing, there is a distinct separation between media and method. Secondly, in the pertinent literature, there was no persuasive research evidence to corroborate the positive media effects.

The results of the Clarks’ research seem to be weak owing to the type of evidence collected to reject the impact of technology. Kozma (1991), in contrast, reiterates on ruling out significant factors in Clark’s study. Kozma (1991) holds that "Missing in these studies are any mentalist notions or descriptions of the cognitive, affective, or social processes by which learning occurs. Also missing are descriptions of the underlying structure and functions of media which might serve as the casual mechanisms..." (P.3).

Kozma acknowledges the failure (Kozma’s 1994) of media in enhancing learning. However, he points out the reasons for this failure on theories, research, and designs constrained (at that time) by behavioral roots (1994, p. 2). He additionally points out that “embedded in the comparative media studies included in Clark’s (1983) review are the primal stimuli and responses of the

behavioral paradigm” (1994, p. 3). It is deemed that Clark’s reason for his argument is compelling. However, his argument was limited to the limited number of technologies in 1990s. Additionally, only certain number of factors were taken into account. Kozma’s stance, on the contrary, seems to be holistic concerning the available technologies excluding emerging technologies. Kozma (1994) puts forth the example of interactive videos on a computer that allow students to view and review a complex series of intersecting sources of information, so students can do real-world problem-solving. The attributes of interactive videos are not replicable by single teacher in a classroom. Thus, the medium—by and of itself—offers an unprecedented type of methodology that was, until then, inaccessible without the medium.

Different Types of Technologies

Mielke (1968) argues that media comparison studies, irrespective of the media harnessed, tend to lead to “no significant difference” conclusions. Compatible with that, Clark (1983) gives a rather comprehensive account about the impact of different types of technologies on learners’ gains. He asserts that research indicates that no matter what type of technology or medium used, the results are the same. Clark (1983) asserts that media cannot influence learning. He further argues that each new medium employs similar approaches to previous ones claiming that it amounts to improved learning. In contrast, Clark (1983) reiterates that the results of the studies that imply students’ achievement from media are not valid owing to a likely confounding variable such as the novelty of the technology adopted. Said another way, learners become interested in the new media used. This primarily impacts on the students’ learning at early stages of learning with the media. It then comes as no surprise that learners stay interested. As the course advances and matures, the interest fades.

Instructional Method and Media

Salomon (1979) draws a clear distinction between instructional method and media. According to this distinction, an instructional method is viewed as “any way to shape information that activates, supplants or compensates for the cognitive processes necessary for achievement or motivation” (p.23). In contrast, media is seen as “delivery vehicles for instruction and do not directly influence learning” (Clark, 1983, p.453). It appears that the argument of medium and method spans across the literature.

The Role of Instructors

According to Clark (1983), another determining factor is the role of instructors. On this account, Kulik, Kulik, and Cohen (1980) contends that the positive effect for media more or less disappears when the same instructor produces all treatments. The results of this study suggest that if one instructor teaches the same material—with or without media— no statistically significant difference is observed. In short, it seems that the instructors’ role outweighs the media adopted. It is easy to imagine that the teacher delivering a new type of instruction with a new medium is per se more progressive and creative. In this respect, teachers are fond of integrating new technologies in education. whereas the teacher delivering the same old methods of instruction using the same old medium of instruction would be less motivated. Thus, the teacher and his methods are certainly confounding variables and must be ruled out in determining the success of instructional outcomes. The key question then is not whether the media has any effect but rather “In what ways can we use the capabilities of media to influence learning for particular students, tasks, and situations?” (Kozma, 1994, p. 23).

Motivation

Factors Informing Student's Motivation

Clark (1994) further highlights that media neither influences learning nor can be held responsible for motivating learners. Clark (1994) asserts that he agrees with Salomon (1984) that cognitive theories of learning significantly impact on shaping learners' beliefs, expectations, and motivations to external happenings. Additionally, Clark (1994) reports multiple researchers have focused on students' beliefs about media. The results of these studies imply that students learn from a variety of media. The results suggest that the students' beliefs are very different toward the same types of media. Thus, motivation turns out to stem from the student themselves and not necessarily the media tool. Expressed another way, two students may take the same online course. However, they may show different levels of motivation toward the same course. The difference emanates from many factors. However, it seems that the learner's role is key. When two students are exposed to the same technology—or media—in an online course, one may have high motivation to complete the online course and submit the assignments. The other student, nonetheless, might lack motivation in spite of being exposed to the same technology. In short, Clark holds that media does not motivate learners by and of itself.

Augmented Reality (AR) and Motivation

Recent studies related to the use of emerging technologies such as augmented reality (AR) corroborates that the use of these technologies amount to boost users' attention and motivation (Ibanez et al., 2014; Singhal et al., 2012). Regarding language education, multiple studies have proved that the use of technology increases the motivation level of language learners (Cascales, Laguna, Pérez-López, Perona, & Contero, 2013; Cheng & Tsai, 2014; Wu, Lee, Chang, & Liang, 2013). However, the related literature posits that there are contradictory results regarding the use of AR in education. Another potential issue is that AR may cause cognitive overload of the learners as warned by Wu et al. (2013). The results of Cheng and Tsai (2013) imply that AR could result in the participants' loss of motivation and increase in cognitive load owing to the complexity level of learning tasks and AR technology itself. These findings corroborate the results of Clark's study (1983) that the medium of instruction does not solely account for the learners' motivation and cognitive achievements.

Students' Perceptions About Technology

The perceptions and attitude of learners have been the topic of intense research in recent years. Liu (2016) conducted a comprehensive study and collected sufficient amount of data through students' oral proficiency tests, WTC questionnaires, follow-up interviews, and journal reflections. He recruited forty-two participants studying at Taiwanese universities. The participants were learning English as a foreign language (EFL) using vlogs (video blogs) through an online classroom. The participants could improve their speaking skill by the end of the study. They expressed that video blogs lacked the real-time advantages of peer interaction. Additionally, online classes lacked the real-time and natural contact with people. Instead, they spoke and recorded their voice for communication with other learners. The results of this study indicate that face-to-face, social, and peer interaction are significant factors in language learning and that students have negative perceptions about online classroom.

Multiple researchers found that students' perceptions toward writing in blogging and leaving reviews for their classmates were negative (Sidek, Emelia and Yunus, 2012). The findings of these studies were compatible with the results of the study by Liu (2016) and consistent with Clark's ideas on the role of media in learning. The results of these studies suggest that students with lower proficiency levels in English felt anxious with writing blogs assignments. They further noted that writing in blogs increased their frustration and decreased their motivation in English writing. Besides, learners felt embarrassed to post their writing and comment on their peers' writings. Students—for the most thing—felt embarrassed if they made an error in their comments. Participants mentioned that they would prefer teacher's feedback on their writing assignments more than their online peers' review. This way the students would feel safe while writing in English.

The results of a number of studies indicated that learners prefer the traditional teaching methods and do not tend to harness technology for the purpose of learning (Tseng, 2010; EL-dali, 2015). In light of this, forcing students to use technology while learning seems to be a recipe for failure. Tseng, (2010) conducted a study to examine the impact of online reading on EFL students' comprehension. The results imply that students disliked reading online texts from a computer screen and complained about having eye-sore from reading on screen. The other students mentioned that they had problems with skipping lines when reading hypertexts, and inability to easily take notes or modify the text such as underlining and highlighting important sections of the text. Further, EL-dali (2015) conducted a study regarding the students' attitudes toward incorporating technology into English language learning at Minufiya University. The results of this study, concerning the senior students' attitudes toward using technology in schools, were surprising. The technology was available, however, most students had never tried to take advantage of their computer labs and showed no interest in using technology in learning English. Some students even mentioned that they had never used the technology in learning.

Embracing the affordances of interactive videos, several students reported that they learn more through these videos owing to their learning styles. Guri-Rosenblit (2005) highlights multiple studies that showed students' preferences for traditional studying irrespective of the rich experiences that video lectures offers. Guri-Rosenblit (2005) did not delineate the impact of interactive videos. Educators, nonetheless, are bound to pay special attention to how students learn best and their preferences.

Affordable and Usable Technology

Technology needs policy makers to support both educators and learners with resources, but not all schools or countries can afford it. Many students around the world do not have online access or computers at home. Coughlan (2015) asserts that according to the report from the Organization for Economic Cooperation and Development (OECD), school investment on computers has led to no significant improvement in students' standardized test results. The report highlights that not only does this result in waste of budget but also a collapse of "too many false hopes". This, therefore, cautions us about integrating high-tech devices in school programs and stresses on the key role of the effective teaching approaches on students' gains.

The medium of instruction, if effectively exploited, can be useful. This is, however, not to say that other researchers agree with this statement (Smith & Dillon, 1999). Lou et al. (2006) state that pedagogy is a significant factor. This indicates the pivotal role of pedagogy. This was compatible with Clark's (1994) view that pedagogical features are more significant than media in terms of

learners' achievement. The results of a study by Lou et al. (2006) implied that if media is harnessed to foster collaborative discussions students outperform. The results of this study were consistent with other studies (Kozma, 1994). Furthermore, according to constructivist views learning takes place via interaction with others (Vygotsky, 1978). Technological tools are predominantly far from the authentic interaction. However, the related literature has illustrated that many of today's tools do not foster genuine interaction. That is why even if schools can explore and find cheap technologies they do not invest on technology as the medium of instruction.

Discussion

Kozma (1994) places emphasis on reframing the perspective on the research and theories. Expressed another way, Kozma urges for moving from instruction as a "delivery" to a perspective of "learning is an active, constructive, cognitive and social process by which the learner strategically manages available cognitive, physical, and social resources to create new knowledge by interacting with information in the environment and integrating it with information already stored in memory" (1994, p. 3). When an English language learner (ELL) struggles understanding a concept on his own, for instance, a variety of resources can be presented via the media (e.g., PowerPoint, YouTube video, interactive quiz, etc.) to assist the learner. Nevertheless, he can grasp the concept fully only when the appropriate and effective instructions, based on the learning needs and styles of the student, are offered. Overall, Clark (1983, 1994) deems that there are other variables (e.g., instructional methods, motivation, attitudes, aptitude, etc.) rather than media, that foster learning. Further, Kozma (1994) contends that "there is no compelling evidence in the past 70 years of published and unpublished research that media cause learning increases under any conditions" (p.25). Drawing on the meta-analyses of the past studies (Mielke, 1968), Clark argues that there are no direct learning benefits from the use of a specific medium. More specifically, Lumsdaine (1963) perceives media as key economic advantage and only a medium "to develop the technology of instructional method" (as cited in Clark, 1994, p.21).

As discussed above, media does not always influence on students' gains. In order for educators to craft a more communicative and immersive experience in their classroom, they may utilize different forms of technologies—online conferencing, mobile learning, augmented reality (AR), Virtual reality (VR), and learning management systems (LMS) will safeguard students' learning. This then comes as no surprise that learners are widely exposed to emerging technologies while learning languages.

Pedagogical Implications

Different learning interests and styles can inherently inform the way students process information. According to Gardner (1991), people are born with multiple intelligences. This then comes as no surprise that some are stronger in one or multiple domains than others. It is advisable for educators to facilitate learning by accommodating students' different learning styles. Thus, technology can accommodate the needs of all students. Overall, Clarks states, "It cannot be argued that any given medium or attribute must be present in order for learning to occur, only that certain media and attributes are more efficient for certain learners, learning goals and tasks," (1994, p. 22). Hence, this argument emphasizes that we are not able to assure educators that certain types of media must be present to facilitate learning in itself, however, we might be able to argue that certain types of media contribute to enhancing understanding of learners. Notwithstanding the affordances that media has, fundamentally students' gains stem from instructional strategies.

The interaction among students aside, educators are required to take other factors into account. One of these factors is student expectation and readiness (Bernard, Brauer, Abrami, & Surkes, 2004). This last concept (student readiness) has been investigated by Bernard et al. (2004), which together with the results of another study (Lou et. al, 2006) suggests that student readiness is an oft-neglected issue and should not be ignored.

In a second language education context, interaction and cooperation among peers is key for learning to take place. Drawing on the Community of Inquiry Model, social presence is essential. Social presence enables teacher and students to communicate not only verbally, but also using body language, which is conducive to language learning. Christophel (1990) reported that the high social presence of the teacher was well received by students. This in turn impacted the perceptions of the learners about the course. In this sense, Baker (2010) explored a positive correlation between the teacher's presence and students' motivation and learning.

Conclusions

In this article, the author put forth contradictory opinions of researchers corroborated by empirical research regarding the incorporation of media and/or technology in language education. I then revisited and scrutinized their controversial views and gave recommendations concerning the use of media and technology in education. As educators in the 21st century, it is advisable for educators to enhance their knowledge concerning technology and how to effectively incorporate it into curriculum. However, while doing so, it is important not to forget that van Lier (2003) asserts, "...if [technology] is to be a positive force in education, [it] should not be cast as an alternative to classroom teaching, or as replacing the teacher, but as a tool that facilitates meaningful and challenging classroom work" (p.2). In this regard, emerging technologies such as augmented reality (AR) cannot be substituted with quality instructional strategies or instructors. AR, however, can be exploited as a tool to facilitate the process of learning and increase the motivation level of learners.

References

- Anderson, T., Rourke, L., Garrison, D. R., Archer, W. (2001). Assessing teaching presence in a computer conference environment. *The Journal of Asynchronous Learning Networks*, 5(2), 1-17.
- Baker, C. (2010). The impact of instructor immediacy and presence for online student affective learning, cognition, and motivation. *Journal of Educators Online*, 7(1), 1-30.
- Bernard, R. M., Brauer, A., Abrami, P. C., & Surkes, M. (2004). The development of a questionnaire for predicting online learning achievement. *Distance Education*, 25(1), 31-47.
- Christophel, D. M. (1990). The relationships among teacher immediacy behaviors, student motivation and learning. *Communication Education*, 39(4), 323-340.
- Cascales, A., L., I., Pérez-López, D., Perona, P., & Contero, M. (2013). An experience on natural sciences augmented reality contents for preschoolers. In R. Shumaker (Ed.), *Virtual augmented and mixed reality: Systems and applications* (pp. 103-112). Berlin, Germany: Springer.
- Cheng, K., & Tsai, C. (2014). Children and parents' reading of an augmented reality picture book: Analyses of behavioral patterns and cognitive attainment. *Computers & Education*, 72, 302-312.
- Clark, R. E. (1983). Reconsidering research on learning from media. *Review of educational research*, 53(4), 445-459.
- Clark, R. E. (1994). Media will never influence learning. *Educational technology research and development*, 42(2), 21-29.
- Coughlan, S. (2015). Computers 'do not improve' pupil results, says OECD. Retrieved September 14, 2017 from <http://www.bbc.com/news/business-34174796>
- El-dali, H. (2015). Integrated EFL skills and technology: Focus on learners' perceptions. *Arab World English Journal*, 2, 91-115.

- Gardner, H. (1991) *The unschooled mind: How children think and how schools should teach*. New York: Basic Books Inc.
- Guri-Rosenblit, S. (2005). Eight paradoxes in the implementation process of e-learning in higher education. *Higher Education Policy*, 18(1), 5-29.
- Ibáñez, M. B., Di Serio, Á., Villarán, D., & Kloos, C. D. (2014). Experimenting with electromagnetism using augmented reality: Impact on flow student experience and educational effectiveness. *Computers & Education*, 71, 1-13.
- Khoshnevisan, B. (2018a). The Effect of Incorporating Animated Pedagogical Agents in Apps on L2 Idiom Acquisition and Retention. In *Proceedings of the GLOCER Conference* (pp. 75- 83). Sarasota, FL: ANAHEI Publishing, LLC.
- Khoshnevisan, B. (2018b). Idiom Assessment: To Go off the Beaten Path. In *Proceedings of the GLOCER Conference* (pp. 2-9). Sarasota, FL: ANAHEI Publishing, LLC.
- Khoshnevisan, B., & Le, N. (2018). Augmented Reality in Language Education: A Systematic Literature Review. In *Proceedings of the Global Conference on Education and Research (GLOCER) Conference* (pp. 59-74). Sarasota, FL: ANAHEI Publishing, LLC.
- Kozma, R. (1991). Learning with media. *Review of Educational Research*, 61(2), 179-212.
- Kozma, R. B. (1994). Will media influence learning: Reframing the debate. *Educational Technology Research and Development*, 42(2), 7-19.
- Kulik, C., Kulik, J., & Cohen, P. (1980). Instructional technology and college teaching. *Teaching of Psychology*, 7(4), 199-205.
- Liu, M. H. (2016). Blending a class video blog to optimize student learning outcomes in higher education. *The Internet and Higher Education*, 30, 44-53.
- Lou, Y., Robert, R. M. & Abrami, P. C. (2006). Media and Pedagogy in Undergraduate Distance Education: A Theory-Based Meta-Analysis of Empirical Literature *Educational Technology Research and Development*, 54 (2), 141-176.
- Lumsdaine, A. A. (1963). Some problems in assessing instructional programs. *Prospectives in Programing*. Macmillan Co., New York.
- Mielke, K. (1968). Questioning the questions of ETV research. *Educational Broadcasting Review*, 2, 6-15.
- Rashtchi, M., & Khoshnevisan, B. (2008). Audio-taped dialogue journal: A technique to improve speaking skill of Iranian EFL learners. *Journal of English Language Pedagogy and Practice*, 1(3), 164-176.
- Salomon, G. (1984). Television is easy and print is “tough”: The differential investment of mental effort in learning as a function of perceptions and attributions. *Journal of Educational Psychology*, 76(4), 647-658.
- Sidek, R., Emelia, A., and Yunus, M. (2012). Students’ experiences on using blog as learning journals. *Procedia – Social and Behavioral Sciences* 67(November 2011):135–43.
- Singhal, S., Bagga, S., Goyal, P., & Saxena, V. (2012). Augmented chemistry: Interactive education system. *International Journal of Computer Applications*, 49(15), 1-5.
- Smith, P. L., & Dillon, C. L. (1999). Lead article: Comparing distance learning and classroom learning: Conceptual considerations. *American Journal of Distance Education*, 13(2), 6-23.
- Tseng, M. C. (2010). Factors that influence online reading: An investigation into EFL students’ perceptions. *Reading*, 10(1).
- van Lier, L. (2003). ‘A tale of two computer classrooms: The ecology of project-based language learning’. In J. Leather and J. van Dam (Eds.), *The Ecology of Language Acquisition* (pp. 49-64). Dordrecht: Kluwer Academic.
- Vygotsky, L. (1978). Interaction between learning and development. *Readings on the Development of Children*, 23(3), 34-41.
- Wu, H., Lee, S., Chang, H., & Liang, J. (2013). Current status, opportunities and challenges of augmented reality in education. *Computers & Education*, 62, 41–49.

Literacy Meets Augmented Reality (AR): The Use of AR in Literacy

Sanghoon Park and Babak Khoshnevisan

College of Education
University of South Florida, United States

Abstract

The incorporation of technology in language education has plagued the field of second language acquisition (SLA): animated pedagogical agents (Khoshnevisan, 2018); mobile augmented reality (Nincarean, Alia, Halim, & Rahman, 2013); audiotaped dialogue journals (Rashtchi and Khoshnevisan, 2008). Ongoing technological advances in the design and use of augmented reality (AR) for improving the language proficiency of language learners necessitate a clear understanding of the related theory and pedagogy behind its use. Recently, augmented reality has been the topic of intense research in SLA. Multiple researchers from diverse disciplines have harnessed this emerging technology: picture books (Cheng & Tsai, 2014); AR-infused material (Chen, Teng, & Lee, 2011); 2D barcode and AR (Liu, Tan, & Chu, 2007). The research results indicate that AR in education has proved to be fruitful. However, only recently, the potentials of AR in language education has been unleashed (khoshnevisan and Le, 2018). This paper then deals with the theoretical considerations and didactic concerns involved in the integration of AR into the instructional process. To achieve that, this paper (1) introduces AR, (2) details affordances and constraints of AR in language education, (3) presents detailed discussion regarding the use of AR in literacy, and finally (4) provides readers with pedagogical implications.

Keywords: augmented reality (AR), affordances, constraints, language education

Introduction

Researchers in the field of second language acquisition (SLA) have cast a different look at AR. Accordingly, I present the related definitions of AR to delineate the affordances that AR offers. Milgram et al. (1994) defines augmented reality as “augmenting natural feedback to the operator with the simulated cues” (p.238). Klopfer & Squire (2008) posit that AR is “a situation in which a real-world context is dynamically overlaid with coherent location or context sensitive virtual information” (p. 205). It then turns out that AR is defined variously in the pertinent literature. However, for the purpose of this paper, I will adhere to the definitions that can be harnessed in SLA. AR, thus, seems to be an enabling technology that supplies learners with novel learning experiences.

To date, a variety of AR-related technologies have been employed to facilitate language acquisition both in EFL/ESL contexts. To achieve that, multiple learning approaches have been adopted by researchers. The focus of these studies has been on a variety of aspects in language education. The vast majority of the studies examined the impact of AR-infused material on literacy, and vocabulary. Other topics such as attitude and cognitive load, immersive learning, culture and communication, and peer interaction have been explored, too.

Background

The year 2012 was a significant time for AR since multiple cutting-edge technologies were introduced and harnessed in research. The most prominent technologies were handheld devices, advanced projector-camera systems, and AR-extended professional devices - e.g., x-ray scanners. Multiple researchers have offered the application of the AR technology in education owing to its significance (Cheng & Tsai, 2014; Wu, Lee, Chang, & Liang, 2013) and its potential (khoshnevisan & Le, 2018). Research findings imply that AR's applicability to education are embodied cognition (Kaufmann 2003) and interactivity (Ibanez et al. 2014; Di Serio et al. 2013). As Specht et al. (2011) detailed, AR provides us with new ways of interacting with information. Another merit of AR is the manner of displaying visual information. AR is designed to display the link between virtual contents to objects found in the real world. For example, Matsutomo et al. (2012) employed AR for displaying virtual magnetic fields on physical magnets. Similarly, AR has positive impacts on motivation level and confidence of learners (Di Serio et al. 2013).

Literature Review

In recent years, SLA researchers have recognized the affordances of AR and have employed AR in language education. In what follows, I intend to shed light on AR-related studies in SLA. Cheng and Tsai (2014) uncovered both behavioral patterns and cognitive attainment of 33 child-parent pairs. The participants attended the study voluntarily. The authors employed content analysis to identify child-parent reading behaviors. Consequently, four behavioral patterns were identified concerning AR picture book reading. The patterns were as follows: parent as dominator, child as dominator, communicative child-parent pair, and low communicative child-parent pair. Coupled with behavioral patterns, cognitive attainment of the participants was further examined. The participants were categorized into two groups; high-level versus low-level cognitive attainment. The results revealed that child as dominator as well as the communicative child-parent pair belong to the high-level cognitive attainment group. However, parent as dominator as well as the low communicative child-parent pair are low-level cognitive attainment groups. Cheng and Tsai (2016)—building upon their studies in 2014—explored the parents' conceptions concerning behavioral transitional patterns for shared child-parent AR picture book reading. The authors explored the role of parents as well as the associations between the parents' conceptions of AR learning and the four behavioral patterns which were already explored in 2014. This study was a follow-up inquiry to deeply discover the parents' conceptions of AR learning for the participants of the age range from 5 to 10. The authors employed sequential analysis to further analyze and examine the level of interaction among the coded behaviors. The results of the study reveal that parental interaction is required so that the children can achieve deeper cognitive attainment. Furthermore, it turns out that the shared AR reading book has three underlying players; children, parent, and AR book. Accordingly, children can and should dominate the reading and operation of AR.

Liu et al. (2007) constructed a 2D barcode and a handheld AR-based learning system entitled HELLO. Twenty college students from Taipei university participated in this inquiry. The study was conducted in 4 weeks. In the first two weeks, HELLO was demonstrated by the researchers on how to use it appropriately. The second phase of this study was context-aware period. It included a campus tour where students in different zones encountered different 2D barcodes. The barcode triggered a content which was sent by the system to the students. The system was to improve 4 skills of the students. The researchers then conducted a survey on the learners' attitude

and their acceptance of emerging technologies. The results suggest that HELLO is easy to use, can increase motivation, improves 4 skills, and system functions are convenient for learning.

Silva, Roberto, and Teichrieb (2013) utilized augmented reality (AR) to investigate its effect on fostering the literacy skills in children. To this end, the authors employed a mixed method using three metrics. Two quantitative metrics were a post-test to assess the students' cognitive attainment and the formative form of assessment conducted by the teacher of the class. The qualitative metric was an interview conducted with the teacher of the class to explore her perceptions regarding the AR technology. The researchers harnessed ARBlocks as a tool to teach the content through AR technology. ARBlocks are blocks with empty areas in the middle where the virtual content will be displayed. The theory undergirding this study was psychogenesis of written language theory posited by Emilia Ferreiro (1985). The participants of the study were approximately 20 students studying in the morning and evening classes. The morning class was the experimental and the evening class was the control group. Activities harnessing AR were reading skills and phonemic awareness. Another activity involved nursery rhymes. There were some missing words that the students were tasked to fill in with ARBlocks. The results suggest that AR fosters literacy development, motivates the students, and brings positive attitude to educators.

Nincarean, Alia, Halim, and Rahman (2013) examined 10 different applications utilizing augmented reality (AR) and mobile augmented reality (MAR). One of the MAR apps, Alien Contact, utilized AR to foster language arts and literacy. This application was used by 80 middle school and high school students. The results of this study suggested high student engagement. Multiple case study indicated that the students, predominantly, were highly engaged. The results of this review suggested beneficial features of the AR technologies as follows: portability, social interactivity, connectivity, context sensitivity, and individuality. The authors reported that AR makes the learning experience more meaningful.

Framing the Issue

Reading is considered the basis of learning (Berninger & Richards, 2002; Cunningham & Stanovich, 2001). Researchers express that reading is an active process of constructing meaning through negotiation with the text and forming new knowledge (Armbruster, Lehr, & Asbom, 2001). Many long-term reading difficulties which culminate in lack of confidence and motivation in learning stems from reading failure (Armbruster et al., 2001; Nation, Clarke, & Snowling, 2002).

Wu et al. explain that paper books are interspersed with abstract concepts that might be misunderstood by language learners. These abstract concepts carry complexities that printed books, by and large, fail to clearly explain. This opaqueness culminates in a lack of understanding. However, AR, as an emerging technology, has the potential to successfully lower the amount of the complexity by supplying authenticity and visualizing unobservable objects and concepts (Wu et al., 2013).

The overarching goal of reading is comprehension. According to National Institute of Child Health and Human Development, reading comprehension is a process “when readers actively relate the ideas represented in print to their own knowledge and experiences and construct mental representations in memory (2000, p. 14).”

Many learners lack the proper knowledge and experience to relate to the text to decode the meaning. These learners are in need of scaffolding so they can dissect the structure of texts. Scaffolding is defined as providing learners with necessary support and affordances to help the learner resolve the problems that they cannot tackle alone (Wood, Brune, & Ross, 1978). AR and QR codes are innovative reading systems added to printed text to supply the students with authentic digital materials as a scaffolding tool. Furthermore, few studies reported the uselessness of AR in language education. For instance, Santos et al. (2016) investigated AR as an emerging tool which creates compelling learning. The researchers explored AR and the pertinent benefits regarding situated vocabulary learning, authentic environment, and multimedia learning theory. In this inquiry, augmented reality was harnessed to present situated multimedia in ubiquitous learning. This study was conducted towards developing an AR application. The researchers tested usability for the app. A pre-test and a post-test were administered to investigate the amount of cognitive attainment as well as memory retention utilizing AR in vocabulary learning. The multimedia used in the app employed different modes such as text, image, sound, and animation. The researchers designed two AR applications to teach German and Filipino vocabularies using the mentioned modes. The results suggested that posttest does not indicate a significant difference between the group learning with AR versus non-AR application. However, a delayed post-test indicated different results. The delayed post-test confirmed that AR vocabulary learning contributes to a better retention.

Making the Case

AR-Infused Books

Augmented reality (AR) has been widely exploited in diverse educational contexts. Researchers have considered the incorporation of AR in the physical environment of a classroom (Bujak et al., 2013) and have proposed working principles of this emerging technology to be applied in those classrooms. Many scholars of the field have made a concerted effort to substitute the printed books with electronic versions. Research results, in contrast, suggest that printed books are unlikely to be replaced with the eBooks due to their tangibility (Sellen & Harper, 2003). AR books and printed books are alike except that digital videos, audios, and pictures that are superimposed on the book. AR, thus, enriches users' learning experiences and creates a different learning environment that facilitates language literacy for language learners. AR creates unique learning experience for children since AR displays a seamless connection between virtual and physical element (McKenzie & Darnell, 2004). The synthesis of audio-video outlet for the book content learning promotes the students' level of understanding (Dias, 2009).

A number of studies have investigated the usability of AR systems regarding their pedagogical applications (Chang, Chen, Huang, & Huang, 2011; Sin, Zaman, 2010). The results of current studies have proved usefulness, ease of use, satisfaction while utilizing AR books (Billinghurst, Kato, & Poupyrev, 2001; Clark & Dunser, 2012). A few studies have probed cognitive attainment via AR-infused textbooks in different areas such as conceptual change (Shelton & Stevens, 2004), language skills (Liu, 2009). Few studies have indicated learners' positive attitude toward AR. Research proves that AR motivates children to learn and enhance their reading and writing abilities (Cascales, Perez-Lopez & Contero, 2013). Research suggests that pedagogues and parents are required to empower the children with autonomy to control the text and AR while reading the textbook. Yang (2011) reports that staying for a long time in the community where the target language is spoken is an effective way of learning a foreign language. Due to time constraints and financial limitations, this is unlikely to happen. However, AR can bring real life and authentic

language into classrooms across the world. AR is beneficial to enhance cognitive attainment in different domains. AR concretize abstract concepts (Dori & Belcher, 2005), contributes to a better understanding (Klopfer & Squire, 2008), visualizes the text and makes understanding easier (Kaufmann & Schmalstieg, 2003), helps students enjoy the learning process (Nunez et al., 2008).

Pedagogical Implications

Embracing the benefits of the AR and MAR, educators may be willing to train their students on how to use apps and games to foster learning in a less threatening ambience. Apps and games of this type can and should provide students with learning affordances with fewer limitations. Khoshnevisan and Le (2018) call for an overriding need for educating instructors and practitioners concerning the use of emerging technologies such as AR in classrooms. Notwithstanding the affordances that AR offers to language educators, it imposes certain challenges. Reinders and Lakanchua (2014) underwent serious challenges while using AR in classrooms. They experienced some technical difficulties with Wikitude, therefore, they had to use other user-friendlier tools for the college students to create an AR-based virtual tour. As such, researchers might have to spend much time during the early stages of crafting an AR-related app or game, which causes frustration among a majority of both researchers and participants. Accordingly, researchers are advised to take more time at early stages of design and piloting a study to maintain the motivation level of the participants.

Conclusions

Educators can harness AR as an emerging technology to contribute to literacy enhancement in children. AR can activate other learning channels in learners to bring both efficiency and variety to cover more learning strategies. The learner then has the option to appropriate the right learning strategy accordingly. Learners do not need to distance from the paper to find more information, the meaning of the unknown words. The findings of AR studies, Nevertheless, show that the unique affordances AR offers to support the teaching and learning process outweighs the existing constraints. Certain issues such as technical errors can be tackled by the modification and development of AR technology in the foreseeable future. This article introduced AR as an emerging technology in the field of second language acquisition (SLA). It then presented the background of the use of AR in education and dive into the AR-related studies in SLA. Having critically scrutinized the results of the studies, this article framed the issue and made a case for the judicious inclusion of AR in literacy. Finally, readers were provided with pedagogical implications concerning the use of AR to improve language learners' literacy.

References

- Billinghurst, M., Kato, H., & Poupyrev, I. (2001). The MagicBook: A transitional AR interface. *Computers Graphics*, 25 (5), 745–753.
- Bujak, K., Radu, I., Catrambone, C., MacIntyre, B., Zheng, R., & Golubski, G. (2013). A psychological perspective on augmented reality in the mathematics classroom. *Computers & Education* 68, 536–544.
- Cascales, A., L., I., Pérez-López, D., Perona, P., & Contero, M. (2013). An experience on natural science augmented reality contents for preschoolers. In R. Shumaker (Ed.), *Virtual augmented and mixed reality: Systems and applications* (pp. 103–112). Berlin, Germany: Springer.
- Chang, Y.J., Chen, C.H., Huang, W.T., & Huang, W.S. (2011, 11–15 July). Investigating students' perceived satisfaction, behavioral intention, and effectiveness of English learning using augmented reality. Paper presented at the IEEE International Conference on Multimedia and Expo (ICME), Barcelona, Spain.
- Cheng, K. H., & Tsai, C. C. (2014). Children and parents' reading of an augmented reality picture book: Analyses of behavioral patterns and cognitive attainment. *Computers & Education*, 72, 302–312.

- Cheng, K. H., & Tsai, C. C. (2016). The interaction of child–parent shared reading with an augmented reality (AR) picture book and parents' conceptions of AR learning. *British Journal of Educational Technology*, 47(1), 203–222.
- Chen, N. S., Teng, D. C. E., & Lee, C. H. (2011). Augmenting paper-based reading activity with direct access to digital materials and scaffolded questioning. *Computers & Education*, 57(2), 1705–1715.
- Clark, A., & Dünser, A. (2012, March). An interactive augmented reality coloring book. In *Proceedings of 2012 IEEE Symposium on 3D User Interfaces (3DUI)* (pp. 7–10). IEEE.
- Di Serio, A., Ibáñez, M., & Kloos, C. (2013). Impact of an augmented reality system on students' motivation for a visual art course. *Computers & Education*, 68, 586–596.
- Dias, A. (2009). Technology enhanced learning and augmented reality: an application on multimedia interactive books. *International Business & Economics Review*, 1(1), 69–79.
- Dori, Y., & Belcher, J. (2005). How does technology-enabled active learning affect undergraduate students' understanding of electromagnetism concepts? *Journal of the Learning Sciences*, 14,2, 243–279.
- Ibáñez, M. B., Di Serio, A., Villarán, D., & Kloos, C. D. (2014). Experimenting with electromagnetism using augmented reality: Impact on flow student experience and educational effectiveness. *Computers & Education*, 71, 1–13.
- Kaufmann, H., & Schmalstieg, D. (2003). Mathematics and geometry education with collaborative augmented reality. *Computers & Graphics*, 27(3), 339–345.
- Khoshnevisan, B. (2018). The Effect of Incorporating Animated Pedagogical Agents in Apps on L2 Idiom Acquisition and Retention. In *Proceedings of the GLOCER Conference* (pp. 75– 83). Sarasota, FL: ANAHEI Publishing, LLC.
- Khoshnevisan, B., & Le, N. (2018). Augmented Reality in Language Education: A Systematic Literature Review. In *Proceedings of the Global Conference on Education and Research (GLOCER) Conference* (pp. 59–74). Sarasota, FL: ANAHEI Publishing, LLC.
- Klopfer, E., & Squire, K. (2008). Environmental detectives: the development of an augmented reality platform for environmental simulations. *Educational Technology Research and Development*, 56(2), 203–228.
- Liu, T. Y. (2009). A context-aware ubiquitous learning environment for language listening and speaking. *Journal of Computer Assisted Learning*, 25(6), 515–527.
- Liu, T. Y., Tan, T. H., & Chu, Y. L. (2007, July). 2D barcode and augmented reality supported English learning system. In *6th IEEE/ACIS International Conference on Computer and Information Science (ICIS 2007)* (pp. 5–10). IEEE.
- Matsutomo, S., Miyauchi, T., Noguchi, S., & Yamashita, H. (2012). Real-time visualization system of magnetic field utilizing augmented reality technology for education. *IEEE transactions on magnetics*, 48(2), 531–534.
- McKenzie, J., & Darnell, D. (2004). The eye Magic book. In *A report into augmented reality storytelling in the context of a children's workshop 2003*. Christchurch: New Zealand Centre for Children's Literature and Christchurch College of Education.
- Nincarean, D., Alia, M. B., Halim, N. D. A., & Rahman, M. H. A. (2013). Mobile augmented reality: The potential for education. *Procedia-Social and Behavioral Sciences*, 103, 657–664.
- Núñez, M., Quirós, R., Núñez, I., Carda, J. B., & Camahort, E. (2008). Collaborative augmented reality for inorganic chemistry education. In *Proceedings of Mathematics and Computers in Science and Engineering* (Vol. 5, pp. 271–277). WSEAS.
- Rashtchi, M., & Khoshnevisan, B. (2008). Audio-taped dialogue journal: A technique to improve speaking skill of Iranian EFL learners. *Journal of English Language Pedagogy and Practice*, 1(3), 164–176.
- Reinders, H., & Lakarnchua, O. (2014). Implementing mobile language learning with an augmented reality activity. *Modern English Teacher*, 23(2), 42–46.
- Santos, M. E. C., Taketomi, T., Yamamoto, G., Rodrigo, M. M. T., Sandor, C., & Kato, H. (2016). Augmented reality as multimedia: the case for situated vocabulary learning. *Research and Practice in Technology Enhanced Learning*, 11(1), 1.
- Sellen, A., & Harper, R. (2003). *The myth of the paperless office*. Cambridge: MIT Press.
- Shelton, B., & Stevens, R. (2004). Using coordination classes to interpret conceptual change in astronomical thinking. In *Proceedings of the Sixth International Conference for the Learning Sciences* (pp. 634–639). Mahwah, NJ: Erlbaum.
- Silva, M., Roberto, R., & Teichrieb, V. (2013). Evaluating an educational system based on projective augmented reality. In *Anais do Simpósio Brasileiro de Informática na Educação* (Vol. 24, No. 1, p. 214).
- Specht, M., Ternier, S., & Greller, W. (2011). Mobile augmented reality for learning: A case study. *Journal of the Research Center for Educational Technology*, 7(1). Retrieved from www.rcetj.org/index.php/rcetj/article/view/151

- Sin, A. K., & Zaman, H. B. (2010). Live Solar System (LSS): evaluation of an Augmented Reality book-based educational tool. In Proceedings of 2010 international symposium on information technology – visual informatics (Vol. 1, pp. 1-6). IEEE.
- Wu, H., Lee, S., Chang, H., & Liang, J. (2013). Current status, opportunities and challenges of augmented reality in education. *Computers & Education*, 62, 41–49.
- Yang, Y. F. (2011). Engaging students in an online situated language learning environment. *Computer Assisted Language Learning*, 24(2), 181-198.

The State of Technology: Linkages Between Kindergarten Teachers' Career Stages and the Stages of Technology Adaption in Turkey

Özge Özel

College of Education
University of South Florida, United States

Abstract

The aim of this study was to explore the linkages between kindergarten teachers' career stage and technology adaption in Turkey. Six kindergarten teachers who are working at technologically well-equipped kindergarten classrooms were interviewed for this study. Data was coded and analyzed based on Technology Integration Matrix (TIM), and Steffy, Wolfe, Pasch, and Enz (2000) teachers' career stages. Findings showed that participants have been creating all types of learning environment including active, collaborative, constructive, authentic, and goal-directed at the active, adoption and adaption levels.

Keywords: early childhood education, technology adaption, career stage

Introduction

Integrating technology tools into instruction actively supports the task of teaching and learning by providing with different opportunities that students can construct their own knowledge and enhance meaningful learning in kindergarten classrooms. The increase of the integration of educational technology into classroom instruction in all levels has pointed out stakeholders such as policymakers, administrators, educators, students, and parents. Thus, over the past decade, educators and governments have been under pressure to reform school through technology (Keengwe and Onchwari, 2009). Turkey is one of these countries, which the implementation of educational technology is the central focus right now (Kurt, 2010).

Turkey has increased access to technologies in classrooms including computers, Internet access, audiovisual hardware, and educational software over the past few years; however, the effects of such improvements have not met educational expectations from teachers (Karaca, Can and Yildirim, 2013). On the other hand, Holden and Rada (2011) have noted that actively using technology as an educational tool in classrooms helps to make learning more effective, and teachers' attitudes have a major role in the effectiveness of technology use in schools. Confident teachers who are early adopters of technology into instruction can positively affect students' academic achievements.

Despite these promising trends, Akbulut, Odabasi, and Kuzu (2011) observe that the majority of kindergarten teachers receive little to no preparation in the universities throughout Turkey. This limited exposure undermines teachers' capacity to include technology in classroom activities. Similarly, Kurt (2013) reports that teachers feel ill-prepared to use technology or challenged to stay up-to-date with rapid advancements.

According to Yilmaz (2011), teachers' inability to integrate technology into the learning-teaching processes is among the most pressing obstacles to instruction. Although there is an increase in teachers' use of technology in classrooms, Yilmaz (2011) and Kurt (2013) claim that teachers do

not reach expected levels of implementation. Researchers note there are various reasons why teachers are not integrating technology into the learning-teaching process such as lack of technological devices, poor preparation to integrate technology at universities, and preferences for traditional teaching practices.

Another factor that affects teachers' level of technology integration is their age. Teachers' age has an impact on teachers' technology adaption levels as Morris, Venkatesh, and Ackerman (2005) state that age affects individual adoption and use of technology. Teachers' ages are part of their career stages. Thus, the aim of this study is to explore the linkage between kindergarten teachers' career stages and the stage of technology adoption in Turkey and build upon the existing research base to explore whether recent changes in the teacher preparation programs to include technology have contributed to increased adoption by kindergarten teachers who are earlier in their career trajectory.

The Turkish Context

The Turkish Ministry of Education is trying to increase the use of technology throughout the country's educational systems and has been providing both schools and teachers with technological devices. However, a problem persists with the diffusion of digital innovations into instruction and the lack of demonstrated effectiveness in the use of technology. Yilmaz (2011) observes that despite increases in technology implementation throughout Turkey, technology use in classroom activities has not yet reached the ideal level of integration, and teachers use technologies primarily for administrative and personal work with more limited integration into teaching and learning.

In addition, Summak, Baglibel, and Samancioglu (2010) measured the technology readiness of primary school teachers in Turkey, and their results suggest that teachers' technology readiness levels remain low. Similarly, Gok and Erdogan (2012) note that although teachers are proficient in using the Internet for educational purposes. However, there are two different methods of using technology for education: for educational purpose (inactive) for instance, teachers use technology to prepare their plan, search for different activities online and print examples for each student etc.; for education (active), in this case, teachers actively integrate technology while they are teaching such as using smart-board to reinforce an activity. The problem in Turkey is that teachers have started to use integrate technology for an educational purpose, but they do not engage it with the curriculum.

On the other hand, Akbulut, Odabasi, and Kuzu (2011) observe that teachers need to develop new strategies to integrate technology in the classrooms; however, since most universities fail to prepare teachers in the use of educational technologies, teachers struggle to embed technological tools into classroom activities. Kurt (2013) concurs that teachers do not feel that they are ready to use technology.

Technology Integration Matrix

The Technology Integration Matrix (TIM) illustrates how teachers can integrate technology to enhance learning by incorporating five interdependent characteristics of meaningful learning environments: active, constructive, goal-directed, authentic, and collaborative. In addition, TIM gives five levels of technology integration: entry, adoption, adaption, infusion, transformation, and each of the five creates characteristics of meaningful learning environments.

Teachers' Career Stages

Through the review of the literature and systematic observation of teachers over time, Steffy, Wolfe, Pasch, and Enz (2000) have identified six phases that committed classroom teachers experience during their careers: novice, apprentice, professional, expert, distinguished, and emeritus. Teachers are taking this path in developing and maintaining professional growth. Steffy, Wolfe, Pasch, and Enz (2000) state that “The strength of this model is its focus on the process of how one continues to grow and become a more competent career teacher along the continuum (p.5).

Methodological Framework

For this study, interviewing was chosen to collect data, and the interview for this study was designed as semi-structured and open-ended, because according to Mertler (2012) “when gathering truly data, interviews are probably best conducted following semi-structured or open-ended formats” (p. 124). The only data were collected for the research came solely from the interviews. The interview was consisting of two parts: demographic information and the participant's response. The interviews were completed individually, and data were collected with a voice recorder. The questions were open-ended about career stages and technology adoption and close-ended about demographic information. The questions allowed teachers to explain their teaching methods and attitudes through integrating technology.

For this study, the permission received from the Institutional Review Board (IRB) at the University of South Florida as the data were collected from human beings. This research includes only interview and is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study. In addition, as the data were collected in Turkey, before interviews started, permission received from Directorate of National Education.

Interviews began with an explanation of the purpose and importance of the study by an interpreter under the heel of the researcher. Then, potential participants were asked whether they would like to participate in this study, once they consented to be a participant, they were asked their permission before interviews began verbally, and then, after interviews finished, they received the copy of verbal recruitment. Interviews began with demographic research questions and continued with detailed questions, which is attached as an appendix at the end of this study. Participants had unlimited time to answer questions and can choose to opt out of answering questions. All participants were conducted interview one-on-one. After two weeks, for member checking list, data were transcribed, and participants were asked to verify what they said and provide any additional comments.

Participants

For the purposes of the study a convenience sample of 6 kindergarten teachers who are working in the well-equipped classrooms with technological devices in Turkey. All teachers are female as gender differences can create variety in the stage of technology adoption, and working in two different schools, 4 teachers from School 1 and 2 teachers from School 2, in Istanbul which is the most crowded city in Turkey. All 6 participants for this study were conducted in individual interviews with 5 questions for demographic information and 31 questions for career stages and technology adoption.

DePaulo (2000) stated that a key point when conducting qualitative research is that the sample must only be big enough to assure that collected data mentions most or all of the perceptions that might be important, and since the interview will be used for data collection, it gives chance to the researcher for an in-depth conversation. Thus, 6 participants will be enough for this study. Schools were chosen by Directorate of National Education, and teachers were chosen by the school administration.

Data Analysis

After data were collected through interviews, entry, and storage was hold with the voice recorder. All interviews were conducted, transcribed and analyzed in Turkish to prevent losing meaning or significant information from data due to language barrier or translation, then, after data analysis was completed, the results were translated in English. The researcher took some notes including key points of interviews. Demographics of participants were categorized based on the years of their teaching experience. Participants were assigned numbers to maintain confidentiality.

Mertler (2012) indicates that “the analysis of qualitative data involves a process of inductive analysis” (p.157). Thus, an inductive analysis will be used for the analysis of this case study to reduce the volume of information collected. This strategy will be helping the researcher to organize the data into themes and constructs a framework to present the information.

For analysis, as each interview was completed, the researcher listened to the tapes and transcribed all interviews in Turkish. The first step was a reduction of the large amounts of narrative data such as the information that was given by teachers, explanations of the other methods that they are using during teaching etc., as well as career stages and technology adaption in the form of interview notes. Then, data were eliminated from narrative information and coded based on a coding scheme. To determine the coding scheme, TIM’s technology adaption stages were used. Finally, results were translated in English, and data were interpreted by examining the representation within the coded categories into a word document.

This study has descriptive validity as data were collected from participant interviews and data are accurate, believable, and trustworthy. In addition, according to Mertler (2012), member checking defined as “sharing of interview transcripts, analytical thoughts and drafts with participants to make sure the study reflects the participants and their ideas accurately” (p. 74) was used for ensuring reliability. After interviews were transcribed by the researcher, participants’ responses were given themselves to ask them whether anything is there they would like to add or remove to ensure reliability, and then, whatever they want adding and removing from interview’s findings.

Findings

The findings showed that all participants have been creating active learning environment by integrating technology at the entry and adoption levels. All participants stated that they are using smart-board just to deliver lessons and agreed with that smart-board makes students’ learning easier, since it has visually and auditory enriched activities. For instance, Teacher#4 said that

“We are at school from 9 to 5, and I divided the day into two parts. Until lunch time, I am teaching the curriculum, after lunch, we usually send time to play. In the morning, while I am teaching, I always use smart-board to deliver the lesson from the books.”

Table 1. Teachers' Career Stages

Participant	Career Stage	Feature
Teacher 1 28 years old 3 year-experience	Apprentice Teacher	This period starts for most teachers when they receive responsibility for planning and delivering instruction on their own, and it usually includes the induction period and continues to second or third year of teaching.
Teacher 2 27 years old 4 year-experience	Professional Teacher	These teachers are seeking interacting with students and motivating students, and help and assistance from other teachers.
Teacher 3 31 years old 6 year-experience	Professional Teacher	These teachers are seeking interacting with students and motivating students, and help and assistance from other teachers.
Teacher 4 47 years old 26 year-experience	Emeritus Teacher	This period is the time that teachers who are leaving their career.
Teacher 5 38 years old 12 year-experience	Expert Teacher	Expert teachers anticipate student responses, modifying and adjusting instruction to promote growth, and they support, facilitate, and nurture growth and development of all students, regardless of their backgrounds or ability levels.
Teacher 6 36 years old 13 year-experience	Expert Teacher	Expert teachers anticipate student responses, modifying and adjusting instruction to promote growth, and they support, facilitate, and nurture growth and development of all students, regardless of their backgrounds or ability levels.

In addition, teachers regulate the activity and make sure each student completes each step of the activity. For example, while Teacher#1 said that: "Once I completed an activity at class, I am turning on a parallel activity on the smart-board to enrich that activity and asking them to complete it". Furthermore, Teacher#6 said that: "Students are struggling to subtract; thus, we are using visual math apps on smart-board to make it clear. For instance, in one activity, there are ten balloons and they blow up two balloons and calculate how many balloons left."

On the other hand, there is only one participant who created active learning environment at the adaption level as she gives chance students to work independently with technological tools in traditional ways even though she chooses the tool to use them. She stated that: "I do not allow them to use other technological devices such as printer. We tried to use computer a few times, but only one student for each time, not together" (Teacher#1).

Findings indicated that other participants do not allow children to use tools independently as Teacher#4 said "There is not a technological device that students can use in the classroom, they can only engage with the smart-board during the activity". On the other hand, none of the participants showed infusion and transformation levels of technology integration as they do not allow students to choose the tool because of different reasons. For instance, one of the participants claimed her reason by saying that:

“It seems like that they have option to choose the technological tool and activity, but in reality, they choose what I want. For example, if you give your children to choose what to wear each morning, they might want to wear a bikini in the winter, and when you said ‘No’ they won’t accept your decision and will be sad, but if you give them only two option to wear, they will choose one these options, They won’t create a problem, and will be happy. Also, in this case, as they have right to choose, their self-confident will develop” (Teacher#1).

Teachers’ responses showed variety in the collaborative learning environment either. For example, one of the participants (Teacher#3) directs students to work alone on task involving technology by saying that: “I do not think that technology helps students’ collaboration. It induces students to work individually, and they stop interacting with their peers while they are using technology” and she added that her students use technology in order under her control during an activity.

Additionally, four participants have collaborative learning environment at the adoption level, and they direct students in the conventional use of technology tools for working with others. For instance, Teacher#2 stated that: “Collaboration occurs more when they engaged with technology as they can work together. Also, while they are doing an activity on paper, they don’t see others’ activities, but when they work on the smart-board everybody can see others’ works and give immediate feedback such as applauding or saying ‘bravo!’”.

On the other hand, the other participant (Teacher#5) provides students with opportunities to explore the tools and integrate them in collaborative ways. She designed a project 3 weeks ago and asked students to create a visual presentation about countries with their parents. Then they presented it in the class. However, infusion and transformation level of collaborative learning environments do not exist in these classrooms, because teachers do not allow students to decide which tool they use in the activities as I mentioned above.

Participants’ response proved that constructive learning environment at the entry and adoption levels serve students in these classrooms. All of the participants integrate technology to deliver information to students and provide students with some opportunities to integrate technology in conventional ways to build knowledge and experience. For instance, Teacher#1 gave an example by saying that:

“While I was teaching the materials, I showed a video about an experiment. He was using a spoon with hot and cold water. When he submerges the spoon in the cold water, the spoon gets colder, and in the hot water, it gets hotter. Before the experiment, they did know materials and temperature. After video, they learned the experiment, and they said we can do it and they did it”.

However, since technological tools are not accessible in these classes, adaption, infusion and transformation levels of constructive learning environment do not exist.

Participants differ in the authentic learning environment since not all of the teachers have been creating authentic learning environment even at the active level. Only Teacher#1 gives students opportunities to apply technology tools to some content-specific activities that are related to the students. For instance, she said that:

“Last year, I designed a project for Mothers’ Day. I asked each student to record a video for his/her mother and tell what s/he wants to purchase for his/her mother and what s/he would tell her. They did a great job. Once they completed the videos, parents, students and I watched them, and both

mothers and I could find chance to evaluate their socio-emotional developments and determine their needs”.

In the findings, I could not find any cue that is related to authentic learning environment at all levels.

For the last type characteristics of the learning environment called goal-directed, the findings were similar with the authentic type. Only Teacher#1 uses technological tools to plan, monitor and evaluate an activity. She gave an example by saying that: “While we are preparing a dance show for annual celebration, firstly, I show the video to teach dance figures. Secondly, I record their performance during practicing. Lastly, I let them to watch their performance, and give them chance to notice what they are doing correct and wrong.” She added that this helps both her and students to evaluate their development.

Additionally, she stated that she is using technology just to give feedback, for instance, she stated that: “If I want to change a behavior on a student, instead of telling them that the behavior is not good and they should change it I am using camera to record students’ unwanted behaviors to show them, and give them chance to evaluate their behaviors, and they change it.” Thus, while Teacher#1 has been creating goal-directed learning environment at the entry and adoption level, neither other participants nor other levels exist in the goal-directed learning environment.

Conclusion

The results indicate that teachers have been creating different characteristics of learning environments including active, collaborative, constructive, authentic and goal-directed based on Technology Integration Matrix. However, on the levels of technology integration into the curriculum part, teachers’ responses are located in limited parts from entry to adaption. None of the participants have infusion and transformation levels of technology integration as they do not give options to students to choose which technological tool they would use for activities because of different reasons.

On the other hand, although teachers are working at the schools which have same conditions their technology integration levels differ from each other. For instance, while Teacher#1 designs projects and creates environment which her students can make real-world connections and gives chances to students to evaluate their work by recording and showing them their activities to see what they have done correct and wrong Teacher#5 is using technological devices actively in entry level by just listening music from computer and learning numbers from smart-board.

While all of the participants are integrating technology actively in entry level, none of the participants show evidence that can be categorized in infusion level or transformation level, and only Teacher#1 and Teacher#5 can be fitted at the adaption level although they did not give options to student to choose which technology they can use, they create opportunities that students can choose what they would like to learn through technology.

Finally, when teachers’ career stages are considered it is obvious that there is a negative relationship between teachers’ career stages and technology adoption level. For instance, Teacher#4 has the most teaching experience in this study, but her technology integration level is the lowest. She is using technology actively but only at the entry level. For instance, she is using

smart-board just to reinforce their learning activities. On the other hand, even though Teacher#1 has less teaching experience she integrates technology at the highest level in this study.

Future Possibilities

Although it is obvious that this study is limited to the views of a small number of participants from particular area of Istanbul in Turkey, findings can provide a starting point for discussing and rethinking new possibilities for understanding the linkages between teachers' career stages and technology adaption. However, there are still limitations in this study. First of all, even though teachers who have same level teaching experiences may vary about technology integration as their personal interests can create difference. Secondly, although teachers have same level teaching experiences, they may have different years of teaching experience in classrooms that has been provided with technological devices, and this can cause differentiation either. Finally, even though teachers have same level teaching experiences their preparation of technology integration at the college level can differ from each other. Thus, the findings from this research invite us to:

- Reconsider teachers' preparation about using technology
- Evaluate to what extent the professional development programs for early childhood educators are responding to integrate technology.
- Revise to what extent Ministry of education and school district support the use of technology in early childhood classrooms.
- Reflect what other factors can influence teachers' technology integration levels.

References

- Akbaba-Altun, S. (2006). Complexity of integrating computer technologies into education in Turkey. *Educational Technology & Society*, 9(1), 176-187.
- Akbulut, Y., Odabasi, H. F., & Kuzu, A. (2011). Perceptions of preservice teachers regarding the integration of information and communication technologies in Turkish education faculties. *The Turkish Online Journal of Educational Technology*, 10(3), 175-184.
- Akkoyunlu, B. (2002). Educational technology in Turkey: Past, present and future. *Educational Media International*, 39(2), 165-174.
- Aslan, A., & Chang, Z. H. U. (2015). Pre-service teachers' perceptions of ICT integration in teacher education in Turkey. *The Turkish Online Journal of Educational Technology*, 14(3), 97-110.
- Aydin, B., Dogan, S., & Kinay, H. (2012). Evaluation of pre-service teachers' view on material design skills and using technology in education. *Energy Education Science and Technology Part B: Social and Educational Studies*, 1, 77-81.
- Buabeng-Andoh, C. (2012). Factors influencing teachers' adoption and integration of information and communication technology into teaching: A review of the literature. *International Journal of Education and Development Using Information and Communication Technology*, 8(1), 136-148.
- Cevher-Kalburan, N., Yurt, O., & Omeroğlu, E. (2011). The use of interactive CD-ROM in early childhood education: Teachers' thoughts and practices. *Procedia Computer Science*, 3, 1555-1561.
- Çınar, H., Döngel, N., & Söğütlü, C. (2009). A case study of technical and vocational education in Turkey. *Procedia-Social and Behavioral Sciences*, 1(1), 160-167.
- Cubukcuoglu, B. (2013). Factors enabling the use of technology in subject teaching. *International Journal of Education and Development Using Information and Communication Technology*, 9(3), 50-63.
- Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2010). Teacher technology change: How knowledge, confidence, beliefs, and culture intersect. *Journal of research on Technology in Education*, 42(3), 255-284.
- Ertmer, P. A., Ottenbreit-Leftwich, A. T., Sadik, O., Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. *Computers & Education*, 59(2), 423-435.
- Gialamas, V., & Nikolopoulou, K. (2010). In-service and pre-service early childhood teachers' views and intentions about ICT use in early childhood settings: A comparative study. *Computers & Education*, 55(1), 333-341.
- Inan, F. A., & Lowther, D. L. (2010). Factors affecting technology integration in K-12 classrooms: A path model. *Educational Technology Research and Development*, 58(2), 137-154.

- Karaca, F., Can, G., & Yildirim, S. (2013). A path model for technology integration into elementary school settings in Turkey. *Computers & Education*, 68, 353-365.
- Kurt, S. (2014). Creating technology-enriched classrooms: Implementational challenges in Turkish education. *Learning, Media and Technology*, 39(1), 90-106.
- Nikolopoulou, K., & Gialamas, V. (2009). Investigating pre-service early childhood teachers' views and intentions about integrating and using computers in early childhood settings: Compilation of an instrument. *Technology, Pedagogy and Education*, 18(2), 201-219.
- Ru-Si, C. (2015). The impacts of workplace advantage, learning intentions, and technology skills on the use of information technology-assisted instruction by early childhood pre-Service teachers. *The Turkish Online Journal of Educational Technology*, 14(2), 206-218.
- Straub, E. T. (2009). Understanding technology adoption: Theory and future directions for informal learning. *Review of Educational Research*, 79(2), 625-649.
- Summak, M. (2011). Assessment of technology integration in vocational education and training schools. *International Journal of Education and Development using ICT*, 7(1), 68-85.
- Summak, M. S., Bağlıbel, M., & Samancıoğlu, M. (2010). Technology readiness of primary school teachers: A case study in Turkey. *Procedia-Social and Behavioral Sciences*, 2, 2671-2675.
- Yilmaz, N. P. (2011). Evaluation of the technology integration process in the Turkish education system. *Contemporary Educational Technology*, 2(1), 37-54.
- Yucel, C., Acun, I., Tarman, B., & Mete, T. (2010). A model to explore Turkish teachers' ICT integration stages. *The Turkish Online Journal of Educational Technology*, 9, 1-9.
- Yurt, O., & Cevher-Kalburan, N. (2011). Early childhood teachers' thoughts and practices about the use of computers in early childhood education. *Procedia Computer Science*, 3, 1562-1570.

Part 5: Global Competence

Comparing the Post-Secondary Education of the Physically Disabled in the U.S. and England

Hawa Allarakhia

The School of Education
University of South Florida, United States

Abstract

The objective of this paper is to answer the research question of how the postsecondary education services provided to college students who are physically disabled in the United States and England differ. The differences in the services provided to this student population are striking considering these two countries both have well-developed education systems. An empirical approach was used in order to conduct a comparative analysis of how the needs of students with physical disabilities are met at four universities in the U.S. and England. This comparison was made considering the role history of education, legal mandates, implementation of mandates, early intervention, assessment of disability, individual education plans, the transition to higher education, and physical structure of buildings. Structure of campus locals is the most important factor that affects college students with physical disabilities. The adaptations made in order to meet these structural needs is explained by comparing Harvard University to the University of Cambridge (CU) and University of Notre Dame (Notre Dame) to St. Mary's University. The findings show that the services offered to college students with physical disabilities in the U.S. and England differ in regards to when students are supposed to initiate services, who is responsible for doing so, the type of proof that is required to gain services and if students receive financial assistance.

Keywords: disabilities, physical, college students, England, and U.S.

Introduction

Research Question

The research question to be explored in this paper will be how the disability services offered to students with physical disabilities attending higher educational institutions in the United States (U.S.) differ from those services offered to the same segment of students in England.

Significance of Research

The significance of this research is to discover the inconsistencies in services provided to the physically disabled in the U.S. and England. The deficiencies in each country can be used as lessons to improve facilities and services offered to the physical disabled.

Background

To understand the differences in the educational systems of the U.S. and England and the impact on the services provided to college students with disabilities one must recognize the differences in the history of education in these two countries. The U.S. and England are two of the oldest and most developed nations in the world. As a result, their educational systems have had more time to develop. Beginning in the late 1700's and early 1800s, parishes in the United States opened schools

located within churches; later non-sectarian common schools were also opened. Schooling became mandatory for all children after 1852 (National Center for Education Statistics (NCES), 2004). In comparison, England's educational system was founded in 597 A.D. and had strong religious affiliations for more than one thousand years, until King George VI revised the system in order to make schooling accessible to all persons (Gillard, 2011). The European model is "urban based, highly elitist and male dominated" (Brock, 2011, p. 6).

Organized education was driven by the need for educated employees as a result of the industrial revolutions in the U.S. and England. At that time, the U.S. split from the European model and developed a new model of education. The new model of education was localized out of geographic necessity. This is somewhat true in both the U.S. and England; most noticeably, the isolating terrain is similar especially when comparing the Northeastern U.S. to England. In the U.S., localization of education resulted in states and individual school districts being responsible for education, its financing, and its curriculum without much interference from the federal government. In England, although schools were geographically isolated, the national government-maintained control over all financial, curricular, and religious aspects at every school. This is partially a reflection of different government philosophies between a daughter colony and its mother country. The U.S. was founded on the premise of separation of church and state. Additionally, the US did not implement any notable social welfare programs until after the Great Depression, while England has cared for its own through parish resources since ancient times.

Thus, the differences between the U.S. and England are that U.S. education is mainly secular and localized while education in England remains somewhat governed by religious ideals and a centralized approach (Brock, 2011, p. 8). However, the educational system in both countries is becoming increasingly humanitarian. The U.S. included women and slaves in education early on, while England expanded its schools to include the nonreligious poor (Brock, 2011, p. 7; Gillard, 2011). Humanitarian goals in education in this millennium include diverse subjects such as poverty, hunger, gender equality, child mortality, maternal health, infectious diseases, the environment, and globalization (Brock, 2011, p. 10). This humanitarian approach strives to be inclusive of all minorities including those who wish to attain higher education despite a physical disability. Such an approach to education could be enacted on a global scale allowing equal access to education worldwide.

Literature Review

Disability Law in the U.S.

The present-day education of disabled persons in the U.S. and England has grown from the diverse histories of these two countries, resulting in new and different laws and approaches. In the US, laws to achieve humanitarian approaches in regards to the education of students with disabilities have been revised six times since their implementation in 1965 under the Johnson administration. The needs of students in K-12 are usually addressed separately from those in the post-secondary environment, but it is helpful to understand the impact that services have had on addressing the limitations the student's impairment may have had on their academic successes and how continuing to receive accommodation in postsecondary education would allow success.

Originally, the US legislation was named the Education for "All Handicapped Children Act" and ensured financial support to afford that this population was given an opportunity to receive equal access to education. By 1990, this legislation was rebranded as the Individuals with Disabilities

Act (IDEA). Amendments were made to the act in 1997 in order to redefine “disabled children” to include those who are intellectually impaired. Additionally, parents were required to solve conflicts with schools through appropriate mediation procedures (Special Education News, 2014). The next set of amendments came in 2004 where Individual Education Plans (IEPs) were given to students for a trial period of only three years as long as the students’ parents found that length of time acceptable. Another change that occurred was that schools were now allowed to set the proficiency criteria of how students were able to meet the federally mandated academic standards. Also, student performance now had an impact on earnings of teachers (Hunt Institute, 2015).

In order to accommodate those students who are physically disabled and wish to attend postsecondary institutions, two additional acts of legislation were implemented. The “Rehabilitation Act of 1973, Section 504” ensured that no one was denied admittance or financial support because of their impairment. The “Americans with Disabilities Act” broadened the definition of disability by modifying the language of the definition, specifically recognizing how impairment can affect all aspects of an individual’s life. The changes included redefining who has a disability, what is regarded as a “major life activity”, and what is considered as a “substantial limit,” as well as specifying disabilities that could be considered “episodic” (U.S. Department of Labor, 2009).

Unlike, the elementary and secondary educational environment, where it is the school’s responsibilities to identify and provide support for those with an impairment, during postsecondary education it is the student’s responsibility to disclose their impairment and request services. Self-advocacy is necessary in higher education because in the eyes of educational institutional and state and federal agencies, an individual is considered an adult at the age of eighteen years old and should be able to communicate what accommodations they need to succeed regardless of impairment, unless they are not intellectually capable.

Disability Law in England

In comparison, English legislation that provides equal access to an education for those who are impaired could be considered in its infancy since the first piece of antidiscrimination legislation was not implemented as law until 1995. This piece of legislation was inspired by the civil rights movement in the US that took place during the 1960s and 1970s. Also in 1970, preliminary legislation laid the ground work for the antidiscrimination legislation of 1995. The 1970 Education Act of England prohibited the classification of children as uneducable especially those who were considered intellectually impaired. This law also removed the health authorities’ ability to preside over any decision regarding the educational needs of these children by transferring the responsibility to the appropriate educational governing body (Rotatori et al, 2014, p. 119)

Prior to 1981, those with disabilities were kept in asylums in England and the education of these individuals was considered to be unimportant (Historic England, 2017). Due to public outrage as a result of these persons being kept in asylums disguised as rehabilitation facilities the 1995 law was amended. In 2001, the “Special Educational Needs and Disability Act” was passed. It was the first piece of legislation in the United Kingdom (UK) that outlawed the discrimination of persons with disabilities in education (Parliament of the United Kingdom, 2001).

This piece of legislation changed how disability is defined. Under the “the Equality Act of 2010” the definition of disabled states “you’re disabled if you have a physical or mental impairment that has a ‘substantial’ and ‘long-term’ negative effect on your ability to do normal daily activities.”

Furthermore, “substantial” is defined as more than trivial or minor and “long-term” refers to more than twelve months. Interestingly, in England one is automatically classified as disabled the day they are diagnosed with HIV, cancer, or multiple sclerosis (U.K. Department of Education and Learning, 2010).

Implementing the Law in Both Countries

The key to ensuring that the legislation in the US and England impacts positively the educational experiences of those with disabilities is early intervention. The majority of support is provided to the family as a whole. Due to differences in execution of this early intervention, the impact of early intervention is somewhat indeterminable. The legal measures and appropriate procedures are in place to ensure effective early intervention; however, the reality is early intervention may be erratic, rendering it less effective.

The majority of a child’s intellectual development occurs within their first three years of life, although delays could be caused as a result of an impairment that affects motor skills. Early intervention is considered more effective and less costly than intervention provided later in life (Schwarz & Nippold, 2011). As a result of this early intervention, the academic outcome of these children is expected to be greater than that expected for children with no early intervention (Schwarz & Nippold, 2011).

Early Intervention in the US and England

In the U.S., early intervention services include case management, family support, counseling in education, and therapies such as occupational, speech, psychological, and physical, which are provided to families free of charge in accordance with IDEA (Derrington et al, 2003). Although a parent or caregiver may be the first individual to notice any developmental delay, the identifier must further report these concerns to the appropriate authority who can conduct an official assessment in order to make the correct diagnosis.

Respectively, England’s procedures of early intervention for children with disabilities also address social needs and are not limited to the impact that impairment has on a child’s academic success. The variation in the education of infants and toddlers is significant in that a wide range of individuals and entities take part in the early stage of intellectual development. Even though these professionals are likely to have extensive training, in most cases their background is outside of the education field since their expertise is focused on childcare. For this reason, anyone is allowed to refer a child for early intervention services. Immediately, after the child has been identified as having special needs, a social worker or case coordinator acts as a liaison between the family and appropriate authorities. Additionally, funding is provided to support daily living as well as health and academic support services (Rotatori et al, 2014, p. 122-123).

Assessment of Disability in U.S. and England

Early intervention assessments for infants in the U.S. start with Bayley Scales of Infant Development, assessment of motor function in children with Down Syndrome, and assessments of language skills, an examination of possible visual or auditory impairments and, recently, screening for autism and intellectual impairments (Derrington et al, 2003). Upon entering school, federal mandates dictate the required testing of a child’s intelligence which determines the special education services a child is to receive during their primary and secondary education. In the US,

an example of the examination that determines the accommodation a child is allowed to receive is based on a battery of tests known as the Wechsler Scale of Intelligence for Children. These tests identify if a child's physical disability could have impacted their cognition and led to a learning disability such as dyslexia, dysgraphia, dyscalculia, dyspraxia, executive functioning issues, language, motor and processing skills, and behavioral issues. Once the child reaches 16 years of age the same test is given using the Wechsler Scale of Intelligence for Adults (Wechsler, 2014).

Assessment procedures in England are moving away from standardized tests and assessment protocols to psychologically based evaluations. The psychological evaluation is a comprehensive analysis including biological, social, and psychological factors (British Psychological Society, 2000). In September of 2014, schools began hiring individuals who fulfilled the role of coordinating the education of children with special needs. The initial diagnosis of a learning disability may be determined by a family physician, with the completion of surveys, and the observations of an educational practitioner (Dyslexia UK, 2017).

Standardized assessments have been used in the U.S. and England for decades. In the U.S., these achievement tests are given periodically during elementary, middle, and high school. In England, they are administered yearly. The criterion for recognizing a possible learning disability using these standardized tests is the student performing two years or more below their current grade level (Florian et al, 2011, p. 73-77; Right Diagnosis, 2017).

IEPS in the U.S. and England

Upon recognition of the learning disability, a legally binding IEP in the U.S., or Statement of Special Educational Needs (SEN) provision in England, is developed to accommodate the student's limitations. However, if an IEP is created in England it is considered a working document, rather than legal directive. The IEP in both U.S. and England should include provisions, outcomes, and targets used to measure academic outcomes and goals (Silas, 2017). These plans are modified throughout the student's academic career and pose as evidence for the continuation of services to be received in a postsecondary learning environment.

However, there are significant differences between IEP's in the U.S. and England. In the US, an IEP must meet both federal and state educational regulations. Academic and functional goals must be addressed on an annual basis and be clearly measurable. Special education services, supplementary aids, and a least restrictive environment should play a role in helping students achieve the goals set forth on their IEP (U.S. Government Publishing Office, 2007). Individual Education Plans in England may not have legal merit as this document is used as a precursor to the SEN and is used as a guide for educators. Students, teachers, and parents use the IEP to navigate how to implement the appropriate services that address the limitations a physical disability may present in an academic setting. The two major differences in this document compared to the U.S. counterpart are that a student's anxieties, likes, dislikes and tasks that can be completed at home are considered when creating the goals set forth in the IEP (Silas, 2017).

Transition to Higher Education US and England

In the U.S. when students' IEP is rewritten during the last two years, outlining the goals of the student and solutions for how to accomplish these goals, whether the student chooses to continue their education at a postsecondary institution or search for employment, these adjustments are made to ensure that the students receive the appropriate accommodations regardless of their chosen

path. All characteristics of the student are considered including limitations in the types of labor that persons are able to do or the postsecondary institution they attend because a physical disability (Kauffman et al, 2011, p. 15).

According to Skinner's study regarding the student advocating for the necessary accommodations to be successful in higher education, some students are unaware of the services available to them (2004, p.91). Not having knowledge of these services, and hence not taking advantage of them, students with disabilities are unable to perform at optimum capacity.

Kim and Lee reported in their study about the effectiveness of academic accommodation on student success "only a few services are stably effective" (2016, p. 42), while Timmerman and Mulvihill found that if it were not for students receiving accommodations, they could not reach their academic potential (2015, p. 1617). The impact that academic accommodations have on a student's performance is directly related to the student's aptitude (Kim and Lee, 2016; Timmerman and Mulvihill, 2015). Therefore, students should be made aware that the accommodations they received during k-12 education are available in the postsecondary learning environment although students must reach out to the appropriate resources and advocate for themselves.

Similar to the U.S. , England has its own transition protocol for students with a statement of SEN completed during the students' ninth academic year and amended on a yearly basis until the student reaches the age of eighteen. The year nine annual review provides the opportunity to gather the necessary information to create the document called a Transition Plan (TP) for the individual. Participants who assist in the creation of this plan include the young person's parents and any professionals who are involved in the young person's life. The views of the individual must also be incorporated into the plan. This plan outlines the steps that need to be taken to ensure that the individuals receive the appropriate services to be academically successful during high school and postsecondary education. Any action required to achieve the goals set within this plan should be taken by all parties involved in its creation (Brighton & Hove City Council, 2017). Once the student enters postsecondary education they are given the chance to disclose any type of support they may require in order to be successful. Upon disclosure of a need for support, a learner support team is convened so that a personal and confidential learning support plan is created to address the needs learning or physical impairment may present (University of the Highlands and Islands Moray College, 2013).

Methods

Through his entire text, Brock calls for uniform approaches in education so that globalization can be achieved from a theoretical standpoint but for the purposes of this paper, it is being applied as a methodological basis for the empirical comparison. Services for students pursuing postsecondary education while balancing the challenges that come with having a physical impairment do not seem to be uniform across the U.S. or England. The physical accessibility of a postsecondary institution is a crucial factor for a student with a physical impairment when deciding to continue their education at a particular institution. Comparing the differences in the range of services provided to these individuals is important in highlighting areas that need to be improved upon to put forth the globalization of services for this group.

Empirical Approach

The four academic institutions to be compared are two private universities versus two religiously affiliated universities. Harvard University in the U.S. will be compared to University of Cambridge (CU) in England while University of Notre Dame (Notre Dame) in the U.S. will be compared to Saint Mary's University in England. The empirical approach involved making comparisons between campus housing, facilities, classrooms, lecture halls, restrooms, ramps, elevators in regard to accessibility for students who are physically disabled.

Findings

Harvard was originally established in 1636 in Cambridge, Massachusetts as a college that educated Puritan clergy, but later transformed to a secular university. Until 1945, select preparatory schools channeled students directly into Harvard University, which has three educationally unified campuses that are geographically separated by less than three miles. The main campus spans 210 acres. The Allston campus is across the Charles River and encompasses 358 acres; currently this campus is slated to undergo ten years of renovation and new construction. Longwood, the medical campus, is the smallest campus spanning only 21 acres. Overall, Harvard University is considered a residential campus since many undergraduates reside on campus (Harvard University, 2017b; 2017d). In 2010, Harvard had an estimated 21,000 students, 6,700 undergrads, and 14,300 postgraduate students (Harvard University, 2010). Generally, the percentage of students with disabilities is estimated to be 11% of all students and 5.6% of these students are physical impaired (Cornucopia of Disability Information, 1992; Higher Education Statistics Agency, 2016). Approximately, 150 physically disabled students attend Harvard (Harvard University, 2010).

At Harvard, first year students are expected to live in Harvard Yard during their freshman year to ease the transition to college life. Three residence halls are fully accessible for those students who use a wheelchair as a result of a physical impairment. These residence halls are equipped with elevators and automatic doors as depicted on the Harvard maps, indicated by yellow dots and red dots, respectively. Automatic entrance doors are indicated with a red dot surrounded by a red box. Other buildings such as dining facilities, libraries and lecture halls class are marked similarly (Harvard, 2017a; 2017c; Appendices A & B). Buildings built prior to 1992 are retrofitted; while newer buildings are built in compliance with regulations put forth by the Americans with Disabilities Act.

University of Cambridge (CU) was founded in 1209 by a group of scholars who left Oxford University after an uprising between the townspeople and Oxford University. The CU campus is located in Cambridge, England. The first college was established in 1284 and the most recent college was established in 2010. At the beginning, each college was associated with an abbey or chapel. In 1536, the university changed from a religious university to secular. At that time, a large segment of the faculty left with the Puritan movement and migrated to New England where Harvard University was established. Until 1950, Cambridge University held a seat within the British Parliament. University of Cambridge is an urban campus built on 90.4 acres spread across eleven sites. The West Cambridge site is undergoing extensive expansion and as a result these new buildings should accommodate students who are physically disabled (University of Cambridge, 2017d).

Unlike Harvard, where all colleges are under the umbrella of a single university administration, Cambridge consists of 31 independent colleges. Each of these colleges provides housing, welfare,

and social functions as well as deciding which students will be accepted to the university. The faculty, the departments, research centers, and laboratories belong to the university and are controlled by the same entity. Undergraduates are supervised within the individual colleges and students could work with faculty with a student: instructor ratio as small as 1:1 (University of Cambridge, 2017d). Eighteen thousand students attend CU; 12,220 are undergraduate students and 7,440 are postgraduate students (Higher Education Statistics Agency, 2016). Overall, 2700 of these students disclose impairment to the Disability Resource Center. The center has seven fulltime advisors, five of whom are designated to assist only those students who have a physical impairment. It can be estimated that 1925 of the students have a physical impairment (Higher Education Statistics Agency, 2016; Cornucopia of Disability Information, 1992). Cambridge University has four libraries which are wheelchair accessible to varying degrees. Some buildings are not able to be retrofitted to achieve full accessibility, and some do not have bathrooms, some have no elevator and entry must be prearranged, some have no ramp. Maps found in (Appendices) C, D, E, show ramps, elevators dimensions, and accessible toilet facilities at University of Cambridge (University of Cambridge, 2017a; 2017b; 2017c). All students live on campus for all four years at Cambridge, so over 12,000 residential are required, of which 1,925 must house students who are physically disabled.

University of Notre Dame (Notre Dame) was founded in 1842 when a young French clergyman and his seven companions took control of 524 acres that were given to them by the Bishop of Vincennes. Notre Dame earned its academic charter from the state legislature in 1844 (University of Notre Dame, 2017d). Until 1967, the university was governed by priests then transformed into a two-fold board composed of academic trustees and religious fellows. The campus is located in Notre Dame, Indiana. Today, Notre Dame continues to incorporate religious and educational traditions that stem from its beginning. From the start, the majority of students at Notre Dame have always resided on campus (University of Notre Dame, 2017a). As of 2017, 12,292 students attend Notre Dame; 8,462 are undergraduate students and 3,830 postgraduate students (Forbes, 2017; University of Notre Dame, 2017c). The percentage of students with disabilities is estimated to be 11% of all students (Higher Education Statistics Agency, 2016), and 5.6% of these students are physical impaired (Cornucopia of Disability Information, 1992), approximately 75 students are physically disabled attending Notre Dame (Forbes, 2017). Appendix F depicts the entire Notre Dame campus, while Appendix G shows all the residence halls, indicating which are wheelchair accessible (Owers, 2016; University of Notre Dame, 2017b). Fourteen out of 28 residence halls are accessible to the physically disabled.

St Mary's University was founded in 1850 as a Catholic college with emphasis on teacher training; the university gained its academic charter in 2014. St Mary's University current estate is separated into four parts and spans 35 acres. Main campus is located on Waldegrave Road in Twickenham, England upon the grounds of Strawberry Hill House, while a hall of residence is located at 16 Strawberry Hill Road, and the new Naylor Library (also on Waldegrave Road) which opened in the autumn of 2015. From the start, the majority of students at St Mary's University have always resided on campus. As of 2016, 5,535 attend St Mary's, 4,120 were undergraduate students and 1,415 postgraduate students (St Mary's University, 2017c). The percentage of students with disabilities is estimated to be 11% of all students and 5.6% of these students are physical impaired (Cornucopia of Disability Information, 1992; Higher Education Statistics Agency, 2016). About 35 students should identify as are physically disabled. Appendix H shows the buildings that encompass St. Mary's campus (St Mary's University, 2017b). Although this university is smaller than the other three discussed, eight residence halls are available at this university (St Mary's

University, 2017a). Most have ramps and some accessibility, but Lady Frances Court, also called de Marrillon Hall, was built specifically to house students with physical impairments. The building has 180 residential rooms, three stories and a large lift.

Conclusions

The U.S. separated from the mother country England after the Revolutionary War to form a nation which separated church and state. As a result, the structure of governmental power and control varies greatly between the two countries. The U.S. lacks the more socialist attitude and structure of England about providing services to individuals who are physically disabled. England's socialist and humanistic approach to education of the physically disabled stems from religious ties, as the physically disabled were cared for by religious parishes. From a historical perspective, the U.S. is younger compared to England and most structures are more easily renovated for accessibility in the U.S., especially those built after 1992 when accessibility laws were put into place. In England, buildings are mostly made of stone so retrofitting ramps and installing elevators post-construction is difficult, if not impossible. In the U.S., laws to address the needs of the physically disabled were coupled with the Civil Rights movement, while England lagged behind in implementing similar legislation until the mid-1990s. This lag time lead to fewer accommodations being made on college campuses in England.

Testing in the U.S. is usually standardized so assessing a child in early invention for the impact a physical impairment has on their academic performance is dependent on the test and the circumstances under which the test is given. England takes on a more observational approach to identifying the services that would appropriately meets the needs brought on by a student's physical disability. Anyone is allowed to refer a child to receive special services. As a result, England focuses more on the impact a physical impairment has on a student in regards to the overall wellbeing instead of mainly on their academic progress as is typical in the U.S. At this point, it cannot be determined which approach has a more significant impact on the student's future success in postsecondary education. Further investigation is needed to determine if testing is more successful than observation at identifying needs early on.

Individual Education Plans in the U.S. outline measurable academic goals for students with disabilities in primary and secondary educational settings, while in England a Special Needs Education Plans follows similar parameters with the addition of considering a student's social and emotional needs. Overall, the most prominent similarity for students who are physically disabled in their primary and secondary schooling experience in the U.S. and England is the fact that a student's experience can vary greatly as a result of localization. Funding plays a large role in the amount of money spent to address the needs of each student in both of these countries. Students with physical impairments transitioning to postsecondary education in the U.S. and England have similar experiences since the process begins during the students last two years of high school. Students, faculty and parents begin to plan where a student will be able to continue their education while considering the implications presented by a physical disability.

Once students with a physical disability enters higher education the range of services available does not only differ between the U.S. and England but specifically differs from college to college. In the U.S., it is the students' responsibility to disclose their disability to the designated authorities at the university in order to receive accommodations. Students typically do this upon acceptance to a postsecondary institution. Self-advocacy plays a critical role in a student receiving services since a university is not legally allowed to question a student about his or her need for services as

a result of a physical disability. In England, services for college students who are physically disabled can be instated anytime during their academic endeavor. Staff at the university will assist students in communicating their accommodations to faculty. Furthermore, financial assistance and help in seeking a personal aide is provided to students who are physically disabled and require help with personal care if they choose to reside on campus. No such service is provided by postsecondary educational institution in the U.S.

Limitations of this paper include sample size, lack of reported data at each university, variations between the information available on university websites and comparison between universities was flawed due to inconsistent availability of information. The sample was restricted to four universities due to the scope of this paper. Ideally, a minimum sample size should have been 30 universities for each category analyzed. Another technique that would have improved the analysis is a pairwise comparison where universities are match based on important criteria such as number of buildings, age of the structures, student population, and accessibility due to environmental and geographical concerns.

Surprisingly, the universities' approaches to the education of students who are physically disabled was not defined by the religious association of the universities. An inference could have been made that religiously-affiliated universities would have taken on a more humanistic approach to providing services to college students who are physically impaired. Despite the vast differences in overall accessibility for students with physical impairments that attended Harvard, Cambridge, Notre Dame and St Mary's, the numerical estimates of students with physical disabilities were approximately the same for all four universities. If more universities had been analyzed, or if more information was available regarding the physical accessibility of each campus the number of students attending could vary significantly from college to college. For example, if students with physical disabilities were aware of the challenges they face at a particular university, a lower percentage of students with physical disabilities might be expected to attend that university. Currently, perspective college students who are physically disabled are advised by their peers to investigate the physical limitations of each university they are considering.

Globalization of the services available to college students who are physically disabled is hindered in part as a result of the broad parameters used in defining what is considered a "reasonable accommodation". Additional limitations to globalization include disparities such as funding, terrain, attitude, locale, structures and available resources. Globalization of the education of the physically disabled college student is expected to continue to be in the forefront of educational change. Globalization of legislation and educational standards will be easier than globalization of the individual campuses. However, efforts must be made for the sake of consistence of equal access to postsecondary education for students who are physically disabled regardless of the obstacles that may arise.

References

- Brighton & Hove City Council. (2017). Transition planning for young people with a statement of SEN. Retrieved from <https://www.brighton-hove.gov.uk/content/children-and-education/childrens-services/transitionplanning-young-people-a-statement-sen>
- British Psychological Society. (2000). Learning Disability Definitions and Context. Retrieved from http://www.bps.org.uk/system/files/documents/ppb_learning.pdf
- Brock, C. (2011). Education as a Global Concern. [Book] New York, NY.: Continuum International Publishing Group, 2011.

- Cornucopia of Disability Information. (1992). Persons with Disability by Sex and Type of Disability. Retrieved from http://codi.tanucc.edu/graph_based/.demographics/.ewd/tables/table01.htm
- Derrington, T., Shapiro, B., & Smith, B. (2003). The Effectiveness of Early Intervention Services. Retrieved from <http://www.seek.hawaii.edu/Products/4-info-Binder/LR-Efectiveness.pdf>
- Dyslexia UK. (2017). Test. Retrieved from www.dyslexia.uk.com/test
- Florian, L., Rouse, M., & Anderson, J. (2011). "Education for All" in the countries of the United Kingdom. In M. Winzer & K. Mazurek (Eds.), *International practices in special education debates and challenges* (pp.67 – 86). Washington, DC.: Gallaudet University Press, 2011
- Forbes. (2017). University of Notre Dame. Retrieved from <https://www.forbes.com/colleges/university-of-nore-dame/>
- Gillard, D. (2011). Education in England: a brief history. Retrieved from <http://www.educationengland.org.uk/history>
- Harvard University. (2010). Fact Book:2010-2011. Retrieved from https://web.archive.org/web/20130418035745/http://www.provost.harvard.edu/institutional_research/harvard_fact_book_2010-11_web.pdf
- Harvard University. (2017a). General Accessibility Map. Retrieved from <http://map.harvard.edu/pdf/8.5x11%20Campus%20Map.pdf>
- Harvard University. (2017b). History. Retrieved from <https://www.harvard.edu/about-harvard/harvard-glance>
- Harvard University. (2017c). Harvard Medical School Accessibility Map. Retrieved from https://hms.harvard.edu/sites/default/files/assets/Sites/Facilities/files/ADA_AccessibleCampusMap.pdf
- Harvard University. (2017d). Resident Life. Retrieved from <https://aeo.fas.harvard.edu/housing.html>
- Higher Education Statistics Agency. (2016). 2015/16 Students by HE provider,level,mode and domicile. Retrieved from https://en.wikipedia.org/wiki/Higher_Education_Statistics_Agency
- Historic England. (2017). Disability History. Retrieved from <https://www.historicengland.org.uk/research/inclusive-heritage/disability-history/1945-to-the-present-day/>
- Hunt Institute. (2015). Evolution of the Elementary and Secondary Education Act. Retrieved from <http://www.hunt-institute.org/wp-content/uploads/2016/09/Development-of-the-Elementary-and-Secondary-Education-Act-August-2016.pdf>
- Kauffman, J., Hirsch, S., Barder, J., Wiley, A., & Barber, B. (2011). "Special Education Today in the United States of America" for All". In M. Winzer & K. Mazurek (Eds.), *International practices in special education debates and challenges* (pp.3 – 31). Washington, DC.: Gallaudet University Press, 2011
- Kim, H. W., Lee, J. (2016). The effect of accommodation on academic performance of college students with disabilities. *Rehabilitation Counseling Bulletin*, 60(1), 40-50. Retrieved from <http://journals.sagepub.com.ezproxy.lib.usf.edu/doi/pdf/10.1177/0034355215605259>
- National Center for Education Statistics. (2004). State compulsory school attendance laws. Retrieved from <http://www.nces.ed.gov/program/digest>
- Owers, C. (2016). Fourteen Notre Dame dorms lack wheelchair accessibility. Retrieved from <http://ndsmcobserver.com/2016/04/notre-dame-accessibility/>
- Parliament of the United Kingdom. (2001). Special Education Needs and Disability Act 2001. Retrieved from https://www.legislation.gov.uk/ukpga/2001/10/pdfs/ukpga_20010010_en.pdf
- Right Diagnosis. (2017). Diagnostic Tests for Learning Disabilities. Retrieved from http://www.rightdiagnosis.com/l/learning_disabilities/tests.htm
- Rotatori, A. F., Bakken, J. P., Obiakor, F. E., & Sharma, U. (2014). [Book] *Special Education International Perspectives: Practices Across the Globe Disabilities.: Insights from across fields and around the world.* (Vol. 28). Bingley: Emerald Group Publishing Limited, 2014.
- Schwarz, I., & Nippold, M. (2011). The Importance of Early Intervention for Infants and Toddlers with Disabilities and their Families. Retrieved from www.nectac.org/~pdfs/pubs/importanceofearlyintervention.pdf
- Silas, D. (2017). IEP – Individual Education Plan. Retrieved from <http://www.specialeducationalneeds.co.uk/iep---individual-education-plan.html>
- Skinner, E. M. (2004). College students with learning disabilities speak out: what it takes to be successful in postsecondary education. *Journal of Postsecondary Education*, (17), 91-104. Retrieved from <http://files.eric.ed.gov/fulltext/EJ876005.pdf>
- Special Education News. (2014). The History of Special Education in the United States. Retrieved from <http://www.specialednews.com/the-history-of-special-education-in-the-united-states.htm>
- St. Mary's University. (2017a). Accommodations: Dorms. Retrieved from <https://www.stmarys.ac.uk/student-life/overview.aspx>
- St. Mary's University. (2017b). Campus Map. Retrieved from <https://www.stmarys.ac.uk/contact/docs/2017-may-local-area.pdf>

- St. Mary's University. (2017c). Heritage and History. Retrieved from <https://www.stmarys.ac.uk/about/history-and-heritage/our-campus.aspx>
- Timmerman, C. L., Mulvihill, M. T. (2015). Accommodations in the college setting: the perspectives of students living with disabilities. *Qualitative Report*, 20(10), 1609-1626. Retrieved from <http://nsuworks.nova.edu/cgi/viewcontent.cgi?article=2334&context=tqr>
- University of Cambridge. (2017a). Accessibility Map: Downing Site. Retrieved from <https://www.disability.admin.cam.ac.uk/files/downingsite.pdf>
- University of Cambridge. (2017b). Accessibility Map: New Museum. Retrieved from <https://www.disability.admin.cam.ac.uk/files/newmuseumssite.pdf>
- University of Cambridge. (2017c). Accessibility Map: Sidgwick Site. Retrieved from <https://www.disability.admin.cam.ac.uk/files/sidgwicksite.pdf>
- University of Cambridge. (2017d). History. Retrieved from <https://www.cam.ac.uk/>
- University of the Highlands and Islands Moray College. (2013). Personal Learning and Support Plan Guidance for Students. Retrieved from <http://www.moray.uhi.ac.uk/students/study-support/PISP-Guidance.pdf>
- University of Notre Dame. (2017a). At a Glance. Retrieved from <https://www.nd.edu/about/at-a-glance>
- University of Notre Dame. (2017b). Campus Map. Retrieved from <https://www.nd.edu/visitors/campus-map/>
- University of Notre Dame. (2017c). Facts and Figures. Retrieved from <https://www.housing.nd.edu/undergraduate/general-info/facts-figures/>
- University of Notre Dame. (2017d). History. Retrieved from <https://www.nd.edu/about/history/>
- U.K. Department of Education and Learning. (2010). Definition of disability under the Equality Act 2010. Retrieved from www.gov.uk/definition-of-disability-under-equality-act-2010
- U.S. Department of Labor. (2009). The ADA Amendments Act of 2008: Frequently Asked Questions. Retrieved from <http://www.dol.gov/ofccp/regs/compliance/faqs/ADAfaqs.htm>
- U.S. Government Publishing Office. (2007). Title 34 – Education: Definition of Individualized Education Program. Retrieved from <http://www.gpo.gov/fdsys/pkg/CFR-2007-title34-vol2/xml/CFR-2007-title34-vol2-sec300-320.xml>
- Wechsler, D. (2014). Wechsler intelligence scale for children-fifth edition. Bloomington, MN: Pearson

Appendices

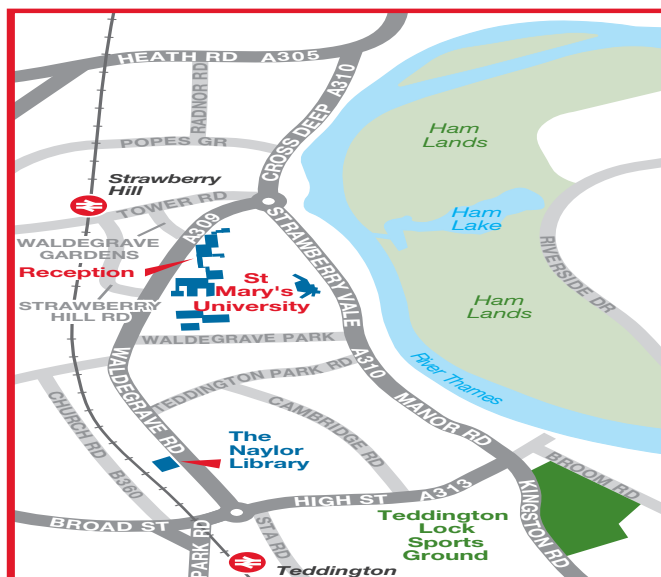
Appendix A



Appendix G



Appendix H



Global Learning Benchmark Integration Project at Corbett Preparatory School

Elaine C. Sullivan

Vice President, International School Connection

Abstract

In 2006 the not for profit International School Connection's (ISC) global community of educators approved its validated set of 10 Global Learning Benchmarks and recommended that these be a guide for developing students as capable global citizens while integrating global realities into their classrooms and schools. In March 2018 OECD's PISA added Global Competence to its examination of 15-year old in developed nations and adopted it as a vital set of basic competencies for K-12 students. The challenge for educators is to learn about the knowledge, attitudes, skills, values, and experiences essential for competence development in the formative years, and how to integrate these into the daily classroom life every year. In 2018, the ISC launched a project about integrating their Global Learning Benchmarks into today's classrooms and school unit at the private, K3-8 Corbett Preparatory School in Tampa, FL USA, and a study to examine the processes and find out about hurdles faced and successes realized in a year period. This paper is designed to more fully understand the urgency to prepare students as global citizens, share the Global Learning Benchmarks and their development, and report on learning from this study. The Project's information and insights will help ISC design systems on how to integrate the Benchmarks into the school and classroom to prepare students not only in the basics of the past but with the new realities of life. The ISC hopes this paper will inspire others to start efforts to prepare every student now and throughout the school years to become aware, participate in, and become responsible in the current and future global life.

Keywords: global citizen, global competence, global life

The not for profit International School Connection (ISC) Global Learning Benchmark (GLB) Integration Project of August 2018-June 2019 is designed to develop student global competence in a globally oriented school responsive to the changing needs and demands of a global context. And, the Project is a study of the implementation processes to gain insights for more effectively and efficiently integrating the GLBs in this and in other projects. Corbett Preparatory of Independent Day School of Tampa, FL (Corbett Prep or Corbett) the selected school for the GLB Project implementation is a private K3-8 school. The main goals of the GLB Integration Project are to 1) guide teacher development in using the ISC's Global Learning Benchmarks as a system to nurture each student's global competence, 2) create a Global Learning Center (GLC) orientation in the school, and 3) build an ISC GLB innovation for replication.

ISC Global Learning Benchmarks for Global Competence Development

The ISC Global Learning Benchmarks are designed to be used to increase each student's global competence. The GLBs' foundation evolved from the ISC's study of promising practices of successful globally-oriented schools worldwide. The GLBs provide the frame of reference for shaping the dimensions of student global competency within the classroom and in school life. The Benchmarks contribute to a student's fund of knowledge of *what it can look and feel like to be a capable global citizen* by providing substance to one's understanding of the meaning of global

competence. The GLBs generate opportunities to excite and invigorate conversations and thinking that raise the levels of insight about the capabilities needed to be successful in our complex global society. The GLBs provide essential information for setting criteria for student's to carry out positive appropriate practice. The ISC Global Learning Benchmarks platform also provides measures to a school on how to strategically set up the most effective and relevant processes for increasing each student's global competence, and then acts as a resource for including meaningful opportunities to practice and learn. The GLB platform brings all the pieces together for teachers and students to include practices to expand competency, and most importantly it stimulates new ways of thinking about becoming competent global citizens.

Global Competence

The Organization for Economic Co-operation and Development (OECD) through its findings of the Program for International Student Assessment (PISA) emphasizes that for individuals to thrive in our rapidly, ever-changing world they must develop global competence. Further, the OECD emphasizes that the global connections within the world society are so prevalent, dense, complex, and quickly changing that being a global competent individual is vital (www.oecd.org). The need for assessing global competence is believed to be so pressing that it is now included in the PISA 2018 assessment. The PISA survey assesses the key areas of math, science, reading, and now global competency. For 2018 some countries chose not to assess for global competency as they wanted more time to prepare their students.

The PISA adoption of global competence as a K-12 student capacity generates the challenge for educators to learn about the knowledge, attitudes, skills, values, and experiences students need during their formative years to nurture this competence. Since PISA also assesses for how well students can apply what they learn in school into real-life situations then it is critical for educators to create real-life type learning activities for developing competence in a globally oriented school environment. Additionally, it stressed that educators need to learn how to integrate this information into the daily classroom life every year for all students (www.oecd.org/pisa). The 2018 report by Piacentini, M., Barrett, M., Boix Mansilla, V., Deardorff, D. and Lee, H. W. titled *PISA: Preparing our Youth for an Inclusive and Sustainable World: The OECD PISA Global Competence Framework (2017)* points out that global competence is defined as a multi-dimensional capacity whereby “globally competent individuals can examine local, global and intercultural issues, understand and appreciate different perspectives and world views, interact successfully and respectfully with others, and take responsible action toward sustainability and collective well-being (p4).”

International School Connection History, Global Learning Center, and the GLBs

The International School Connection Inc. in its 25-year history as a global network of educators initially was a multi-national university collaborative; and, eventually it became a non-profit organization. Through these years principals and educational leaders in the ISC community collaborated to learn the best approaches to school development from scholars around the world, and from each other. The concept emerged of a school as a Global Learning Center (GLC) which is a school is designed to develop an individual student's global competence for success in this global age of living and working through a global oriented point of view for the learning activities, student experiences, and the school's processes and structures. The set of 10 ISC Global Learning Benchmarks (see table 1) were developed through the ISC's examination on how successful schools were addressing the new and many emerging global trends impacting schools, living, and

work. The emergence of the GLBs made it clear to the ISC leaders and community that a GLC model guided by the Benchmark framework was vital in creating the change in schools needed for preparing global competence in students (Snyder, 2006).

ISC Global Learning Benchmarks

I. The Global Learning Environment for Students Cluster

- GLB 1: The curriculum provides opportunities to learn about local and global forces that influence change.
- GLB 2: The school as a growing system has a vision and a plan to connect with the 3 global community and its dynamic forces.
- GLB 3: Educators participate in professional development activity in a globally networked environment to promote learning.
- GLB 4: Partnerships with local, regional and other global businesses enhance the direction of school development.
- GLB 5: The school annually shows evidence of improving or sustaining student performance levels, using multiple local, regional, or international measures.

II. Student Preparation for Success in a Global Environment Cluster

- GLB 6: Current knowledge about human learning guides teaching and learning practices throughout the school.
- GLB 7: International projects or programs are included in the school's curriculum to promote global learning opportunities for all students.
- GLB 8: Students are developing capacities for success in the evolving global workforce, which includes emerging technologies.
- GLB 9: Students learn and use democratic decision-making processes that value diversity, and promote equity and the appreciation for human life as foundations for becoming global citizens.
- GLB 10: Students demonstrate an orientation for caring about the human community and its sustainable development.

ISC GLBS and Systemic School Organization

Over time the ISC leaders also recognized that a systemic approach to sustainable schooling was critical for any successful, school improvement process (Snyder, K. J., Acker-Hocevar, M., & Snyder, K. M., 2000). Through the years it was noted by the ISC Inc. community that Corbett Prep, one of many schools participating in ISC activities and also an endorsed ISC GLC, continued to grow as a cohesive systemic organization, where the latest innovations are integrated into its programs while continuing those that supported student success over the years. Corbett's successful work processes and the high level of excellence of its' students in multiple types of measures confirmed to the ISC Team that a systemic approach to sustainable schooling was also needed, rather than a focus only on the global features of a school's development.

The ISC with more focused work on the GLBs then expanded its student's global capacities concept by building on the OECD/PISA's global competence literature. The ISC also incorporated into its platform the United Nations' Sustainable Development Goals (SDGs) as the primary

challenging issues individuals need to study to take action as a responsible global citizen (www.un.org/sustainabledevelopment/sustainable-development-goals/).

International School Connection 2018

When the ISC renewed its Florida and U.S.A. not-for-profit status in 2018 it updated its aim, mission, vision, and purpose to reflect the belief that the ISC needed to promote a Global Learning Center program while stressing the school's development as an integrated and interdependent system. With this in mind, the Aim of the ISC is “*for students during their schooling years to become competent and caring citizens within a global society.*” And, the updated ISC Mission is “*to promote sustainable schooling for a global age.*” The ISC is now preparing to offer to school leaders around the world programs guided by the ISC GLB framework and a systems approach that supports school sustainability. These programs include 1) an International School Partnership Program, 2) a Global Learning Center Support System, 3) a *Leadership for Sustainable School Development* Training program, 4) Becoming a Global Learning Center Training, 5) Training in *More Options for Results in Education* (M.O.R.E.), 6) professional development services and resources of the model school Corbett Prep School, and 7) the International School Study Visits Program (www.ISCnow.org).

ISC GLBs Build Global Competence

The ISC believes that their ISC GLBs are significant and relevant for schools to use in developing the global competence of future generations. The ISC further believes that the GLBs can, are, and should be used to guide the creation of learning environments to develop each student's global competence in this increasingly complex and interconnected global society. (Sullivan, E. C., Snyder, K. J., and Fitzgerald, J., 2010).

In schools, global competence can simply be interpreted as students having the age-appropriate capacity and attitude to understand global issues and to take action from a global perspective as noted by the work of the Asian Society Center for Global Education in partnership with the OECD. Some critical trends causing the need for students to increase their global competence are 1) the global and local economy's impact on employability skills, 2) a more multicultural world requires new and different perspectives and interactions, 3) technology exponentially impacts how we live and work, 4) effectively communicating through old and new media is required, and 5) careful and full examination of challenging issues identified in the UN Sustainability Goals are needed to take considered action for world sustainability.

GLB Framework Guides Lesson Planning

Using the GLBs as a framework, schools can create powerful and significant global context connections within their lessons and in school life for students to learn and practice in environments similar to the real world to prepare students in ways to address these critical demands. Globally oriented learning environments also afford students the opportunity to include experiences that “value diversity, and promote equity and the appreciation for human life as foundations for becoming global citizens” as noted in GLB 9 (see table 1). In GLB 10 (see table 1) students “demonstrate an orientation for caring about the human community and its sustainable development.” The GLBs are practical guides for crafting the building blocks of the multi-dimensional capacities of the global competence students need to practice to get ready for a future often not imagined. These multi-dimensional parts can be shaped for a school when its staff asks

these questions about global competence: 1) What should a student know? 2) What should a student be able to do? 3) What should a student be like? This ISC Global Learning Benchmark Integration Project is designed to use these prompts to guide teachers and staff in designing practical lesson plans, learning events, and school activities within a significantly relevant global context with appropriate real-life learning activities to expand a student's knowledge, skills, attitudes, and values (www.ISCnow.org).]

Development and Validation of the ISC Global Learning Benchmarks

The ten Global Learning Center Benchmarks each contain five Characteristics to increase clarity, and the ten are subdivided into two Clusters of five Benchmarks. The Clusters are 1. *The Global Learning Environment for Students* and 2. *Preparation for Success in a Global Environment* (see table 1). These Benchmarks represent the identified practices of promise from globally oriented schools around the globe which resulted from the ISC community's observations and dialogue over several years about what successful schools are doing differently in preparing students for the global age. During this time the GLB work was guided by this inquiry premise:

- *If these [new] patterns are to provide pathways to a more responsive learning*
- *experience in schools in preparing youth for new adult roles, then how might*
- *the ISC foster school development in this global direction?*

The ISC investigation found in schools from around the world that eight distinct trends existed that demonstrated a global orientation. These trends are highlighted in GLB 1-4, 6-8, 10 (see table 1). Local ISC Hub members and leaders continued to exchange ideas and perspectives about possible Benchmarks unique to the eight trends we could all support. At the 2004 Ottawa ISC Summit, the ISC set forth the idea of creating schools as *Global Learning Centers* guided by the ISC GLBs. ISC inquiry about the Benchmarks continued to determine if any major areas of schooling had been omitted, resulting in the addition of a global and local student performance statement as GLB 5 (see table 1). After the GLC Portfolio Review for Ottawa's A.Y. Jackson Secondary School, the first Certified GLC School, another Benchmark, GLB 9, (see table 1) was added about respect for diversity (ISCnow.org).

When the 10 Global Learning Benchmark statements were finalized in 2006, the ISC conducted a validation study among the ISC global community by creating a rating system to determine the importance, clarity, and meaning of each Benchmark. Additionally, several open-ended questions were established to determine agreement among the international ISC community about GLB interpretation and use within a school. The instruments were sent to all ISC participants, and then the data was analyzed. This process was completed once more to provide opportunities to work out clarity and mutual understanding of the interpretation among the various countries. The open-ended questions provided needed anecdotal information about each Benchmark and about the 10 collectively to work through possible issues before finalizing for use across the world. Through these open-ended questions, it became apparent that descriptors and dividing the GLBs into clusters would make a difference in multinational use and interpretation. In 2005 the Ottawa, CA Hub members used big theme ideas for each GLB to help staff in preparing for A. Y Jackson Secondary School's ISC GLC Certification. These big theme ideas became the foundation of the Benchmark Characteristics. The ISC validation study resulted in 10 Benchmarks (see table 1) which were formally approved as the ISC Global Learning Benchmarks at the 2006 ISC Spain Summit (Sullivan and Fitzgerald, 2006).

ISC GLB Integration Project Methods

The 2018-2019 ISC Global Learning Benchmark Integration Project at Corbett Preparatory of Independent Day School is intended to develop student global competence and to create a Global Learning Center oriented school responsive to the changing needs and demands in a global context. And, it is a study to learn about hurdles faced and successes of the Project's implementation processes realized over one year. Corbett Prep accepted ISC's proposal to become the pilot Integration Project School. The following information in this section detailing the Project was summarized from the GLB Integration Project Report prepared for the Corbett Leadership Team (Sullivan, 2018). An ISC and Corbett Prep team designed a research-based GLB Integration Project with these main goals to 1) guide teacher development as guided by ISC's Global Learning Benchmarks in nurturing each student's global competence, 2) create a Global Learning Center orientation in the school, and 3) build an innovation for replication that nurtures global competence. This Project's focus is to increase the global relevance of lessons and learning activities to develop an individual's global competence needed for successful living and working in our complex global setting.

Project School Selection

Corbett Preparatory a pre-K3-8 private school was selected for the Project because of continued progress over the years made as a participant in ISC activities and as a holder of the ISC Global Learning Center Certification. Equally important for the selection was that the ISC Team saw Corbett as an example of a dynamic system capable of responding both to internal and external conditions. And finally, Corbett also had close relationships with many ISC countries and participants having hosted many ISC events, School Partnerships, School Visits, and Summits. Over the years the Headmaster guided Corbett into becoming systemic in its functions as the school continuously integrated the latest innovations into its practices and addressed local challenges. This systemic approach while continuing to raise the bar of excellence led ISC leaders to believe Corbett Prep could become a *Sustainable School for a Global Age* model.

Data Collection

The ISC GLB Integration Project data collection method is to determine the current use and frequency of occurrence of the GLBs in the classroom and everyday school life. The Benchmarks are used to offer relative measures of how a school responds and adapts to local and global conditions, and creates a global lens to help make sense of information and to make informed decisions. The data analyzed from the key implementation activities described below provides information about GLB use. These data sets along with other relevant information generate perspectives about themes and patterns within and across teams and divisions, and for the school as a unit. This Study also provides significant information about Project replications.

The ISC Team works with Corbett Prep staff to determine ways to integrate the GLBs rather than having the Benchmarks as an *add on*. The key Project implementation activities are 1) Workshops, 2) the Global Learning Benchmark Tool administration, 3) GLB Examples reported by teachers per trimester, 4) Focus Groups with teaching teams/departments, 5) GLB School Project Administrator Meetings, and 6) Teacher Weekly Reports. The Project's progress thus far includes three workshops, two rounds of Focus Groups, completion of the Teacher Weekly Report, two rounds of submitting the Global Learning Benchmark Examples, the Global Learning Benchmark Tool baseline administration, and School Project Administrator Meetings. Each activity as

appropriate either is on Survey Monkey or in a paper form, each with ISC established protocols. Brief descriptions of these implementation activities are presented next.

Workshops

The Workshops with active learning activities provide information to staff to develop a solid knowledge base of the ISC Global Benchmarks framework, the Global Learning Center concept, the definition and dimensions of global competence, how to integrate the GLBs, and the global context's *compelling why*. There are four workshops: a three-hour Introduction Workshop about these concepts and three one hour workshops that focus on feedback about using the Benchmarks, finding ways to make new opportunities, and learning to face challenges of using the Benchmarks. The workshop staff reports outs were used as anecdotal data.

Global Learning Benchmark Tool

The Tool consists of the ten GLBs and their five Characteristics written as prompts with a 5-point Likert scale. Each staff member is asked to rate his/her perception of the GLB frequency of occurrence in his/her classroom by selecting the Rating Scale number that best represents how well each statement describes the occurrence. The Rating Scale measures from a low of 1 to a high of 5 with the following Rating Scale descriptors: 1 -- Never Occurs, 2 -- Occasionally Occurs, 3 -- Frequently Occurs, 4 -- Consistently Occurs, and 5 -- Always Occurs. A school baseline percentage rating of occurrence was determined by combining each teacher's rating on each point of the Rating Scale.

Global Learning Benchmark Examples Collected by Trimester

The GLB Examples describe a GLB lesson, unit, or project taught that are prepared by each teaching team or individual middle school teacher. This "Example" information written within established guidelines illustrates how the Benchmarks are used in the classroom. The GLB Examples are analyzed for themes and patterns to provide Corbett staff feedback and research data for the ISC. These examples are included in the ISC's GLB Resource Bank.

Focus Groups

The Focus Group, a group interview based on dialogue, was used to collect anecdotal information, and to stimulate staff's thinking about using the GLBs. A protocol was created to provide consistency among the groups. The ISC Team conducted Focus Groups in November and in March with each teaching team to learn about faculty feelings, thoughts, and perspectives on GLB integration into classroom life. The 'Big Picture' information about what the ISC is learning about their Benchmark integration was shared to Corbett Staff.

GLB School Project Administrator Meetings

The GLB School Project Administrator Meetings provide insights from another school-based perspective on what is happening with the various teams as they integrate the Global Learning Benchmarks into the curriculum. These Meetings provide another view about the progress and the challenges faced by the teams.

Teacher Weekly Reports

These Weekly Reports provide information on the Benchmark(s) teachers select to integrate into the lesson, the topic of the lesson/unit/project, and the student learning activity, the Corbett Prep curriculum, and teacher satisfaction with the lesson's results. The staff answers prompts about the GLBs satisfaction with this 5 point Likert scale 1. Not Well at All, 2. Not Well, 3. Neither, 4. Very Well, and 5. Extremely Well.

Prompts were analyzed based on the frequency with each teacher's response for each question converted to a simple percentage of level of success, and anecdotal information is also compiled for themes and patterns to provide other information.

Data Findings of Project

The general findings are collected from the following means: 1) Global Learning Benchmark Tool #1 Administration, 2) Focus Groups, and 3) Teacher Weekly Reports. The information from the workshops, Project School Administrator Meetings, and the GLB Examples is used to provide other data sources. A more detailed mid-year findings report individually and across methods was prepared for the ISC Team and for Corbett Prep; a year-end report will be completed in June 2019. In this paper, only the midyear 'Big Take Aways' are shared below.

GLB Tool Data Big Picture Take Away

At the start of the ISC Project at Corbett GLB Project, the staff's collective perception of the ISC GLBs' use was determined through the ISC GLB Tool baseline #1 administration. Corbett known as a professional development school with highly trained staff was reflected in their GLB 6 (see table 1) rating about their use of "Current knowledge about human learning guides teaching and learning practices throughout the school." Major highlights about students were pointed out in GLB 5c which mirrored their student performance and achievement data in that students are recognized for demonstrating "high levels of performance in a variety of ways, in addition to standardized tests." Further, Corbett staff focuses on their students' emotional development which was highlighted in their GLB 9 (see table 1) rating about learners "using democratic decision-making processes that value diversity, and promote equity." Some areas of challenges were the use of international resources and trends (GLB 3e and 9b & d) and focusing on career-related international competencies (GLB 7b & d), as well as integrating the GLBs instead of adding them on to current work.

Focus Group Data Big Picture Take Away

Teachers expressed many times during the Focus Groups that "kids at Corbett are preparing to be globally oriented, and so the GLB Project fits." Many teams shared the general feeling that teams had a variety of challenging start-up experiences, but that teachers are more conscious about global ideas now. A coaching element emerged during the Focus Group process, and the ISC Team determined the coaching piece needs to be appraised for its role in future projects. There appeared to be a *before and after* the workshop and Focus Groups attitude expressed by staff: "Until the workshop yesterday we were doing what we normally do in lessons, and then reflecting on how they fit with the GLBs." "Now we will be intentional in our planning... This feels manageable." From all quarters of the Corbett School there appeared to be a sense of the combined curricular functions of the IB program and the GLBs along with the understandings that the faculty have with

how they fit together as a whole.“ GLBs are viewed as a starting point for planning, and then guide us in how to integrate global learning into our school and classrooms.” “With the GLBs, our program will be richer in relation to big concepts and perspectives.” “The Workshop on student GLBs gave us the student perspective, which will help us plan for expanding student engagement.”

Teacher Weekly Reports Data Big Picture Take Away

The Report’s reporting format changed in December to better reflect the number of “Ns.” Also, the data summary switched from a prose style to numerical one which provided a clearer method of analyzing and reporting data. The GLB lesson teacher satisfaction rates of 80-90% rates continued to appear as high as or higher than the first survey period (Sullivan, E. C, Fitzgerald, J., and Snyder, K. J., 2019).

Observations Emerging in the Project

The Project concludes in June 2019, therefore only observations determined from the Project start through the midyear activities are shared now. An end of the year report will include conclusions and other topics. Over the year more GLB integration and thoughtfulness can be observed in the lesson planning and delivery, and in everyday school life activities. In the mid-year, the teams were at varying levels of use and integration of the ten GLBs; and, overall staff was in the readiness stage of innovation adoption. The intentional use of the GLBs increased, and more focus occurred on developing global competence in planning lessons and activities. Preliminary findings point out that at the readiness stage of implementation additional time was needed for more in-depth professional development activities about the GLBs and the global context’s *compelling why* to more effectively and efficiently put into practice the Benchmark integration. The ISC Team is also examining the need to use other data collection techniques to gain more information on what is actually occurring in the classroom or school, and will also evaluate the data collection design effectiveness. Midyear data analysis pointed out that there is a need to move to more student engagement with the GLBs to establish individual ownership in developing global competence. The Next Steps for Corbett staff will be to continue using the GLB integration strategy to establish an even more robust global mindset while creating relevant global learning environments full of real-life oriented activities (Sullivan, E. C. et al, 2019).

This Project’s information on implementation and GLB integration ideas in the curriculum, in student learning tasks, and school life will be an additional resource for the ISC participants at schools worldwide now working with using the GLB framework to develop learning environments that prepare students for global living and working in a sustainable world. The information and insights gained from this Project will help ISC and its partners design systems on how to more effectively integrate the GLBs into the school activities and classroom to prepare students not only in the basics of the past but for the new realities of life in this global age. The ISC GLB Integration Project already makes obvious that schools do not need to expend large amounts of money, use massive amounts of resources, or require a curriculum *add on*, etc. to vigorously prepare each student to handle the changing demands of his/her life. The ISC’s practical approach of integration in the GLB Project demonstrates that the average teacher can provide the environment and activities for each student to develop global competence and become a responsible global citizen! This ISC project provides a path for schools to intentionally and habitually nurture each student’s global competence every day and every year, as well as creating a strong global orientation within the school.

References

- Asia Society/OECD. (2018). Teaching for global competence in a rapidly changing world Retrieved from <https://doi.org/10.1787/9789264289024-en>
- International School Connection. (2018). Tampa, FL: International School Connection. Retrieved from www.ISCnow.org
- Organization for Economic Co-operation and Development [OECD]. (2018). *2018 PISA*. Retrieved from www.oecd.org/pisa
- Organization for Economic Co-operation and Development. (2018). *PISA 2018 global competence*. Retrieved from www.oecd.org/pisa/pisa-2018-global-competence.htm
- Piacentini, M., Barrett, M., Boix Mansilla, V., Deardorff, D. and Lee, H-W. (2017). *Preparing our youth for an inclusive and sustainable world: The OECD PISA global competence framework*. Retrieved from <https://www.oecd.org/education/Global-competency-for-an-inclusive-world.pdf>.
- Snyder, K. J. (2006). Schools becoming global learning centers: A challenge and opportunity for our times in Wingspan Journal, Fall 2, 1.
- Snyder, K. J., Acker-Hocevar, M., & Snyder, K. M. (2000). *Living on the edge of chaos: Leading schools into the global age*. Milwaukee WI: ASQ Quality Press.
- Sullivan, E. C. (2018). *The ISC global learning benchmark integration project with Corbett Preparatory of IDS: Project portfolio of services*. Tampa, FL: International School Connection.
- Sullivan, E. C., & Fitzgerald, J. (2006). *GLC certification global learning center application booklet*. Tampa, FL: International School Connection.
- Sullivan, E. C., Fitzgerald, J., & Snyder, K. J. (2010). *A report: Global learning benchmark integration project Corbett Preparatory School August 2018 - January 2019*. Tampa, FL: International School Connection.
- Sullivan, E. C., Snyder, K. J., & Fitzgerald, J. (2010). *Becoming a global learning center school: A professional development program*. Tampa, FL: International School Connection.
- United Nations (n.d.). *Sustainable development goals* (N.D.). Retrieved from www.un.org/sustainabledevelopment/sustainable-development-goals/

Preparing Globally Competent Students: The K-12 Schooling Challenge

Karolyn J. Snyder

President

International School Connection, Inc.

Abstract

The overarching purpose of schooling now is to prepare every student, every day and year in the knowledge, attitudes, behaviors, values, and experiences that are required to live and work in a simultaneous local/global world. A new dynamic was created for education institutions worldwide when OECD's PISA declared that Global Competence was a set of basic skills, adding a new set of test items to its March 2018 administration to over 70 nations. With this new challenge, the inclusion of global learning into the daily life of a school takes on a new urgency. Working with educators around the world, the International School Connection, Inc. is designing fresh programs to help school leaders reframe school development systems toward a global purpose, and work with teachers to integrate global learning into daily life in classrooms. This paper reports the global realities for preparing competent and caring global citizens, along with the new ISC programs and services that are designed to help school leaders and teachers rethink and redesign schooling for this global era of living and working.

Keywords: global competence, global learning, global citizen, school connections, global schooling

Introduction

The global community now is so interconnected and complex that every feature in today's lives is influenced by its resources and opportunities, as well as its threats and sustainability challenges. Over the years this global dynamic has created a primal shift of power and opportunity to gain advantage and/or to create islands of sustainability that are both local and global. Mounting layers of complexity have led to a new kind of thinking and action in all work environments, whether it be politics, finance, trade, agriculture, climate change, supply chains, or war. It is time that educators everywhere take up the challenge to transform schooling, with a curriculum and learning systems that will adapt to the evolving web of life. Within this global context of rapid change and continuous learning, the schooling mission necessarily shifts to preparing globally competent youth to engage in and shape the future of the planet. This is both the challenge and the opportunity before us as educators.

The purpose of this paper is to highlight the mounting demands of educators to prepare students as competent global citizens, which draw from international organizations as well as from the changing nature of living and work in the emerging global environment. This global context provides the back drop for the work of the International School Connection, Inc. a not-for-profit organization in the USA to provide programs and services to educators and their students for adding *global learning* to the basic daily curriculum of the school. It is anticipated that this example of assistance to educators around the world may inspire many others to respond to the global schooling challenges of this age.

Global Transformations

The global transformations today will without a doubt influence the successful preparation of youth for simultaneous local and global working and living. What global forces are stimulating the *global competence* pressure on schooling, and adding complex challenges for educators? What are the challenges for which students must be prepared? Essentially, students must be equipped with the dynamic new work processes that are rapidly changing careers and jobs, no matter the purpose or focus of work. The organization itself now resembles little of the 20th century bureaucracy and its management, for demands now include 24/7 work responses within local and global contexts, and in both face-to-face and digital environments that promote both worker entrepreneurship and accountability. Life has become too complex to continue with old habits of mind and work, requiring instead rapid collaborative adaptations to new conditions. If a sustainable global community is now an aim, as many are promoting, plans for the future need to be grounded in assumptions about the sustainability of education and its co-existence with healthy and vital national and international agencies and the business community (Halinen, 2017).

The forces that are creating this complex global dynamic for living include human sustainability challenges along with a dense web of global politics and commerce. In response new jobs, careers and work patterns within networks and organizations are altering fundamental traditions of working and making a living. Ban Ki-Moon, former Secretary General of the UN urges that “Sustainability is the pathway to the future we want for all.” <https://www.un.org/sustainabledevelopment/?s=ban+ki-moon+Sustainability+is+the+pathway+to+the+future+we+want+for+all>). The human challenges of the world now include the 17 global sustainability goals that the United Nations has identified, to which all nations as well as schools are expected to work toward by 2030, such as water, climate, food, and inequity (<https://sustainabledevelopment.un.org/?menu=1300>).

Another human challenge for living is the global networked society that Castells (1997) predicted over 20 years ago would emerge through the technology revolution, with multinational and transnational enterprises, global networks of capital, management and information. Emerging new jobs and careers have multiplied since that time, requiring new kinds of competence that build upon the past and integrate possibilities thinking, innovative work processes, along with collective critical examination (<https://www.cnn.com/2012/01/04/21st-Century-Jobs.html>). The world of work itself is shifting in fundamental ways: from a profit and results orientation to purpose, from hierarchies of authority to networks with collective responsibility, from controlling workers to empowerment and invention, from planning toward results and outcomes to experimentation and promise, and from privacy of work to transparency at all levels (Chakhoyan, 2017). With these major developments, new values, attitudes and competencies for work are also emerging.

Many organizations that have quickly adapted to these major changes are being influenced by the Quality Management movement to create a customer focus with continuous improvement of services and products as the driver of work (ISO 9000 <https://asq.org/quality-resources/iso-9000>). Workers are more involved now at all levels of organization in using information to guide decisions and invent more promising systems of work. The practices of management control are no longer sufficiently flexible for an organization to respond to the rapid pace of change today. In its place has emerged core values, which create the foundations for the systems of work in organizations, and which permeate the interdependency of all work functions.

The Global Schooling Challenge

Global forces at work are raising the bar for quality education and worker competence at all levels. UNESCO's challenge to education was given recently by Irina Bokova, the Director General: A fundamental change is needed in the way we think about education's role in global development, because it has a catalytic impact on the well-being of individuals and the future of our planet (<https://news.un.org/en/story/2014/11/483212>). Now more than ever, education has a responsibility to be in gear with the 21st century challenges and aspirations, and foster the right types of values and skills that will lead to sustainable and inclusive growth and peaceful living together" (www.unescodoc.unesco.org).

To inform educators of the capacities now required in the workplace, the World Economic Forum advanced three clusters of 21st century skills as a new vision for education, increasing the complexity of school learning and assessment in fundamental ways (<https://www.weforum.org/agenda/2016/03/21st-century-skills-future-jobs-students/>). The first skills cluster is the foundation capacities of literacy, numeracy, and scientific and cultural literacy, which reflect the basic curriculum of the 20th century. The second skills cluster is a set of essential competencies that include complex problem solving and critical thinking, creativity, communication and collaboration. The third, and newest skills cluster to the schooling curricula, identifies essential character qualities, which guide how students approach their changing environment and interact with others. These qualities include curiosity, initiative, persistence, adaptability, leadership, and social and cultural awareness.

The aim of a rather new initiative in the United Nations, called Decade of Education for Sustainable Development challenges educators to promote and improve the integration of education for sustainable development into strategies and action plans at all levels, for all countries (<https://en.unesco.org/education2030-sdg>). The UN urges that the content for school learning needs to become its 17 Global Sustainability Goals, which requires rethinking learning environments that prepare students to act for sustainability and societal transformation. We need to change the way we think and act to create quality education and learning for sustainable development, so that we can learn to live together sustainably. The UN's program empowers people to change the way they think and work together towards a sustainable future, so that sustainable development can be integrated across the curriculum!

The pressure to transform the environment and content of school learning has mounted again with the declaration of OECD's PISA that Global Competence is a new set of basic skills, as evidenced in the March 2018 administration of its Exam to 15 year-olds in 70+ developed nations. What is global competence? PISA defines Global Competence as the capacity to examine local, global and intercultural issues, to understand and appreciate the perspectives and world views of others, to engage in open, appropriate and effective interactions with people from different cultures, and to act for collective well-being and sustainable development, <http://www.oecd.org/pisa/pisa-2018-global-competence.htm>

Although some countries chose not to administer the global competence test items in the March 2018 administration, this declaration by PISA moves the topic of global learning from the fringes of school life into its center: the curriculum, which is the basic knowledge and skills that are taught and tested. The aim of OECD's Education2030 is to fund the answers to two questions: 1) What knowledge, skills, attitudes, and values will today's students need to shape and thrive in their world in 2030? and 2) How can instructional systems develop their knowledge, skills, attitudes and

values effectively? PISA argues that Learning to participate in interconnected, complex and diverse societies is no longer a luxury but a pressing necessity. (<http://www.oecd.org/pisa/pisa-2018-global-competence.htm>) The new PISA exam section provides a framework for nurturing global competence among young people world-wide, using the three levels that Schattle (2008) put forth in his work: *The Practices of Global Citizenship*.

- *Awareness Level*: Awareness of oneself and the outside world, a global consciousness. Citizenship is a dynamic relationship among strangers who are transformed into neighbors, whose commonality derives from expanding consciousness rather than geographic proximity,
- *Responsibility Level*: Strengthening solidarity across humanity for values and for redressing the enormous imbalances that exist; notions of belonging with democratically accountable public spaces and respective ethics of responsibility for an evolution of public space.
- *Participation Levels*: Contributing to the political or social life of a community, whether it is local or global, that focuses on voice and activity. Political action influences the practices and decisions of governing institutions with calls for accountability and reform.

Big Ideas for the Transformation of Schooling

How do educators conceptualize schooling today in this rapidly changing global context, whether it be the curriculum, organization, learning systems, planning or accountability to other agencies? To adapt to the complexities in the world today, the focus for schooling will necessarily become students and their competence development. Leaders will drive work toward this purpose as people organize in new ways to stimulate learning for a global age of living. Simply adding global competence, or other skills now needed will fail to sustain a school's performance in modern times. What is needed is rethinking the schooling purpose and processes of work toward a new end: preparing students for a complex global age of living and working.

In a recent multi-site research study of industrial mid-level managers, it was found there to be a lack of dialogue among leaders about what is leadership, what is culture, and what is meant by values in the organization (Snyder, Backstrom, & Ingelsson, 2018). Middle managers continue to be prisoners of a crisis management orientation, and need methods by which to create a culture of engagement and proactive development. Big ideas about systems of work and their leadership can alter the crisis management pattern, and elevate the organization to more sustainable results.

Consider a few clues from physics for rethinking school leadership, organization, development, the curriculum, and learning systems. Gone will be isolation in any form, as well as silos of work. Communities of professionals working together toward new kinds of purposes will reshape the concept of schooling for this global age. This is a story about energy, for unleashing it within schools to reshape the systems of learning and working, is not only possible, it is essential to a sustainable future.

A Systems Approach to management entered the picture over 70 years ago to promote a shift in focus from small groups to the organization as a whole, where workers began to function interdependently within and across units toward a common purpose (Kast & Rosenzweig, 1974). In this view of organizations as living systems, workers linked together across groups to herald in an era of interdependence of work toward common goals (Snyder & Anderson, 1986). Separate functions began to connect, which had a surprising impact on organizational outcomes.

Researchers identified the impact of collaboration within and across teams in ways that effected professional performance and success patterns. With multiple professional perspectives and disciplines viewing the same challenges, a new dynamic was created that led to higher levels of organizational resilience. In time the assembly line mentality (the machine) began to fade with a growing interest in the potential of a System's perspective for promoting growth (a living organization). Fritjof and Luisi, in their recent book *The Systems View of Life: A Unifying Vision* (2016), argue Systems Thinking is now vital as a way of life for the sustainability of communities and nations, and their schools.

The Quality Revolution has an impact on organizations as managers shift their focus from goals and evaluation to the customer and a continuous improvement agenda for programs and services. In the early 1990s our research team worked with school districts in the Tampa Bay area of Florida around systemic and quality principles for school development (Snyder et. al, 2000). What emerged was a model of Quality Management for education settings that continued an holistic and systemic approach to development, and included the basic tenants from Deming (1986) and Juran (1989). In a research study of schools in the Pasco County School District in Florida, which had integrated system thinking and quality management practices for some time, Snyder (1997) found that schools with the highest levels of Quality Management practices in use were schools with significantly higher student achievement pattern, as measured on State tests. A student focus towards the integration of work systems shows promise for schools.

Chaos Theory offers perspectives on how natural systems change over time, which enables leaders to guide an organization's development using principles found in the emergence of living, growing systems of all kinds (Snyder et al., 2008). The idea is to stay tuned to the environment and adapt to the growing complexity of life. Sustainability, a more recent valued concept, has emerged as a premier global drive for development in every feature of life, with emphasis, at long last, on the importance of creating sustainability in education institutions as a building block for the future (Halinen, 2017). Building upon the sciences, sustainability is defined here as the responsiveness of living systems to changing conditions over time. The physics of Chaos Theory can influence our thinking about the natural dynamic process of change in living systems, such as schools, which is a departure from static bureaucratic practices.

Toward sustainability aims, Networking Science plays a vital function within organizations and their growth over time. Duncan Watts observes that complex networks live between chaos and order and are driven by their purpose (2003). Key features of networks include hubs of collective work that are connected to other hubs, and to smaller clusters of other important work for the network. Links that exist between and among hubs and clusters enable the network to grow in unpredictable and sustainable ways (Barabasi, 2003). We can now hypothesize that sustainability over time emerges from healthy, growing networks of human activity around a unifying purpose! Human networks emerge from a unifying purpose, along with independent and voluntary links, and with multiple leaders. The unifying purpose, systems of work, processes, values, and procedures, are all central to consistency across a network. These vital features prompt new pathways to open and enhance life within the network.

Recent studies reveal that purpose-driven organizations tap into the basic interests of their workers to create energy for innovation and continuous improvement (Quinn & Thackor, 2018). Networking, both outside an organization, as well as internally, is becoming a natural way of responding quickly and effectively to emerging challenges. A scale-free network of activity is a complex cluster of interconnectivity, which includes hubs that dominate network activity, along

with smaller clusters of work that support and are connected to hubs and many other clusters (Buchanan, 2002). The distinction between various existing systems of school work (learning communities, teams, departments, houses, specials), for example, and networks is the connecting links that function between and among them.

Multiple leaders, rather than a few, are characteristic of networks, where power comes from the unifying purpose and a specific function that advances the organization. A surprising find is this: The more complex the network, the fewer fluctuations there are in its performance and growth; the most stable type of network is complex (Buchanan, 2002). More simple networks are found to be more vulnerable and less sustainable in performance and growth. Complexity is a good thing, it seems, for it grows naturally in a healthy network, strengthens its structure as a living system, and leads to durability and sustainability over time.

Given these foundations to organizational development in recent decades (Systems Thinking, Quality Management, Chaos Theory and Sustainability, and Networking Science, let us now consider vital assumptions, foundations, and conditions that are necessary for transform schooling for this global age of living and working:

a. *The Organization:*

- is a living, growing system
- becomes its own dynamic energy force
- embraces systems thinking, where everything is connected
- engages in the global working and learning environment

b. *The Organization's*

- work systems are interconnected
- focus is on the customer, its purpose, and the empowerment of workers
- goals link to continuous professional development
- challenges drive improvement strategies
- professional development program promotes high levels of competence and performance
- growth is sustainable over time

c. *Positive energy drives the culture of continuous improvement*

d. *Everyone owns the organization's development journey*

The International School Connection, Inc.: A Response

The International School Connection, Inc. (ISC) was launched 25 years ago when globalization emerged as a rather new phenomenon (Snyder et al., 2008). Beginning as an international network of educators across the globe, the ISC initially organized events for school leaders to learn with and from each other about school-based management, and exploring the links between school development and globalization. Two on-line graduate programs were launched in the College of Education at the University of South Florida, called Global Organizational Development, which were offered through the ISC to students from Sweden, Russia, Venezuela, and the USA. An on-line global community emerged for those graduate students, and from other ISC school leaders and academics from around the world to explore the opportunities of a global context to schooling.

In time it became clear that the focus of school development within a global context needed to shift from school development itself to preparing students as global citizens. Working with the ISC global community during three annual global summits, and online communications, the Global Learning Benchmarks (GLBs) emerged as a set of ideas to guide educators in preparing students as global citizens during the K-12 school years (Sullivan, 2019). In time the final set of GLBs was validated with this global community, generating a platform for helping school leaders guide their school's development as a global learning center. The ISC shifted its attention eventually to support school partnerships where teachers and students from different time zones and cultures studied challenges together that were both local and global.

In 2017 the ISC launched a new era of services to schools around the world with its purpose: to help K-12 educators prepare their students to become globally competent to support a sustainable global community. ISC programs were either updated, redesigned, or created anew to provide teachers and school leaders with the knowledge and skills to create new school cultures and mindsets of learning for sustainable living. Our new platform was built upon two challenges: OECD's new PISA Exam with the items on global competence, and UNESCO's challenge to education to rethink its role in global development. The foundation of all our programs is the big ideas we have drawn from systems thinking, quality management, chaos theory and sustainability, and networking sciences. These big ideas provide a solid foundation to the task of rebuilding the education of youth in school environments.

Five New ISC Programs

ISC Program 1: School Partnerships

School partnerships provide easy access for students and teachers to life in another part of the globe, with its traditions, customs, and challenges. Students always find similarities between their partners' lives and their own, and come to celebrate in many ways the new connections. Often exchange programs evolve, as well as visits, friendships, and long term relationships. These are the building blocks for becoming a global citizen.

Schools everywhere are asking questions about how to prepare young people for success in this new century. Given the rapid growth of new knowledge about human learning, and the global context of living and working, schools are likely to become very different from 20th century models. The global learning environment will become increasingly important in school development as students engage more actively across curriculum, time, age groups, and national boundaries. In a school that becomes a Global Learning Center, informed decisions and intentional actions are guided by data from Benchmarking to global standards.

In 2006 over 50 schools participated in international partnerships with the ISC. A report was published in 2011 by the leaders in three school districts whose schools were engaged in a three-way partnership: Stockholm Sweden, Pasco County Florida USA, and Shenzhen, China (Snyder, Mann, Johnson, & Xing, 2010). Currently 20 schools are engaged in partnerships from China, Australia, Finland, Sweden, and the USA. Plans are being made for linking together more schools in China, Spain, Finland, Sweden, Canada, USA, United Arab Emirates, and India. Partnership communications occur in many formats: Email, SKYPE, websites, WeChat, WhatsApp, and Facetime, where students and teachers exchange messages and work with each other, as well as share videos and other products from their work.

The ISC is building a data base of schools around the world whose leaders express interest in their students and teachers connecting with the same in a school from a different part of the global community. The GLBs promote school connections across borders for educators and students to learn about global realities, conditions, and sustainability challenges. The ISC provides a service of linking schools together. School partnerships are guided by the Global Learning Benchmarks to facilitate planning for developing student global competence. Teachers and students select a focus for their work together, such as music festivals, sports, climate challenges, water challenges, literature, science, and so on. Some school partners are already working together on selected United Nations Sustainability Goals (<https://sustainabledevelopment.un.org/?menu=1300>):

- | | | |
|----------------------------|-------------------|---|
| • Poverty | Energy | Climate Change |
| • Hunger and Food Security | | Economic Growth Oceans |
| • Health | Infrastructure | Biodiversity, Forests |
| • Education | Industrialization | Desertification |
| • Gender Equality | Inequity | Peace, Justice |
| • Women's Empowerment | Cities | Strong Institutions |
| • Water Sanitation | | Sustainable Consumption Partnerships & Production |

We anticipate featuring student partnership projects on the ISC website (www.iscnow.org), and also in future global conferences.

ISC Program 2: Global Learning Benchmark Integration

During the 2004 ISC Global Summit in Ottawa, CA, the idea of GLC Benchmarks emerged and a decision was made to establish Global Benchmarks for Schools as Global Learning Centers, which were develop over two years and then validated in 2006 (Snyder et. al., 2008). The Benchmarks were to become guides in school development processes of a school becoming a Global Learning Center, and as the framework for an ISC Global Learning Center Certification System. The ISC's Benchmark development was guided by this inquiry premise: "How might the ISC foster school development in a global direction?"

The Global Learning Center Benchmarks

The ISC Global Benchmarks are organized into two Clusters: (1) The Global Learning Environment for Students 1 (2) Preparation for Success in a Global Environment. There are Ten GLC Benchmarks with five Benchmarks in each Cluster (Snyder et al., 2008). Each Benchmark has five characteristics for further interpretation and clarification. These Benchmarks represent the best practices and ones of promise from other globally oriented schools around the world.

Cluster 1: The Global Learning Environment for Students

1. The curriculum provides opportunities to learn about local & global forces that influence change.
2. The School as a growing system has a vision and a plan to provide opportunities to connect with the Global Community & its dynamic forces.
3. Educators participate in professional development activity in a global networked environment to promote learning and exchange.
4. Partnerships with local, regional, and/or global businesses enhance the direction of school development.
5. The School has achieved high student performance results using either local, regional, and/or international measures.

Cluster 2: Preparation for Success in a Global Environment

1. Current knowledge about human learning guides learning practices throughout school life.
2. International projects are included in local curriculum to promote global learning opportunities for all students.
3. Students are developing capacities for success in the evolving global workforce, which includes emerging technologies.
4. Students in Global Learning Centers learn & use democratic decision making processes, peace building strategies, & practices for ethno-cultural equity as guides & foundations for becoming global citizens.
5. Students demonstrate an orientation for caring about the global community and its sustainable development.

A centerpiece of the ISC work is making possible a school community's development of students for success in this global age of living and working. In a Global Learning Center the student is the focus of attention, and the Global Learning Benchmarks are the strategic drivers of school development. The GLBs give a school community a relative measure of their preparedness for students to respond and adapt to local and global trends.

Global Learning Benchmark Support System

The Benchmarks make up the foundation of the ISC Global Learning Center Support System which has six elements:

A. The GLB Diagnostic Tool was created to assist educators in developing schools as Global Learning Centers. The Tool provides a relative measure of how globally responsive the school is in its processes and environment. The analyzed data becomes the basis for Strategic Action Planning and Implementation, and provides information to operationalize the Benchmarks into the school's life and that of all classrooms.

B. The GLC Training Program facilitates a shift in thinking and acting to a global orientation. The training program provides new knowledge and tools for working together while using ISC Global Benchmarks to shape schools as Global Learning Centers. The program also focuses on developing Strategic Leadership and Thinking for All.

The Training Program Outcomes are to:

1. Develop a school leadership team for working together to become a Global Learning Center school
2. Develop a working knowledge of the global context of schooling for preparing students as world citizens.
3. Create a vision and a working plan to guide school development that is grounded in the ISC's Global Learning Center (GLC) Benchmarks.
4. Promote the GLC Benchmarks as an orientation to active, essential and enduring learning.
5. Acquire a model for school development that is based on Systems, Chaos and Complexity sciences.
6. Develop a digital culture with emerging technologies for learning and communication.
7. Become an ISC Network School.

C. Coaching and facilitation guide a school's Leadership Team to become a global learning center. The ISC creates an inquiry-oriented environment to guide using school data for organizing change initiatives

D. A 5-Step GLC certification process includes: Application, Discovery, Recognition, Certification, and Re-certification. After a three-year period based on a portfolio and an ISC representative school visit, a School is recertified as a Global Learning Center.

In 2007 the A.Y. Jackson Secondary School in Ottawa, Canada became the first certified ISC Global Learning Center School. The award was given at the Annual ISC Global Summit that year in Beijing, where students and teachers shared features from their school portfolio for each of the ten Global Learning Center Benchmarks.

ISC Program 3: More Options for Results in Education Training (The M.O.R.E. Approach)

The M.O.R.E. Approach training program prepares teachers and school leaders to create brain-friendly learning environments to accelerate the learning process. The M.O.R.E. Model, developed over the years by J. Swartzman (Cohen, 2003) has been the core set of values and practices of the Corbett Preparatory School, in Tampa, Florida. Educators in Spain and China have also been trained in the M.O.R.E. Approach over the last several decades, with trainers now in each country.

The Seven Components of the M.O.R.E. Model

- Component 1: Child-Centered Vision, which facilitates a more joyful and effortless learning community by leaning heavily on the change process and lessons neurobiologists to accelerate learning.
- Component 2: Appreciating the Uniqueness of the Learner focuses on how people intake and process information through learning preferences. This is the foundation for creating a learning environment in which all students are able and expected to succeed. Academic, behavioral, social and emotional styles are included.
- Component 3: Motivational Strategies to Increase Time on Task are used by teachers to make full use of an array of brain-friendly strategies and gimmicks to capture student interest, mix fun into the learning process and bring learning to life.
- Component 4: Creating Dignity and Respect, using a Positive Mental Set and positive phrasing are at the heart of all interactions. Faculty and staff work to focus on what they want people to know or do. Having a positive approach involves choosing options and seeking solutions, rather than creating and dwelling on obstacles. Core values are emphasized along with specific communication skills to support an environment that adds credence to the power of dignity and respect.
- Component 5: Teacher Presence, Making Connections supports the long-held belief that the teacher makes the difference in setting the tone, culture and academic success in the classroom. Teacher presence represents the nonverbal behaviors and mental set that send a message to the student about the teacher's intention, subconscious confidence and ability to make strong connections with the learner.
- Component 6: A Learning Community is grounded in the use of cooperative learning models, team instruction and communication strategies that enhance group dynamics to

create a synergistic, cohesive and successful learning community. A vibrant learning community includes teachers, parents and students in the process.

- Component 7: Curriculum Development is the intention to engage meaningfully while creating a comprehensive framework for classroom application. At its heart is the use of multiple learning strategies woven into a seamless plan that can lead to elegant teaching and insightful learning opportunities.

ISC Program 4: Leadership for Sustainable School Development (LSSD): A Training Program for School Leaders

LSSD Training was first developed for the Pasco County School District in Florida in 2006. Since that time over 600 school level and school district administrators have completed the 10-module/one year training program. The program gave the school district a common set of values, along with a common language and collaborative work systems and processes to create sustainable schooling results. In 2018 LSSD was updated completely to reflect the global context and dynamics of current global conditions. Today this 10 module training program is offered both online by the ISC through Drake University for four hours of graduate credit, and also from a 10-day on-site delivery program, over the span of a school year.

The LSSD Program develops leadership capacities for systemic and sustainable school development to foster the preparation of youth for success in this global age of living. The program fuses together the concepts of systems thinking, sustainability, quality management, chaos theory, the human networked organization, and global competence as essential elements for leading schools in this global age.

Participants in training create a learning organization environment together with common purposes, goals, work organization and assumptions about continuous improvement. Credit for participation in the LSSD Training Program includes continuous engagement, practice of each LSSD Dialogue and Group Research Tools, an electronic portfolio, and a final presentation of what has been learned during training about creating and leading a sustainable schools for all students.

The LSSD Training Program is designed to promote the integration of school functions: (a) visionary strategic leadership, (b) planning and cooperative work systems, (c) human resource and professional learning systems, (d) 21st century curriculum, (e) student learning communities, and (d) a global learning culture. These six work clusters comprise a theoretical map of the whole school's work culture, which is driven by common values and priorities.

The 10 training modules guide learning as a system of interdependent practices, and include the following concepts and theoretical foundations:

1. Global Transformations and Systems Thinking
2. Chaos Theory of Change for Sustainable Futures
3. Disequilibrium as the Target for Change
4. Developing a Shared Vision and Plans
5. Systemic Systems of Work: The Networked School
6. Professional Learning Communities
7. Student Learning Communities
8. Students and Educators as Global Citizens

9. Benchmarking Progress

10. The Impact of My LSSD Journey—Participant Presentations.

To facilitate the continuous improvement of the school's systems of work, and to make productive use of the conceptual and theoretical foundations of the Program, the following dialogue and group research tools are taught in training and then practiced in a school setting:

• Brainstorming	The Basics	Mini DDT
• Leverage Point Analysis	Delphi Dialogue Technique	Strategic Planning
• Case Study Technique	Strategic Funnel	Network Building
• Benchmarking Progress	The World Café	Force Field Analysis

Together these theoretical and conceptual bases, combined with dialogue and group research tools, equip school leaders to guide school development processes continuously toward the successful preparation of competent and caring students for a local and global future. Sustainability is the growth of a living system as it responds to changing conditions THE AIM!

ISC Program 5: International School Study Visits

International School Study visits promote learning for school leaders and teachers about features of high performing schools in another country, which promotes global learning and inspiration for transforming existing school work systems for a global future. The ISC has facilitated successful international school visits over the decades in Sweden, Finland, Ontario Canada, Russia, China, and the USA (particularly in Florida). The International Study Visits Program offers school leaders and teachers an opportunity to spend up to a week visiting high achieving schools in other countries. The purpose is to facilitate learning about other schooling practices that can reinforce and inspire new ways of viewing school development in this global age of living for preparing students for success as global citizens.

Currently an international school study visit prototype is being developed with a school district near Helsinki, Finland for private school leaders in Spain. The ISC leadership team is working together with the Finnish school district leaders and the Spanish representative to create a week long study visit prototype, to provide a rich learning experience for all involved educators. In time this prototype will be expanded to include high performing schools in at least Canada, Spain, the USA, China, Sweden, and others in Finland. A personalized school study guide is prepared for visitors to consider eight features: 1) similarities and differences between schools; 2) outstanding school features and initiatives; 3) global learning activity in the classroom, and throughout the school; 4) student success patterns; 5) systemic thinking throughout the school; 6) strategic leadership at various levels; 7) evidence of possible school sustainability; and 8) fresh ideas to consider for school development.

Conclusions

The dramatic human challenges, the emerging nature of work and careers, and the rapidly changing adaptations to the organization of work and its leadership creates the urgency for schooling everywhere to adapt to these rapidly changing, complex times. The international agencies of the UN, UNESCO, OECD, and PISA have given a clarion call to transform the purpose and practice of schooling everywhere. The International School Connection is one example of the kind of support system for educators that can provide connection systems along with programs for

acquiring the knowledge, skills, attitudes, and values for shifting to a global orientation for the education of young people.

School Partnerships link students and their teachers with others across the world to learn together and from each other. The Global Learning Benchmark System provides a practical guide for teachers and school leaders to elevate learning to a global stage, both historically and currently. The M.O.R.E. Model prepares teachers and instructional leaders to create brain-friendly, nurturing learning environments for student, with an emphasis on both emotional and social development. The LSSD Training Program prepares school leaders in a systemic approach to school development that embraces quality leadership, global competence development, networked organizations, and continuous professional development. The International School Study Visits offer opportunities for teachers and/or school leaders to learn about exemplary schooling in another country that encourages professional thinking and learning that is both local and global.

Preparing students to promote sustainable global development and living throughout their lifetime is now the challenge for educators everywhere. Hopefully the ISC story will encourage others to begin connecting educators and their students with the drama that now is unfolding on the global stage of life.

References

- Barabasi, A.-L. (2003) *Linked: How everything is connected to everything else and what it means for business, science and everyday life*. New York, NY: Penguin.
- Buchanan, M. (2002). *NEXUS: Small worlds and the groundbreaking theory of networks*. New York, NY: W. W. Norton.
- Capra, F., & Luisi, P. L. (2014). *The systems view of life: A unifying vision*. Cambridge, UK: Cambridge University Press.
- Capra, F., & Luisi, P. L. (2016). *The systems view of life: A unifying vision* (Reprint ed.). Cambridge, UK: Cambridge University Press.
- Castells, M. (2000). *The rise of the Network Society: The information age: Economy, society and culture* (Vol. 1, 2nd ed.). Oxford, England: Blackwell.
- Chakhoyan, A. (2017). Is the era of management over? Retrieved from WWW.weforum.org/agenda/2017/12/is-management-era-over
- Cohen, D. H., & the Faculty and Staff of Corbett Preparatory School of IDS. (2003). *It's all about kids: Every child deserves a teacher of the year*. Tampa, FL: Bee Happy Publishing.
- Deming, W. E. (1986). *Out of crisis*. Cambridge, MA: MIT Press.
- Halinen, I., (2017). *The conceptualization of competencies related to sustainable development and sustainable lifestyles*. Paris: IBE UNESCO International Bureau of education. No.6
- Juran, J. M., 1989, *Juran on leadership for quality: An executive handbook*. New York, NY: The Free Press, a Division of Macmillan.
- Kast, F. E., & Rosenzweig, J. E. (1974). *Organization and management: A systems approach* (2nd ed.). New York, NY: McGraw Hill.
- Quinn, R. E., & Thakor, A. V. (2018). Creating a purpose-driven organization. *Harvard Business Review*, July-August, 78-85.
- Schattle, H. (2008). *The practices of global citizenship*. New York, NY: Rowman & Little.
- Snyder, K. J. (2017). *Sustainable schooling for a global age*. Retrieved from www.iscnw.org
- Snyder, K. M. (1997). *A construct validation and reliability estimation of the Educational Quality Benchmark System*. Retrieved from Proquest Dissertation and Theses A&I. (304367789)
- Snyder, K. J., & Anderson, R. H. (1986) *Managing productive schools: Toward an ecology*. Orlando, FL: Harcourt, Brace and Jovanovich.
- Snyder, K., Acker-Hocevar, M., & Snyder, K. M. (2000). *Living on the edge of chaos: Leading schools into the global age*. Milwaukee WI: ASQ The Quality Press.
- Snyder, K., Acker-Hocevar, M., & Snyder, K. M. (2008). *Living on the edge of chaos: Leading schools into the global age* (2nd ed.). Milwaukee WI: ASQ The Quality Press.

- Snyder, K. M., Backstrom, I., & Ingelsson, P. (2018). Using design thinking and support for values-based leadership for sustainable quality development. *Business Process Management Journal*, 24(6), pp. 1289-1301.
- Snyder, K. J., Mann, J. I., Johnson, E., & Xing, M. (2010) Schools without borders: The global partnership project. *Innovation Magazine*, Fall 2010, 5-13.
- Sullivan, E. (May 2019). The Global Integration Project at Corbett Preparatory School. Presentation made at Global Conference on Education Research in Sarasota, FL.
- Watts, D. J. (2003). *Six degrees: The science of a connected age*. New York, NY: W. W. Norton.

Language and Intercultural Education

Nianyu Guo

Doctoral School in Humanities and Science
The University of Modena and Reggio Emilia, Italy

Abstract

This purpose of this paper is to attempt to identify and explain the relationship between culture and language by giving a closer look at the role intercultural communication plays in language learning and acquisition. This paper begins with an explanation of the reasons why the concept of culture needs to be addressed. The first section focuses on interpreting culture from anthropological and cognitive perspectives, whereby paving the way for expatiating on the relationship between culture and language. The second section gives an exhaustive analysis of Karen Risager (2006)'s pioneering insights into culture and language; for she demolished the traditional view of the relationship between cultural and language by arguing that language and culture are separable. Then, the third section turns spotlight on pedagogy, mainly dwelling on how to foster intercultural competence in educational sphere. (Scollon, Scollon, & Jones, 2011) discourse approach to interpreting intercultural communication will be detailed. Based on Michael Byram (1998)'s model of intercultural communicative competence; the fourth part may take a further step to expound on the way of developing intercultural awareness and competency by paying particular attention to the role that tele-collaboration plays in improving intercultural competence.

Keywords: culture, intercultural competence and pedagogy, computer-mediated communication

Introduction

An array of traditional literatures views culture as a conglomeration of the ideologies and material subjects of a society's collective value system; incorporating beliefs, cuisine, clothing and a number of other factors. Yet, none of these perceptions of culture are clear and thorough. With such an ambiguous conceptualization of culture, researchers may carry preconceptions when they conduct culturally related empirical studies. They painstakingly devote themselves into data analysis, drawing on conclusions which, whilst plausibly rational at first sight, fail to stand up to rigorous testing. A priori assumptions, in most cases, do not correlate with the real situation. If researchers continually conduct researches with pre-assumptions, the results of these studies are doomed to be biased and less significant. In this sense, if a researcher needs to undertake an examination into the relationship between language and culture or between language learning and intercultural communication, the first and foremost step is having an exhaustively complete conceptualization of culture. Only in this way can s(he) have objective and critical analysis.

Literature Review

Although the concrete definition of culture may be an issue left open to debate, it roughly can be interpreted from two perspectives, namely, anthropological and cognitive perspectives.

The Anthropological Viewpoint

From anthropological perspective, culture is the product of human intervention and unaffected on biological influence. This argument gains favor in the book *Culture as Praxi*, written by Zygmunt Bauman (1999), a sociologist who categorized culture into three dimensions, amongst which the generic concept of culture should be mentioned. Baumann defined culture as “the human mode of being-in-the-world...is supplied with two essential instruments---tools and language”. However, his elaboration on culture was rough and non-systematic. Taking a similar position, Claire Kramsch (1998) succinctly pointed out that culture was the human products in the biological process of nature and was not related to biological time. Taking influence from a poem by Emily Dickinson, she purported that nature is to culture what petals are to the essence of a rose. Nature may become deteriorated as petals may wither. By contrast, culture may remain unaffected by time as it can be regarded as a kind of heritage (visible or invisible), being passed down on generations through institutions, such as media and school. (ibid.) However, what Kramsch did not articulate is that, notwithstanding biological changes, nature can remain just as unaffected as culture. Regardless of battles, disasters and so on, nature is always there and exists eternally. In fact, culture is parallel to nature and can be analyzed from an ecological perspective. This point of view serves as an inspiration to her book *Language Acquisition and Language Socialization: Ecological Perspectives* (2014).

As mentioned earlier, culture can be conceived as representations of human activities, yet it does not mean that it is monolithic and unchanged, rather it is also evolutionarily orientated. This conceptualization of culture is rooted in Darwin’s theory. However, it was Franz Boas that offered new insights into the anthropological conceptualization of culture, drawing sociology into the picture of cultural evolution. Under the anthropological umbrella, there comes the third conceptualization of culture. That culture is not only evolutionarily oriented, but also sociologically bound. Boas discarded the monolithic view that culture was generally evolutionary and underwent a series of hierarchical stages towards civilization. Instead, he emphasized that culture as a whole, should be construed only in specific contexts or in ethnic groups. That is to say, it is only when one has a clear understanding of specific cultural contexts that he or she can grip with the essence and the features of culture. (Moore, 2000)

As can be seen, culture, from an anthropological perspective, can be construed as hierarchically evolutionary and sociological related. The first interpretation of culture can be seen as ushering in the second one whose main tenet is construing culture as knowledge, frames and being emotionally tuned.

The Cognitive Viewpoint

From cognitive perspective, culture is viewed as knowledge and consciousness. This understanding of culture was first captured in the book *Language, Thought and Reality* (1956) By addressing Newtonian space, time and matter, (Whorf, 1956) highlighted that culture and language were regarded as common sense or intuition. Unfortunately, Whorf failed to deal with the concept of culture systematically nor did he articulate that culture was more than intuition. He simply made a sharp analysis of the differences and similarities between Hopi and SAE (Southern American English) from the perspectives of time and kinesthesia. W. Goodenough (1964) took this concept further by associating culture with knowledge and consciousness:

Culture, being what people have to learn as distinct from their biological heritage, must consist of the end product of learning: knowledge, in a most general, if relative, sense of the term. By this definition, we should note that culture is not a material phenomenon.It does not consist of things, people, behavior, or emotions. It is rather an organization of these things that people have in mind, their models for perceiving, relating and otherwise interpreting them. (pp. 36-65)

Although this cognitive concept of culture is far from clear, it proves to be the basis of Byram's model of intercultural communicative competence. Amongst which knowledge is an integral component, being culture-laden and able to the conduit for intercultural communication. As for Byram's model, it will be discussed later.

Admittedly, both Whorf and Goodenough construed culture as thinking patterns, a sort of knowledge that determines the way in which individuals perceive the world. Yet, neither of them explicitly pointed out that culture can be clusters of knowledge; the synergy of a set of beliefs, values and traditional norms that are shared by a variety of social groups. This interpretation has been acknowledged and praised by Kövecses who argued that culture was frame-based and could be regarded as models. "...that culture can be defined as a collection of shared understanding represented by frames and cultural models.". In the book *Communication Power* (2009) Manuel Castells concurred with the viewpoint that culture could be defined as frames. Against multicultural and globalized backdrop, (Castells, 2009) clarified the amorphous and frame-based concept of culture by categorizing it into global culture and local cultures. He pointed out that the global culture was "a culture of protocols" (in Castells' terms, 36), being shared by network society whereas local cultures are heterogeneous and diversified, being shaped and reshaped during the process of historical and geographical development. (ibid.) Similarly, this prototypical concept of culture is also mentioned in the literatures of Edward Hall and Geert Hofstede. In respect to cultural dimension, (E. T. Hall, 1976) roughly decomposed it into two parts which can be construed as two "frames". They are high context versus low context. In high context, the ideas conveyed by interlocutors are always implicit. Only when one draws inference from their shared knowledge can he or she understand the meaning of the message. On the contrary, the information delivered by speakers in low context is explicit and it is not necessary to draw on background knowledge for the purpose of interfering the meaning of the information articulated (Flor & Juan, 2010). Likewise, Hofstede (2005) underpinned collectivistic and individualistic tendencies in terms of cultural dimensions. He echoed the ideas of Hall, positing that individualistic tendency is applicable in the groups who pursue rights and liberty while collectivistic tendency manifests itself in the individuals who give priority to collectivistic interests over theirs. (Hofstede & Minkov, 2005) It cannot be denied that Hall and Hofstede deal with culture in systematic fashion. Nevertheless, their standpoints of culture are, to some extent, monolithic and dichotomous. This kind of claim may lead to untenable arguments which may not be applicable to explaining cultural related phenomena, particularly in a world where cultures tend to be diversified and ever-changing. Moreover, Hofstede's theories and contentions may gain favor in business domain whereas in pedagogical field they cannot be used to elaborate on the relationship between culture and language

Nevertheless, the "frames" aforementioned are not pre-shaped principles or rules to which one may adhere, but rather are emotionally tuned, which in return may influence the ways in which individuals construe situations:

"It is our emotional attitude to the situation that leads us to frame the situation in a particular way...we choose different words in debates because we profile them against different frames." (Kovecses, 2006) Thus, from my standpoint, the importance of emotional characteristics of culture

should not be underestimated. Emotions are a kind of biological response contributing to shaping peoples' thinking models. This in turn, influences the way in which people adapt themselves to various scenarios. "Emotion is conceptualized cross culturally. Studies in numerous languages show emotions to be thought of as a personal response that mediates the episodic scenes and events of everyday life." (Kitayama & Markus, 1994). In addition, emotions are also the carriers of cultures, acting as prisms through which one can know diverse cultures. This argument was pronounced soundly in the groundbreaking book *Emotions across Languages and Cultures: Diversity and Universals*. Anna Wierzbicka (1999) in this book claimed that the way of expressing emotions varied from culture to culture. She gave an exhaustive analysis of the argument by comparing the emotion-laden lexica in Anglo American culture and Polish culture respectively. Through analyzing the denotation of anger in English and Polish, she asserted:

An apparent basic and innocent concept of anger is in fact linked with a certain culture of models and so cannot be taken for granted as a culture-free analytical tool or as a universal standard for describing human emotions. (Wierzbicka, 1999)

Therefore, emotion is correlated with cultural models and different cultures may channel different concepts of emotions.

In conclusion, culture can be mainly interpreted from two angles, viz. anthropological and cognitive perspectives. In the light of anthropology, culture can be construed as generic, evolutionary and sociological oriented. When it comes to cognitive viewpoint, culture is viewed as knowledge, frames and emotion-laden.

Critical Relations Between Language and Culture

As mentioned earlier, semantics, as one of the representations of language, plays an indispensable role in describing culturally related phenomena. So, language is closely tied with culture.

Language Is Inseparable From Culture

What should be noted is that the relationship between language and culture is complicated, and subsequently can be interpreted in many ways. The majority of literatures viewed language and culture as profoundly interconnected. In most cases, language is considered as "the window" through which one could learn another's culture and socio-cultural norms. In short, language reflects culture. This interpretation resonated with that of McWhorter (2014). He criticized Whorfian tradition, which postulates that language might influence people's thinking patterns and vice versa. He acutely pinpointed that language merely reflected culture but not the other way around (Kramsch, 2014). From a semiotic perspective, language can be viewed as linguistic signs mirroring culture. An emblematic study can be Vygotsky's conceptualization of internal language. According to Vygotsky (1978), inner language is a system of signs, acting as cognitive mediator transforming external information into inner psychological mechanism. The psychological mechanism (perception, attention and memory) acts as mediator linking children and sociocultural world where there are abundant semiotic resources. A case in point was caregivers' language whose meanings were gradually understood by children. In a similar vein, Zhabayeva (2014) emphasized that language, in its spoken and written forms, mirrored culture:

For native speakers, the dominant symbolic code will be their language which is divided into spoken and written forms. The language will reflect the cultural reality and social codes diachronically.(para. 222)

From semantic - pragmatic perspective, language can be construed as metaphorical-cognitive interface which reflects culture. Moser (2000) pointed out that one of the values of metaphors was reflecting social and cultural possession of understanding. This point of view is compatible with that of Kövecses who postulated that metaphors emerged themselves in socio-physical practice and was the epitome of culture.

In addition, language does not only reflect culture but also facilitates culturally relevant communication and conceptualization. Barker and Galasiński (2001) hypothesized that figuring out how language can be used in specific contexts might contribute to cultural understanding. Joan Kelly Hall (2012) pointed out that the sociocultural aspect of language is the major tool enabling individuals to fulfill their goals:

A sociocultural perspective on human action locates the essence of social life in communication. Through our use of linguistic symbols with others, we establish goals, negotiate the means to reach them, and reconceptualize those we have set. (pp. 8-9)

Besides, language per se is powerful and ideologically gated. It serves culturally permeated communication in a way of enabling people to articulate personal identities and manage their membership in social communities. In the book *Culture and Language*, Claire Kramsch (1998) succinctly illustrated the relationship between culture and language by emphasizing that language served as a tool disclosing power and hegemony. She postulated that language was the spokesman of the powerful and the powerless shaping and reshaping cultures. “Both words and their silences contribute to shaping one’s own and others’ cultures” (para. 9) This viewpoint is compatible with that of Holliday. Revolving around the two pairs of dichotomous concepts, viz. Periphery versus Center and “othering” versus “us”. Holliday (2010) opined that language could be the channel through which the hegemonic culture exercised power and control while the unnoticed and powerless cultures struggled against the dominant and powerful identities.

Language Is Separable From Culture

However, as previously mentioned, language and culture can be separable. A linguist who champions this view is Karen Risager. Backing on Ager’s concept of “*linguaculture*” and Friedrich’s concept of “*linguaculture*”, Risager (2006) acutely pinpointed that it is from the psychological perspective that language and culture can be related with each other. Risager, first and foremost, illustrated Ager’s version’s *linguaculture* by pointing out that “*lingua*” refers to discourses whereas “*culture*” to cultural related phenomena. Then, she developed Ager’s view further by drawing sociolinguistics into the picture of language and culture. Risager’s contention that language and culture were separable was strongly indebted to earlier proposals of “Copenhagen School” and Saussure tradition whose main center of interest is linguistic semiotics. She concurred with Harder’s arguments that language can be considered either as linguistic structures (forms) or content-laden ones. Based on the arguments aforementioned, Risager explained the reason for which language can be independent from culture. From the angle of references, language is separable from culture. She argued that language, as a sort of linguistic form, could be linked to culture only under the condition that both the language and the culture are at the basis of the first language. “These lexicalizations are part of the common *linguacultural*

recourses that have been developed in the various social networks.” (para.166) She articulated that language could be used either in the first language dominant context, or in other contexts dominated by other foreign languages in a way of claiming that there is no one-to-one mapping between language and culture. Language, as signs as a whole, can refer to anything. By anything, it refers to both cultural-related entities and imaginary ones:

...and it is important to underlie that there is no determining relation between linguistic practice in a particular language and its potential to refer to specific cultural and social conditions: linguistic flows can go anywhere and link up with any form of context and discursive content (para. 167)

From the angle of cultural representations, Risager argued that the first language could not denote the meanings permeated in foreign language dominant contexts. She stressed that only the first language acts as the basis for people to obtain cultural related experiences in a first language environment. To put it simply, it is the first socialization that links language with culture:

But this (the inseparability between language and culture) can happen only because at the same time one is subject to a first-language bias and therefore only considers each of the languages in its capacity as first-language. If, as a Danish speaker, one reads a text about Denmark but in a language that is foreign language to one. eg. French. There is not a necessarily a basis for such an experience (i.e. an experience of a unity between French language and French ‘content’) (pp.168-169)

It cannot be denied that Risager’s study about the relationship between language and culture is path-breaking in that she thought outside the box by proposing that language could be separable from culture. To support her point of view, she introduced the concept of “languaculture” in an attempt of distinguishing it from the traditional and amorphous definition of language. Furthermore, she considered any possible explanations about language in an effort of interpreting it from three perspectives; namely the sociological point of view; the psychological point of view and the system-oriented point of view. Her unconventional arguments contribute greatly to research concerning language and cultural pedagogy. This is evidenced by Risager’s identification of the culturally related difficulties that L2 learners encounter when they engage themselves in intercultural activities. According to her, the reason why L2 learners fail to tackle intercultural issues is that they are incapable of grasping the cultural references and representations of the foreign language. Italian gestures can be a case in point. In this sense, Risager’s contention that language can be separable from culture provides conceptual toolkit for researchers who devote themselves into intercultural studies. Nonetheless, Risager’s arguments, which seemingly challenged the orthodox view of language and culture, are far from being unconventional. In other words, her claim that language was separable from culture did not completely cut the umbilical cord of the traditional viewpoint, as she also admitted the inseparability between language and culture. Yet, she elucidated the inseparable relations only under the condition that language can be reckoned as “languaculture”.

Language Learning and Intercultural Communication

After expounding on the relationship between language and culture, it is necessary to move from language and culture, to language and intercultural communication.

When it comes to intercultural communication, one of the most recognized studies should be that of Scollon, Wong Scollon and Jones (2011) In one of their intercultural studies, they suggested

that culture should be understood as a verb because they deemed that the two concepts language and culture fused into one. By “a verb”, it does not refer to a single verb at grammatical level, but rather to discourses. Subsequently, they interpreted intercultural communication to be inter-discourse communication. On the one hand, discourses are regarded as a set of sociological systems including a concoction of different identities, such as sexual identities, professional identities and so forth (see a discussion in Holliday, 2016) Discourses can also be understood to be cognitive systems. Each different group has its own different cognitive system, which manifests itself into different thinking patterns, different ways in which people treat others and so forth. (pp. 268-270) Hence intercultural communication can happen between groups, whilst each still has its own distinct discourse, as well as cognitive and sociological systems. Individuals in each group share cognitive and sociological traits, however, these traits are not pre-established. Instead, they emerge themselves during the process of interaction. Thus, Scollon, Wong Scollon and Jones appealed that one should pay more attention to what people are doing, or which tool they may deploy when they interact with one another, rather than painstakingly describing the concept of culture itself and analyzing people’s behaviors based on the culture that they belong to. (para. 5) In addition, they coined the term “cultural tools” in a way of replacing the loosely used word “tools” in traditional literatures. The cultural tools can be either visible or invisible, and language is just one kind of tool in its abstract form.

Scollon, Wong Scollon and Jones’ assertions contributed greatly to cultural studies. They enriched the concept of culture by interpreting it as discourse systems varying from one situation to another. In the book *Intercultural Communication---A Discourse Approach*, they discarded the essential and reductive viewpoint respectively in favor of a constructive approach to analyzing intercultural communication. They first dismissed the essentialist view of culture, which asserted that people who belong to different cultures must possess different traits. Instead they decided that describing what people do during the process of interaction should be the focus of analysis. With regards to the reductive viewpoint, they underscored that interpreting intercultural communication as a separate entity from international interaction might provide researchers with convenience when it comes to analysis. Yet, this interpretation would give rise to biased data. The role that idiosyncrasy and specific contexts play in intercultural communication was not taken into consideration. In this way, as Scollon, Wong Scollon and Jones found out that this conceptualization of intercultural communication might end up with over-simplistic claim, which could not stand up to scrutiny. However, the viewpoint that intercultural communication can be regarded as discourse systems is also reductive. IC is more than discourses. What they really dealt with was merely the cognitive and sociological viewpoints of intercultural communication. In other words, their arguments just handled a fragment of the whole picture, running risks of being over-generalized. Overall, Scollon, Wong Scollon and Jones’ understanding of intercultural communication was inspirational. This is because they analyzed intercultural communication in critical manner, which offered renewed impetus to cross-cultural studies.

Language Learning and Intercultural Pedagogy

Foreign language teaching is more than imparting students with linguistic knowledge. Similarly, second language acquisition should not be limited to grammar learning. That does not mean that teaching and learning linguistic knowledge is not important. On the contrary, it lays the foundation for the further cultural learning and teaching. Only when L2 learners have sufficient language proficiency can they have in-depth exchanges with native speakers. Once they reach this point, they are able to come to understand the cultural differences and similarities between themselves and the locals. Yet, it should be acknowledged that the ultimate goal of foreign language teaching

and cultural pedagogy, is cultivating language learners into the ones who think critically and who are open-minded to the others with different cultural backgrounds when they engage in cultural-related activities.

Michael Byram (1997) was a strong proponent of the argument aforementioned. He put forward a model for intercultural communicative competence. In this model, knowledge and attitude are the prerequisites for L2 learners who want to develop high-leveled intercultural communicative competence. Attitude plays a pivotal role in gaining intercultural awareness. When the interlocutors interact with one other, their ideas are always colored by ideology, viz. stereotypes and prejudices. It is these ideological barriers that lead to unsuccessful interaction. In this sense, the first step of teaching intercultural awareness and language competence is to help L2 learners get rid of the ingrained preconceptions and discriminations. By attitude, it does not refer to any cultural preferences, but rather to curiosity and openness to the target language that they are studying and the embedded culture. In other words, attitudes in this model, indicates that L2 learners should discard a priori beliefs or disbeliefs of other cultures in an effort of fully engaging themselves in a particular interaction:

They need to be attitudes of curiosity and openness, of readiness to suspend disbelief and judgment with respect to others' meanings, beliefs and behaviors. There also needs to be a willingness to suspend belief in one's own meanings and behaviors, and to analyze them from the viewpoint of the others with whom one is engaging (para. 34).

That is to say, L2 learners may gradually shape and reshape their beliefs or understandings of the target culture by analyzing the viewpoints of interlocutors in the on-going interactions. Knowledge is closely linked with attitudes. The knowledge that individuals bring to the interaction can be categorized into two types. One is the knowledge obtained during the process of socialization. Interlocutors gain and share this type of knowledge, both consciously and unconsciously, with other individuals in the same social groups during the process of primary (family) and secondary (from social and school) socializations. The shared knowledge serves as a group label on the one hand, and as a way to be distinguished from different social groups on the other. Most of the time, this kind of knowledge is obtained unconsciously. Only in the condition where there is a need to make a comparison between different groups, can the awareness of the individuals in one group be aroused. Under these circumstances they may have a more comprehensive perception of their own national, social and personal identity. The other can be termed as the knowledge of the processes of interaction at an individual, and societal level. Interlocutors carry different cultural knowledge. When they interact with one another, one serves as a prism through which another speaker can gradually obtain the cultural knowledge of his or her interlocutor. The more contact they make, the more knowledge will be obtained. Media and politics determine the degree to which this knowledge can be gained. Some cultural knowledge like American knowledge is universal and is shared by many individuals, whereas some is rarely known by people, and interaction with the interlocutor of that culture shall be a necessary step for those who are lack of that kind of cultural knowledge. Skills are also an imperative constituent in Byram's model. When an individual is presented a written material s(he) may interpret it with common sense, priori knowledge gained owe to socialization. When they are doing translation, they may clarify contradictory meanings they have noticed by applying interpretative skills. This kind of skill is different from that of discovery and interaction, with the latter requiring the engagement of another interlocutor. The second type of skill could be acquired in social interaction. When interlocutors communicate with one another, one ascribes his or her knowledge of which another interlocutor

may lack, then the “dysfunction” emerges and one needs to mediate the “abnormal” part of communication by employing his or her interpretive skills.

Although Byram’s model is not the most appropriate one in interpreting intercultural communicative competence, it serves as a conceptual toolkit in relation to cultural pedagogy. Byram clarified the amorphous concept of intercultural communicative competence by dissecting it into three constituents, namely attitudes, knowledge and skills. Each of the three components can be the departure point from which culturally sensitive researchers may venture an examination on intercultural related issues. Nevertheless, Byram’s model is still found wanting. In his ICC model, intercultural communication is reduced to the interaction between native and non-native people. However, the so-called native or non-native people, to a large extent, do not exist in this transcultural world. In this modern society, people become “hybrid” on cultural plane as they have more or less intercultural knowledge and skills. Thus, there’s no clear-cut distinction between native and non-native speakers as people of different origins immigrated or emigrated from one place to another. During this process, they exchanged their distinct cultural artifacts and shared thoughts with one another. As time goes by, creative communicative modes have gained favor in this contemporary era because the territory-bounded views cannot facilitate but only hamper intercultural communication. By territory-bound view, it refers to an outlook developed gradually based on ethnicity, nationality or any other membership categories. People who hold this standpoint aforesaid think that cultural boundaries are un-crossable and they can fulfill interaction only under the condition where both of them meet each other’s normative expectations. Provided that an Italian A and a Chinese B are colleagues in a Chinese University in Beijing. One day, they took lunch together and after that Italian A asked B whether he would like a cup of tea as she held the cultural belief that the Chinese people love drinking tea than coffee. To her surprise, the Chinese B declined her proposal by showing his affection for coffee and Moka pot. He told her it was not a problem for him if he took a cup of coffee, as both of them fancy for it. As can be seen, the national-based communicative modes do not work out in the context aforementioned in that every individual is, in essence, the “mosaics” of the “globalized tapestry”. They are intercultural to some extent. Therefore, the yesteryear viewpoint does not applicable in this transcultural world. What’s worse, it may give rise to confusions, misunderstandings and even conflicts for the territory-bounded perspectives are over-simplistic and incomplete, leading to stereotypes and prejudices.

Another forerunner in the field of language and intercultural communication is O’Dowd. He renewed the concept of intercultural communication by drawing Internet into the picture. By virtue of videoconferencing and emails, O’Dowd (2006) conducted semester-long ethnographic interviews. His aim was to explore the intercultural awareness and critical thinking of native German-speaking learners of English. He suggests that the influence of internet-mediated communication be double-edged. On the one hand, it serves as a platform upon which learners could explore other world outlooks whilst still remaining firmly rooted in interaction and development linguistic competencies. Compared with the traditional face-to-face interaction, the practice of videoconferences and emails facilitates a previously unavailable level of authenticity from participants. It provides English learners from different cultural backgrounds with opportunities with which they can fully express themselves. However, he also acknowledged that the instantaneous nature of internet-based interaction has the potential to fuel tension between two cultural groups, which he argued, impeded students from analyzing the cultural related issued of their counterparts in critical ways:

However, the immediacy of the medium in conjunction with the visual cues meant that students were often unable to avoid or ignore awkward subjects and this, in turn, gave rise to misunderstandings and moments of tension between the two groups. (para.116)

O'Dowd's arguments that internet-based interaction between two cultural groups may promote intercultural communication are noteworthy. This is due to the environment that internet-mediated intercultural communication provides for sharpening an individuals' critical awareness and improving their communicative skills. However, O'Dowd failed to capture the essence intercultural communication. It is personal trajectories, face relationships, cultural customs, educational backgrounds, family backgrounds and moral values that influence intercultural communication but not internet-based media like emails, videoconference and so on. Internet-mediated communication can be conceived as a contributor to intercultural communication, but it plays a small role in fulfilling successful intercultural communication. After all, they are instruments with which researchers can probe into the issues concerning intercultural communication. Paying too much attention to the effects of medium while ignoring the crux of the matter is apparently putting the cart before the horse. Liddicoat (2013) emphasized that intercultural communication should not be considered as static. Rather, it should be construed as subjective-based. "We need to move beyond seeing cultures as discrete, static entities and see cultures as varied, subjective and power –based constructions of lived experience" (para. 7) It is in-person interaction that constructs "lived experience" because it could enable interlocutors to communicate promptly with one another. In this way, they will feel less confused in their moment-by-moment interactions for there are no meaningless delays nor fuzzy sounds which are unavoidable if interlocutors are in computer-mediated communication as network is far more than stable. Under unstable conditions, neither listeners nor speakers can hear each other's words clearly due to poor connection. As a result, they may find it hard to understand the meanings conveyed by the other person. Thus, computer-mediated communication, as far as I'm concerned, plays a constructive but not fundamental role in intercultural communication and education.

Conclusions

In conclusion, this paper set out to explain the relationship between language and culture by paying particular attention to three pairs of relations, namely culture and language, language and intercultural communication and language learning and cultural pedagogy. This paper can be mainly divided into three parts, except for introduction and conclusion. In section 1, two interpretations of the concept of culture were introduced. From anthropological perspectives, culture could be construed as evolutionary and sociological. From a cognitive perspective, culture then might be regarded as moral-orientated, frame-based and emotionally tuned. The thorough explanation of the concept of culture served as theoretical basis of section 2, the focus of which being the exploration of the relationship between language and culture. Risager's contention that language is separable from culture was highlighted in section 2. Risager challenged the traditional view that language and culture are intertwined, arguing that this view is reductive, since researchers interpreted the relations between language and culture separately from the psychological perspective. She, then, proposed her conceptualization of culture based on Agar's interpretation of "languaculture" in a way of querying the inseparability between language and culture. The critical analysis in the second section paved the way for the illustration of intercultural communication. Scollon, Wong Scollon and Jones' argument that culture was a verb was mentioned. The third section concentrated on intercultural communication in the pedagogical domain, touching upon Byram's model of intercultural communicative competence and O'Dowd's internet-mediated intercultural communication.

- Two Interpretations of culture
- The relations between culture and language
- Intercultural communication and education

In a nutshell, this paper aims at disentangling the fusion concept of culture and giving a critical analysis of the relationship between language and culture. It contributes to flourishing future researches in intercultural communication and education.

References

- Barker, C., & Galasiński, D. (2001). *Cultural Studies and Discourse Analysis: A dialogue on Language and Identity*. London, UK: SAGE Publications Ltd.
- Byram, M. (1997). *Teaching and assessing intercultural communicative competence*. Clevedon, UK: Multilingual Matters.
- Castells, M. (2009). *Communication power* (Rev. ed.). Oxford, UK: Oxford University Press.
- Dervin, F., & Liddicoat, A. J. (2013). *Linguistics for Intercultural Education*. Amsterdam, NL: John Benjamins Publishing Company.
- Flor, A. M., & Juan, E. U. (2010). *Speech act performance: Theoretical, empirical and methodological issues*. *Language Learning and Language Teaching*, no. 26. Philadelphia, USA: John Benjamins Publishing.
- Goodenough, W. H. (1964). *Cultural Anthropology and Linguistics*. In D. Hymes (Eds.). *Language in Culture and Society: A Reader in Linguistics and Anthropology*. (pp. 36-65). New York, USA: Harper & Row.
- Hall, E. T. (1976). *Beyond culture*. New York, USA: Doubleday & Company.
- Hall, J. K. (2011). *Teaching and researching: Language and culture*. London, UK: Routledge.
- Hofstede, G., & Minkov, M. (2005). *Cultures and organizations: Software of the mind*. New York, USA: McGraw-Hill.
- Holliday, A. (2010). *Intercultural Communication and Ideology*. Los Angeles, USA: SAGE Publications.
- Kitayama, S. E., & Markus, H. R. E. (1994). *Emotion and culture: Empirical studies of mutual influence*. Washington, D. C., USA: American Psychological Association.
- Kovecses, Z. (2006). *Language, mind, and culture: A practical introduction*. Oxford, UK: Oxford University Press.
- Kramsch, C. (2014). *Language and culture*. *AILA review*, 27(1), 30-55. DOI: 10.1075/aila.27.02kra.
- McWhorter, J. H. (2014). *The language hoax: Why the world looks the same in any language*. New York, USA: Oxford University Press.
- Moore, J. D. (2019). *Visions of culture: An introduction to anthropological theories and theorists*. London, UK: Rowman & Littlefield Publishers. Inc.
- Moser, K. (2000). *Metaphor Analysis in Psychology-Method, Theory, and Fields of Application*. *Forum : Qualitative Social Research*, 1(2). doi:http://dx.doi.org/10.17169/fqs-1.2.1090.
- O'Dowd, R. (2006). *The use of videoconferencing and e-mail as mediators of intercultural student ethnography*. In J. A. Blez., & Thorne, S. (Eds.). *Internet-mediated Intercultural Foreign Language education*. (pp. 86-120). Boston, MA: Heinle and Heinle.
- Risager, K. (2006). *Language and culture: Global flows and local complexity*. Clevedon, UK: Multilingual Matters.
- Scollon, R., Scollon, S. W., & Jones, R. H. (2011). *Intercultural communication: A discourse approach*. Malden, MA: Wiley-Blackwell.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, UK: Harvard University Press.
- Wortham, S. (2006). *Semantics, cultures, and cognition. Universal human concepts in culture-specific configurations*. Oxford, UK: OUP.
- Whorf, B. L., & Carroll, J. B. (1956). *Language, thought, and reality : Selected writings of Benjamin Lee Whorf*. Cambridge, Mass.: M.I.T. Press.
- Wierzbicka, A. (1999). *Emotions across languages and cultures: Diversity and universals*. Cambridge, UK: Cambridge University Press.
- Zhabayeva, S. (2014). *The Reflection of Cultural Semiotic Codes in the Language*. *Asian Journal of Social Sciences & Humanities* 3(1). 219-226. Retrived from [http://www.ajssh.leenaluna.co.jp/AJSSHPDFs/Vol.3\(1\)/AJSSH2014\(3.1-21\).pdf](http://www.ajssh.leenaluna.co.jp/AJSSHPDFs/Vol.3(1)/AJSSH2014(3.1-21).pdf)

Part 6: Higher Education & Educational Leadership

The Necessity of Leadership Training in Higher Education in Vietnam: A Perspective From Students

Hong Pham Van¹ and Van Pham Thi Trang²

¹Hanoi School of Business and Management, Vietnam National University

²Vietnam Japan University, Vietnam

Abstract

The research proves the necessity of leadership training in higher education in Vietnam. The methodologies used in the research includes literature review to point out the necessity of leadership training; checking websites of 100 Vietnamese universities to analyze leadership training's syllabuses; student survey to assess their current leadership knowledge, skills and training needs; and comparison the leadership training in Vietnam's universities with international experiences. The research results show that although leadership is a necessary skill for personal, organizational and country development and there is still a large room to improve student's leadership's skills, Vietnamese higher education institutions have not yet paid enough attention to this type of training. To sum up, the research gives recommendations for Vietnam in both short-term and long-term to strengthen leadership training and practicing for students in higher education of Vietnam.

Keywords: leadership, leadership training, higher education, Vietnamese universities

Introduction

After more than 30 years of Doi Moi (renovation) since 1986, Vietnam has made some notably achievements in transforming from a command economy to a socialist-based market economy. Such promising achievement is mainly resulted from effective and appropriate policies of Vietnamese Government. In this process, policies of educational reform in general and higher education in particular play an important role in providing high quality human resources to meet the needs of industrialization and modernization. Since adoption of 2005 Law on Education and Resolution No. 29/NQ-TW on fundamental and comprehensive renovation in education ratified by Central committee of the communist Party of Vietnam in November 2013 (Resolution No. 29), by the school year of 2016-2017, the Vietnamese Higher Education (HE) witnessed the massive growth of HE network: 235 universities and institutes have been built including 170 public schools and 65 privates, increasing 5% compared to the 2015-2016 school-year (MOET, 2019). To perform HE reform requirements promulgated in the Resolution No. 29, HE institutions have actively and proactively innovated content and teaching methods in the direction of approaching capacity, enhancing practice skills and helping students develop their talents and creativity. However, the dramatic developments in science and technology among other nations is requiring much more significant reform in education to balance between quantity and quality of labor resource. That requires many HE institution leaders to look for solutions in international educational systems. One of them is training leadership course in HE institution which is a key variable in the development of high quality educational outcomes (Harris & Muijs, 2005; Leithwood, Jantzi, & Steinbach, 1999).

The process to bring leadership becoming an education subjects started in the USA since 1911 when Frederick Taylor wrote the book Principles of Scientific Management. During 1990s,

leadership became an important subjects in curriculum of many universities all over the world (Ira E.Bogotch, 2011). In Vietnam, leadership, together with other soft skills were taught firstly by some soft skills training center at early 2000s. However, until present, some Vietnamese HE institutions are still confusing on the necessity of bringing this important subject to their training programs.

The purpose of this research is to confirm the importance of leadership training in Vietnam higher education and propose the recommendations to improve leadership training in higher education in Vietnam.

Literature Review

More than 20 books and papers/researches have been reviewed to understand the viewpoints of other scholars on leadership teaching. We also using information from website of different universities to analyze. The research team have collected the syllabuses of 100 Vietnamese universities to study the current situation of leadership training in higher education. Scope of research includes not only official curriculum but also short-term courses and workshops/seminars on leadership development. The data also compares between technical and social-science universities to explore the difference in leadership training in these two types of universities.

The research questions expected to be answered are as followed:

- Why training leadership in higher education is necessary?
- What is the current situation of Vietnamese student's leadership understandings and skills?
- What is the current situation of leadership training in Vietnamese higher education and other countries?
- How to strengthen leadership training in higher education in the Vietnam National University (VNU) and in Vietnam?

The research determined 5 research hypothesizes as follow:

- H1: Leadership training is a necessary skill for personal, organizational and country development
- H2: Leadership could be improved through training and practice
- H3: It's important to train leadership in higher education
- H4: Vietnamese's universities and colleges are not paying enough attention on leadership training
- H5: There are large room to improve Vietnamese student's leadership skills

Research Methods

With above-mentioned research questions and hypothesizes , the following methodologies are used for this research, includes:

Desk Study

The research team have collected the syllabus and curriculum of 100 Vietnamese universities through their websites to study current situation of leadership training, both for undergraduate and graduate students. The syllabuses and curriculum include not only official curriculum for degree training, but also curriculum of short-term courses and workshops/seminars on leadership development topics. The data also compares between technical and social-science universities to explore the differences in leadership training in these two types of universities. This method is used to assess the current situation of leadership training in Vietnam, therefore prove the H4 and H5 hypothesizes. The list of universities researched are listed at Annex No.1.

Field Survey

A questionnaire consists of 11 questions were delivered to students of 5 universities and schools under the Vietnam National University-Hanoi, namely University of Economics and Business (UEB), University of Engineering and Technology (UET), Vietnam - Japan University (VJU), School of Law (VNU – LS) and University of Languages and International Studies (ULIS) (see Annex No.3). Information collected from survey is to provide the following assessments: (i) current student's leadership understandings and skills; (ii) the training needs of students on leadership subject.

More than 250 questionnaires have been sent to students, in which 132 (n=132) questionnaires were collected, including 58 male and 74 female respondents. The analysis of this survey proved that there is still large room for leadership improvement for VNU students in particular and Vietnamese students in general (H5). Because of medium size of sample (n=132 only), so we use Excel software for analyzing.

Comparison Methods

Information on leadership training at top-ivy league universities and top leading universities in Vietnam are collected aim at making a comparison. The leading universities in Vietnam are based on the ranking of Webometrics Ranking of World universities (<http://www.webometrics.info/en/>) This comparison methodology is used to find the common and difference in leadership training between Vietnam and other top universities in the world. This information is used to support for H1, H4 and H5 hypotheses.

Findings

Leadership Training Is Necessary Skills for Personal, Organizational and Country Development

The role of leadership to personal development could be clearly seen through the arguments of Manfred Gollent (2015) who defined that “Leadership “happens” when one has voluntary followers” and leadership “takes place also during a sales call, a customer service response, a family decision or a meeting with some friends.” From Manfred Gollent’s perspectives, we can see that leadership is a necessary skill for everyone, not only the leaders.

For the contribution of leadership to organizational development, Steven H. Appelbaum et al. (2015) argued that leadership and learning are two origins of strategic organizational change. The

figure 1 bellows shows the correlation between leadership and organizational change, thus affecting organizational development.

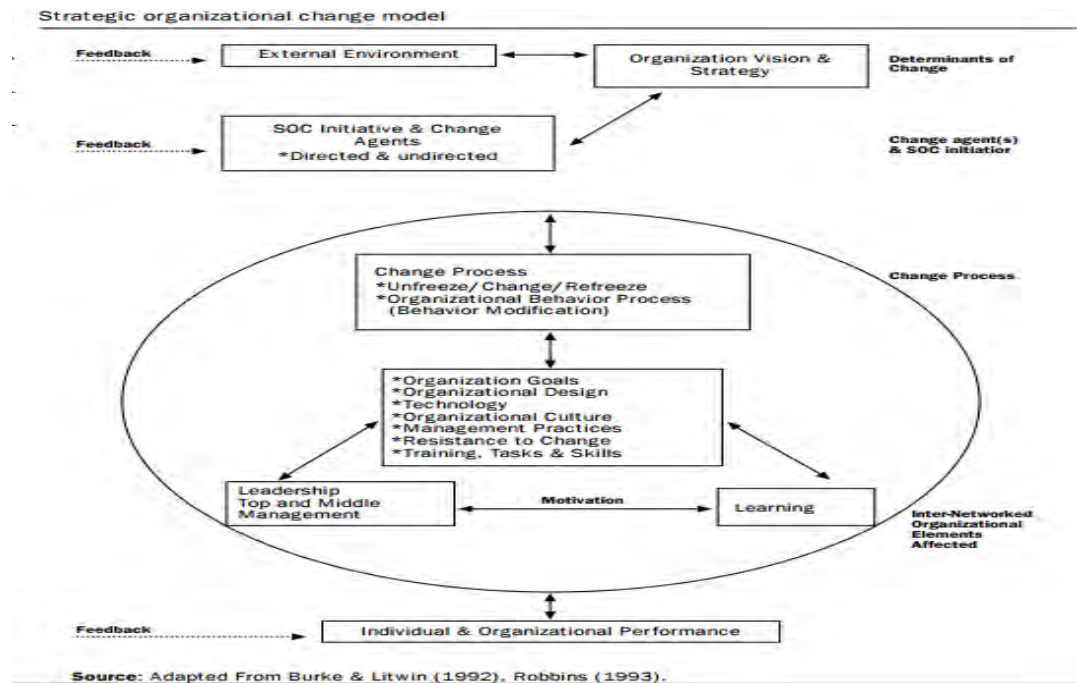


Figure 1. Strategic organizational change model

When it comes to the level of country development, Steve Tobak (2011) blamed the lacking of leadership is the causes of US's current social and economic issues and affirmed the important role of leadership with the development of the country.

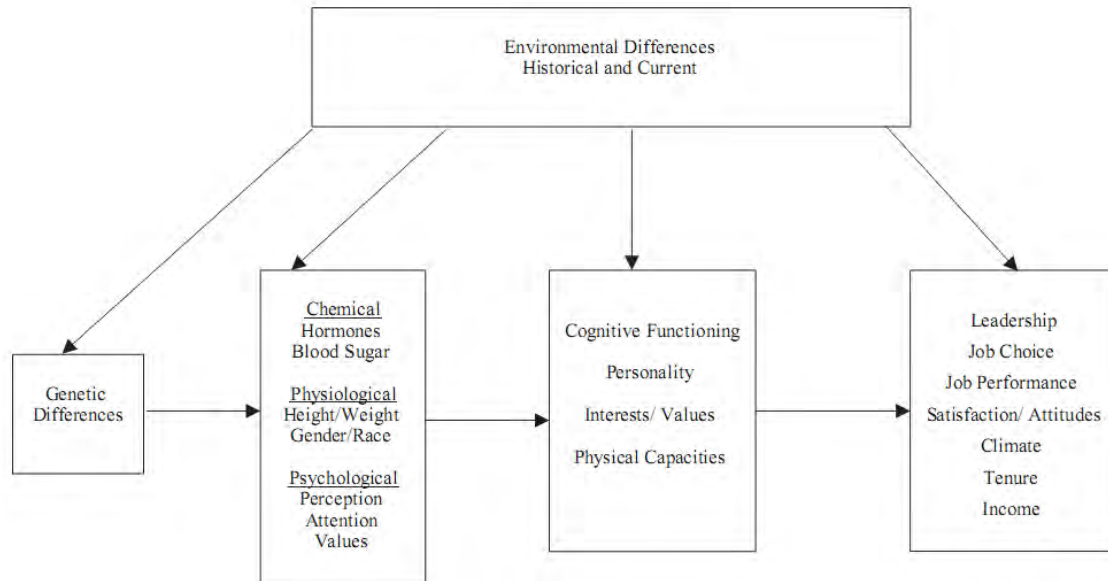
In addition to that, training leadership is to nurture future leaders which is really necessary for the coming ages. By studying and applying leadership, students shall know how to increase productivity and make a better decision.

From the three arguments presented above, we can come to the conclusion that leadership plays an important role in the development of individual, organization and every country.

Leadership Could Be Improved Through Training and Practice

It's no doubt about the important role of leadership in all levels of development, however, leadership was born or made, is leadership could be trained is the questions for discussing over the past years. Research made by Richard D. Arvey et all. (2006) and another research conducted by Tymothy A. Judge et all. (2004) found that the correlation between genetic and intelligence to leadership occupancy is not as strong as many people used to think.

Richard D. Arvey et all. (2006) examined a sample of male twins (n=238) who share 100% genetic background to determine the influence of genetic factor on leadership role occupancy. This relationship are modeled in figure 2 bellow



Source: Richard D. Arvey, Rotundo, M., Johnson, W., Zhang, Z., & McGue, M. (2006).

Figure 2. The genetic - Leadership Role Occupation Model

From Figure 2, we can see genetic influence leadership through chemical, physiological and psychological factors, these factors, after that will affect personality, interest, physical capacities, cognitive functioning and then creating impacts on leadership. Using quantitative method, as shown in table 1, the authors found that genetic just accounts for 30% of leadership role occupancy (H 2 indicator)

Table 1. Relationship Between Genetic and Leadership Role Occupancy

Results of multivariate model-fitting for social potency, achievement, and leadership role occupancy

	Proportion of variance due to			Genetic correlation b/w personality variables and leadership
	Genetic (h^2)	Shared environment	Non-shared environment	
Best-fitting (A,E) model				
Social potency	.54 (.41, .65)	n/a	.46 (.35, .59)	.49 (.21, .79)
Achievement	.43 (.27, .56)	n/a	.57 (.44, .73)	.65 (.32, .98)
Leadership role occupancy	.30 (.14, .44)	n/a	.70 (.57, .86)	n/a

Note: 95% confidence intervals in parentheses.

This model is based on raw data rather than covariance matrix. The sample sizes vary across variables. For Leadership Role Occupancy the sample size is 119/94 pairs for identical/fraternal twins, while for Social Potency and Achievement it is 106/69 pairs. The missing data are treated as missing completely at random.

Tymothy A. Judge et al. (2004) also proved that intelligence doesn't affect much the quality of leadership. Using the meta-analysis method, the authors argued that "the relationship between intelligence and leadership is considerably lower than previous thought". The table 2 bellow shows the low correlation coefficient ($p^2 = .27$) between intelligence and leadership.

Timothy A Judge also affirmed in his study that "anywhere between 30% - 60%, most leadership behaviors are developed over time".

The above-mentioned 2 research's results show that leadership are not born, they are made, and given the importance of leadership to the personal, organizational and country the development,

we are happy to know that there are large room for education and practice to contribute to enhance people's leader capacity.

Table 2. The Correlation Between Intelligence and Leadership

Meta-Analysis of the Overall Relationship Between Leader Intelligence and Leadership

<i>k</i>	<i>N</i>	Average <i>r</i>	ρ_1	SD_{ρ_1}	ρ_2	SD_{ρ_2}	80% CV		95% CI	
							Lower	Upper	Lower	Upper
151	40,652	.17	.21	.16	.27	.17	.05	.48	.24	.30

Note. Whitener's (1990) formula for standard error of the mean correlation was used in computing confidence intervals. *k* = number of correlations; *N* = combined sample size; ρ_1 = estimated true score correlation corrected for unreliability in the predictor and criterion; SD_{ρ_1} = standard deviation of ρ_1 ; ρ_2 = estimated true score correlation corrected for unreliability in the predictor and criterion and for range restriction; SD_{ρ_2} = standard deviation of ρ_2 ; CV = credibility interval around ρ_2 ; CI = confidence interval around ρ_2 .

The Importance of Leadership in Higher Education

Why It Is Important to Train Leadership in Higher Education

It could be explained why it is important because of 3 main following reasons:

Firstly, students in higher education are adult enough to understand that they need to make a lot of improvements both in the method and in the contents to move up themselves. It helps them to meet the requirements of the society such as: analysis ability, assessment ability, influencing ability, etc. In addition, leadership would help students build their self-confidence and wisdom, as well as bring clarify their vision.

Secondly, students in higher education have to prepare their own capacity and skills to apply a job or even though move up on their career. Therefore, leadership training shall make them become more advantageous than others. In the modern trend, jobs requirements necessitates thinking out of the box, applying core concepts to real world situations. The leadership knowledge and skill could bring comparative experience to bear on all matter.

Finally, leadership could shorten time for people to approach to success in all aspects of life, helping students to see the principles to be successful in life.

An Overview of Current Situation of Leadership Training in Vietnamese Higher Education

According to the information collected from 100 website of universities in Vietnam, of which 85 are public universities, 11 are private universities and 4 are international ones, we have found that only 20 universities have Leadership as an elective subject (see Figure 3) and only 5% of 20 universities are relevant to science - technology field (see Annex No.2). As provided on above that it is really necessary to train leadership in higher education, via this collection, it could be obviously seen that Vietnam higher educations do not pay enough attention to this subject.

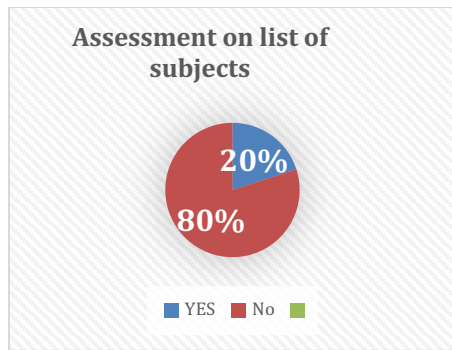


Figure 3. Numbers of university have leadership subject

In addition, some universities which do not have leadership as a subject but provide students Startup clubs activities and/or Startup competitions. Hence Vietnamese students have chance to practice leadership as Entrepreneur role. Lussier and Achua (2010) stated some entrepreneur behaviors of leaders: Developing new or improved products or services; Developing new ways to process products and services; and Purchasing new equipment

The following table shows some Vietnamese cases:

Table 3. Business Clubs and Competitions for Students in Vietnam

No.	Organization	City	Startup Club	Startup Competition
1	Foreign Trade University	Hanoi	Tomorrow Entrepreneur Club	Kawai Business Startup
2	Banking Academy	Hanoi	Young CEO club	Startup.BA
3	National Economics University	Hanoi	Startup Club	I-Startup
4	Tôn Đức Thắng University	HCM	Startup TDTU	Startup Journey 2017
5	Hospitality.vn	HCM		Young Hotelier Awards 2016
6	Praxis Partnership Program (Leipzig University - German and Hanoi University of Science and Technology)	Hanoi		Business idea contest
7	RMIT Vietnam	Hanoi and HCM	RMIT Activator	

Source: Research group collected information from internet

For clubs, the students organize specialized workshops to study the business knowledge and skills. On the other hand, through startup competitions, the students experience the facts of doing a real business, from idea to commercialization. Further more, the students can only get the real experiences shared by successful entrepreneurs, but also they are instructed by these entrepreneurs to develop their own projects. Especially, the innovation is the most important criteria to evaluate the business projects, then the students who participated would enhance their leadership to a new high level.

Although the business clubs and startup competitions benefit the students with many leadership skills and experiences, but this kind of clubs is still rare in Vietnam. In addition, some of the business contests give prizes based only on idea and business proposal, without a trial product or trial selling. The winners would have no support to promote their projects after that. Those opposed to the Praxis Partnership Program and RMIT Activator Club, the good enough projects are supported to grow and scale-up.

Overview of Leadership Training in Overseas

It has been also found that the leadership training at higher education over the world has a long history and various training formats, as following examples:

Table 4. International Examples of Leadership Training at Universities

No	University	World Rank (webometrics.info)	Country	Leadership Development Institution	Leadership Development Activity
1	Harvard University	1	United States	Institute for Management and Leadership in Education	School Leadership and Education Leadership Degrees
2	Stanford University	2	United States	Stanford Leadership Institute, Stanford Educational Leadership Initiative	Leadership and Management Courses
3	Massachusetts Institute of Technology	3	United States	MIT Leadership Centre, Leadership Faculty	Degree Programs and Events
4	National University of Singapore	53	Singapore	Leadership Development Programs	Degree Programs and Events

Source: Research group collected information from internet

While investigating the international leadership training at Universities, there exist many articles, scientific journals telling that the leadership training for students is a crucial responsibility of higher education, for both undergraduate and postgraduate attendants. Helping students develop the integrity and strength of character that pre-prepare them for leadership may be one of the most challenging and important goals of higher education” (King, 1997, p. 87). “Increasingly, higher education is being turned to as a source for potential change given its significant role in developing leadership capacity among today’s youth” (Dugan and Komives, 2007).

Given the diversity of training courses and tools over the world it is unsurprising that a range of leadership development activities have evolved. On the basis of searching the leadership involvement of each university on their own website, such as: bachelor of leadership, master of leadership, doctoral of leadership, work-based learning programs, leadership topics seminars, and short courses. It is proposed that theoretical and experiential, critical approaches are most likely to create the graduates capable of meeting the future needs of organizations and society. Furthermore the universities provide also more informal and personalized leadership development activities, such as mentoring, coaching, 360o feedback, project assignments, and team project - see Table below:

Table 5. Changing Trends in Leadership Development

Key Trends	From	To
Type of provision	<ul style="list-style-type: none"> • Prescribed course • Standardized • Theoretical/academic 	<ul style="list-style-type: none"> • Intervention/development programme • Customized • Applied/based on real-life challenges
Time-frame	<ul style="list-style-type: none"> • One-off • Discrete start & end points 	<ul style="list-style-type: none"> • Continual • An ongoing development ‘journey’
Format	<ul style="list-style-type: none"> • Didactic: lectures & presentations • Abstract/conceptual 	<ul style="list-style-type: none"> • Participatory: interactive activities & group work • Experiential/reflective

Key Trends	From	To
Location	<ul style="list-style-type: none"> • Classroom-based • Off-site 	<ul style="list-style-type: none"> • Blended (variety of methods) • Work-based as well as off-site
Focus	<ul style="list-style-type: none"> • Development of individuals • Generic 	<ul style="list-style-type: none"> • Development of individuals & groups • Vocational/for a specific purpose
Role of provider	<ul style="list-style-type: none"> • Supplier • Expert 	<ul style="list-style-type: none"> • Partner, collaborator & coach • Co-designer/facilitator
Nature of support	<ul style="list-style-type: none"> • Limited • Primarily concerned with accreditation • Theoretical/academic 	<ul style="list-style-type: none"> • Extensive – relationship management • Primarily concerned with client experience • Coaching/mentoring

Source: Gold, J., Thorpe, R., & Mumford, A. (2010).

There Are Large Rooms to Improve Leadership Skills in Vietnam Higher Education

In order to make our hypothesis strong based evidence, we have make a real survey (see Annex No. 3) consisting of 11 questions for students in 5 universities and schools under the Vietnam National University-Hanoi, namely University of Economics and Business (UEB), University of Engineering and Technology (UET), Vietnam - Japan University (VJU) , School of Law (VNU – LS) and University of Languages and International Studies (ULIS).

We have divided questions into 3 main information for assessment of their understanding of Leadership, their view of necessity of leadership training and their willing to study leadership in university.

The result is described in Figure 4 below, in details: 77% of students have wrong answers of leadership general understanding; 62% of students consider leadership is an important subject need to be trained in higher university and 34% considers it very important, and 81% of students say YES towards question “Do they enjoy attending the class of leadership in university”.

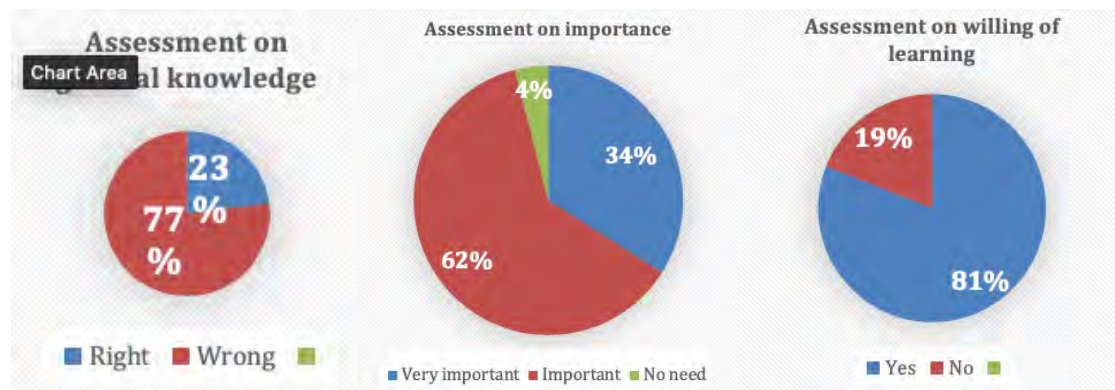


Figure 4. Results of survey

One special thing found from the result of this survey is that some students who have studied leadership before said that “leadership is not relevant to their field (science or technology)” or “leadership is only for leader”. Their answers raise a question of training quality in Vietnam as well as the leadership role of teacher in class. Nowadays, it requires teachers to change their teaching method as well as enhance their leadership as a leader in the class to meet the changing of education style.

Conclusion

In some countries such as Japan or the United States, leadership is even trained in the primary school. Based on other author's research on role of leadership in life and its impact on people's success, we have to admit that it is a really useful skills for everyone and individual's leadership could be improved by training. According to our summary of current situation of Vietnam, we do hope to extend our research in all provinces in Vietnam to have a more logical and critical thinking can go to conclusions and recommendation that: Firstly, it is really necessary to train leadership as a background subject for all students in the fresh year; Secondly, the term of leadership has to be translated into Vietnamese exactly to ensure its meaning in English is nearly approach in Vietnam. And, not only students but teachers have to be trained Leadership to enhance their leader role in class first, then to meet requirements of changing.

In short terms, we recommend that Vietnam should conduct a research of current teaching leadership in higher education in Vietnam and other relevant researches to find suitable method of teaching and studying in compliance with specific features of each province. In the very first period, we can consider it as an elective subject or open short course training leadership training. Although we have some start up clubs or competitions for youth to express their leadership, Vietnam still need much more clubs on giant scope to create a communication for everyone to improve their practical ability as well as share information of the world's trends or changings. The leadership role of teacher must be enhanced first to ensure the quality of training in general and the quality of leadership training in particular.

In long terms, we suppose it to be a compulsory subject apply in all Vietnamese universities. Then, we should build a National program on leadership enhancing.

References

- Lussier, R.N., & Achua C.F. (2010). Who is a Leader? In Lussier, R.N., & Achua C.F. (Eds), *Leadership Theory, Application, & Skill Development* (4th ed, 2-28). South-Western Cengage Learning.
- Burke, W.W. & Litwin, G.H. (1992). A causal model of organisation performance and change, *Journal of Management*, 18 (3), 523-545.
- Collins, D. B., & III, E. F. H. (2004). The effectiveness of managerial leadership development program: a meta - analysis of studies from 1982 to 2001. *Human Resource Development Quarterly*, 15(2), 217-248. doi:10.1002/hrdq.1099.
- Dugan, J.P., & Komives, S.R. (2007). *Developing leadership capacity in college students: Findings from a national study. A Report from the Multi-Institutional Study of Leadership*. College Park, MD: National Clearinghouse for Leadership Programs.
- King, P.M. (1997). Character and civic education: What does it take?, *Educational Record*, 78 (3,4), 87-90.
- Gold, J., Thorpe, R., & Mumford, A. (2010). *Leadership, Management and Organisational Development*. In Gold, J., Thorpe, R. & Mumford, A. (eds) (2010) *Handbook of Leadership and Management Development*.
- Gollent, M. (2015, 22 September 2015). What Makes Leadership Skills Important - For Everyone? Retrieved from <https://www.linkedin.com/pulse/what-makes-leadership-skills-important-everyone-manfred-gollent>
- Ira E.Bogotch, E. L. a. R. M., Florida Atlantic Univeristy, Boca Raton, FL,USA. (2011). The state of art: leadership training and development: US perspectives: above and beyond recorded history. *School Leadership & Management*, 123-138. doi:10.1080/13632434.2011.560662.
- Richard D.Arvey, Rotundo, M., Johnson, W., Zhang, Z., & McGue, M. (2006). The determinants of leadership role occupancy: Genetic and personality factors. *The Leadership Quarterly*, 17, 1-20.
- Robbins, S. (1993). *Organizational Behavior*. Prentice Hall, Englewood Cliffs.
- Report of Ministry of Education and Training, 2019, <https://moet.gov.vn/thong-ke/Pages/thong-ko-giao-duc-dai-hoc.aspx?ItemID=5137>, access on 30 January 2019
- Steven H. Appelbaum, F. o. C. a. A., Concordia Univeristy, MonTreal, Quebec, Canada, St-Pierre, N., Canadian Imperial Bank of Commerce, M., Quebec, Canada, & Willliam Glavas, P. a. W. C., Montreal, Quebec,

- Canada. (2015). Strategic organizational change: the role of leadership, learning, motivation and productivity. *Management Decision*, 36(5), 289 - 301.
- Taylor, F.W. (1911). *The principles of scientific management*. New York: Harper & Brothers.
- Timothy A. Judge, U. o. F., Amy E.Colbert, U. o. I., & Remus Ilies, U. o. F. (2004). Intelligence and Leadership: A Quatitative Review and Test of Theoretical Propositions. *Jounal of Applied Psychology*, 89, No3, 542-552. doi:10.1037/0021-9010.89.3.542.
- Tobak, S. (2011). Is There a Leadership Crisis in America? www.cbsnews.com. Retrieved from <https://www.cbsnews.com/news/is-there-a-leadership-crisis-in-america/>

ANNEX 1. List of 100 Universities Researched in the Study

No.	Name of university	No.	Name of university
1	Hanoi University of Science and Technology	51	University of Medicine and Pharmacy at Ho Chi Minh city
2	Trade Union University	52	Hanoi Medical University
3	University of Transport Technology	53	Hanoi University of Public Health
4	Hanoi Industry University	54	Hanoi Open University
5	Quang Ninh University of Industrial	55	Academy of Journalism & Communication
6	Industrial University of Ho Chi Minh City	56	Academy of Policy and Development
7	Ha Noi University of Pharmacy	57	Academy of HCMC Bureaucracy
8	Petro Vietnam University	58	Post and Telecommunications Institute of Technology
9	Electric Power University	59	Vietnam Aviation School
10	HaNoi University	60	Academy of National Administration
11	Vietnam Maritime University	61	Graduate University of Science and Technology
12	University of Science and Technology of Hanoi	62	Graduate Academy of Social Sciences
13	Hanoi Architecture University	63	Banking Of Academy
14	University of Architecture Ho Chi Minh City	64	Diplomatic Academy of Vietnam
15	University of Economic and Technical Industries	65	Vietnam National University of Agriculture
16	National Economic University	66	Vietnam Women's Academy
17	University of Economics Ho Chi Minh City	67	National Academy of Education Management
18	Haiduong Medical Technical University	68	Academy of Finance
19	University of Transport and Communications	69	Vietnam University of Traditional Medicine
20	Ho Chi Minh City University of Transport	70	Academy of Justice
21	University of Labour and Social Affairs	71	Chuvanan University
22	Hanoi Law University	72	Saigon Technology University
23	Ho Chi Minh City Law University	73	HCMC University of Technology (HUTECH)
24	Vietnam National University of Forestry	74	Phuong Dong University
25	Hanoi University of Mining and Geology	75	Duy Tan University
26	Ho Chi Minh City Open University	76	Dai Nam University
27	University of Industrial Fine Art	77	FPT University
28	Vietnam Art University	78	Vietnam Fulbright University
29	Banking University Ho Chi Minh City	79	Hoa Binh University
30	Foreign Trade University	80	Hoa Sen University
31	Hanoi University of Home Affairs	81	Hung Vuong University Ho Chi Minh City
32	Agriculture and Forestry University	82	Hanoi University of Business and Technology
33	Hanoi Academy of Theatre and Cinema	83	University of Economic and Finance
34	Ho Chi Minh City Academy of Theatre and Cinema	84	Thang Long University
35	Hanoi National University of Education	85	RMIT University
36	Hanoi Pedagogical University 2	86	Thanh Do University
37	Hung Yen university of technology and education	87	Bac Ha International University
38	HCMC University of Technology and Education	88	VNU University of Economics and Business
39	Vinh University of Technology Education	89	VNU University of Education
40	National University of Art Education	90	University of Languages & International Studies
41	HCMC University of Education	91	VNU University of Science
42	University of Finance and Accounting	92	University of Social Sciences and Humanities
43	University of Finance and Marketing	93	University of Technology
44	Hanoi University of Natural Resources and Environment	94	Vetnam -Japan University
45	Irrigation University	95	Ho Chi Minh City University of Technology
46	Trade University	96	Vietnam National University Ho Chi Minh City
47	Hanoi University of Culture	97	University of Social Sciences and Humanities
48	National University of Civil Engineering	98	University of Economics and Law
49	University of Civil Engineering – middle region	99	Vietnam - German University
50	Can Tho University of Medicine and Pharmacy	100	HCMC International University

ANNEX 2. List of 20 Universities in 100 Universities Have Leadership Training

	Name of University	Natural Science	Social Science	Note
1	Hanoi Industry University		x	15 Universities with Leadership per 85 Public Universities (17%)
2	Hanoi University		x	
3	University of Economics Ho Chi Minh City		x	
4	Ho Chi Minh City Law University		x	
5	Ho Chi Minh City Open University		x	
6	Banking University Ho Chi Minh City		x	

7	Foreign Trade University		x	
8	Post and Telecommunications Institute of Technology		x	
9	Banking of Academy		x	
10	Vietnam Women's Academy		x	
11	University of Economic and Finance		x	
12	VNU Hanoi, school of Economics and Business		x	
13	School of Economics and Law VNU HCM		x	
14	International school - VNU HCM		x	
15	Ho Chi Minh City University of Technology	x		
16	Hoa Sen University		x	2 Universities with Leadership per 11
17	Bac Ha International University		x	Private Universities (18%)
18	Vietnam Fulbright University		x	3 Universities with Leadership per 4
19	Vietnam Japan University		x	International Universities (75%)
20	Vietnam-German University		x	

ANNEX 3. Survey Questionnaires

Section 1. General Information

1. Age:
2. Sex: Male Female
3. Major studies:
4. Have you ever being trained leadership? Not yet Yes Name of training institution:

Section 2. Survey Questionnaires (only 1 choice)

1. According to leadership theory, what is the most important characteristic of a Leader?
Creative Knowledge Smart Cooperative
2. If a leader manage all information and disclose a part to employee, what is his style?
Democratic Autocratic Freedom Dictatorial
3. What does "Charisma" means?
Followers believe that leader's belief is believable and truly correct
The similar belief between leaders and followers
Unconditional obey of followers
The influence which is not based on power or title of leaders but based on the understanding of followers about leaders who have extremely special characteristics
4. Terms of "lead is better than manage" comes from which country?
America England Japan German
5. "Role of initiator" is which of followings?
Leader role Informative role Decision making role
6. Leadership is born or made? (Choose 1 option only)
Born Made
7. Have you ever being a leader of a group or an organization?
Not yet Yes Title/How long:
8. Is it necessary to train leadership in higher education in Vietnam?
Yes No Reason why
9. Is Leadership trained in your university?
Yes No
10. How do you think Leadership effect to your life and your future?
Extremely important Important Unimportant
11. If your university has Leadership subject, will you agree to join the class?
Yes No Reason why

The Impact of Dual Credit Programs on College Persistence and Achievement by Low-Income Students

Lana Victoria Short¹ and Daniel W. Eadens²

¹Chandler-Gilbert Community College, United States

²The College of Education
Northern Arizona University, United States

Abstract

This quantitative study was an attempt to fill a gap in the research literature concerning low-socioeconomic status (SES) dual credit students' subsequent college matriculation and their academic achievement and success. Identifying which type of dual credit programs has more effectiveness for college matriculation and academic success is important for determining the best allocation of state and federal funds and for understanding the dynamics of successful students who receive financial aid and state grant money. While existing research has demonstrated that participation in dual credit programs increases low-SES students' college matriculation and other academic success indicators, limited studies are available to examine the effects and compare the outcomes of participation in various formats of dual credit programs. In this study, two groups of low-SES students were compared: those who had participated in an early college Achieving a College Education (ACE) program and those who had participated in a standard dual enrollment (SDE) program in the high schools served by Chandler-Gilbert Community College in Arizona. A casual-comparative ex post facto design was utilized. A simple random sampling method was applied to select the sample from all available archival data on low-SES students who had participated in ACE and SDE programs and subsequently enrolled at Chandler-Gilbert Community College in 2013–2017. All participants were randomly selected from the data set of all low-SES ACE students and SDE students. A priori sample size determination yielded 610 participants (305 in each group) for Research Question 1 and 210 participants (105 in each group) for Research Questions 2 and 3.

Keywords: dual credit, dual enrollment, ace, underrepresented students, higher education

Introduction and Overview of the Study

This causal-comparative study was conducted to explore and compare the impacts of ACE and SDE programs on college enrollment after school graduation and common academic indicators of success for low-SES students who participated in these dual credit programs. The study was an attempt to determine whether a relationship existed between participation in one of the dual credit programs, ACE or SDE, and academic achievement as measured by GPA and number of college credits earned by these freshmen college students, as well as their subsequent college enrollment rate at one community college, CGCC, located in MCCC Arizona.

An extensive literature review on dual credit, dual enrollment, early college programs, and their effects on students' academic success in general and their impact on low-SES students was conducted. The sample for the first research question was randomly selected from all available data on low-SES ACE and SDE students who had been enrolled in either of these dual credit programs in 2013–2017 and was composed of 610 low-SES students. Each group in this study, ACE and SDE, consisted of 305 low-SES participants. For the second and third research questions,

there were two randomly selected subsets, each of 105 participants, from each of the groups, SDE and ACE. A chi-square test of homogeneity was conducted to analyze the subsequent college matriculation data. An independent-samples t test and Mann Whitney U test were performed to statistically compare the number of earned college credits between the ACE and SDE groups, and an independent-samples t test was conducted to compare GPAs between the ACE and SDE groups.

Research Question 1

The first research question was posed to determine whether participation in one of the dual credit formats (ACE or SDE) was statistically associated with subsequent college enrollment. A chi-square test for homogeneity was conducted to address the question and the subsequent college enrollment was identified as dependent on the type of the dual credit program (ACE or SDE) in which the students had participated, $\chi^2(1) = 18.407$, $p = .00$. According to the descriptive statistics, 186 students (61%) in the ACE group persisted to CGCC after high school and 119 students (39%) did not persist. In the SDE group, 235 students (77%) subsequently enrolled into college and 70 students (23%) did not enroll. Therefore, students who participated in SDE had a 16% higher proportion of subsequent college enrollees than ACE students.

According to the Maricopa ACE Programs 2016 Progress Report (MCC, 2017b), out of five cohorts across 10 Maricopa colleges, 48% of ACE students continued to the colleges immediately following high school graduation. The percentage of overall ACE enrollment stated in that report is lower than the results of the current study, in which an average of 61% of ACE students enrolled in CGCC following high school graduation. On the other hand, the Maricopa ACE Programs 2016 Progress Report (MCC, 2017b) presents much higher percentages: 71.4% for 2014 and 80.7% for 2015. The discrepancy in the numbers may be attributed to the facts that (a) the current study's sampling was done for only one of the Maricopa colleges, CGCC, and thus did not represent an average enrollment rate for all 10 Maricopa colleges, and (b) the study considered data for 2013 through 2017 rather than for a single year.

According to the Chandler-Gilbert Community College Analysis of Dual Enrollment Students (CGCC, 2018b), of 12,087 students who finished high school from 2011 through 2016, 4,155 (34%) enrolled in CGCC after high school. In the current research, an average of 77% of SDE students enrolled in CGCC following high school graduation. The percentage of overall DE students enrolling in the college after high school as stated in the report is lower than the percentage obtained in the present study, but the discrepancy may be attributed to the fact that the current study's sampling was done only for low-SES students, while the CGCC Analysis of Dual Enrollment Students (CGCC, 2018b) did not differentiate by socioeconomic status.

In a study on early college impact on student outcomes, Berger et al. (2014) reported that students who participated in early college were significantly more likely to enroll in college than comparison students who did not participate in early college programs. Early colleges students' college enrollment rate was approximately 9% higher than the college enrollment rate for comparison students (Berger et al., 2014). Karp et al. (2007), as well Edwards and Hughes (2011), also reported a positive correlation between participation in one of the early college programs, City University of New York's College Now, and subsequent college enrollment. Haxton et al. (2016) stated that enrollment rates for early college students were approximately 9% higher than enrollment rates for non-early college peers. Similarly, Tobolowsky and Allen (2016) reported that more early college graduates enrolled in college than did nonparticipating peers (71% versus 68%). The DE programs research performed by Cook (2017) and by Radunzel et al. (2014)

indicated that DE participation was associated with higher college enrollment rates than in comparison groups comprised of non-DE participants. Similarly, Karp (2015) and Karp et al. (2007) found that low-SES students' participation in DE programs was positively related to subsequent enrollment in postsecondary institutions.

Rodríguez, Hughes, and Belfield (2012) argued that there was no consistent evidence regarding whether dual credit participation had any apparent effect on subsequent college enrollment within 1 year after high school graduation. While most of the research literature compares early college students or DE students with peers who did not participate in any dual credit programs, the impact of participation in various types of dual credit programs on subsequent college enrollment rates remains unclear. The present study was an attempt to fill this gap in the literature and, although additional research is required to identify specific qualitative factors that influenced the outcomes, it is notable that more SDE low-SES participants (77%) persisted to college than did their ACE counterparts (61%). It is also remarkable that the matriculation rate of both CGCC ACE and SDE groups exceeded the statewide rate of Arizona high school graduates going to college. Since 2013 and through 2017, the matriculation rate in Arizona has remained static at 52.6% (Arizona Board of Regents, 2018).

Other studies support the evidence that participation in various formats of dual credit programs increases the likelihood of subsequent college enrollment (Berger et al., 2014; Cook, 2017; Edwards & Hughes, 2011; Haxton et al., 2016; Radunzel et al., 2014; Tobolowsky & Allen, 2016), although the majority of the research compared dual credit enrollees with non-dual credit peers. This includes studies of low-SES students who were 30% more likely to enroll in college after high school and 16% more likely to graduate from college if they had participated in dual credit programs, compared to non-dual credit peers (Taylor, 2015). Other researchers also observed a correlation between low-SES student participation in dual credit and increased likelihood of those students to enroll in a college (An, 2013; Felder, 2017; Sparks, 2013). Limited data are available on the impact of participation in various types of dual credit programs on subsequent college enrollment rates (e.g., An, 2015; Felder, 2017; Haskell, 2016; Karp, 2007) and no published or online studies were found that compared the early college ACE and SDE outcomes. The first null hypothesis of the present study was rejected; the researcher found evidence that more low-SES participants in SDE (77%) persisted to college after finishing high school than did their ACE counterparts (61%). Therefore, it can be concluded that SDE students showed a higher matriculation rate than ACE students. This finding holds true for low-SES dual credit students attending CGCC from whom a representative sample was taken.

Research Question 2

The purpose of the second research question was to determine whether there is a significant difference in academic achievement as measured by the number of college credits earned by former ACE and SDE students during their first year of college enrollment. A two-tailed independent-samples *t* test was run to determine whether there were differences in earned college credits between ACE and SDE students. The number of college credits earned by ACE students ($M = 15.39$, $SD = 7.91$) was greater than the number of credits earned by SDE students ($M = 13.09$, $SD = 8.89$), a statistically significant difference, $M = 2.30$, 95% CI [0.01, 04.59], $t(205.22) = 1.98$, $p = .05$.

Since the normality for SDE was violated (*z*-scores for kurtosis = - 2.72, which is outside of the ± 2.58 range), a Mann-Whitney *U* test was used for additional analysis of data and to validate the

results of the conducted t test. The Mann-Whitney U test results also indicated a statistically significant difference in the number of earned college credits between the two groups, ACE (Mdn = 14.00) and SDE (Mdn = 11.00), $U = 4549$, $z = -2.19$, $p = .028$.

Previous research findings have shown that engaging in DE and EC courses improves educational outcomes for all students, including traditionally underrepresented students (i.e., low-SES students; An, 2013; Karp et al., 2007; Speroni, 2011; Struhl, 2013). Students who participate in early college and DE typically show an increased persistence rate in college and accrue more college credits than students who do not participate in any dual credit programs (Barnett & Hughes, 2010). Rodríguez et al. (2012) found a strong association between college credits accumulated by the end of the first year in college and prior student participation in dual credit programs stating, citing strong and consistent advantages for dual enrollees. Two other researchers also found a positive relationship between DE participation and earning more college credits and reported that DE participation increased the likelihood of earning college credit hours (Rodríguez et al., 2012; Thacker, 2014).

The outcome of the current study conflicts with results of a study by Ganzert (2010), who compared the college credits accumulation and overall graduation rates of DE students with Huskins Bill (a medical and technical cohorts early college program) students and found that the former were greater than rates for both non-DE students and the medical program subset of Huskins Bill students. On the other hand, Huskins Bill Technical program students showed 29% credit hours accumulation and overall graduation rates, compared to 27% of DE students (Ganzert, 2010), which is directionally consistent with findings in the present study.

According to the current research, low-SES SDE students earned an average of 15.39 credit hours per year. This is lower than the average of 17 credit hours per year earned by DE students enrolling in CGCC after high school, as reported in the Chandler-Gilbert Community College Analysis of Dual Enrollment Students (CGCC, 2018b), which did not differentiate DE students by SES. No similar data were found in any printed or online reports for ACE students enrolled in CGCC or any other Maricopa community colleges, so it was not possible to compare those results with the outcome of 15.39 college credits obtained in the current research.

The current investigation indicated a statistically significant difference in the number of accumulated college credits earned by former ACE and SDE low-SES students by the end of their freshman year in college. The ACE group college credits mean score was 2.30 ($SE = 0.12$) higher than the mean score of the SDE group. The results of this study did not conflict with the research on dual enrollment and early college programs, which indicates that participating students tend to accrue more college credits than students who do not take any dual credits in high school (Barnett et al., 2015; Rodríguez et al., 2012).

Ganzert (2010) reported that Huskins Bill technical program students showed a 2% higher rate of accumulation college credits and overall graduation than DE students, which is directionally consistent with findings in the present study showing that ACE students accumulated an average of 2.3 more credits during their freshman year than did their SDE counterparts. Therefore, it can be concluded that ACE students earn more college credits during their first year at college than their ACE counterparts. The finding is valid for low-SES dual credit students attending CGCC from whom a representative sample for this study was taken.

Research Question 3

The purpose of the third research question was to determine whether there would be a statistically significant difference between ACE and SDE low-SES students by the end of their first year in college in terms of their academic achievement, as measured by GPAs. A two-tailed independent-samples *t* test was run to determine whether there were differences in accumulated GPA between ACE and SDE students by the end of their freshman year. There were no outliers in the data, as assessed by inspection of the boxplots. The GPA scores for each group, ACE and SDE, were normally distributed, as assessed by (a) Normal Q-Q Plot method, (b) conducting an assessment of skewness and kurtosis, and (c) evaluating *z*-scores. There also was the homogeneity of variances, as assessed by Levene's test for equality of variances ($p = .139$). The mean GPA for SDE students ($M = 3.145$, $SD = 0.72$) was greater than the mean GPA for ACE students ($M = 2.797$, $SD = 0.85$), a statistically significant difference, $M = 0.35$, 95% CI $[-0.56 \text{ to } -0.13]$, $t(208) = -3.199$, $p = .002$.

Similar to the results of the current study, evidence in research has indicated that DE participation exhibits a relationship with increased cumulative GPAs (An, 2013, 2015; An & Taylor, 2015; Carey, 2015; Haxton et al., 2016; Karp et al., 2007) during the freshman year in college. Ganzert (2010) reported that dual credit participation increased the likelihood of earning college credit hours and identified a strong positive statistical relationship between first-year GPAs and exposure to a dual enrollment or early college Huskins Bill courses. DE students maintained a higher first-year GPA (2.18) than the early college Huskins Bill students, who averaged a 1.93 first-year GPA (Ganzert, 2010). An early college program, College Now, has also demonstrated a positive correlation between participation in the program and college GPA (Bramucci, 2014; Edwards & Hughes, 2011; Karp et al., 2007) but that research did not compare the College Now students' results with results for DE peers.

In contrast to the results of the present study, some research data have suggested a positive correlation between the total number of dual credits taken in high school and subsequent GPA during the first year in college (Stansberry, 2013), thus inferring that ACE students, who typically earn an average of 20.9 college credits in high school (MCC, 2017a), should have demonstrated a higher GPA than their DE counterparts, who typically earn fewer DE credits (7 to 11) (Pierson et al., 2017; Zinth, 2015). The findings in the present research indicated that the average first-year college SDE GPA of 3.2 was higher than the average ACE GPA of 2.8 (SDE $M = 3.145$, $SE = 0.07$; ACE $M = 2.797$, $SE = 0.08$). The average difference in GPA scores constituted 0.4 and was statistically significant.

The results of this study concurred with Ganzert's (2010) study, which showed not only a strong positive and statistically significant correlation between first-year GPAs and exposure to a DE or early college Huskins Bill courses but also demonstrated that DE students maintained a higher first-year GPA (2.18) than the Huskins Bill students (1.93). Other researchers have found supporting evidence of low-SES students' high school dual credits correlating with higher GPAs at the end of their freshman college year, but their research did not account for a range of types of dual credit programs, such as the early college ACE and SDE formats (e.g., Ann, 2013, 2015; Engle & Tinto, 2008; Felder, 2017; Sparks, 2013).

Therefore, based on the results of the current study, it can be concluded that SDE students' academic performance was better than that of their ACE counterparts, which was expressed in their higher average GPA scores. The difference of 0.4 between the GPAs in the ACE and SDE

groups was statistically significant. This finding is valid for the low-SES dual credit freshmen students attending CGCC from whom a representative sample was taken.

Based on the study's findings, it was determined that more low-SES SDE students persisted to college than did ACE students (77% versus 61%) and demonstrated a higher GPA (3.2 versus 2.8). The ACE students accumulated more college credits than did SDE students during their first year in college (15.4 versus 13.1 credits).

Results indicated a significant statistical difference between the two groups of students in college matriculation rate, average earned credits, and grade point averages during their first year in college.

Conclusion

Funding is the “most severe issue” (Wozniak & Palmer, 2013, p. 4) and it creates a serious barrier to expanding dual credit programs. Determining the most beneficial type of dual credit program for low-SES students and understanding which dual credit format yields a better return on investment of tax dollars will assist in making dual credit funding allocation decisions. It is yet another step on a path toward solving challenges related to the cost of education for low-SES students and to developing clear paths to their academic achievement. As Benjamin Franklin once said, “An investment in knowledge always pays the best interest.” Empowering low-SES students with a greater chance at success in higher education will open the door to their brighter future.

References

- An, B. P. (2013). The impact of dual enrollment on college degree attainment: Do low-SES students benefit? *Educational Evaluation and Policy Analysis*, 35(1), 57-75.
- An, B. P. (2015). The role of academic motivation and engagement on the relationship between dual enrollment and academic performance. *Journal of Higher Education*, 86, 98-126.
- An, B. P., & Taylor, J. L. (2015). Are dual enrollment students college ready? Evidence from the Wabash National Study of Liberal Arts Education. *Education Policy Analysis Archives*, 23(58), 1-26.
- Arizona Board of Regents. (2018). 2018 College Enrollment and Completion Report. Retrieved from <https://www.azregents.edu/sites/default/files/public/CollegeEnrollmentAndCompletion%20final.pdf>
- Barnett, E., & Hughes, K. (2010). Issue brief: Community college and high school partnerships. New York, NY: Community College Research Center, Columbia University.
- Berger, A., Cassidy, L., Ford, J., Garet, M., Haxton, C., Hoshen, G., . . . Zeiser, K. (2013). Early college, early success: Early college high school initiative impact study. Washington, DC: American Institutes for Research.
- Berger, A., Garet, M., Hoshen, G., Knudson, J., & Turk-Bicakci, L. (2014). Early college, early success: Early college high school initiative impact study. Washington, DC: American Institutes for Research.
- Bramucci, M. G. (2014). The early college high school model as a means of reducing or eliminating the achievement gap for students from traditionally underrepresented populations (Doctoral dissertation). Widener University, Chester, PA. (UMI No. 1529697266)
- Carey, A. (2015). Dual enrollment: An integration strategy for college persistence and achievement among first-generation students (Doctoral dissertation). Liberty University, Lynchburg, VA. (UMI No. 10009321)
- Chandler-Gilbert Community College. (2018b). Chandler-Gilbert Community College analysis of dual enrollment students. Retrieved from <https://inside.cgc.edu/adminservices2/Documents/IR%20Documents/Miscellaneous/CGCC%20Dual%20Enrollment%20Issue%20Brief.pdf>
- Cook, N. G. (2017). Dual credit instructor and counselor opinions concerning the effectiveness of dual credit programs on post-secondary readiness in southwest Missouri (Doctoral dissertation). Lindenwood University, St. Charles, MO. (UMI No. 10642894)
- Ganzert, B. (2010). The effects of dual enrollment credit and Huskins program credit on college readiness (Doctoral dissertation). Appalachian State University, Boone, NC.

- Engle, J., & Tinto, V. (2008). Moving beyond access: College success for low-income, first-generation students. Retrieved from <http://files.eric.ed.gov/fulltext/ED504448.pdf>
- Edwards, L., Hughes, K., & Weisberg, A. (2011). Different approaches to dual enrollment. New York, NY: Columbia University Teachers College, Community College Research Center.
- Felder, T. (2017). Dual enrollment for low-income students: Exploring student perceptions. Available from ProQuest Dissertations and Theses database. (UMI No 10603469)
- Haskell, R. E. (2016). The effects of dual credit enrollment on underrepresented students: The Utah case. *International Journal of Economics and Finance*, 8(1), 144-165.
- Haxton, C., Song, M., Zeiser, K., Berger, A., Turk-Bicakci, L., Garet, M. S., . . . Hoshen, G. (2016). Longitudinal findings from the Early College High School Initiative Impact Study. *Educational Evaluation and Policy Analysis*, 38, 410-430.
- Karp, M. M. (2007). Learning about the role of college student through dual enrollment participation. New York, NY: Community College Research Center.
- Karp, M. M. (2015). Dual enrollment, structural reform, and the completion agenda. In J. L. Taylor & J. Pretlow (Eds.), *New directions for community colleges: No. 169. Dual enrollment policies, pathways, and perspectives* (pp. 103-111). San Francisco, CA: Jossey-Bass.
- Maricopa Community Colleges. (2017a). Financial aid and satisfactory academic progress. Retrieved from <https://my.maricopa.edu/financial-aid/satisfactory-academic-progress>
- Maricopa Community Colleges. (2017b). The Maricopa ACE programs 2016 progress report. Retrieved from [https://ep.maricopa.edu/ASA/Departments/Documents/2016_ACE_ProgReport_FA16_011917_w-o_Pages%20\(2\).pdf](https://ep.maricopa.edu/ASA/Departments/Documents/2016_ACE_ProgReport_FA16_011917_w-o_Pages%20(2).pdf)
- Pierson, A., Hodara, M., & Luke, J. (2017). Earning college credits in high school: Options, participation, and outcomes for Oregon students. Washington, DC: U.S. Department of Education.
- Radunzel, J., Noble, J., & Wheeler, S. (2014). Dual credit/dual enrollment coursework and long-term college success in Texas. Retrieved from <https://www.act.org/research/policymakers/pdf/DualCreditTexasReport.pdf>
- Rodríguez, O., Hughes, K. & Belfield, C. (2012). Bridging college and careers: Using dual enrollment to enhance career and technical education pathways. Retrieved from <https://academiccommons.columbia.edu/doi/10.7916/D8PG1PTG>
- Sparks, S. D. (2013). Dual enrollment: The impact of dual enrollment on college degree attainment—Do low-SES students benefit? *Education Week*, 32(26), 5.
- Speroni, C. (2011). High school dual enrollment programs: Are we fast-tracking students too fast? New York, NY: National Center for Postsecondary Research.
- Stansberry, D. E. (2013). The effect of prior high school dual enrollment course completion and access equity on first generation college attending students (Doctoral dissertation). University of Nebraska at Omaha. (UMI No. 3588489)
- Struhl, B. (2013). Rewarding dual enrollment in performance-based funding formulas: How states can create incentives for college to high school partnerships. Boston, MA: Jobs for the Future.
- Taylor, J. L. (2015). Accelerating pathways to college: The (in)equitable effects of community college dual credit. *Community College Review*, 43, 355-379. doi:10.1177/0091552115594880
- Thacker, K. (2014). Graduation rates: A comparison of college graduation success rates of dual enrollment versus non-dual enrollment students at the community college (Doctoral dissertation). University of Tennessee at Chattanooga.
- Tobolowsky, B., & Allen, T. (2016). On the fast track: Understanding the opportunities and challenges of dual credit. *ASHE Higher Education Report*, 42(3), 7-106.
- Wozniak, C., & Palmer, L. B. (2013). Stakeholder perceptions of barriers and solutions to significant expansion of postsecondary enrollment options for high school students. *International Journal of Education Policy & Leadership*, 8(2), 1-17.
- Zinth, J. D. (2015). State approaches to funding dual enrollment. Denver, CO: Education Commission of the States.

African Traditional Thought and Soul Force: A Globalization of Community-Based Civil Rights

Ruth Miller Lucier

Bennett College, United States of America

Abstract

This paper offers a positive interpretation of the African Traditional term ‘Magara’ or ‘Soul Force’ and raises the philosophical question of whether, and to what extent, the African Traditional Concept that this term expresses, utilized by three civil rights leaders (and, in a sense, indeed, enabled the three leaders to teach to the entire world), a profoundly humanizing concept that motivated human events in three distinct international venues. These events are described as including the civil rights efforts organized Mohandas Gandhi in India, the Civil rights movement led by Martin Luther King, Jr. in the United States of America, and the anti-apartheid movement led by Nelson Mandela in South Africa. It is suggested that all three leaders utilized this African concept to convey modern visions of human freedom and democracy – visions that have fostered a philosophically global view of Civil Rights in dramatic and splendidly memorable ways.

Keywords: community, globalization, justice, rights

Introduction

The Concept of Soul Force

In Huston Smith’s multi-cultural NEH seminar on the “Great Chain of Being” held in the summer of 1988, it was revealed that in African Traditional Thought, dating from the pre-Colonial period, there was, indeed, a “Great Chain of Spiritual Connections” proceeding down in a hierarchical way from the High Creator God through all the vital and vibrant totality of creation (Lucier 1989). In the seminar itself (a seminar that covered traditional spiritual beliefs of a hierarchical kind in a variety of the world’s religions), the seminar members turned their attention to a very spiritually important concept in African Traditional Thought – one which is found in Central and South African communities. This concept comes under the linguistic sub-category of Kuntu (characterized as “ways or activities of being”). It is, namely, the concept of Magara (often translated as ‘Soul Force’). (Lucier, 1989)

This sub-category of modality (identified in print by Placide Temples (Temples, 1965) originally, and affirmed later by philosopher and linguist Alexis Kagame (Kagame 1971), is one of the four “categories of being” found in the African Traditional Cultures of the many peoples who speak what linguists call “the Bantu/Muntu family of languages.” The four categories are these: 1) Bantu/Muntu (people/person); 2) Kintu (animals and things); 3) Kuntu (modality); and 4) Hantu (space-time). These categories are found embedded in the grammatical structure of Bantu languages.

In such languages, the concept of Magara or “Soul Force” is the modality of mutual communal uplift; it is an active process—just one of the many active processes that Bantu/Muntu Languages include under the category of Kuntu.

Surely, Magara is a crucially important concept. As a sub-category of Kuntu, it is an active modality that is recognized in shared daily speech and is central to references to spiritual matters in many widely spoken African languages (e.g. Shona, Zulu, key-Rwandan). The sub-category's activeness differs from the more fixed set of "concepts of spiritual uplift" found in the grammatical structures (e.g., the subject/verb structures) that are shared by languages in the Indo-European family of languages (e.g. English, French, German and Hindi)—languages that share features of a Hindi-based language structure).

Witnessing Magara in Action

While watching a film entitled "Sisterhood in Action," (Seiler, 2012, with copyright in the public domain), which focused on the involvement of women students in the Civil Rights "sit-in" movement of Feb. 1, 1960 (which was a series of demonstrations that occurred near Bennett College at Woolworth's in Greensboro, North Carolina, USA), many viewers have been intensely drawn to the way in which the concept of Magara seems to be displayed in the expression of that historic event. For the film gives clear evidence that students demonstrating on February 1, 1960 worked diligently from 1958 on to follow the spirit of the "sit in" suggestions given by the Rev. Dr. Martin Luther King, Jr. when Dr. King privately met with four members of the campus press following his 1958 address at Bennett College's Annie Merner Pfeiffer Chapel—an address which included the concepts of morally up-lifting community protest grounded on respecting all of the persons involved. (King, 1958)

The still enthusiastic narrative interviews conducted in 2012 with some of the students who were participants in the February 1960 demonstrations in down town Greensboro, as well as the documenting photographic artifacts from that time which were provided by these interviewed students, underscore the fact that what occurred in Greensboro, NC, USA in February, 1960, was a spontaneous and heartfelt implementation of the earlier plans for alerting a press and legal defense network, namely, plans that had been developed by the interviewed women themselves. The process of enacting this plan, however, took on a totally a new, expansive, dimension, the moment it was known that four young men who were students at the North Carolina Agricultural and Technical University had actually sat down at the lunch counter at Woolworth's on February 1, 1960, and had asked to be served. For, in spite of the fact that the first planners of the demonstrations had decided on a later (post Spring Break) date for a "sit-in" demonstration, neither they, nor any of the others intent on organizing an active demonstration against segregation, hesitated to respond. Indeed, students from all six Greensboro Colleges, responded as if they were all part of one group, even as they began in a totally dedicated way, to peacefully insist on the need for the cessation of segregation at the Woolworth's lunch counter on the grounds that this was a change that was essential for the common good.

Literature Review: Envisioning Connections

What occurs to most of those who view the historic interviews and artifacts, is that what was finally displayed on February 1, 1960 in, and around, the Woolworth's venue in Greensboro, and what continued in the weeks that followed, was akin to a community caught up in a life-changing event that fit the profile of Magara. For, what emanated from the gathering at Woolworth's was an amazingly positive spirit of selflessness, and a dynamic enthusiasm even in the face of possible extremes of personal loss (e.g. injury, imprisonment, and even death). Indeed, as students moved from the classrooms of four or more Greensboro colleges, and converged on the Woolworth's site (scholars all), the central supportive participants without hesitation joined together across

institutional lines to embrace, to participate in, and to implement, previously planned support activities (e.g. logistical plans, press announcements, provisions for those arrested, etc.)—and did so as if they were all of one mind.

What was particularly remarkable about that historic day of February 1, 1960 in Greensboro, North Carolina, was that the students, in effect, seemed to be caught up in a kind of inspired social and psychological togetherness; the demonstrators indeed acted within a shared sense of mutual community—one which transcended all divisions, including institutional, cultural, and social differences. The inclusiveness was surely much in line with the “Magara vitality” that would have been displayed within a village community in Africa when members of that community confronted a mutual threat by acting in concert to achieve goals crucial to the well-being and survival of the whole.

This identification strikes a chord in the minds of many that moves them to think of an earlier civil rights success. That same togetherness of positive community was surely present in the civil rights movement led by Mohandas Karamchand Gandhi throughout his approximately 22 years in South Africa (which began with his employment as a civil rights lawyer defending Indian clients but which was work that also involved close contact with indigenous Zulu culture). Gandhi affirms this in his first-published autobiography, which was originally written in Gandhi’s mother tongue, Gujarati, even while he was still in South Africa, and then later translated into English by Valhi Govindji Desai. (Gandhi, 1928).

On the first page of the final chapter of this book, written by Gandhi while he was still struggling to defend South African-based business clients of Indian/Gujarati heritage from the oppressive human-rights-violating, and segregating, actions of South African’s Apartheid leaders, Gandhi describes the strength of his movement as a movement grounded, not on passive resistance, not on collective behavior, and, specifically, not on civil disobedience. Instead, says Gandhi, the movement he led in South Africa was based on totally positive, non-violent “soul force.” It was “soul force” that Gandhi says in this his initial version of his autobiography that he, Gandhi, had been using to undergird his attempt (over his 22-year sojourn as a lawyer in South Africa) to defeat the implementation of unjust laws that the then racist South African government was trying to impose against the subcontinent immigrant Indian community.

Methods: Considering the Evidence

The similarities between the active and passionate togetherness of Gandhi’s movement (first carried out in South Africa and then later in his native India), and group behavior seen as displaying Magara as “Soul Force,” may usher in the question of whether Gandhi (during his many post-law degree years of living and working to defend Civil Rights in South Africa—fighting, in effect, for minority citizens’ civil rights--had acquired the concept of Magara from indigenous cultures in South Africa, and then used that specific concept to explain his own civil rights successes there. Did Gandhi, then, for use in India, translate the meaning of “Magara” into a made-up, single, Hindi-sounding word, which connected two Hindi words—namely, the Hindi word for “grasp” and the Hindi word for “truth,” when he invented the term “Satyagraha”?

Coming fast upon this second point of inquiry, is a third: might the Rev. Dr. Martin

Luther King, Jr., have himself reached back both to Gandhi (Carson 1998, p.24) and to African Traditional Thought to take hold of the philosophical concept of Magara or “Soul Force”?

(Washington, 1986) And, might he have done so, in order to infuse a source of spiritually focused psychological power into his United States based civil rights movement in order to press for the uplifting of total, inclusive, community? Was it by doing so, that King started the process of totally transforming the United States of American in permanently positive ways? And, then, did Nelson Mandela, too, reach back to both the use of the concept of Magara (Soul Force) in both Gandhi's and King's reforming visions (Smith, 2010, pp. 94-99) in order to lead the South African civil rights movement full circle (Cohen, David Elliot 2009, p.130), finding a basis for the movement, once again, in the concept of Soul Force? (Washington, 1986, pp. 102-104). Was it through making this connection, that Mandela was also able to offer a civil rights revolution that peacefully seized the imagination of the world, while eventually bringing about a, nation-transforming, philosophically non-violent, and comprehensive "civil rights " revolution – a revolution with the clear purpose of courageously fostering the commitment to achieving a consistently honored, and openly mandated, policy of equal and dignified treatment for all citizens - a policy that would usher in new freedoms for all concerned, as well as comprehensive, legal, equality ((Mandela, 1994, p. 54, 539-540).

It is worth adding that Mandela, while very versed in King's civil rights movement in the United states, knew of King's use of the term "love force" or "soul force," as King did in fact use it. However, this knowledge may well have also come from Mandela's own cultural knowledge of this term and its meaning for he himself spoke Bantu languages, and had likely seen the working of this kind of "soul force" in his own indigenous South African Thembu Culture.

Conclusion

This thesis concerning the positive effect of Margara/Soul Force, while still awaiting additional development and supportive research, seems to be borne out, (1) by the very effectiveness of its use as a concept with spiritually-connected psychological connotations, (2) by the amplification of the term's significance in the fleshed-out historical demonstrations of peaceful processes and strategies grounded in what was meant by the term itself, and, finally, (3) by the term's major role in its linear, peaceful, and repeated utilization in the civil rights movements led by the above-mentioned three great and charismatic leaders—namely, Gandhi, King, and Mandela.

It would seem then, that through its applications, the concept (Magara/Soul Force) was exhibited and acknowledged as a willingness of individuals to set aside their own immediate interests in order to act in concert, and to do this so that the just and positive needs and aspirations of the wider moral community could be met. To the extent that this was so, the outcome was that in three different national contexts, namely, those in South Africa, in India, and in the historically segregated southern states of the United States of America, entire communities of individuals were united by vigorous mutual support, selfless courage, and steadfast goodwill—and thus thousands were joined in advancing ardent requests for change. The result was that true reform could prevail and usher in permanent, positive, new ways of relating to others, many of which continue to inform our thinking today.

Thus, the rather ambitious claim offered here (one for which evidence is still being collected) is that a profound, indigenous African Traditional Concept was carried full circle by three great moral leaders—leaders who all three aimed to peacefully uplift the world's vision, and who all three offered what is still an internationally valued perspective—a perspective accepted by people of the kind that the Rev. Dr. Martin Luther King, Jr. in fact, surely meant to refer to in his 1958 speech at Bennett College's Annie Merner Pfeiffer Chapel as "people of good will."

An interesting historical observation supported here, is that a centrally important African concept has been evoked across the globe in order to create identifiably transcendent “Circles of Support.” Moreover, this concept, (namely, the Magara/Soul Force concept), has highlighted a dimension of human experience that peacefully offers a sense of active inclusiveness and cohesion that draws together members of the human community in ways that form an active, inspired, and positively energized whole. Such energized collectives have moved resolutely and fearlessly toward the purpose of realizing bravely focused, intentionally truth-filled, and monumentally positive, social change.

References

- Carson, Clayborne, ed. (1998) *the Autobiography of Martin Luther King*. New York: Warner Books, Ink.
- Cohen, David Elliot. (2009). *Nelson Mandela: a life in photographs*. New York, USA: Sterling Publishing Co., Inc.
- Gandhi, M. (1928) *Satyagraha in South Africa*. (1928). Ahmedabad, India: Navajivan Press.
- Kagame, Alexis. (1971). *La Philosophie Bantu Compare*. Paris, France: Presence Africaine.
- King, Martin Luther, Jr. (An Original Speech delivered without a title) on February 11, 1958, in Annie Merner Pfeiffer Chapel at Bennett College Greensboro; this recording of this speech by King himself is currently held in the Archives of Bennett College's Holgate Library, in Greensboro, North Carolina, USA.
- Lucier, R. (1989). Dynamic of hierarchy in African thought. *Listening: Journal of Religion and Culture*, 24 (1).
- Mandela, Nelson. (1994). *Long walk to freedom: the autobiography of Nelson Mandela*. Boston, USA : Little, Brown & Company.
- Seiler, Melissa and Arielle Smith, with Ruth Lucier, Instructor. (2012) *Sisterhood in Action.mov*” (Copyright in Public Domain).
- Smith, David James. (2010). *Young Mandela: The Revolutionary Years*. New York: Little, Brown & Company.
- Tempels, Placide. (1945). *Bantu Philosophy*. Paris, France: Presence Africaine.
- Washington, Melvin James, Jr. ed. (1986). *I Have a Dream: Writings and Speeches that Changed the World*. San Francisco, USA: Harper.

Acknowledgments

The author gratefully acknowledges the assistance of the following colleagues with earlier revisions of this draft: Dr. Lucheia Graves, Tytianna Horn, and Courtney Lawrence.

Transitioning of Instructional Designers From Preparatory Programs to the Workplace

Christian Olson and Daniel Eadens

Northern Arizona University, USA

Abstract

Instructional design is becoming integral to modern educational organizations. As experts in technology, learning theory, and practice, the skills and knowledge required to be an effective instructional designer are becoming complex and challenging to master (Riter, 2016). Organizations are struggling to find instructional designers that can meet their needs (Riter, 2016). Managers may want instructional designers to have expertise in all areas of instructional design, but organizations that create instructional design competencies report this is not possible (International Board of Standards for Training, Performance and Instruction, 2012; Villachica, Marker, & Taylor, 2010). Instructional designers report that their role in the organization can be ill-defined, and that graduate schools do not teach all the needed skills for the workplace (Larson, 2005). This research design was a quantitative, non-experimental, correlational design research study. A custom survey instrument of instructional designer comfort level with and frequency using competencies was sent to graduates of three instructional design graduate schools. Correlational statistics (Pearson's r) were computed from responses collected from novice and experienced instructional designers. The researcher analyzed correlations between the two groups. Research question one and research question two were not found to be statistically significant. Research question three was statistically significant with a large, positive correlation ($r(28) = .58$, $p < .05$). The coefficient of determination was .33, a moderate practical effect size (Cohen, 1992). Research question four was statistically significant with a large, positive correlation ($r(28) = .61$, $p < .001$). The coefficient of determination was .37, a moderate practical effect size (Cohen, 1992).

Keywords: modern educational organizations, preparatory programs, learning theory

Introduction

The problems and realities of working in higher education pressure educational leaders and employees to face an ever-increasing set of demands to keep their institutions running. These demands, whether political, financial, technological, or instructional, sometimes require the aid of new employees with the latest training and education. As these new faces are on-boarded into the institution, an educational leader is faced with a decision: use a lengthy formal training process or hope they can learn as they go. The leader needs help solving institutional problems now, but the new employee may need further training to successfully transition into a valuable member of the team. If an educational leader chooses a less effective method of preparation, the institution is faced with wasted hours of potentially ineffective training, an employee ill-prepared and unable to meet the requirements of the position, or an employee who becomes frustrated and leaves the institution without ever contributing to solving the institutional problems.

This problem of transitioning an employee into the workplace is on the minds of many educational leaders around the country, especially in the field of instructional design. The demands and needs of instructional design are multiplying as the role is quickly becoming integral to modern higher education (Riter, 2016). If leaders can promptly assess the instructional design needs of their

institutions and train novice instructional designers to meet those needs, they can find practical solutions to the many demands placed on them and their institutions. Through this prospectus, the researcher seeks to define the role of the instructional designer in the workplace and to identify the gaps in the transition of novice instructional designers from graduate programs into their positions.

Statement of the Problem

Despite the need for IDs, there is difficulty transitioning novice instructional designers into the workplace. Gaps exist during this transition phase due to a lack of understanding of the role of the instructional designer in the workplace and in instructional design graduate programs. Organizations have been unable to define the role of an ID in their organization accurately. Researchers have been trying to identify the role of the instructional designer and determine methods of improving this transition process for decades (Larson, 2005; Larson & Lockee, 2009; Leigh & Tracey, 2010; Moskal, 2012; York & Ertmer, 2016). This lack of understanding helps researchers to infer that organizations are losing time and money in getting novice instructional designers ready for their role in the workplace (International Board of Standards for Training, Performance and Instruction, 2012; Larson, 2005; Larson & Lockee, 2009; Sugar, 2014; Thompson-Sellers, 2012; Villachica, et al., 2010; York & Ertmer, 2016).

Organizations and instructional design leaders are frustrated with the lack of preparation of their novice IDs. Villachica et al. (2010) reported the need for further research on the expectations and needs of organizations with the conclusion there is a shortage of information on the topic. The researchers identified 22 common activities novice instructional designers need to perform for their organizational role, but organization leaders report that 53.70-97.50% (depending on the activity) of novice instructional designers frequently do not meet expectations in completing these activities. Additionally, only one-third of all novice instructional designers could complete basic ID tasks such as writing and sequencing learning objectives without the need for ample assistance.

The research of Villachica et al. (2010) demonstrated there is a need to explore what instructional design leaders want from their new instructional designers and what is needed from novice IDs in an organization. It is not been identified in existing literature if instructional design leaders demand too much of novice instructional designers, or if a novice instructional designer must indeed master every activity desired by instructional design leaders. In either case, instructional design leaders have not identified the role of the novice instructional designer in their organizations. Conversely, there is no current method to determine if the education received from institutions of higher learning is up-to-date to current workplace demands, or if perhaps there are gaps in the preparation of novice instructional designers by higher education graduate programs. Similar findings and suggestions to understand better the role of the instructional designer in the workplace can be found in Lechner (2012), Sugar (2014), and Thompson-Sellers (2012).

The other major issue creating gaps in the transition of novice instructional designers into the workplace is that current training methods are expensive and time-consuming. Current researchers are exploring the effectiveness of higher education graduate programs in preparing novice instructional designers. Sugar (2014) reported many researchers have discovered that the process of training instructional designers may be inadequate as well as expensive. Other researchers such as Veletsianos & Moe (2017) echo these findings regarding the costliness of training IDs. Sugar (2014) also wrote that workplace skills are different than skills learned during higher education ID preparation and stated that training programs need to adjust accordingly. For example, York and Ertmer (2016) reported that inefficient practice activities, such as ID design model memorization,

would yield better results when replaced with effective learning practices, such as mimicking the methods used by experts during problem-solving.

Instructional designers also reported feelings of frustration with the ID preparation and transition process. IDs stated in a Larson (2005) survey that they felt ill-prepared to meet many of the realities of the workplace. Of the IDs surveyed, 59.10% of novice instructional designers felt unprepared for workplace politics, with another 40-46% reporting an issue with managing workload (Larson, 2005). Additional concerns included finding resources; balancing quality, timeliness, and cost; and working with managers.

From the previous literature we learn that organizations need high quality and highly effective instructional designers, but there are gaps that are slowing down novice instructional designers from meeting these needs. If organizations accurately defined the role of the instructional designer that are well aligned with graduate programs, instructional designers could meet organizational demands and feel confident in their performance.

Purpose of the Study

The purpose of this study was to determine the relationship between novice instructional designer comfort level with and frequency of using ID competencies during the transition of the novice instructional designer from graduate school into the workplace. The researcher determined the role of the novice instructional designer by asking the following research questions: What is the relationship between the comfort level of novice instructional designers using the IBSTPI instructional design competencies and the frequency those instructional design competencies are used by novice instructional designers in the workplace? What is the relationship between the comfort level of experienced instructional designers using the IBSTPI instructional design competencies and the frequency those instructional design competencies are used by experienced instructional designers in the workplace? The researcher surveyed graduates from three higher education instructional design graduate programs. The results of this study inform instructional design leaders on the expected role of a novice instructional designer in the workplace, as well as enlighten instructional design leaders which instructional design competencies require increased focus during higher education graduate programs.

Theoretical Framework

The theoretical framework of this study was Constructivism in combination with Backwards Design. Constructivism is a learning framework based on the idea of the learners constructing their own learned environment. As Constructivism places the focus on the student, Backwards Design is also useful to the framework of this research design by focusing on transitioning instructional designer skill and knowledge into the workplace and graduate programs. The specific Backwards Design model used in this research design was Understanding by Design (UbD) which was created by Wiggins & McTigue (2005). UbD focuses on what it terms as understandings and defines these understandings as “making meaning of facts and transferring knowledge to other problems, tasks, and domains” (p. 46). In other words, understandings are the outcomes a learner needs to gain from instruction.

Focusing on the constructs that create a learning environment for a student and the actual learning of the student was the theoretical framework of this research design. Integrating Backwards Design into Constructivism can be problematic as the narrow definition of understandings can be

seemingly incongruent with that Constructivist view of learner-directed outcomes. Combining the basic idea of focusing on learner outcomes while acknowledging the environment in which learning occurs and how the learner negotiates this environment to learn is a concept that this research design named constructs.

Constructs can be applied to instructional designers in the workforce by using the International Board of Standards for Training, Performance and Instruction (IBSTPI) instructional design competencies. The IBSTPI competencies were created based on the skills and knowledge an instructional designer should obtain to meet the needs of an organization. It combines workplace performance needs with the skills expected of instructional designers in the workplace. These competencies are now widely used across organizations and in research (International Board of Standards for Training, Performance and Instruction [IBSTPI], 2018; Brown, 2016; Leigh, 2010).

Using Constructivist and Backwards Design integrated constructs was an approach not identified by any prior research. There was an opportunity to use the strengths of Constructivism and the UbD model combined with the IBSTPI competencies to have instructional designers assist in defining the role of the ID in the workplace and using the findings to improve graduate programs. In addition, discovering the role designers are performing in an organization helped define expectations of instructional design leaders.

Research Design and Procedures

This research design was a quantitative, non-experimental, correlational design research study. This design examined whether a relationship exists or does not exist between the frequency of competency use by instructional designers and the comfort level of using each competency by novice instructional designers (Check & Schutt, 2012). The specific quantitative statistical test used to determine the correlation of these two measures in this research design was Pearson's correlation (r). Age and gender are included in the data collected and will be reported but will not be undergoing statistical analysis.

The data for the statistical tests were collected using a survey research design. Survey research is a versatile method of data collection that can produce generalizable statistics (Check & Schutt, 2012; Fowler, 2014). An online survey was sent to graduates of three higher education instructional design graduate programs. The goal and challenge of the survey was to collect large amounts of data without the need of an interviewer (Fowler, 2014). However, not enough participants were collected so the survey was sent to an additional eight higher education graduate programs and the EDUCAUSE Instructional Design listserv. The questionnaire used in the survey instrument was tested for validity and reliability.

The research design was correlational. Using the correlational design allowed the researcher to quantitatively determine the magnitude and direction of the relationship between the frequency of use and novice instructional designer comfort level with the instructional design competencies (Laerd Statistics, 2018; Pagano, 2010). The instrument used in the research design was validated through statistics to confirm this linear relationship exists. All data and computations were analyzed by a second coding expert to confirm accuracy. Responses were collected anonymously: no personally identifiable questions were asked, and any tracking features in the survey collection tool were turned off.

Population

The target population for this study consisted of instructional designers who have graduated from three instructional design graduate programs located in the United States. The selected graduate programs offer instructional design or related graduate programs. Instructional designers were employed in a variety of fields.

Sampling

Systematic random sampling was the sampling technique used in this study because it met the criteria of the research design. The correlational statistics were computed on these two groups of responses. The collected responses were also reviewed to make sure they meet the qualifications of the study. To qualify, responses must have been from instructional designers who are working in the field and have graduated from an instructional design or equivalent graduate program. Responses that did not meet these criteria were omitted from both groups of sampled responses.

The following method was used to randomly choose participants from both groups in the sample. From the pool of qualifying responses, every other response was selected until the required number of responses was collected. This process occurred for both of the groups, and the selection process was independent in both the novice and the experienced ID group.

Instrumentation

The data for this study were collected through a survey instrument administered online. The full survey instrument can be accessed in Appendix C. The instrument was delivered in three parts: a) Part 1 - Demographics, for sampling purposes, b) Part 2 – Frequency of Use, to determine the frequency competencies are used in the workplace, and c) Part 3 – Novice Instructional Designer Comfort Level, to determine the comfort level of novice instructional designers in using competencies. The verbiage of the alumni email group invitation can be view in Appendix A. Alumni self-selected into completing the survey based on the email request. The survey responses were collected and analyzed using appropriate statistics. The researcher created a plan for confidentiality in participant responses, and gained the approval from the Institutional Review Board (IRB), as well as the dissertation committee members.

Data Analysis

The data analysis procedures for this study included computing four Pearson's r correlations with the purpose of determining the strength and direction of the relationship between the two variables (Pagano, 2010; Laerd Statistics, 2018). The researcher paired the summative scores of the novice instructional designers with the summative scores of the experienced instructional designers, as well as pairing the scores of the novice instructional designers together, and pairing the scores of the experienced instructional designers together. The linear correlation was analyzed to determine how the data impact the workplace using a Type I alpha error rate for hypothesis testing of .05 (Pagano, 2010; Laerd Statistics, 2018). Table 2, below, provides a breakdown of the procedures for each research question.

Research Question 1

The first research question asked: What is the relationship between the comfort level of novice instructional designers using the IBSTPI instructional design competencies and the frequency those instructional design competencies are used by novice instructional designers in the workplace? The purpose of this question was to determine if there was a relationship between the two variables to determine which competencies are being used in the workplace by designers and which competencies are not commonly used.

Major Findings

A Pearson's r correlation was calculated on the novice+ sample. The novice+ sample are the novice instructional designers plus the least experienced instructional designers (a large enough sample of novice IDs was not collected). A large, positive, and statistically significant correlation was identified between the comfort level with using and frequency of using the IBSTPI instructional design competencies in the novice+ sample. Once a relationship was confirmed, the response data were used to identify competencies that were frequently used by IDs, not frequently used by IDs, and whether or not they feel comfortable using them. Thus, this data may reveal a window into the role of the novice instructional designer.

While the findings based on the data were statistically significant, it must also be determined if there is practical significance as well. Practical significance was determined by measuring the effect size of the r . In other words, the data must also show that the variation between the variables is based on each other and not unknown factors. The practical significance was determined to be moderate as determined by calculating the coefficient of determination. While this was not as strong of a practical significance as desired, some following conclusions from the data were drawn.

The survey responses were grouped by novice and experienced instructional designers. There were eight responses from novice instructional designers. While not as strong of a sample size as desired, the data produced provided some insight. The list compiled was based on the data of the most frequently and least frequently used competencies and the competencies that were most comfortable and least comfortable for the novice IDs. Using this data, the succeeding competencies were identified as the most frequently used and most comfortable in the workplace:

- Communicate effectively in visual, oral, and written form
- Analyze the characteristics of existing and emerging technologies and their potential use

Conversely, these competencies were the least commonly used by, and least comfortable for, novice IDs:

- Design learning assessments
- These skills were identified as less frequently used than most, however still comfortable for novices:
- Identify and describe target population and environment characteristics
- Develop instructional materials
- Revise instructional and non-instructional solutions based on data
- Apply data collection and analysis skills in instructional design projects
- Apply research and theory to the discipline of instructional design

- Plan and manage instructional design projects
- Select and use analysis techniques for determining instructional content
- Implement, disseminate, and diffuse instructional and non-instructional interventions
- Use an instructional design and development process appropriate for a given project
- Select or modify existing instructional materials
- Evaluate instructional and non-instructional interventions
- Apply business skills to managing the instructional design function

These skills were identified as being frequently used by novice IDs, but less comfortable than other skills:

- Identify and respond to ethical, legal, and political implications of design in the workplace
- Manage partnerships and collaborative relationships
- These two skills were identified as being not frequently used by many novice IDs and also less comfortable than others skills:
- Organize instructional programs and/or products to be designed, developed, and evaluated
- Apply data collection and analysis skills in instructional design projects

Research Question 2

The second research question is: What is the relationship between the comfort level of experienced instructional designers using the IBSTPI instructional design competencies and the frequency those instructional design competencies are used by experienced instructional designers in the workplace? The purpose of this question was to determine if there was a relationship between the comfort level with using and the frequency of use of the IBSTPI instructional design competencies by experienced designers. This relationship was to be used in order to determine which competencies are being used and not used in the workplace by experienced designers and what competencies are most and least comfortable for those designers.

Research question two was important because it helped define the role of the instructional designer in the workplace. Findings in this session were congruent with the findings from The Chronicle of Higher Education report (2016). This report found that there were significant discrepancies between how faculty and IDs view the role of the instructional designer in the workplace. Using Backwards Design in conjunction with Constructivism as we interpret the data from the study allowed for a framework to identify, at least in part, the role the instructional designer is performing in the workplace. Inferences from the data might help create a basis for a realistic description of the work performed by IDs. This description might assist managers and graduate schools to inform their practice and training.

Major Findings

A Pearson's r correlation was computed on the experienced sample. A large, positive, and statistically significant correlation was identified between the comfort level with using and frequency of using the IBSTPI instructional design competencies in the experienced sample. Once a relationship was confirmed, the researcher used the response data to identify competencies that are frequently used by IDs, not frequently used by IDs, and whether or not they feel comfortable using them.

While the findings based on the data were statistically significant, the researcher must also determine if there is practical significance as well. Practical significance is determined by measuring the coefficient of determination. In layman's terms, the data must also show that the variation between the variables is based on each other and not unknown factors. The practical significance was determined to be moderate (.37). Whereas this is not as strong of a practical significance as desired, the researcher was able to draw some conclusions from the data.

The survey responses were grouped by novice and experienced instructional designers (Appendix G). There were 72 responses from experienced instructional designers that were grouped in these four categories: 1 ½ to 5 years of experience, 5 to 10 years of experience, 10+ years of experience, and retired. Using resulting data, the following competencies were identified as the most frequently used in the workplace.

The competencies that had both a high frequency of use score and a high comfort level score are:

- Communicate effectively in visual, oral, and written form
- Select or modify existing instructional materials
- Develop instructional materials
- Plan and manage instructional design projects.

Conversely, these competencies were the least commonly used and least comfortable for experienced IDs:

- Plan non-instructional interventions
- Evaluate instructional and non-instructional interventions
- Apply data collection and analysis skills in instructional design projects
- Identify and respond to ethical, legal, and political implications of design in the workplace.
- The competencies that were less frequently used but had a higher comfort level score are:
- Revise instructional and non-instructional solutions based on data
- Use an instructional design and development process appropriate for a given project
- Organize instructional programs and/or products to be designed, developed, and evaluated.

The competencies that were frequently used but had a lower comfort level score are:

- Apply business skills to managing the instructional design function.

The competencies that were frequently used but had a moderate comfort level score are:

- Manage partnerships and collaborative relationships.
- Apply research and theory to the discipline of instructional design.
- Select and use analysis techniques for determining instructional content.
- The competencies that had a moderate frequency used score but had a higher comfort level score are:
- Analyze the characteristics of existing and emerging technologies and their potential use
- Apply research and theory to the discipline of instructional design
- Design instructional interventions
- Implement, disseminate, and diffuse instructional and non-instructional interventions
- Design learning assessment

- Identify and describe target populations and environmental characteristics
- Conduct a needs assessment in order to recommend appropriate design solutions and strategies
- Revise instructional and non-instructional solutions based on data.

Conclusion

Instructional design is becoming integral to modern educational organizations. As experts in technology, learning theory, and practice, the skills and knowledge required to be an effective instructional designer are becoming complex and challenging to master (Riter, 2016). Organizations are struggling to find instructional designers that can meet their needs (Riter, 2016). While managers may want instructional designers to have expertise in all areas of instructional design, but organizations that create instructional design competencies report this is not possible (International Board of Standards for Training, Performance and Instruction, 2012; Villachica, Marker & Taylor, 2010). Instructional designers report that their role in the organization can be ill-defined, and that graduate schools do not teach all the needed skills (Larson, 2005). This research design was a quantitative, non-experimental, correlational design research study. A custom survey instrument of instructional designer comfort level with and frequency using competencies was sent to graduates of multiple instructional design graduate schools.

The data was analyzed to determine the relationship between the comfort level using and frequency of use within the novice group and the experienced group (research questions 1 and 2). A large statistical and moderate practical significance was identified in research question 1 and research question 2. Research question one was statistically significant with a large, positive correlation ($r(28) = .58, p < .05$). The coefficient of determination was .33, a moderate practical effect size (Cohen, 1992). Research question two was statistically significant with a large, positive correlation ($r(28) = .61, p < .001$). The coefficient of determination was .37, a moderate practical effect size (Cohen, 1992).

Using the data, Figure 1 was created. Figure 1 shows the contrast between graduate school preparation and workplace practice. The skills and competencies listed in the graduate school section are those that are instructional designers likely are comfortable with upon graduation but are less likely to be used in the workplace. On the other side, competencies and skills listed in the workplace category are more likely to be used in the workplace but IDs are less comfortable using them. The overlapping section includes illustrates the skills and competencies that are both likely to be well-prepared during graduate school and frequently used in the workplace. This figure uses data to suggest likely starting places for both graduate school and workplaces to focus their attention and resources.

There were limitations to this study. Most importantly, a larger sample size was desired but could not be obtained. Despite many attempts to recruit more respondents, only eight novice instructional designers and seventy qualifying experienced instructional designers ultimately responded. This means that only a large effect size was used a specialized novice+ group had to be created using novice and less experienced instructional designers. Additionally, as with any anonymous survey, all the responses were assumed to be accurate and truthful. However, there is ultimately no way to confirm that every respondent was entirely truthful. Another limitation is that the majority of the respondents were in the fields of higher education or business/corporate. Given the diverse number of fields of instructional design, these findings may not be generalizable

to all other fields. Despite these limitations, the researcher feels that there are meaningful conclusions that can be drawn from this study.

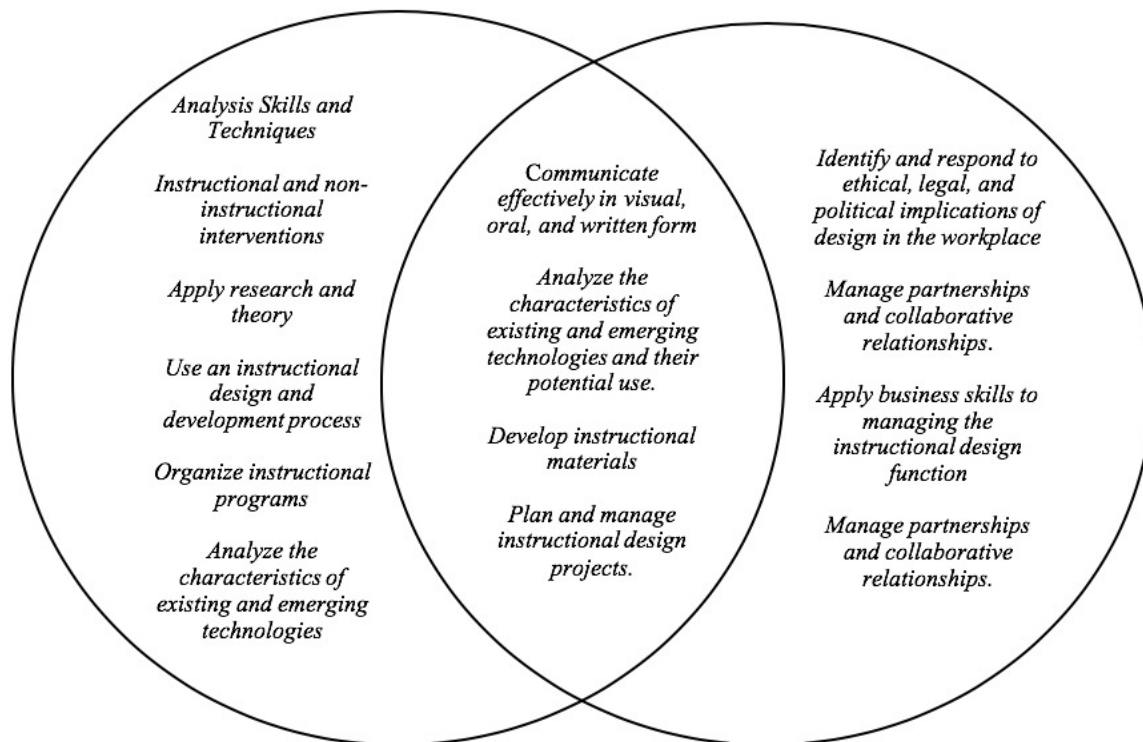


Figure 1. Competencies and Skills During Transition Phase

Riter (2016) summarizes the stakes when he says, “Instructional designers are, in many ways, the linchpin of higher education’s digital transformation. But great instructional designers are hard to find.” Because of the increased demand for instructional designers in the workplace, it is critical that instructional designers being prepared today efficiently and effectively to transition into their roles. To serve this growing and important field, the researcher recommends that inquiry and evaluation of current practice continue. More data are needed that focus in greater detail the experience of the novice instructional designer.

References

- Brown, T. M. (2016). Instructional design in higher education: Identifying the connection between theory and practice (Order No. 10162671). Available from ProQuest Dissertations & Theses Global. (1830471447). Retrieved from <http://search.proquest.com.libproxy.nau.edu/docview/1830471447?accountid=12706>.
- Check, J., & Schutt, R. K. (2012). Research methods in education. Thousand Oaks, CA: Sage Publications.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155-159.
- Fowler, Jr., F. J. (2014). Survey research methods. Thousand Oaks, CA: Sage.
- International Board of Standards for Training, Performance and Instruction. (2012). Instructional design competencies: The standards. International Board of Standards for Training, Performance and Instruction.
- International Board of Standards for Training, Performance and Instruction. (2018). Instructional designer competencies. Retrieved from <http://ibstpi.org/instructional-design-competencies/>.
- Larson, M. B. (2005). Instructional design career environments: Survey of the alignment of preparation and practice. *Tech Trends*, 49(6), 22-32.
- Larson, M., & Lockee, B. (2009). Preparing instructional designers for different career environments: A case study. *Educational Technology Research & Development*, 57(1), 1-24. doi:10.1007/s11423-006-9031-4.

- Laerd Statistics. (2018). Pearson's product-moment correlation. Retrieved from <https://statistics.laerd.com/premium/spss/pc/pearson-correlation-in-spss.php>.
- Lechner, T. (2012). Bridging the gap: Preparing instructional designers for the realities of the workplace. *NUCB Journal of Language Culture and Communication*, 14(1), 47-55.
- Leigh, H. N., & Tracey, M. W. (2010). A review and new framework for instructional design practice variation research. *Performance Improvement Quarterly*, 23(2), 33-46.
- Moskal, T. M. (2012). Instructional designers in higher education (Order No. 3546879). Available from ProQuest Dissertations & Theses Global. (1267747031). The University of Nebraska – Lincoln. Retrieved from <http://search.proquest.com.libproxy.nau.edu/docview/1267747031?accountid=12706>.
- Pagano, R. R. (2010). *Understanding statistics in the behavioral sciences*. Belmont, CA: Wadsworth Cengage.
- Riter, P. (2016, June 7). The quest for great instructional designers. *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/advice/2016/06/07/troublesome-shortage-instructional-designers-essay>.
- Sugar, W. (2014). *Studies of ID practices: A review and synthesis of research on ID current practices*. New York, NY: Springer.
- The Chronicle of Higher Education. (2016). Instructional designers in higher ed: Changing the course of next-generation learning. Retrieved from <http://results.chronicle.com/LP=1341?cid=housead>.
- Thompson-Sellers, I. N. (2012). What informs practice and what is valued in corporate instructional design? A mixed method study. Georgia State University. Retrieved from http://scholarworks.gsu.edu/cgi/viewcontent.cgi?article=1095&context=msit_dis
- Veletsianos, G., & Moe, R. (2017, April 10). The rise of educational technology as a sociocultural and ideological phenomenon. *Educause*. Retrieved from <http://er.educause.edu/articles/2017/4/the-rise-of-educational-technology-as-a-sociocultural-and-ideological-phenomenon>.
- Villachica, S. W., Marker, A., & Taylor, K. (2010). But what do they really expect? Employer perceptions of the skills of entry-level instructional designers. *Performance Improvement Quarterly*, 22(4), 33-51.
- Wiggins, G., & McTigue, J. (2005). *Understanding by design* (2nd ed.). Alexandria, VA: ASTD.
- York, C. S., & Ertmer, P. A. (2016). Examining instructional design principles applied by experienced designers in practice. *Performance Improvement Quarterly*, 29(2), 169-192.

Piloting Restorative Justice Practices in Middle School: A Case Study

Zorka Karanxha, Michael Bailey, and Sean Dickerson

College of Education
University of South Florida, United States

Abstract

The purpose of this study is to deepen understanding of the dynamics of implementing equity policies in school discipline and change in schools. Research design: This longitudinal case study of Restorative Justice practices implementation utilized data collection through interviews with four participants interviewed twice each, focus groups, observation data, field notes, email communication, and document analysis. Findings: 1) The leadership of school developed the vision for the initiative and engaged in careful planning to begin the implementation of this change; 2) Most of the participants had common definitions of RJ practices; 3) The school chose to start restorative circles with students in most need rather than engage in a school-wide approach; 4) The people engaged in this change had divergent purposes, goals, and hopes of Restorative Justice circles; and 5) Barriers and challenges became more pronounced in the second year of implementation. Conclusions: Commitment, deliberate planning and district support are paramount for successful restorative practices to take root in school discipline.

Keywords: restorative circles, change implementation, middle school

Introduction

The concepts of restorative justice are based largely on indigenous approaches. The emphasis is on healing harm or repairing rather than punishing. In restorative justice approaches, questions like these are asked: What is the harm caused and to whom? What are the needs and obligations that have arisen? How can everyone present contribute to addressing the needs, repairing the harm, and restoring relationships? Additional questions can probe the roots of the conflict and make broader connections: What social circumstances promoted the harm? What similarities can we see with other incidents? What structures need to change? The emphasis is on building trusting relationships and community. In this study, we explore, document, and analyze the implementation of restorative justice practices in a middle school. As an approach that is markedly different than the more punitive approaches to discipline, its successful implementation would require a fundamental shift in policy, practice, values and beliefs.

Literature Review

In the literature review, we draw from two areas of research: Zero tolerance policies and their impact on students of color and low socioeconomic backgrounds, and positive school-wide discipline with specific interest in restorative justice practices.

Zero Tolerance Policies

Zero-tolerance policies mandate the application of predetermined consequences, most often severe and punitive in nature, that are intended to be applied regardless of the gravity of behavior, mitigating circumstances, or situational context. These policies were instituted in American

schools nationwide in the mid-1990s, and have since been at the center of a heated debate concerning misbehavior in schools. Initially, schools implemented zero-tolerance policies to comply with federal laws designed to eliminate the presence of guns in schools. Overtime, many schools expanded their policies to include any object that could be considered a weapon, drugs, and other misbehavior. Advocates and critics alike suggest the need for flexibility within the policies, while others argue the policies should be abolished entirely (Karanhya, 2017).

Harsh disciplinary actions (i.e., suspension or expulsion) predicated on zero-tolerance policies have been applied to nonviolent infractions such as tardiness, absences, and willful disobedience (Lospennato, 2009). Schools that rely on these disciplinary methods experience greater disciplinary concerns that impact students of color disproportionately (Skiba & Peterson, 2000). Zero tolerance puts school resources toward policing and push-out instead of toward teaching and support. The number of youth who are pushed out of school and incarcerated has increased dramatically and many of the youth have disabilities and identify as LGBTQ.

According to Gregory, Skiba, and Noguera (2010), the “achievement gap” is rooted in the “discipline gap.” Disproportionality in disciplinary actions particularly impacts students of color (male and female) who are referred at higher rates for minor infractions such as disrespect and excessive noise, regardless of socioeconomic backgrounds (Kim, 2009). Skiba, Simmons, Staudinger, Rausch, Dow, and Feggins (2003) pointed out the negative impact that zero tolerance exclusionary practices have on the trajectory of students exposed to such practices in their description of the redirection of the pipeline from school to higher education and productive citizenship to prison. This redirection occurs because expulsions and suspensions remove students from the schools and increase their exposure to negative models, increase opportunities to engage in delinquent behavior, and diminish school attachment, an important determinant of academic achievement (Skiba & Peterson, 2000).

It is often argued that the true issue in the disproportionality observed in many areas within the school setting (e.g., the achievement gap, the discipline gap, gifted placement, etc.) is due to issues of socioeconomic status (SES) and not race. Studies on school discipline (Lustick, 2016; Skiba et al., 2000; Walker, 2012) show that black students are disciplined more often and more harshly than their white peers, even when controlling for socioeconomic status and behavior. Archer (2009) and Kim (2009) reported that Black males receive harsher punishments for engaging in similar behaviors as their white counterparts regardless of SES. Furthermore, the push for teacher accountability has been negatively manifested as teachers provide surveillance and behavior management within the classroom instead of support and guidance (Raible & Irizarry, 2010). According to Skiba (2001), African American students were twice as likely as white students to be issued a referral to the office by teachers and the disparity in school suspensions is a result of greater rate of which African American students are referred to the office rather than the administrative decisions. Furthermore, it is not that African American males have a tendency to act out more than white males. According to Skiba (2001), there are no differences between black and white students on 24 out of 32 reasons for disciplinary referral. Black students receive punitive discipline for more subjective and less serious reasons than white students (Skiba, 2001).

Positive School-Wide Discipline

Recently, schools are implementing positive school discipline policies such as PBIS, MTSS, and restorative justice to address racial disparities in school discipline. Positive discipline reduces the need for suspensions (Chin et al., 2012 as cited by Lustick, 2016). Evolving practices of school-

based interventions such as Positive Behavioral Supports (Chitiyo & Wheeler, 2009), and Response To Intervention (RTI) (Fuchs, Mock, Morgan, & Young, 2003; Justice, 2006) that align services to specific student needs can curtail entry into the juvenile system. According to an analysis of state level statutes or codes by Pavelka (2016), 39 states have some reference to incorporation or expansion of restorative justice related principles to alter negative long-term outcomes for offenders and victims. School districts such as Denver School District, San Francisco School District, and Oakland Unified School District who have used this approach to discipline have seen a marked decline in the number of suspensions and expulsions.

Most of the literature points to the positive impact of RJ practices in reducing suspensions and expulsions (Kline, 2016). According to Hamilton (2008) restorative circles contributed to a healthier school climate, and impacted student behavior in positive ways. However, recent research studies on school discipline outcomes show that even positive approaches to discipline” replicate same patterns of racial disproportionate diversity disciplinary outcomes as suspensions” (Lustick, 2016, p. 3). According to a flurry of studies reviewed by Lustick (2016), while change in policy and implementation of positive behavior programs narrowed the discipline gap compared to the national average, data showed that African-American students were overrepresented among students who received referrals. Calls for anti-racist education, culturally relevant education (Ladson-Billings, 1996), culturally responsive discipline permeate the literature (Lustick, 2016).

Context of the Study

This study took place over the course of two years in a large school district in the southeastern United States. Riverside School District (pseudonym) is situated on the outskirts of a large metropolitan area and serves approximately 70,000 students enrolled in 80 schools. Although there is socioeconomic diversity, the ethnic makeup of the district is significantly more homogeneous. According to the district’s data, 64% of students identify as White while only 7% identify as Black, 21% as Hispanic, and 3% as Asian. Despite the high percentage of White students and relatively low percentages of students of color in the district, Riverside follows national trends, in which students of color receive disproportionately high percentages of exclusionary discipline. Black students, in particular, are more than two and a half times more likely to receive out-of-school suspension than their White peers.

In addition to overrepresentation related to discipline, students of color in the district experience over identification for special education services, particularly under the categories of Emotional and Behavioral Disabilities, Specific Learning Disabilities, and Intellectual Disabilities. Being Black and disabled increases a student’s likelihood of experiencing negative school outcomes. Identification as a student with a disability is, in and of itself, an indicator of low performance or other struggles due to the Individuals with Disabilities Education Act’s (2004) requirement that the student’s disability have some form of negative educational impact in order to be found eligible. Being a student with a disability under IDEA can lead to an increased likelihood for segregation from peers. In the district, approximately 22 percent of students with disabilities spend the majority of their instructional time in settings other than the general education classroom. With such a confluence of factors (i.e., educational struggles, increased likelihood of suspension, and increased likelihood of segregation), it is not surprising Black students with disabilities have a 20 percent lower graduation rate than their peers.

The school at which this study took place closely follows many of the trends seen in the district. Of the 720 students enrolled in the school, approximately 57% identify as White, 6% as Black,

23% as Hispanic, and 1% as Asian. The disciplinary outcomes for Black students are even more troubling at this school than in the district as a whole. Black students at Cherry Hill Middle School (pseudonym) are 462% more likely to be suspended than their White peers while both students with disabilities and English language learners are 113% more likely to be suspended. According to the district data system, during the year in which this study primarily took place, discretionary offences accounted for a large portion of all office discipline referrals at Cherry Hill Middle School. Of all disciplinary codes used, 21% of referrals were for defiance or profanity, 17% were for disruptive behavior, and 16% were for fights without injury. Other notable reasons for referrals were skipping or leaving class (7%), profanity or provocative language (6%), and violation of safety rules (5%). No other referral code made up more than 3 percent of total referrals at the school. Of the top six reasons for referrals, five can be considered discretionary or minor offense (fighting excluded). Together, these five categories accounted for approximately 56% of all referrals given during the 2015-2016 school year. Despite the discretionary nature of referrals, the majority of consequences were punitive and/or exclusionary. The top three consequences given by the school during the 2015-2016 school year were out-of-school suspension (37%), detention (25%), and in-school suspension (10%). These three categories accounted for approximately 72% of all consequences given as a result of an office discipline referral while more constructive and restorative interventions such as peer mediation (0.09%), behavior agreements (0.09%), alternatives to suspension (0.27%), and referrals to social service agencies (1.34%) were used infrequently or not at all. The patterns of overrepresentation of students of color, high rates of referrals for discretionary offences, and heavy reliance on exclusionary discipline indicated a need to consider how the school might reconceptualize student behavior and discipline.

Theoretical Framework

Restorative justice (RJ) has seen increased attention due to some of the successes to creating improved relationships within communities and decreasing recidivism relative to criminal justice (Bouffard, Cooper, & Bergseth, 2017; Bradshaw & Roseborough, 2005) when compared to a traditional model of retributive justice. The roots of RJ have been traced back to a range of diverse cultures (e.g., American Indian, Maori), religious traditions (e.g., Judaism), and other ancient civilizations (Zehr, 2002). In the U.S. context, Amstutz and Mullet (2005) describe restorative school environments as prevention oriented when they emphasize an ethos of care and social and emotional learning. Morris and Vaandering (2012) underscore the importance of relationships as part of the “deeper social and emotional foundation” (p. 141) in moving “away from a disciplinary measure of control to a pedagogy and praxis of engagement, development, and integrity at both individual and institutional levels” (p. 141). Thus, the notion of “restorative” is operationalized as a set of practices that are oriented towards prevention of infractions.

Researchers contend that respect lies at the core of restorative justice (Zehr & Toews, 2004) and that RJ itself is “grounded in the premise that human beings are relational and thrive in contexts of social engagement over control” (Morrison & Vaandering, 2012, p. 139). By valuing respect for self and others, space can be created for victims and offenders to come to a place of healing and restoration of relationships by voicing their equal perspective. However, reconceptualizing the application of justice utilizing RJ principles is a paradigmatic shift for many schools in comparison to a traditional behavior altering approach grounded in retribution (Morrison et al., 2006). Shifting from a paradigm that promotes “a one-size-fits-all regulatory framework” (Morrison & Vaandering, 2012, p. 140) to one more responsive (i.e., restorative justice) “requires a willingness to disturb the traditional institutional dynamic of schools” (Morrison & Vaandering, 2012, p. 140). According to Winslade and colleagues, RJ implementation is fraught with difficulties wherein

different personalities in positions of responsibility can make a huge difference to the success or otherwise of the school's commitment to the process (Drewery & Winslade, 2003). Some of the preventive and community building RJ practices are proactive circles, staff circles, restorative approach with community/families, and fundamental hypothesis understanding. The intervention or repairing harm practices include restorative questions, responsive or re-entry circles, small impromptu circles, peer court, restorative conference circles, and reintegrative management of shame (Gregory et al., 2015).

Methods

As Cherry Hill Middle School volunteered to become a pilot school and begin implementation of RJ practices to school discipline, we thought it would be an opportunity to document and engage with the school regarding their implementation of RJ. The overall purpose is to deepen understanding of the dynamics of implementing equity policies and change in schools, and to identify challenges and possible lessons for policymakers and school leaders for future efforts to design, implement and institutionalize change that benefits students.

The research design is a longitudinal case study (Stake, 1995). Case studies help to shed light on a phenomenon (the processes, events, persons, or things) of interest to the researcher (Gall, Gall, & Borg, 2003). With IRB approval, in the summer of 2015, the researchers began documenting the activities between the district administrators and the school staff and participated in administrator and staff training on restorative practices at the school site. Once the implementation began, researchers/participants took part in restorative practices training of personnel at the school, circles with groups of students, and restorative circles in classrooms. Also, researchers attended and observed leadership meetings at the school. The longitudinal nature of the study (2 years) allowed tracking of different actions and practices over time and a deeper understanding of the change process.

Sample

Study sample includes school district administrators involved in the initiative and school staff who led and implemented RJ practices at the school that served as a pilot school. Eight individuals were interviewed for the study. Four were district administrators and four were professionals from the school. After initial interviews, we focused on a smaller number of individuals who have frequent contact with discipline either as the ones administering it or implementing restorative justice practices with students. In this paper, the focus is on four participants who facilitated the restorative justice circles practice.

Data Collection

There were a total of 8 individual interviews and one focus group with three individuals who were mostly in either administrative or student support positions. Also, two focus groups with school and district administrators took place. Researchers kept observational data and reflections during school visits. Each participant was interviewed twice. Additionally, researchers observed and participated in restorative circles with the school's administrators, staff, teachers, and students over two years. The first author kept field notes and a reflective journal throughout the process and they are included as data in this study's reporting of findings.

Data Analysis

Researchers used inductive and apriori codes to analyze the data. Apriori codes were based on the study's questions and restorative justice framework constituted initial coding. Some of the codes included RJ definition, understanding of RJ practices, and plan of implementation. These initial codes led to compound coding such as practices implemented, impact of RJ, and barriers to change. Researchers analyzed the data separately. There was no major disagreement on the major findings.

Findings

There are six major findings in the study: 1) Vision and careful planning in year one; 2) Common definition of RJ practices; 3) Starting restorative circles with students in most need; 4) Divergent purposes, goals, and hopes; and 5) Barriers and challenges.

Vision and Careful Planning in Year One at Cherry Hill Middle School

In the early summer of 2015, three district administrators in the special education student services department began discussing integrating restorative justice in the Multiple Tiers of Support (MTSS) discipline framework the district was using. They were looking for middle schools that would volunteer to pilot RJ practices. Cherry Hill Middle School's principal, Daniel Smith (pseudonym), volunteered his school. District administrators described Daniel Smith as "visionary." On August 3, 2015, a restorative justice practices meeting took place that was attended by principal Smith alongside an assistant principal, a school psychologist, a school teacher, two school administrators from another middle school, one teacher, three district administrators, and the researchers. The meeting's purpose was to build community of the two middle schools piloting the RJ practices and district administrators, and university staff, and to plan next steps in implementing RJ approaches in the two schools. The district administrators modelled the meeting around the community building circle practice.

Daniel Smith articulated the needs of Cherry Hill Middle School. First, the leadership in the school needed to look at "our traditional roles as a foundational issue" (Daniel Smith Focus Group Quote), and developing a cohesive professional development program for the school. He also iterated that the school personnel needed to be able to respond to the question "Why kids do what they do?", and to tend to social emotional learning needs of their students. He also outlined the school would need support from the district to build capacity for his school personnel to implement RJ practices. Principal Smith continuously tried to emphasize the importance of how RJ approach to discipline would be perceived by the school personnel (teachers and staff). He asked "Do we have to use the term?" and inquired about overlap of RJ philosophy with positive supports concepts, and identifying entry points in the existing discipline structures. Wednesday and Friday were designated as days the school would work on restorative practices.

Daniel Smith was deliberate in his efforts not to rush the implementation of the change until the school personnel in student services fully understood RJ practices, received training and modeling of RJ circles, and resources for planning. Based on focus groups and informal discussions between school-based staff, district staff, and the research team, the participants in this study narrowed their focus on a couple key areas that school-based staff identified as manageable and relevant to their school improvement plan. Specifically, Cherry Hill Middle School focused on two aspects: integration of RJ into the school's current Positive Behavioral Intervention and Strategies (PBIS)

paradigm and the implementation of restorative circles as an intervention for students who needed tier two PBIS supports

Principal Smith indicated a preference to align RJ within the school's existing PBIS framework. Based on the information outlined in Cherry Hill Middle School's 2015-2016 School Success Plan and data regarding student engagement obtained from the previous year's Gallup student survey, the principal and the school's PBIS implementation team identified key areas of focus including a) clear and consistent communication of staff expectations, b) streamlining and consolidating interventions, c) embedded coaching supports for implementation staff, and d) the identification of specific students to target for interventions. As a result of these focus areas that arose from meetings with the school's PBIS team, the district and university staff supporting the school worked to develop an alignment plan to present to the school's PBIS team. Using the Alameda County Health Care Services Agency's (2011) Restorative Justice Guide as a resource, the team developed a PBIS alignment plan. Tier I practices included the use of restorative dialogue, implementation of proactive circles, school-wide culture building, and improving inclusive practices. Tier II practices included circles to repair harm, office discipline referral diversion, and post-discipline classroom re-entry meetings. Tier III practices included formal conferencing, reentry circles, suspension/expulsion diversion, and a focus on repairing harm. Based on the agreed upon structure, the school opted to focus primarily on Tier II supports at the onset of implementation. Specifically, they began by utilizing restorative circles for students already in the schools Behavior Education Program (BEP).

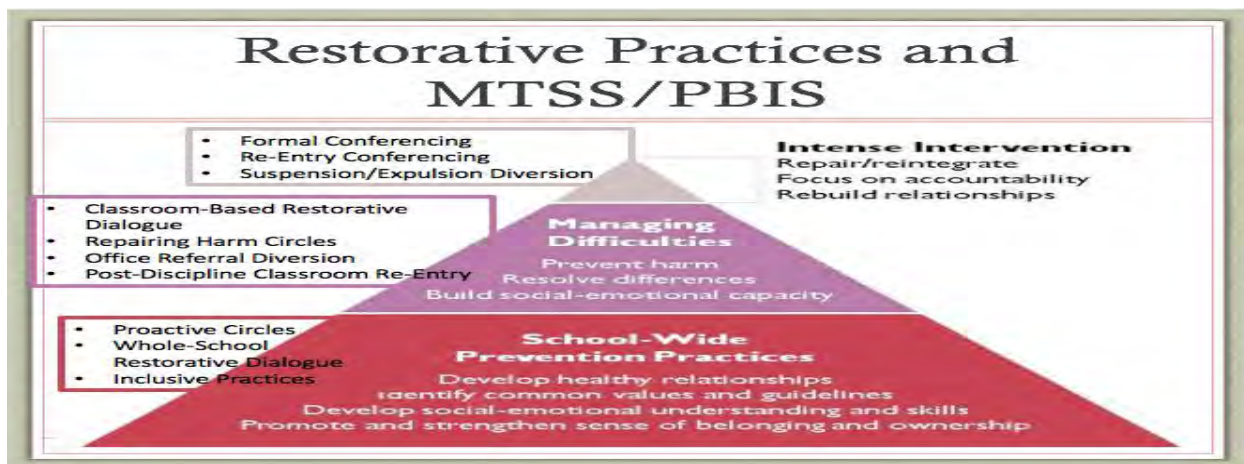


Figure 1. Alignment of restorative justice with PBIS

Cherry Hill Middle School's BEP had been in existence for several years at the time of this study. Students were selected for the BEP based on a history of repeated referrals or noted and consistent disruptive behavior as reported by a student's classroom teacher. The BEP had three primary components: establishing a primary adult who would be responsible for monitoring the student's progress (e.g., school counselor, behavior intervention teacher, etc.), daily "check-ins" with said adult, and the use of a behavior point sheet to monitor student progress and reward the student for meeting established goals. Students who were part of the BEP were grouped based on similar characteristics and/or needs by the school staff and placed in weekly circle groups, each facilitated by two staff members. Building on the practices that were currently in place, Cherry Hill Middle School wanted to incorporate supports that would help build a sense of community for students who either were disconnected or were at risk for being disconnected from school. As a result, the school began implementing weekly restorative circles for students currently in the BEP. These

practices were the primary avenue for implementing RJ at Cherry Hill Middle School during this study. Eventually, the plan was to carefully expand its implementation more broadly in the school. A total of six groups were formed each consisting of 4-5 students.

Common Definition of RJ Practices

As envisioned, the purpose of these circles was to create a safe space where positive relationships could be fostered between adults and students and between peers in the BEP as well as to offer an outlet to discuss ideas, concerns, and problems in a constructive environment (Morrison & Vaandering, 2012). By removing the hierarchical positioning inherent in school relationships and focusing on each individual as an equal person, the circles offer a constructive space for both community building and redressing harms (Gregory et al., 2015). According to data, it seems that there was a common understanding about RJ practices as relation building, as a safe space for students and adults, and as a place to help students develop a sense of community and interdependence, and to take a proactive approach to discipline.

Annie, the school psychologist, described the RJ circle she facilitated thusly:

Well, I see it [RJ circle] being like very multi-faceted. I feel like there is definitely a community building piece to it, a restorative piece of like restoring harm and then validating, like I do feel like in our groups mostly that is, well my group is, the girls are mostly getting out of it like kind of validating others' thoughts and feelings. So it's mostly community building. We became like a family.

According to Kathryn, the school's social worker, RJ has an empowering and restoring element as it builds community in the group. Lisa, one of the guidance counselors, had a similar definition of RJ when it came to building relationships and community. However, those relationships were restricted to kids. Lisa did not view the circles as opportunities for her to build relationships with the students:

So far my understanding is, ... being new to it, I think it is to build a community within the kids and having them see that everybody struggles with different issues. ... So that is the biggest thing, the main point that I have seen in our circles is just them coming together and sharing and talking about struggles going on and how we can fix them, and you know general questions; just build relationships amongst the kids and to restore any damage that has been done.

It is clear that while Lisa co-facilitated one group, she was a novice to RJ and had a medical view of the process rather than a restorative one. Kathryn had received RJ training and engaged in RJ practices in another position she held before starting to work in the district. So she expressed her delight upon hearing Cherry Hill Middle School was becoming a pilot school for Restorative Justice. Kathryn understood the circles as a place "that is ideally it is for repair, it is not for being punitive to the student necessarily in that circle, it is guiding them to a place where restoration can take place." Vivian also saw the RJ circles as spaces for community building and common understanding of experiences. Overall, most of the participants defined Restorative Justice as a space that allows participants to build community, accept each individual person as valuable, validate others and their feelings, repair harm, and build support. Also, there was a differential level of sophistication and understanding of RJ among participants.

Starting Restorative Circles With Students in Most Need

The leadership team and school support personnel used data such as disciplinary referrals, student incident reports, frequent visits to the office, students with Behavior Education Plans, students on

the Autism spectrum, or with issues in academic achievement to assemble the groups. Predominantly, the participants in RJ circles were targeted based on previously identified gaps in areas of behavior and academics; more often identified because of a combination of underperformance in both areas who were selected on the BEP. Each participant in the study labeled the students targeted to become part of RJ circles as either “the heavy hitters,” “the frequent fliers,” “the tough cookie street boys,” “autism spectrum kids,” and/or “kids in Tier II.” This is surprising considering the philosophy of restorative justice is about valuing the individual and treating everyone with respect.

The groups were organized based on common needs. For example, Group I consisted of 4 male students with discipline issues that according to Vivian “stemmed from academic issues;” Group II was made up of all females who were on BEP plans; Group III was all males who had experienced suspensions and expulsions; and Group IV had males and females who had IEPs and predominantly on the Autism spectrum. A total of six restorative circle groups were created, each facilitated by two adults who were either the Exceptional Student Education specialist, guidance counselor, school psychologist, or social worker. They met each week during 2015 spring semester. Each team established rules and values they would abide by, determined the rituals for their circles, and used a talking piece. In its first circle, the all male group decided to talk about their best “qualities” or values when they are at “their best.” Some of the answers were: kindness, “honesty,” “self-control,” respectful, “thoughtful,” and “responsible” (See Figure 2).

After two sessions, students became comfortable sharing with each other suggesting establishment of trust within the group and development of a sense of community. Each of the participants who served as facilitators stated that students needed a couple of sessions of circles to begin to share with the others in the circle. Somehow, all the groups ended up being a group of four students instead of 5-6 that the leadership team had initially planned. Reasons for not participating included a lack of desire to participate in the case of one female, circle time being planned the same period as reading for another, out of school suspension of a male student in another case, and removal of one male student by facilitators. According to Lisa, one of the facilitators of one group:

We recently took a student out because he was kind of just toxic to the environment, always goofing around, and interrupting other students, so we finally filtered that out, gave him a couple of chances, talked to him and he just wasn’t really into it. So I think we might be more successful with our kids now. ... We are going to do more one-on-one with them [the student the facilitators removed; and the student who had multiple out of school suspensions] because the group setting just wasn’t, they couldn’t handle it.

Most of the groups met 8 times during Spring semester before standardized testing as part of state accountability system started. The emphasis of all the circles was community building. The circles were proactive with discussions revolving around students’ interests. Also, the extent of planning varied across the groups with some facilitators being more skillful than others. All used materials the district provided on how to facilitate circles. The facilitators emphasized the Importance of using affirming and affective language.

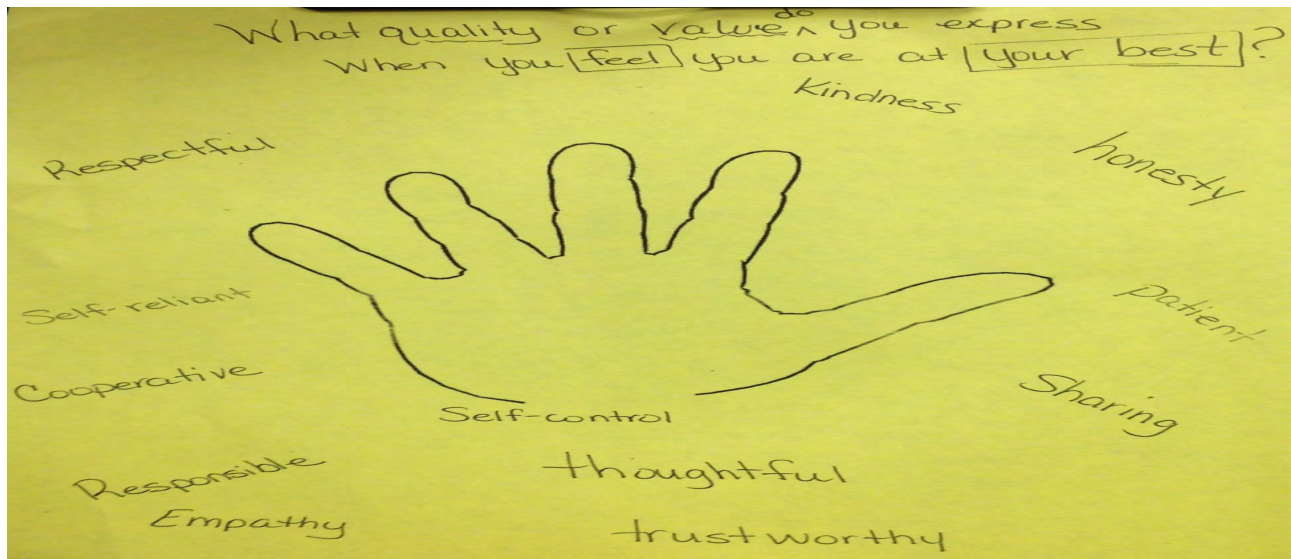


Figure 2. Day one of restorative justice circle group qualities and values

Divergent Purposes, Goals, and Hopes

While all participants in the study had a clear understanding of what RJ circles were, different educators seemed to have differing expectations on outcomes. For example, the Assistant Principal, skeptical of RJ practices throughout the study, wanted a quick drop in referrals, the ESE specialist wanted skill development, the school counselor “deeper feelings and emotions rather than surface level stuff”, the PBIS coordinator liked to expand the circles to Tier III students, while the school psychologists wanted to see the RJ circles be implemented at the classroom level. There was a varying level of capacity and of believing in the value of RJ practices as well.

Kathryn was consistent in how she defined the circles and her expectations of RJ circles: “Restorative justice is about giving students equal voice in circles. It is not about teaching a skill. My partner in the circle felt disappointed that she did not teach children anything. She did not have anything to show for it. Like you can’t say, well I taught them this skill. The benefits are hidden especially in the beginning.” Multiple participants shared that the assistant principal was looking for a reduction in referrals from the beginning. According to Annie: “The AP thought that restorative justice would lower the referrals right away. That did not happen. But the data in the MTSS showed remarkable improvement.” Fully committed to RJ approaches to community building, Kathryn expressed her hope of expanding RJ circles: “We would like to see [RJ circles] start [to] happen between students and teachers, and students and students.” Kathryn wanted to see restorative practices at the middle school and be inclusive of fifth graders as future middle school students coming to this particular school to help with some of the difficulties in student transition. According to Kathryn, doing circles with fifth graders is an opportunity to “see what are their biggest concerns or questions about the [transition to] middle school” (Kathryn’s quote) directly from the youth. Similar circles would be put in place for current sixth grade students of the middle school in order to hear reflections from those students on “what were the biggest helps or the biggest challenges that they faced when they had that transition” (Kathryn’s quote).

Annie would like to see RJ circles take place in all tiers. However, if it is not possible to do RJ circles at Tier III, she believes implementing RJ circles in Tier I would be most beneficial as it would curtail misbehavior early on and reduce referrals as a result. Vivian and Annie agreed that

school wide circles at the classroom level are the best possible implementation. They both felt that teachers in the school would benefit from community building circles. “I think it would be great if we have regular faculty circles because I think we definitely need help on our culture...” According to Vivian, “everyone is kind of playing [the] blame game so I think that is where RJ can kind of help us to see what we need from each other.” Lisa, on the other hand, is skeptical of teachers being able to engage in RJ circles.

I have a really hard time with making, with coming to the grasp of making RJ school wide. It is kind of scary because the teachers out there, they all mean well obviously, but they are not trained in student services, psychology, all that stuff and my biggest fear is that a kid is going to open up a can that the teacher is not qualified to handle... it might do more harm to the kid than good. ... The teachers are there to teach.

It is clear that Lisa does not trust in teachers’ ability to connect with children using RJ circles. She was the only participant that was against expanding the circles at the classroom level and strongly believed that RJ circles ought to be the purview of “trained professionals” that are “trauma informed” and “mental health informed.”

Barriers and Challenges

In the two years of piloting RJ at Cherry Hill Middle School, participants identified five major factors for the diminishing level of RJ circles implementation. First, school leadership lacked a coherent understanding of the scope and process of implementing RJ practices during the second year of implementation. A second factor was the disagreement among the three administrators on the benefits of RJ practices. Here’s how Annie described it:

I think the difference between the first year and the second year is...same three leaders starting the first year and starting the second year-I think one of them was a little bit more-what is the word I am looking for-more like steadfast in his beliefs that it didn’t align with this. ...So then he doesn’t necessarily agree with these practices and then the other administrators [principal and the other AP] do, then there ends up being a lot of discussion about it instead of action. So when we are sitting in planning meetings, we call them MTSS meetings-it ended up being the three of them kind of talking and discussing ...Then that leaves little time or room for the rest of us to make a plan and to move forward.

These disagreements led to delays and lack of intentional planning for year two of implementation which is the third barrier. As a result, only two groups started RJ practices in January.

Leadership turnover was the fourth barrier to this change. In February, Daniel Smith left in the middle of the second year and became principal of another middle school that lost its principal in a tragic accident. The new principal showed no interest in RJ practices. Vivian described her attempts to continue with RJ practices as doing “the cha-cha with the principal.” In a focus group setting, the new principal told two of the researchers that continuation of RJ practices was “up to the teachers” even though this change was never at the teacher level of implementation. He also showed no intention in leading this change and suggested “experts” being in charge to lead the initiative. Additional turnovers included three facilitators and members of the school leadership team who were passionate about RJ practices who left the school by the end of year two.

Finally, the support of the school district for Cherry Hill Middle School also tapered off. The school district administrators who initiated the change and provided technical support were promoted to other district positions that made providing assistance to the school impossible. According to Annie: “I think when we started this year we were just kind of on our own, so if our

administrators weren't on board or on the same page, and there was no, I don't want to say pressure from the district, but like directive from district, then us as support staff, it is hard to make it a priority." While the support in year one was robust and continuous, in Year Two, there was only one visit from one of the district administrators. As in any new change, time, resources, and additional training were some of the ongoing needs at the school level.

Discussion

The findings of this study reflect the complex nature of change in this middle school. The principal was adamant to avoid adding additional responsibilities to teachers and decided to implement the change at the Tier II level of PBIS. This was done in large part because he felt the student support staff and the leadership team would be fully on board. However, despite the effort to make this change fit in seamlessly in the existing structure, issues rose especially in the second year of implementation. This was in large part due to disagreement among the three administrators that prevented deliberate planning for continuation of RJ practices.

Furthermore, this change becomes even more challenging because RJ requires a fundamental shift from punishment to restoration and repairing harm approach to discipline. According to the teacher contract in this school district: "Teacher has a general responsibility for student control and a major responsibility for controlling those students under his/her direct supervision. The board recognizes its full responsibility to give full support and assistance to teachers in maintaining the appropriate discipline necessary to ensure that effective teaching and learning takes place in an orderly and disciplined classroom without the distraction caused by disobedient, disrespectful, violent, abusive, uncontrollable, and disruptive students." This is antithetical to RJ philosophy of respect, relationship building, and an ethos of care. In lieu of this culture, it comes as no surprise that implementation of RJ practices at the school remains a pipedream at Cherry Hill Middle School. Also, even the co-facilitators that believed in restorative practices could not move away from deficit oriented lens of labelling students as "frequent fliers" or "heavy hitters". In other words, this kind of change requires a fundamental shift in how we view students in order to open up the possibility to engage with students in different ways.

The different expectations from this change and a lack of patience by one of the APs made the continuation of RJ circles challenging. To think that RJ circles would diminish the number of referrals after only two months of implementation with a small group of students (n=26) is unrealistic. Such an expectation also shows a lack of understanding of the time needed for RJ practices to take root and change the school culture and using RJ as an approach to discipline rather than community building. Similar to most literature in change and vision, this case also shows the importance of those in leadership positions to believe in the vision of change. This case illustrates the negative impact of lack of belief by one of the administrators who was also in charge of implementing the change. Needless to say, there are many ways that one in leadership position can inhibit progress and implementation by asking questions, asking for data, refusing to believe in data that do not support one's views.

Finally, changes in leadership and early implementers have resulted in reverting to punishment of students and usage of mystery ISS. As the former principal left the school and three of the co-facilitators also moved to other schools the RJ practices are at a standstill. Based on the interview with the new principal, the school has improved when it comes to referrals and he does not intend to continue with this change.

Conclusions

Restorative justice practices offer promise to schools interested in instituting changes to their culture. In this particular context, the practice of restorative justice circles was utilized to promote the building of community and produce positive outcomes specific to behavior and academic progress with the groups of students that were repeatedly suspended and expelled. These practices provided space for the “frequent fliers” to be included in the community, to feel supported by peers and adults, and to have a say on what matters to them.

Despite success and observable changes in students in this study, barriers and challenges persisted in implementing these practices. For educational leaders and policymakers, considerations for addressing the barriers that can surface when orchestrating changes to philosophy and practice of schools should remain a priority. Deconstruction of barriers in improving access to supportive resources for teachers and students can help “cast a vision that ideally it is for repair, it is not for being punitive” (Annie’s quote).

In summary, commitment from school leaders is necessary for the RJ practices continuation, planning the RJ circles is paramount for their success, and school district support must continue throughout the implementation process. A school district administrator said: “I was really hoping this [restorative justice] would be a bright light in a lot of messes, and it’s really a mess right now.” The power of restorative practices to transform teacher-student relationships and achieve equity in school discipline is present if educators are serious about lowering disciplinary punishment of students that feeds the school to prison pipeline.

References

- Amstutz, L. & Mullet, J. H. (2005). *The little book of restorative discipline for schools*. Intercourse, PA: Good Books.
- Angus, L. (2006). Educational leadership and the imperative of including student voices, student interests, and students’ loves in the mainstream. *International Journal of Leadership in Education*, 9(4), 369-379.
- Bouffard, J., Cooper, M., & Bergseth, K. (2017). The effectiveness of various restorative justice interventions on recidivism outcomes among juvenile offenders. *Youth Violence and Juvenile Justice*, 15(4), 465-480.
- Bradshaw, W. & Roseborough, D. (2005). Restorative justice dialogue: The impact of mediation and conferencing on juvenile recidivism. *Federal Probation*, 69(22), 15-21.
- Chitiyo, M., & Wheeler, J. J. (2009). Challenges faced by school teachers in implementing positive behavior support in their school systems. *Remedial and Special Education*, 30, 58-63.
- Choi, J. J., Green, D. L., & Gilbert, M. J. (2011). Putting a human face on crimes: A qualitative study on restorative justice processes for youths. *Child and Adolescent Social Work Journal*, 28(5), 335-355.
- Drewery, W., & Winslade, J. (2003). Developing restorative practices in schools: Flavour of the month or saviour of the system? Paper presented to the AARE/NZARE Conference, Auckland.
- DeFur, S. H., & Korinek, L. (2010). Listening to student voices. *The Clearing House: A Journal of Educational Strategies, Issues, and Ideas*, 83(1), 15-19.
- Fuchs, D., Mock, D., Morgan, P. L., & Young, C. (2003). Responsiveness-to-intervention: Definitions, evidence, and implications for the learning disabilities construct. *Learning Disabilities*, 18, 157-171.
- Gregory, A., Clawson, K., Davis, A., & Gerewitz, J. (2015). The promise of restorative practices to transform teacher-student relationships and achieve equity in school discipline. *Journal of Educational and Psychological Consultation*, 25, 1-25. doi: 10.1080/10474412.2014.929950
- Gregory, A., Skiba, R. B., & Noguera, P. A. (2010). The achievement gap and the discipline gap: Two sides of the same coin? *Educational Researcher*, 39(1), 59-68.
- Hamilton, M. V. (2008). *Restorative justice: Reconceptualizing school disciplinary theory and practice*. Available from ProQuest Dissertation and Theses Database. (UMI No. 2008. 3303484.)
- Justice, L. M. (2006). Evidence based practice, response to intervention, and the prevention of reading difficulties. *Language, Speech, and Hearing Services in Schools*, 37, 284-297.

- Karaxha, Z. (2017). Zero tolerance. In C. J. Schreck (Editor-in-Chief), Leiber, M. J., Welch, K., & Ventura Miller, H. (Associate Editors) *Encyclopedia of Juvenile Delinquency and Justice*, 1-5. Wiley-Blackwell.
- Kim, C. Y. (2009). Procedures for public law remediation in school-to-prison pipeline litigation: Lessons learned from *Antoine v. Winner School District*. *New York Law School Law Review*, 54, 955-974.
- Kline, D. (2016). Can restorative practices help to reduce disparities in school discipline data? A review of literature. *Multicultural Perspectives*, 18(2), 97-102. doi: 10.1080/15210960.2016.1159099
- Lemley, E. C. (2001). Designing restorative justice policy: An analytical perspective. *Criminal Justice Policy Review*, 12(1), 43-65.
- Lospennato, R. K. (2009). Multifaceted strategies to stop the school-to-prison pipeline. *Journal of Poverty Law and Policy*, 48, 1-21.
- Lustick, H. (2016). Making discipline relevant: Toward a theory of culturally responsive positive schoolwide discipline. *Race, Ethnicity and Education*, 1-15.
- Mayworm, A. M. & Sharkey, J. D. (2014). Ethical considerations in a three-tiered approach to school discipline policy and practice. *Psychology in the Schools*, 51(7), 693-704.
- Mitra, D., Sierrerie, S., & Kirshner, B. (2014). Youth participation in U.S. contexts: Student voice without a national mandate. *Children & Society*, 28, 292-304.
- Morrison, B., Blood, P., & Thorsborne, M. (2005). Practicing restorative justice in school communities: The challenge of culture change. *Public Organization Review: A Global Journal*, 5, 335-357.
- Morrison, B. E., & Vaandering, D. (2012). Restorative justice: Pedagogy, praxis, and discipline. *Journal of School Violence*, 11, 137-155.
- Nind, M., Boorman, G., & Clarke, G. (2012). Creating spaces to belong: Listening to the voice of girls with behavioural, emotional and social difficulties through digital visual and narrative methods. *International Journal of Inclusive Education*, 16(7), 643-656.
- Ozer, E. J., Ritterman, M. L., & Wanis, M. G. (2010). Participatory action research (PAR) in middle school: Opportunities, constraints, and key processes. *American Journal of Community Psychology*, 46, 152-166.
- Pavelka, S. (2016). Restorative justice in the states: An analysis of statutory legislation and policy. *Justice Policy Journal*, 2(13), 1-23.
- Skiba, R. J., & Peterson, R. L. (2000). School discipline at a crossroads: From zero tolerance to early response. *Exceptional Children*, 66(3), 335-396.
- Smyth, J. (2006). Educational leadership that fosters 'student voice'. *International Journal of Leadership in Education: Theory and Practice*, 9(4), 279-284.
- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage Publications.
- Stinchcomb, J. B., Bazemore, G., & Riestenberg, N. (2006). Beyond zero tolerance: Restoring justice in secondary schools. *Youth Violence and Juvenile Justice*, 4(2), 123-147.
- Tschannen-Moran, M., Bankole, R. A., Mitchell, R. M., & Moore, Jr., D. M. (2013). Student academic optimism: A confirmatory analysis. *Journal of Educational Administration*, 51(2), 150-175.
- Walker, B. L. T. (2012). Teacher education and African American Males: Deconstructing pathways from the schoolhouse to the "big house". *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, 35, 320-332.
- Zehr, H. (2002). *The little book of restorative justice*. Intercourse, PA: Good Books.
- Zehr, H., & Towes, B. (2004). *Critical issues in restorative justice*. Monsey, NY: Criminal Justice Press.

Part 7: Human Resource Development

Perspectives on Competency: Leaders and Their Managers

R. Douglas Waldo¹, Christine Bellido², and Haley R. Waldo³

¹ School of Business, Liberty University, United States

² College of Education and Social Services, St. Leo University, United States

³ Warrington College of Business, University of Florida, United States

Abstract

A leader's competency is essential if they are to guide their followers to realize the strategic objectives set forth by their organizations and managers. This literature review considers the historical and scholarly defined differences between leaders and managers in order to lay the context for a study concerning the relationship between leader's perceived self-competence and their manager's interpretation of their performance.

Keywords: leadership, management, style competency

Introduction

As this topic contains many facets, including the concepts of leadership, management, self-efficacy, and performance outcomes, several research methods were identified in the literature review. In general, research studies on leadership, organizational culture, and management thereof have employed surveys sent out to several firms over the course of several years (Melo, 2012; Langford, Dougall, and Parkes, 2015). Sometimes, performance evaluation data from these firms is collected as well if the researchers are specifically interested in this attribute (Silbaugh, 2016). Furthermore, synthesis review of leadership literature and applied content analysis have also been used as innovative methods for clarifying and expanding present research on the subject (Nienaber, 2010).

After the data is compiled, researchers will use analysis of the data, consisting of various statistical techniques depending on the nature of their resource. Silbaugh (2016), for example, employed a linear regression for its study of a leader's mindset, self-efficacy, and performance ratings in addition to correlation matrices. These measures were necessary to determine the direction and presence of relationships between these factors. Conversely, Wei, Li, Zhang, and Liu (2018) used a hierarchical regression analysis to find the role that leadership competency has on follower's job performance. Hence, the analysis method chosen depends on the specific variables in question.

Literature Review

What is the difference between a manager and a leader? A number of articles have given studies to these concepts and found that they are distinguished by the fact that a manager is a person who organizes and coordinates tasks in order to "ensure the success of the business," (Nienaber, 2010, p. 661). A manager is a person who controls their subordinates, department, organization or even a machine to perform optimally. A leader's definition is not so clear cut, yet many theorists posit that there is a watershed between the two concepts. According to the synthesis review of Nienaber (2010), the most basic definition of a leader is one who leads, that is "cause or go along with oneself, to bring a person or animal to a place," (p. 664). Thus, a leader's abilities entail both

knowing where to go and the ability to lead others there. A leader, therefore, must have followers. They are in charge of these beings and must, by their leadership qualities, organize them towards the task of reaching a specific destination or outcomes (Mishra & Jha, 2017). Hence, closely tied to leadership is the concept of motivation.

Literature has been increasingly orientated towards the understanding of the development of leaders rather than managers (Mishra & Jha, 2017; Nienaber, 2010). Inspirational, transformational, and positive leadership are but a few of the recently studied forms of leadership whose name suggests the motivational quality of their character. Nevertheless, leadership is probably more nonspecific than management as all management may be considered a form of leadership while not all leadership may be management (Nienaber, 2010). For example, giving direction, a task classically associated with leaders is offered a “key managerial leadership practice,” in Kerns (2017). The contradiction between this fact and the rise of literature exclusively concerned with leadership makes the study topic of this proposal a particularly relevant for the field. Specifically, it will help to determine that, if managers really are doing more than leaders, does that mean that their interpretation of their performance means more as well?

The importance of understanding the top tier of an organization’s management is also critical since it is the senior management that sets the tone for the “visible and invisible aspects of organizational culture,” (Melo, 2012, p. 36). In other words, leaders fundamentally depend on their managers to help them in the leading process for the entire organization (Ryan, 2017). Much the same finding is discovered in Setiawan and Santoso (2017),’s study of managerial leadership. With 200 surveyed subjects, a correlation coefficient of .90 was found between managerial leadership and its effect on corporate performance, suggesting a highly significant relationship between the two. Indeed, such influence was the subject of Reyes Liske and Holladay (2014)’s analysis of leadership coaching and its influence on the leader’s competencies. This study, likewise, found that those who are coached, i.e., strategically managed, in leadership have “significantly improved leadership competencies and significantly higher retention rates on year post-program,” (Reyes Liske & Holladay, 2014, p. 936). Hence, when analyzing manager’s appraisal of a leader’s performance, the possibility that the managers themselves are affecting this performance must be accounted for it will be a significant limitation of the study.

A leader’s successful performance depends on their competency (Shet, Patil, & Chandawarkar, 2017). Furthermore, competencies are fundamental constructs for appraising the performance of the leader since it is through their competencies that management realizes organizational strategies. For instance, Wei et al. (2018), find the competency of a leader is necessary for tapping follower’s job performance and acts as a mediator for the development of their authentic leadership.

A method for determining a leader’s competency can be found in the six-sigma business model. Competencies required by leaders within this system include the “ability to identify an opportunity for improvement, goal setting and economic justification of the improvement effort, taking a process view in all important activities, commitment to process control & improvement, goal setting at the process level, assessment of requirements of change at the process level, measurement systems, sampling, control charts, gage, and process capability,” (Huq, 2017, p. 18). As these qualities are used by six-sigma, a business model that is an extensively used model by businesses to develop new processes and optimize existing ones which are both comprehensive and results orientated, they would make ideal qualities for evaluating the dimensions of leadership on behalf of management.

Additional performance metrics managers might use to rate their leaders are offered in Langford, Dougall, and Parkes (2017). The five dimensions of performance analyzed in this study include overall performance, change and innovation, safety, customer satisfaction, and employee productivity. Furthermore, in this study, the researchers considered the employee absences and turnover as factors reflective of a leader's success (Langford, Dougall, & Parkes, 2017). Trivellas and Reklitis, (2014), identify 25 different leadership competencies as well, which may be reviewed and integrated into a test for determining leaders and their manager's competencies. Given the full range of competency offered in the literature, it may be wise to narrow analyses to predominantly those concerning task management; the kind found most predictive of leadership effectiveness (Vaculik, Prochazka & Smutny, 2014).

In general, leaders with higher self-efficacy perform better. For instance, Silbaugh (2016), found in their analysis of school principles that there was a relationship between their performance and the degree of their self-efficacy. Curiously, moral leadership-self-efficacy in principals had a negative relationship on the principle's performance. Mahon (2017)'s analysis of female leaders likewise found a correlation between a leader's self-efficacy and leadership performance. Indeed, as Mahon reports, the leader's perceived self-efficacy likely forms a fundamental trait in their desire to lead in the first place. What has not been discussed is how the leader's self-efficacy reflects in their evaluation by their managers, a gap this study proposes to resolve. The next section will explain the research methodology to support the findings.

Methods

The purpose of this quantitative, cross-sectional survey study was to assess supervisors' self-perceived competency ratings, as well as to compare these ratings with managers' competency ratings. This study seeks to address the problem identified regarding the potentially negative impacts a lack of self-awareness regarding supervisor and leader competency (Rubens, Schoenfeld, Schaffer, & Leah, 2018). Specifically, this study sought to address the research question pertaining to whether or not supervisors' and managers' self-perceived and objective competency ratings align with each other.

The focus, or premise, of this study, was to analyze ways in which managers view their competency as leaders as compared with how their supervisors view their competency. Additionally, this study sought to determine how managers' perceived self-efficacy related to their performance appraisal ratings within the same competency model. Evidence suggests that a lack of coordination between self-perceived competency and managers' ratings of supervisor competency can cause negative performance outcomes, poor communication, and impaired decision making within the business context (Rubens et al., 2018).

This section includes a description of the methodology undertaken in order to address this question. The research design and methodological approach selected for this study are presented first, including a rationale and justification for this approach in comparison with other potential alternatives. The population is then identified, along with the sampling approach and methods of recruitment. Key variables and/or constructs of interest in this study are then discussed, and the manner in which these variables were measured is described.

The approach taken to collect data is then presented, as well as methods of analyzing these data. Ethical issues and methods of maintaining trustworthiness are then described. Finally, the potential

limitations associated with the selected design and methodology are discussed. This document concludes with a brief summary and an outline of key points.

Research Design and Methodological Approach

A quantitative, cross-sectional design was selected in order to address the central research question of this study pertaining to whether or not supervisors' and managers' competency ratings align with each other. This design draws from a positivist epistemological and ontological position, in which it is assumed that an objective reality exists independently from the lens of human perception and that this reality can be measured, quantified, and expressed numerically for the purpose of disseminating knowledge related to some real phenomenon (Bell, Bryman, & Harley, 2018). This design was selected based on the intent of this study to quantify supervisors' self-perceived competency ratings, managers' competency ratings of supervisors, and to statistically measure the relationship between these variables. An interpretive epistemological and ontological position was not determined to be optimal for this study because such a position seeks to incorporate the subjective perceptions of the research in the analysis, while this study sought to eliminate research interpretation in the analytical process (Bell et al., 2018).

A qualitative or mixed methods approach was not determined to be appropriate for this study because such research aims to merely describe and classify data pertaining to some phenomenon and the interpretive position associated with such designs (Bell et al., 2018). Rather than describe and interpret data, this study sought to objectively measure and quantify self-perceived competency ratings through the use of inferential statistics. This study was done to compare scores with each other and determine the magnitude and strength of these relationships.

A cross-sectional survey was selected as the most appropriate approach to collecting data. This approach was determined to be ideal because of the ability to achieve a large sample size that was representative of the population under investigation and also to allow for confidentiality and anonymity amongst participants (Sekaran & Bougie, 2016). This approach was selected instead of other potentially suitable quantitative designs, such as pre-test post-test designs or a retrospective cohort, primarily for logistical reasons and the need to obtain as many participants as possible to increase statistical power and reduce the chance of error or bias having impacted the eventual results (Sekaran & Bougie, 2016). The following section includes a description of the population, sampling and recruitment methods.

Sample

The population of interest in this investigation is leaders, managers, and other forms of supervisors in the field of business and management. This population spans the entire world and encompasses managers and leaders from all types of organizations, regions, and countries. As a result, the population for this study is estimated to be in the hundreds of thousands.

However, because of the exploratory nature of this study, no *a priori* quota was established for ideal sample size, nor was a G*Power analysis conducted to determine the minimum number of participants needed in order to represent this sample. Instead, a non-probabilistic design was used to sample participants. This involved soliciting participation in the study during a leadership training and development program.

While this sampling approach is exposed to potential self-selecting bias, it was deemed acceptable based on the preliminary nature of this study and need to identify participants that met specific inclusion and exclusion criteria (Hair Jr., Wolfinbarger, Money, Samouel, & Page, 2015). Specifically, participants were included in this study if they were managers, leaders, or supervisors in the field of business and were members of the leadership training and development program being hosted. This led to a final sample of 102 supervisors and managers from two employers (i.e., 14 from a South African natural resources company and 88 from a Canadian retail store chain). The following section includes a description of the critical variables and measurement strategies included in this investigation.

The key variable/construct measured in this study was competency. Competency refers to the level of proficiency and skill one possesses in relation to a particular task, duty, or role (Sturm, Vera, & Crossan, 2017). Specifically, this study sought to measure and compare self-perceived and objective managerial and leadership competency. Managerial and leadership competency pertain to the level of proficiency and skill one possesses in relation to managerial and/or leadership duties in the field of business (Sturm et al., 2017).

To measure managerial and leadership competency, the REACH model and instrument was used. This model is a novel conceptualization of emotional intelligence which relates specifically to leader and manager proficiency. This model contains 16 individual competencies that, when combined, produce a quotient that is indicative of one's overall skill as a leader or manager.

These 16 competencies include: assimilating new members, cultivating team spirit, identifying needs, recognizing efforts, building rapport, easing tensions, finding synergy, rallying others, establishing expectations, evaluating performance, exercising control, guiding others, addressing concerns, designing teams, integrating diversity, and aligning resources. In each case, supervisors rated themselves, and managers are providing ratings of supervisors. Reliability and internal consistency of these ratings were measured within subjects, and the correlation between these findings was measured between subjects.

These 16 individual competencies are grouped into four subcategories defining a leader or manager's proficiency in her or his position. These include counseling, coaching, driving, and advising. Each of these four subcategories represents a unique leadership style that may be more or less appropriate in a given business setting and context. Because of the novelty of the REACH model and quotient, no reliability or validity statistics are available. For this reason, the current study was considered exploratory in nature, with one of the key aims to gain an understanding of the accuracy and effectiveness of this novel instrument in assessing leader competency. The following section includes a description of the data collection strategy used in this investigation of perceived leader and manager competency.

Data Collection

Data collection for this study involved the distribution of a survey containing the REACH model instrument assessing leader and manager competency. This survey was distributed to attendees of a professional leadership and development program. Prior to being given the survey, all participants were debriefed as to the nature of the study and required to provide informed consent.

Once this was complete, the survey was administered. Supervisors taking the survey were asked to rate themselves in each of the 16 individual competencies within the REACH model. Managers

who took the survey were asked to measure the competencies of supervisors when completing the instrument.

Neither the supervisors nor managers were informed of the others' ratings prior to completing the instrument. Following the completion of data collection, all data were entered into the *Statistical Package for the Social Sciences* (SPSS v. 17.0) for the purpose of analysis. Methods of analyzing these data are discussed in the following section.

Findings

The primary purpose of this study was to determine the relationship between supervisors' self-rated competency and managers' ratings of their competency. Therefore, a correlation test was performed in order to determine the strength and significance of the relationship between these variables. Specifically, Pearson's correlation test was performed to determine the degree to which self and manager ratings compared or differed.

All relationships were considered statistically significant if the probability of chance or error impacting the test was less than five percent (i.e., $p < 0.05$). Accordingly, *a priori* alpha level of 0.95 was established. Furthermore, Cronbach's α was measured to determine the reliability of each of the four sub-category scales in the REACH model. This step was taken in order to provide a preliminary estimation of the REACH instrument's psychometric properties and to guide future research based on its accuracy in assessing manager or leader competency. Ethical issues and data trustworthiness are discussed in the following section.

All participants in this study were at least 18 years or older. All participants were required to complete an informed consent document prior to commencing the study stating they had been debriefed as to the nature of the study and their role, as well as understood their rights as human subjects in a scientific study. Data were kept confidential throughout the course of the study, and no identifying information was used to match participants with their responses at any time.

Following the collection of data, completed instruments were stored electronically on the primary investigator's computer in an encrypted file in order to prevent tampering or theft. All data will be destroyed following the completion of this study. There are believed to be no conflicts of interest impacting this study, nor was the questionnaire or general involvement in this study found to pose any significant psychological or physical risk to participants. Potential limitations associated with this study's methodology are discussed in the following section.

Limitations

Although this study is believed to offer valuable insight into a novel subject involving self-perceived and objective manager competency ratings, some potential limitations are present that warrant consideration. First, this study is correlational in nature. As a result, only the relationship between self-perceived and objective manager competency ratings can be determined from this design (Walliman, 2017).

Unfortunately, this design does not enable causality between these variables to be determined (Walliman, 2017). However, due to the preliminary nature of this study and the primary aim of determining the correlation between these ratings, this design was determined to be the most appropriate for addressing this study's research questions. Future research may seek to implement

an alternative design in order to determine the degree to which one of these ratings influences another or how self-perceived competency develops.

Additionally, this study used an opportunity sample based on leaders' and managers' participation in a leadership development conference. Such a sampling approach is exposed to the risk of self-selecting bias (Walliman, 2017). Specifically, this sampling approach may have been impacted by having participants who were more likely to be interested in perceived competency ratings to volunteer and take part in the survey.

Therefore, the results may have been skewed positively or negatively due to the likelihood that those who were more interested in the research topic to complete the entirety of the survey. Furthermore, this survey contained no controls for common sources of error and bias in surveys, such as social desirability, order effects, or inauthenticity. Future studies are advised to control for these sources of bias by presenting items in different orders, leaving every certain number of items blank to ensure participants are completing all items authentically and reinforcing anonymity in order to prevent participants from responding in socially desirable ways.

Conclusion

The purpose of this document was to describe the methodology undertaken in order to address this study's central research question pertaining to the relationship between the supervisor's self-perceived and objective competency ratings. The research design and method was described first, which included a quantitative, cross-sectional survey design. The population and sample were then discussed, which included business managers and leaders.

The sample included attendees of a leadership development conference. Although potentially self-selecting in nature, this sampling approach was determined to be appropriate based on the exploratory nature of this study. Methods of data collection and analysis were then described. Data were collected via a survey distributed to volunteer participants from a business leadership and management conference.

Data were analyzed using a correlation test, and Cronbach's α was measured to determine the internal consistency and reliability of the ratings and the REACH instrument in general. Ethical issues were then discussed, which were primarily limited to maintaining confidentiality and anonymity. Finally, potential limitations were presented, which included a self-selecting sample and correlational design. Despite these potential limitations, the results of this study are expected to provide important and novel insight into the degree to which supervisors accurately and honestly rate their own competency, as well as the reliability of a novel instrument for measuring manager and leadership competency.

References

- Bell, E., Bryman, A., & Harley, B. (2018). *Business research methods*. Oxford: Oxford university press.
- Hair Jr, J. F., Wolfenbarger, M., Money, A. H., Samouel, P., & Page, M. J. (2015). *Essentials of business research methods*. New York: Routledge.
- Huq, Z. (2017). A competency model for assessing six-sigma implementation readiness. *American Journal of Management*, 17(5), 10-23.
- Kerns, C. D. (2017). Providing direction: A key managerial leadership practice. *The Journal of Applied Business and Economics*, 19(9), 25-41.
- Langford, P. H., Dougall, C. B., & Parkes, L. P. (2017). Measuring leader behaviour: evidence for a "big five" model of leadership. *Leadership & Organization Development Journal*, 38(1), 126-144.

- Mahon, M. R. (2017). *The influence of leader prototype congruence on leadership beliefs*. (Doctoral dissertation, St. Ambrose University).
- Melo, T. (2012). Determinants of corporate social performance: the influence of organizational culture, management tenure and financial performance. *Social Responsibility Journal*, 8(1), 33-47.
- Mishra, R., & Jha, S. (2017). A conceptual framework on positive leadership style with competency based models. *International Journal on Leadership*, 5(1), 22.
- Nienaber, H. (2010). Conceptualization of management and leadership. *Management Decision*, 48(5), 661-675.
- Reyes Liske, J. M., & Holladay, C. L. (2016). Evaluating coaching's effect: Competencies, career mobility and retention. *Leadership & Organization Development Journal*, 37(7), 936-948.
- Rubens, A., Schoenfeld, G. A., Schaffer, B. S., & Leah, J. S. (2018). Self-awareness and leadership: Developing an individual strategic professional development plan in an MBA leadership course. *The International Journal of Management Education*, 16(1), 1-13.
- Ryan, C. (2017). Sustaining and growing a winning culture. *Journal of Healthcare Management*, 62(6), 361-365.
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. Hoboken, NJ: John Wiley & Sons.
- Setiawan, K., & Santoso, B. (2017). Influence of managerial leadership, corporate culture and ERP implementation on corporate performance. *Aktual'ni Problemy Ekonomiky= Actual Problems in Economics*, (189), 253.
- Shet, S. V., Patil, S. V., & Chandawarkar, M. R. (2017). Framework for methodical review of literature on leadership competencies. *Cogent Business & Management*, 4(1), 1309123.
- Silbaugh, K. M. (2016). *An exploration of the relationship between principal self-efficacy, mindset, & performance outcomes*. (Doctoral dissertation, Gannon University).
- Sturm, R. E., Vera, D., & Crossan, M. (2017). The entanglement of leader character and leader competence and its impact on performance. *The Leadership Quarterly*, 28(3), 349-366.
- Trivellas, P., & Reklitis, P. (2014). Leadership competencies profiles and managerial effectiveness in Greece. *Procedia Economics and Finance*, 9, 380-390.
- Vaculik, M., Prochazka, J., & Smutny, P. (2014, November). Competencies and leadership effectiveness: Which skills predict effective leadership. In *Academic Conferences and Publishing International Limited* (pp. 337-344).
- Walliman, N. (2017). *Research methods: The basics*. New York: Routledge.
- Wei, F., Li, Y., Zhang, Y., & Liu, S. (2018). The interactive effect of authentic leadership and leader competency on followers' job performance: The mediating role of work engagement. *Journal of Business Ethics*, 153(3), 763-773.

Part 8: Inclusive Education

Does Having a GSA in the School Improve the School Experience for LGBTQ Students?

Steven D. Hooker

The Watson School of Education
Department of Educational Leadership
University of North Carolina Wilmington, United States

Abstract

This qualitative study was conducted to determine if a school-based gay-straight alliance (GSA) improved the school environment and experience for lesbian, gay, bisexual, transgender, and questioning/queer (LGBTQ) students in these politically charged times. Does such an alliance reduce the incidents of harassment and bullying for those who are LGBTQ or perceived to be LGBTQ? Also examined were the school policies to see if the LGBTQ students are a protected group, like race, gender, ethnicity or religion. If so, do school policies help to support the GSA and the students involved in the group? Six GSA advisors were interviewed, including three in the southeast and three in the Midwest. The findings indicated that having a school-based GSA helped to create a safer school environment for those students who identify as LGBTQ and those perceived to be LGBTQ.

Keywords: Gay-Straight Alliance (GSA), LGBTQ students, bullying, student organizations, school policies, school culture

Introduction

Schools are generally sites of bullying and abuse for lesbian, gay, bisexual, transgender, and questioning (LGBTQ) youth, or for anyone who does not closely conform to traditional gender roles. Although this may be changing over time, what little data exists on this topic show that antigay harassment is common. The Gay, Lesbian, and Straight Education Network (GLSEN) conducts a national school climate survey every two years. “The most recent reports indicate that 61% of LGBTQ students feel unsafe and 72% hear derogatory remarks, while 85% are verbally harassed, and 40% are physically harassed based on their sexual orientation” (Fetner, 2012, p. 190). Additionally, 70% of transgender students have been verbally harassed, and of the LGBTQ students of color, 80% were verbally harassed and 60% were physically harassed (Diaz & Kosciw (2009). Poteat, Espelage, & Green (2007) conducted a study of 192 students, ages 13-18, and found that homophobic attitudes and values are prevalent in adolescent peer groups.

Faggot, dyke, homo, and queer, are words you will hear walking down the hallway of nearly any school. These pejorative terms are tossed about without any thought or feeling as to how they will affect those around them. No student likes to be the target of teasing, but many students report a greater negative reaction to being the target of anti-gay labels. Much of this teasing and harassment focused on sexual orientation or gender identity is emotionally charged (Kimmel, 2016).

There is little disagreement that LGBTQ youth experience high rates of school harassment. Several studies of LGBTQ youth have documented high levels of school victimization (Kosciw et al., 2010). Sexual minority youth often report feeling socially and emotionally isolated in their lives and in their experiences of the educational system (Mudrey & Medina-Adams, 2006). They

frequently do not know to whom they might turn for support as they struggle through their identity development processes.

The Association of Secondary Principals found that only 10% of high school principals reported that students at their school are bullied, called names, or harassed for being a gay man, lesbian, or bisexual individual, and only 33% of those same principals claimed that that a gay male, lesbian, or bisexual student would feel safe in their school. Forty-five percent of administrators in the poll believed that bullying, name-calling, or harassment of students is a serious problem at their school, yet 85% admitted that they had heard students make homophobic remarks (GLSEN & Harris Interactive, 2008). “Because social injustice is ever present in our society and exacerbated in our schools, educational leaders must not only identify and understand the unjust practices happening in schools, but also feel an urgency to take action” (Allen, Harper, & Koschoreck, 2009, p. 77). School cultures are likely to be based on heterosexual normativity, if schools fail to end the harassing and bullying behavior (Kimmel, 2016; Heck, 2015).

A gay/straight alliance (GSA) is a student-run club in a high school or middle school that brings together LGBTQ and straight students to support each other, provide a safe place to socialize, and create a platform to fight for racial, gender, LGBTQ, and economic justice. GSAs can sometimes be politically contentious and difficult to establish, however many school districts, advocates, and adolescents themselves would benefit from a strong association between GSAs and adolescent wellbeing (Marx & Kettrey, 2016). Prior studies show a strong association between gay-straight alliances and the well-being and safety of sexual minority students in school (Ioverno, et al, 2016).

GSAs serve a greater purpose than being simply another extra-curricular activity, like many other school clubs and organizations. In addition to the educational component provided by these alliances, “GSAs are on the cusp of a greater social movement that, building on the gay rights movements of earlier decades, is breaking new ground in the areas of equal rights and social accountability” (Stonefish & Lafreniere, 2015, p. 1).

School personnel grow increasingly aware of the often-hostile school climates LGBTQ students face. School and district level responses have typically ranged from disregarding the needs of LGBTQ youth to providing them with some minimal degree of protection and assistance (Mayberry, 2006). Recent efforts of school personnel who have implemented a variety of initiatives aimed at providing safe and tolerant learning environments for LGBTQ students have resulted in the inclusion “of homosexual identities in school curricula, identification of positive role models, counseling programs, and support groups, yet antigay attitudes and actions of students and teachers continue to persist” (Mayberry, 2006, p.262).

“LGBTQ youth and their allies organizing to find ways to transform our schools into more socially just institutions is a growing phenomenon” (Mayberry 2012, p. 49). Empowerment can be useful in understanding the potential for GSAs to be a force in school reform efforts to make school environments more inclusive. Rather than focusing on the victimization of LGBTQ youth, in need of special services, GSAs represent the potential of LGBTQ youth to become agents of social change in their schools (Griffin, et al., 2004).

This study was designed to determine if school-based gay-straight alliances (GSAs) improve the school environment and experience for lesbian, gay, bisexual, transgender, and questioning/queer (LGBTQ) students in schools in the southeast and Midwestern part of the country. Does the alliance reduce the incidents of harassment and bullying for those who are LGBTQ or perceived

to be LGBTQ? Do LGBTQ students need to be identified as an enumerated protected group in a school's anti-bullying policies?

Review of Literature

GSAs are a form of social support for LGBTQ students. These alliances are student-run social clubs like other high-school social groups, such as drama clubs, math teams, and chess teams. However, one of the main purposes of gay-straight alliances is to provide support to LGBTQ students in difficult personal circumstances or in hostile school environments (Fetner & Kush, 2008). "In many cases, differences among students on health and academic indices were associated with the presence of GSAs at their school" (Poteat, Digiovanni, Sinclair, Koenig, & Russell, 2012, p. 327).

Over the past 20 years, gay-straight alliances have spread throughout high schools in North American. In a relatively short period of history. GSAs have emerged in the United States as an important strategy for promoting safety and well-being for LGBTQ and all students, and for promoting positive school climates. It has been in the period of only two decades that U.S. legal cases established the right of students to establish GSAs in their schools and some schools continue to resist the formations of GSAs (Fetner & Kush, 2008). "There are now more than three thousand GSAs registered with the GLSEN organization in all fifty states of the United States (MacGillivray, 2009, p. 26). The gay, lesbian, and straight education network (GLSEN) is a national organization formed to ensure that every student, in every school, is valued and treated with respect, regardless of their sexual orientation, gender identity or gender expression. The organization's mission state that they believe that all students deserve a safe and affirming school environment where they can learn and grow.

Mayberry's (2012) findings were similar to previous studies about GSAs (Lee, 2002, Mayberry, 2006a), suggesting that GSAs empower members to speak out against antigay comments and behaviors, and actively resist practices leading to a sense of isolation or marginalization for LGBTQ youth. Unfortunately, GSAs cannot serve as empowering organizations, if they are not called upon when issues of school climate are being discussed by administrators and school staff (Mayberry, 2012). Additionally, "the GSAs in our study show only slight evidence of strategically building coalitions with community organizations and little evidence of coalition building with the school setting in an effort to improve the quality of life for LGBTQ students" (Mayberry, 2012, p. 50).

Seelman, Forge, Walls, and Bridges (2015) found that in relation to GSA characteristics that it is not enough for schools to establish a GSA and believe their work is complete. "School personnel have a responsibility after the GSA is created to nurture and maintain a culture that supports such an organization and provides students with the ability to develop activities relevant to the particular school" (Seelman, et al., 2015, p. 27). Additionally, Poteat, et al. (2015) aimed to shift from treating GSAs and their members as homogenous to directly consider their diversity. They noted that "critical dimensions of GSAs are socializing and advocacy" (p. 428).

Fetner and Elafros (2015) cited that students in many schools with GSAs had support from teachers and administrators. "Supportive teachers and administrators helped these students form gay-straight alliances in the first place and facilitated their work as a student group. These supportive educators also intervened when opposition to LGBTQ inclusivity arose from other teachers, students or parents" (Fetner & Elafros, 2015, p. 577). This support is critical for those who lack

the strength or power to confront these opponents on their own. Close relationships between supportive adults and the presence of a gay-straight alliance are important factors in creating an LGBTQ inclusive school environment (Fetner & Elafros, 2015). In schools where faculty members and administrators do not support the GSA, it is much more difficult for students to form and gain support for the group.

GSA involvement and other related activities focused on diversity are positively linked with school belongingness and GPA (Toomey & Russell, 2011). Research has documented several benefits of the presence of GSAs for LGBTQ youth. For example, the presence of a GSA is associated with less harassment based on sexual orientation (Kosciw et al., 2010), higher levels of self-reported safety and inclusion at school (Walls, Kane, & Wisneski, 2010), and less thoughts and attempts at suicides (Goodenow et al, 2006). Macgillivray (2009) reported that a California safe school survey cited that students are more likely to feel safe if the school supports the establishment of a GSA. When commenting about his students, who started the first GSA in Mexico, My students reported learning valuable lessons about working through bureaucracy, diplomacy in power relationships, compromise, and working with others in a democratic process. Besides learning personal lessons, they reported changing the climate and culture of the school to be more accepting of people's differences (p. 27).

Fetner and Elafros (2015) interviewed 53 young adults between the ages of 18 and 25, who had completed high school and been involved in a GSA. They found many of their participants reported their high schools were largely supportive of LGBTQ students. They agreed that everyone was treated the same and had generally positive memories of their high school experience. However, the students were asked if they had seen or heard any specific situation of verbal or physical harassment, the majority had stories to share of verbal harassment, some had memories of physical harassment to themselves or to a friend. "Nearly all of our participants reported hearing the terms 'that's so gay' to indicate that something is bad, or the use of 'fag' as an insult" (Fetner, & Elafros, 2015, p. 569).

In addition to what affect the GSA has on the students, often it also affects the faculty member who chooses to sponsor the group. GSA advisors face challenges of discrimination as well as the students they seek to help. Deciding to become GSA advisor comes with some fear of risks, such as losing one's job and being accused of recruiting youth to the gay lifestyle (Valenti & Campbell, 2009). It is important that advisors be cautious due to allegations of being labelled as lesbian, or gay could lead to job termination, especially if the "culture misconception of gay men being pedophiles is the common norm or a homophobic culture exists in the school environment" (Valenti & Campbell, 2009, p. 243).

Students in schools with GSAs report that they are less likely to feel unsafe because of their sexual orientation (Walls, et al., 2010). Students who report feeling safe at school are more likely to have higher grade point averages (GPAs) and are more likely to plan to go to college (Clark & Russell, 2009). A study of LGBTQ students show that in schools with a GSA, 26% missed school due to safety concerns, compared with 32% of LGBTQ students at schools without a GSA (GLSEN, 2007). Students in a GSA in Salt Lake City, Utah demonstrated an increase in academic potential after their GSA was formed (Mayberry, 2006). Lee (2002) also found that a GSA had a positive impact on academic performance. When GSA members were compared with non-GSA members, those students who attend the GSA had significantly higher grades and a lower drop-out rate (Walls, et al., 2010).

The purpose of this study is to determine if having a GSA in a school will improve the school environment and experience for LGBTQ students. Does it reduce the incidents of harassment and bullying for those who are LGBTQ or perceived to be LGBTQ? Also examined were the school policies to see if the LGBTQ students are a protected group, like race, gender, ethnicity or religion. If so, does this help to support the GSA and the students involved in the organization? “It is important to study how a GSA’s characteristics matter in relation to the school climate” (Seelman, et al., 2015, p. 26). Lee (2002) found the GSA contributed to improvements in school, social, and family relationships; comfort level with sexual orientation; development of strategies to handle assumptions of heterosexuality; increased perceived ability to contribute to society; and an enhanced sense of belonging to the school community.

Methods

For this qualitative study, I interviewed the Gay/Straight Alliance (GSA) advisors in three schools in the southeast and three in the Midwest to see if having a GSA in the school helps to reduce the incidents of bullying for LGBTQ students. I also examined each school’s handbook policy about bullying to see if it supports anti-bullying for LGBTQ students. The reason three participants in the southeast and three in the Midwest were interviewed was to see if the geographic location provided a difference in the effect the school GSA had on the school climate.

During this study, I collected data by conducting semi-structured interviews. The use of semi-standardized interviews involves asking predetermined questions, but allows the flexibility of asking for an explanation about or more specific information with a response. It also allows participants to tell a story about an experience they have had (Berg, 2007). The interviews were scheduled at a time and location convenient for the participants being interviewed.

Open-ended interview questions allow the interviewer to ask questions about a particular topic, and then probe more deeply into the areas and issues that the participant initiates (Bogdan & Biklen, 1998). The semi-structured, open-ended interview requires carefully and fully wording each question to ensure that each subject was asked the same questions, “the same stimuli, in the same way and same order” (Patton, 2002, p. 344). The six GSA advisors were interviewed by telephone for about 60 minutes each. The interviews were recorded and transcribed. The responses to the questions were analyzed, and coded to identify common themes.

The data responses were coded according to Berg’s (2007) recommendations about how qualitative data are analyzed using six steps:

1. Data are collected and made into text
2. Codes are analytically developed or inductively identified in the data and affixed to the transcriptions
3. Codes are transformed into categorical labels or themes
4. Materials are sorted by these categories, identifying similar phrases, patterns, relationships, and commonalities or disparities
5. Sorted materials are examined to isolate meaningful patterns and processes
6. Identified patterns are considered in light of previous research and theories, and a small set of generalizations is established (p. 306).

Interestingly, out of the 27 partnership high schools for a major university, in the southeast region, only three had a GSA support group for the LGBTQ students. The three in the Midwest were

chosen because I had a connection with the area GLSEN organization who works with these schools.

Each GSA sponsor was sent a copy of the interview transcription to ensure the accuracy of the data transcribed. The student handbook for each of these schools, including the bullying policy, was collected to be examined. The school policy was then compared to each participant's responses to see if those responses supported the school's bullying policy.

Limitations

One limitation to the study was that only three schools in the southeast and three in the Midwest were used. Involving a larger number of schools would certainly be one area for future research. Another limitation was that no students or other school personnel were interviewed. It is suggested that future research interview those students in the GSA, school counselors, and school administrators to get a broader perspective of views regarding the school safety for LGBTQ students. The findings from this research are not to be considered generalizable. If this study were to be replicated in large cities such as New York City, or Los Angeles, I would imagine the data collected would be very different. Most of the existing scholarship about the impact of GSAs is not generalizable because samples have been taken from a limited geographic area or because the research is qualitative in nature (Walls, et al., 2010). Another consideration for future research would be to identify GSAs in rural or suburban areas. Often religious fundamentalism and ultra-conservative right-wing political agendas are strong in rural and suburban areas making it more difficult for schools to form GSAs (Stonefish & Lafreniere, 2015).

Findings

All six of the schools, whose GSA advisors were interviewed, were located in metropolitan areas in the southeastern and Midwestern area of the country. The smallest of these high schools had 1600 students and the largest had 3000. All six schools have GSA meetings either weekly or bi-weekly. Additionally, all six GSA advisors claimed that serving in that role has changed with lives. All agree that it has helped them become more aware of how marginalized populations are treated, not only in school but in society. One claimed that she takes her family to Pride events every year as a result of advising the school GSA. Some talked how about they are more connected to the LGBTQ community in the cities, which allows them to invite guest speakers, inform students about community events, and even collaborate with community groups so that the students in the GSAs have the opportunity to meet successful LGBTQ adults. All six felt that it has been a positive experience for them and changed their lives for the better, and none of them hesitated when asked to sponsor the GSA in their school.

The three teachers advising GSAs in the southeast are not tenured, as the state in which they are teaching does not allow teachers to be tenured. The three GSA advisors in the Midwest are all tenured, but one of them took on the role prior to being tenured. All of the teachers emphatically stated that they became the GSA advisors because they believed in the cause, none expressed any fear about serving in that role, but are proud of what they see happening with the GSA students.

Teachers who are not yet tenured may be reluctant to take on a socially volatile group such as a GSA. "Deciding to take on the role is often connected to their employment, salary, and career. Deciding to take on the role involved not only their personal sphere of life, but also their professional sphere" (Valenti & Campbell, 2009, p. 243).

Five of the teachers have been advising the GSA since they arrived at their schools from two to six years ago, while one has been at the same school for 13 years and served as the GSA advisor, claiming, “There was a GSA when I arrived at the school.” It was interesting that all six advisors were female, while some stated that they have openly gay men teaching in the schools, none of these gay men led the GSA organizations in their schools.

GSAs in the Southeast

The GSA advisors stated that the three schools in the southeast generally have about seven to 10 students attend their GSA meetings, with two or three allies attending each meeting, and the remainder being students who identify as LGBTQ. Two of these groups meet after school, but one school has club time combined with their lunch break. All three of these schools have policies that enumerate sexual orientation and gender identity in the anti-bullying sections of their student handbooks. In addition, all three noted that same sex couples attend proms, homecoming events, and other school-related activities with no negative comments or incidents occurring.

Only one of the GSAs in the southeast collaborates with other student clubs, such as student government or school paper club. In this school, the student government plans events that include all other student groups and the GSA always participates. The other two stated that they do not collaborate with other groups, one school advisor claiming that they have a GSA Facebook page, but only four people follow it. All three southeastern GSA advisors claim that students are not committed to the success of the clubs and there is little interest in planning activities, but each faculty sponsor claimed that having a GSA has made a difference in the school climate for LGBTQ students. One advisor claimed,

It helps them to know that there is a safe place for them, and advocates for them and someone is on their side. Our school is an accepting school community. We have a large ‘trans’ population here. There is a lot of support from the staff for the LGBTQ community in the school.

Another responded,

I think they feel more comfortable talking to others about their feelings. They support each other. I don’t know that the organization has reduced bullying, but students do feel more open to talk to others about situations that happen.

All three GSA advisors, in the southeast, claimed that students felt safer in the school environment because of having the GSA club and the school policies protecting them from being bullied. These three also claim the lack of student leadership as one of the reasons these clubs are not more popular and successful in their schools. It should also be noted that GSAs are supported by the GLSEN organization in the community. The communities in which these schools are located do not have GLSEN chapters that would support the groups. The GLSEN website (glsen.org) promotes activities and days of action that helps promote GSAs in the school settings.

GSAs in the Midwest

The three GSA advisors in the Midwest claimed they generally have anywhere from 15 to 40 students attend the meetings, with about 25-50% being allies and the remainder identifying as LGBTQ. All three of the clubs meet after school for one or two hours. Two of the three schools have specific bullying policies that protect the students who identify as LGBTQ. The other school

has anti-bullying policies, but does not specifically state that LGBTQ students will be protected from bullying, while race, religion, nationality, and physical appearance are listed.

Like the schools in the southeast, the three schools in the Midwest, allow same sex couples to attend proms and other school dances and activities. The LGBTQ students are not treated any differently than any other students, claim these advisors. These advisors all stated that the GSA gets involved with other student groups as they promote the GLSEN days of action including Day of Silence (www.glsen.org/day-of-silence/faq), Ally Week (www.glsen.org/allyweek/about), and No Name Calling Week (www.glsen.org/blog/4-tips-glsens-no-name-calling-week).

All three advisors stated that LGBTQ students feel that the school environment is safer and more inclusive because of the workings of the GSA organizations. One GSA advisor commented,

Students are not afraid to tell new teachers about pronoun use and about the GSA and how students need to be protected and valued in the classroom. In a French class, the teacher was showing a video of a French fashion show and another teacher came in to drop something off and made some transphobic comments about what was on the video. The French teacher called the GSA sponsor and she went and talked to that teacher, knowing she would be supported by the school principal. This school is known for being trans supportive and trans friendly.

A national news program wanted to come and do a story about the school, but angry anti-gay groups found out and said they would hunt down the students and teachers and create a disturbance at the school site. She went on to state,

Our principal was almost in tears, he was so furious, but we had to cancel. The principal gathered the students and explained to them that he wasn't going to let anyone hurt them or treat them badly so he cancelled the event to keep everyone safe.

Another advisor noted,

Our GSA works very hard to make change. They worked to make change so that boys can buy boys prom tickets.- Girls could always buy girls a ticket- Once it was brought to the attention of the our staff- they made the change. This was a huge victory!

Our GSA has teamed up with student council and honored A Day of Silence. Our GSA collaborated with administration and parents to have the entire district staff safe zoned trained- during school hours. They also were able to get two gender-neutral restrooms. They are building them now! There is no law that "makes" our district do this- our GSA students wrote letters to administration. They presented to the team and BOOM! The ball was sent in motion. So amazing!

The two cities in the Midwest in which the school GSAs were located both have a GLSEN chapter that supports the GSAs in the schools. There is a member of each GLSEN organization that is specifically identified to provide assistance and support to the GSAs in these cities.

The one major difference between the GSA organizations in the southeast and the Midwest is that those in the Midwest focus on promoting social change. As one advisor stated, "I do my best to empower the students in this organization to stand-up and become activists for social change." When asked if students belonging to the GSA feel it has change their school experience, an advisor commented,

Yes, they do. However, they do hear comments in the hallways, but I know that the activism that we do helps to reduce the amount of bullying, and gaining levels of acceptance. I have a senior now and says that things are so much better now than they were when he was a freshman. Of course, some of that may be his

level of acceptance with himself as a gay man. There is a greater level of visibility for LGBTQ issues than there ever has been, and it's really made a difference.

This advisor claimed the students in the GSA have changed the culture of the school to be more inclusive for students who may feel marginalized. The GSA members conduct trainings for teachers about how to be an ally and how to create safe classroom environments.

Discussion/Analysis

LGBTQ youth are at greater risk of social problems, including depression, suicide, dropping out of school, homelessness, and drug use. Additionally, they are more likely to experience stress, family conflicts, and anxiety (Fetner, 2012). GSAs often provide a relief for students who are feeling anxious or depressed. The groups may also help keep students from dropping out of school, as they now have a social network with whom they can feel connected.

All six of the advisors agreed that LGBTQ students feel that having a GSA in the school improves the school experience for those students who identify as LGBTQ. It is also evident the schools located in Midwestern cities, that have GLSEN chapters to support the GSAs, have greater attendance at the meetings and are involved in more than just creating a safe school, but also promoting social change in the school and the communities in which they live. Additionally, all six of the GSA advisors feel that have benefitted from sponsoring this club. They feel that have become stronger allies and are more aware of bullying and harassment that occurs. None of the six has regretted being the faculty advisor for the group, even though one advisor from the Midwest admitted that one year she got a group of LGBTQ freshmen who had a history of attempted suicides and some were cutters. She claimed that she had to work with the social worker and get them into the GSA group so that they could feel supported.

The advisors who were interviewed have all provided a social network where the students feel safe to discuss any concerns students have. As one advisor in the southeast stated, "It helps them to know that there is a safe place for them, and an advocate for them and someone is on their side." Another GSA advisor in the southeast added, "They feel more comfortable to talk to others about what they are feeling. They support each other."

While some of the GSAs in the Midwest have greater numbers in their organizations and are more involved with promoting social change in the schools, all six advisors claimed that the GSA has created a safer school environment for students who identify as LGBTQ. All felt like they have helped to create a more inclusive and welcoming school setting for LGBTQ students. It was however, obvious when talking with the advisors in the Midwest how much having a GLSEN chapter in the city helps to support the efforts and events of the school GSAs. However, it was obvious that having a GLSEN chapter in the city is not required to have successful GSAs in a city's schools. It is also important to note that all six of the school administrators strongly support the school's GSA, according to these advisors. When asked how important they perceived the principal's support to be, all claimed it was extremely important because without his/her support, the workings and promotion of the GSA could not happen.

All six of these schools were in large metropolitan areas, but the schools in the Midwest were in a larger urban area where there are large LGBTQ communities. "High schools that exist in communities with less affirming views of LGBTQ individuals may not have GSAs and even if they do, school administrators may not allow such a program to be delivered to LGBTQ students"

(Heck, 2015, p. 230). Research suggests that GSAs are more likely to be established in communities where support for LGBTQ individuals already exists, thus GSA and school-based programming may not be feasible in the areas where there is the greatest need (Heck, 2015). McCormack and Anderson (2014) suggest that homophobia is on the decline, which could allow these environments to become more conducive to the development of GSAs.

The findings from this research support that of Mayberry (2012) who found that GSAs empower members to speak out against antigay comments and behaviors, as well as Fetner and Elafros (2015) who noted that many of their participants reported their high schools were largely supportive of LGBTQ students, when the school had a GSA. All six of the GSA advisors in this study agreed the LGBTQ students in their schools felt that they were safer in the school because the school had a GSA.

Whether or not the GSA influences the school climate for LGBTQ students is influenced by the level of involvement in regular activities, “whether it is visible, whether it attracts many students or only a few, and whether people in the school generally talk positively or negatively about the GSA” (Seelman, et al., 2015, p. 26). The other factor that appears to be present when a GSA influences the school environment is the support of the school administration. Teachers and administrators must be supportive of GSAs, and intervene when there is opposition from parents, other teachers, or community members (Fetner & Elafros, 2015).

Even in schools where LGBTQ-positive programs exist, such as GSAs, they are often kept somewhat under the radar. “Obviously, educators need to exercise care when discussing students – some may not be ‘out’ to family members, or some parents and caregivers may not be supportive of their children’s LGBTQ identities” (Sadowski, 2010, p. 12). GSAs provide the necessary conditions for high-quality groups interactions between LGBTQ students and non-LGBTQ students (Horn & Romeo, 2010).

GSA’s can play a major role in the lives of LGBTQ youth by creating a safe space in the schools, in which students can develop positive relationships with their peers and build relationships with understanding adult mentors. Because all students are required to attend school, their safety must be provided for (Young, 2011). As students come out at younger ages, schools must create an atmosphere where individual differences are respected and students learn to appreciate diversity. Forming gay/straight alliances on junior high and high school campuses can be the first step in this process. Research has documented several protective benefits of the presence of GSAs for LGBTQ youth. For example, the presence of a GSA is associated with less victimization based on sexual orientation (Kosciw et al., 2010).

LGBTQ youth reported more school belonging and less at-school victimization because of their sexual orientation when they attended a school with a GSA, as opposed to those LGBTQ students who attended schools that did not have a GSA. This highlights the benefits of attending a high school with a GSA for LGBTQ youth (Heck, Flentje, & Cochran, 2011).

In recent years, MacIntosh (2007) has challenged the premise on which safe-space initiatives, such as GSAs are founded and argues that such initiatives are not designed to make visible normative school practices that sustain intolerance, marginalization and a hostile school environment. MacIntosh (2007) illuminates the limits of safe-space school reform efforts:

Many schools of education rely on curricula that focuses solely on anti-bullying or antihomophobia and safe-space initiatives. In and of themselves, are not inherently obstructive pedagogical undertakings. Neither, however, do they foster a framework for engaging with systemic change or elicit critical interrogations of local or institutional contexts. These initiatives stop short of problematizing the problems underlying the need for so-called safe spaces (p. 35).

GSAs are rare with respect to the fact that they are youth-led and provide a youth driven context for the development of youth leadership, activism, and engagement in social change” (Russell et al., 2009). Reaching beyond education and mobilizing of school safety and school climates is the broader social and political impact of GSAs as a social movement (Stonefish & Lafreniere, 2015). Safe spaces produced by gay-straight alliances mobilize students and encourage activism, as the social movement literature would claim (Fetner, et al., 2012).

“Recent findings on the impact of gay–straight alliances (GSAs) on the school experiences of sexual minority youth have demonstrated that numerous positive outcomes are associated with attending schools that have such student organizations” (Walls, Kane, & Wisneski, 2010, p. 307). Some research credits this positive impact to shifts in campus climate resulting from recognition and legitimization of GSAs, while other research suggests the influence is primarily because of the increased social support that sexual minority youth experience (Walls, Kane, & Wisneski, 2010).

GSAs have the potential to make a positive impact on the educational experiences of sexual minority youth. The positive impacts may result from providing individual support and altering the school climate to be more inclusive (Walls, Freedenthal, & Wineski, 2008). Some have suggested that the GSA movement is “one of the most visible manifestations of the contemporary movement for social justice” (Russell et al., 2009, p. 892). A GSA provides students with the space to discuss their sexual orientation and gender identity as well as resources and support to help with identity formation (Carvalho, 2006).

This study contributes to findings showing the importance of school administration support and the inclusion of GSAs in typical high school life. The students involved in all six of the GSAs felt safer in their schools and less fearful about being involved in school activities. The LGBTQ students continued to hear anti-gay comments, but those comments were not directed toward them. This study also revealed how the GSA advisors felt that serving the group had changed their lives. Some of the advisors are involved in Parents, Family & Friends of Lesbians and Gays (PFLAG), and other LGBTQ service organizations in their cities, and all attend local Pride events. One even mentioned having LGBTQ alumni come back and talk with students. This study exposes how the existence of a GSA can help to create a more inclusive school environment. While these results cannot be generalized to all mid-sized and large high schools, these advisors and other researchers (Fetner & Elafros, 2015; Fetner, 2012; Walls, et al., 2012) note that there are more allies in their schools and the LGBTQ students felt more empowered to stand up for themselves. Furthermore, they would ask for help when faced with adversity when there were GSAs in the schools.

References

- Allen, J. G., Harper, R. E., & Koschoreck, J. W. (2009). Fostering positive dispositions about LGBTIQ matters: The effects of a social justice curriculum on future educational leaders. In J. W. Koschoreck, & A. K. Tooms (Eds.), *Sexuality matters: Paradigms and policies for educational leaders* (pp. 75-102). Lanham, MD: Rowman & Littlefield Education.
- Berg, B. L. (2007). *Qualitative research methods for the social sciences* (6th ed.). Boston, MA: Pearson Education.

- Bogdan, R. C., & Biklen, S. K. (1998). *Qualitative research for education: An introduction to theory and methods* (3rd ed.). Needham Heights, MA: Allyn & Bacon.
- Carvalho, K. (2006, April). Effects of a Gay-Straight Alliance on the perceived climate at a continuation high school. Presentation to faculty and staff of the College of Social Work. San Jose State University, San Jose, CA.
- Clark, T. J., & Russell, S.T. (2009). School safety and academic achievement (California Safe Schools Coalition Research Brief No. 7). San Francisco, CA: California Safe Schools Coalition.
- Diaz, E.M. & Kosciw, J.G (2009). *Shared Differences: The Experiences of Lesbian, Gay, Bisexual, and Transgender Students of Color in Our Nation's Schools*. New York: GLSEN.
- Fetner, T. (2012, May14). Safe spaces: Gay-straight alliances in high schools. *Canadian Review*, 49(2), 188-207.
- Fetner, T., & Kush, K. (2008). Gay straight alliances in high schools: Social predictors of early adoption. *Youth & Society*, 40, 114-140. <http://dx.doi.org/10.1177/0044118X07308073>
- Fetner, T. & Elafros, A. (2015). The GSA difference: LGBTQ and ally experiences in high schools with and without gay-straight alliances. *Social Sciences*, 4, 563-581. doi: 10.3390/socsci4030563
- Fetner, T., Elafros, A., Bortolin, S., & Creschler, C. (2012, May). Safe spaces: Gay-straight alliances in high schools. *Canadian Review of Sociology*, 49(2), 188-207.
- GLSEN (2007). *Gay-straight alliances: Creating safer schools for LGBT students and their allies*. GLSEN Research Briefs. New York, NY: GLSEN.
- GLSEN, & Harris Interactive (2008). *The principal's perspective: School safety, bullying and harassment, a survey of public school principals*. New York, NY: GLSEN.
- Goodenow, C., Scalacha, L., & Westheimer, K. (2006). School support groups, other school factors, and the safety of sexual minority adolescents. *Psychology in the Schools*, 43, 573-589.
- Griffin, P. C., Waugh, L. J., & Beyer, C. (2004). Describing roles that gay-straight alliances plan in schools: From individual support to social change. *Journal of Gay & Lesbian Issues in Education*, 1, 7-22.
- Heck, N.C. (2015). The potential to promote resilience: Piloting a minority stress-informed, GSA-based, mental health promotion program for LGBTQ youth. *Psychology of Sexual Orientation and Gender Diversity*, 2(3), 225-231.
- Heck, N.C., Flentje, A. & Cochran, B.N. (2011). Offsetting risks: High school gay-straight alliances and lesbian, gay, bisexual and transgender (LGBT) youth. *School Psychology Quarterly*, 26(2), 161-174. doi: 10.1037/a0023226
- Horn, S. S., & Romeo, K.E. (2010). Peer contexts for lesbian, gay, bisexual and transgender students: Reducing stigma, prejudices and discrimination. *The Prevention Researcher*, 17, 7-10.
- Ioverno, S., Baiocco, R., Belser, A.B., Grossman, A. H., & Russell, S.T. (2016). The protective role of gay-straight alliances for lesbian, gay, bisexual, and questioning students: A prospective analysis. *Psychology of Sexual Orientation and Gender Diversity*, 3(4), 397-406.
- Kimmel, A. P. (2016, May). Title IX: An imperfect but vital tool to stop bullying of LGBT students. *The Yale Law Journal*, 125(7). Retrieved from LexisNexis Academic.
- Kosciw, J. G., Greytak, E. A., Diaz, E. M., & Bartkiewicz, M. J. (2010). *The 2009 National School Climate Survey: The experiences of lesbian, gay, bisexual and transgender youth in our nation's schools*. New York: GLSEN.
- Lee, C. (2002). The impact of belonging to a high school Gay/Straight Alliance. *High School Journal*, 85, 13-27. doi: 10.1353/hsj.2002.0005
- Macgillivray, I. K. (2009). Gay-straight alliances and other student clubs: A district's responsibilities. In J. W. Koschoreck, & A. K. Tooms (Eds.), *Sexuality matters: Paradigms and policies for educational leaders* (pp. 25-42). Lanham, MD: Rowman & Littlefield Education.
- MacIntosh, L. (2007). Does anyone have a Band-Aid? Anti-homophobic discourses and pedagogical impossibilities. *Educational Studies*, 41(1), 33-43.
- Marx, R.A., & Kettrey, H.H. (2016). Gay-straight alliances are associated with lower levels of school-based victimization of LGBTQ+ youth: A systematic review and meta-analysis. *Journal of Youth Adolescence*, 45, 1269-1282. doi: 10.1007/s10964-016-0501-7
- Mayberry, M. (2006, July/August). School reform efforts for lesbian, gay bisexual, and transgendered students. *The Clearing House: A Journal of Educational Strategies*, 79(6), 262-264.
- Mayberry, M. (2006a). The story of a Salt Lake City gay-straight alliance: Identity work and LGBT youth. *Journal of Gay & Lesbian Issues in Education*, 4, 13-31.
- Mayberry, M. (2012). Gay-straight alliances: Youth empowerment and working toward reducing stigma of LGBT youth. *Humanity & Society*, 35(1), 35-54. doi: 10.1177/0160597612454358

- McCormack, M., & Anderson, E. (2014). The influence of declining homophobia on men's gender in the United States: An argument for the study of homophobia. *Sex Roles*, 71, 109-120.
<http://dx.doi.org/10.1007/s11199-014-0358-8>
- Mudrey, R., & Medina-Adams, A. (2006). Attitudes, perceptions, and knowledge of preservice teachers regarding the educational isolation of sexual minority youth. *Journal of Homosexuality*, 51, 63-90.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Poteat, V. P., Espelage, D. L., & Green, H. D., Jr. (2007). The socialization of dominance: Peer group contextual effects on homophobic and dominance attitudes. *Journal of Personality and Social Psychology*, 92, 1040-1050.
- Poteat, V. P., DiGiovanni, C.D., Sinclair, K.O., Koenig, B.W., & Russel, S.T. (2012). Gay-straight alliances are associated with student health: A multischool comparison of LGBTQ and heterosexual youth. *Journal of Research on Adolescence*, 23(2), 319-330. doi: 10.1111/j.1532-7795.2012.00832.x
- Poteat, V. P., Scheer, J.R., Marx, R.A., Balzo, J.P., & Yoshikawa, H. (2015). Gay-straight alliances vary on dimensions youth socializing and advocacy: Factors accounting for individual and setting-level differences. *American Journal of Community Psychology*, 55, 422-432. doi: 10.1007/s10464-015-9722-2
- Russell, S.T., Muraco, A., Subramaniam, A., & Laub, C. (2009). Youth empowerment and high school gay-straight alliances. *Youth Adolescence*, 38, 891-903. doi: 10.1007/s10964-008-9382-8
- Sadowski, M. (2010, September). Beyond gay-straight alliances. *Education Digest*, 76(1), 12-16.
- Seelman, K.L., Forge, N. Walls, N.E., & Bridges, N. (2015). School engagement among LGBTQ high school students: The roles of safe adults and gay-straight alliance characteristics. *Children and Youth Services Review*, 57, 19-29.
- Stonefish, T., & Lafreniere, K.D. (2015, December). Embracing diversity: The dual role of gay-straight alliances. *Canadian Journal of Education*, 38(4), 1-27.
- Toomey, R. B., & Russell, S. T., (2011). Gay-straight alliances, social justice involvement, and school victimization of lesbian, gay, bisexual, and queer youth: Implications for school well-being and plans to vote. *Youth & Society*, 45(4), 500-522. doi: 10.1177/0044118X11422546
- Valenti, M., & Campbell, R. (2009). Working with youth on LGBT issues: Why gay-straight alliance advisors become involved. *Journal of Community Psychology*, 37(2), 228-248. doi: 10.1002/jcop.20290
- Walls, N.E., Kane, S.B., & Wisneski, H. (2010, March). Gay-straight alliances and school experiences of sexual minority youth. *Youth & Society*, 41(3), 307-332.
- Walls, N.E., Freedenthal, S., & Wineski, H. (2008). Suicidal ideation and attempts among sexual minority youth receiving social services. *Social Work*, 53, 21-29.
- Young, A.L. (2011, October). LGBT students want educators to speak up for them. *The Phi Delta Kappan*, 93(2), 35-37.

Part 9: International Education

Educational Access in Ghana

Hope Marie Taylor

College of Teaching and Learning
University of South Florida, United States

Abstract

Current research about orphans in Ghana suggests that those living in orphanages or in fostering situations may be disadvantaged educationally due to this status. Research does not always look at what the barriers are to a quality education for this group of children. This paper is a phenomenological anecdote of one orphan's struggle to gain access to education. The experience was costly in time and resources just to gain access to materials needed to progress toward a tertiary education in the Central Region of Ghana. Understanding the barriers to education in this context is crucial for improvement for this marginalized group of children.

Keywords: education, access, international, orphans

Introduction

This paper describes the ongoing conversation that began during the summer of 2018 in the Central Region of Ghana with one 19 year old male who grew up in an orphanage there. I traveled with a group from the University of South Florida to Bawjiase, Ghana for a service learning study abroad trip where taught and worked for two weeks in May. While working at the orphanage, I had the opportunity to befriend and have many conversations with Prince about his desires for furthering his education. Through this experience, I began to draw many parallels between access to education issues in this rural area and those in America for people of color. I was reminded of the writings of Marcus Garvey and W.E.B. DuBois demanding for better conditions for the African Diaspora in all areas of life. Policies are in place to govern the improvement of education for the most vulnerable children yet the reality is many still suffer.

Prince

Prince is a nineteen-year old male who has lived at Countryside Children's Welfare Home in a rural area of the Central Region of Ghana since he was approximately one and a half years old. He completed high school in a town called Swedru just southwest of Bawjiase. Prince loves music. He plays the keyboard in the church he attends every Sunday morning for worship service. He has no memory of living anywhere other than the children's home. I came to know Prince during the two weeks we stayed in Awutu, Bawjiase. I had several occasions to sit and speak with him about his life and his aspirations in the dining hall attached to classrooms at the Countryside School. He spoke of going to school in Winneba to study music there. Prince loves music and can play all instruments. He says that music is the only thing that has never left him; a profound and heartfelt statement from a young man who grew up without parents. He has aspirations to attend college and maybe study to be a music teacher in the United States, quite a hefty goal. He also expressed an interest in taking the Scholastic Aptitude Test (SAT) and attending a music camp during the month of June 2018. This music camp would allow him time to practice his skills on the instruments to prepare him for the entrance exam to get into the college. Prince is always well kept so that one would not know he lives at an orphanage. He wears clean pressed clothes and shoes.

Even when wearing white shoes, they look new in an area where red clay fills the air from the wind. On a few occasions while speaking with Prince, we spoke of upcoming dates for the SAT. He said that he had received high marks in school and asked about what would be on the SAT that he would need to take. On this day, sitting in the dining area, I used my iPhone and 3G internet to pull up an SAT practice test. This took quite some time to load as the internet serviced was limited. He used the phone to practice reading passages until the practice test timed him out after approximately 30 minutes. He had only answered a fraction of the questions. I pulled up the passages with the answers for him to review and told him that the test would be timed, and he would need to practice before registering for the test. This sent me on a quest to find resources for him to study with. I found study books rather easily on Amazon and asked my daughter, Heather, to try and order a book and have it sent to the home in Bawjiase. She agreed but found that not one of the books could be sent to Ghana. In the meantime, I discussed with Prince the possibility of him using the computer lab in what we call “The German”, the dorms for the German missionaries when they come to the orphanage to volunteer. He said that it is not equipped with internet nor would he be allowed to use it. My frustration over accessibility to information was mounting. Around this time, one of the professors that traveled with us would be returning to Accra to catch a flight home earlier than the rest of the group. Prince had offered to accompany her. As I began to problem solve, I thought I would go as well and find a book store to purchase an SAT prep book in Accra. I found a bookstore, proposed the idea to both doctors and put a plan into place. We would go to Accra Mall, the professor would meet her friend to go to the airport, we would meet a friend who also grew up in the orphanage who now lives in Accra, Simon, and go to the bookstore before returning to Bawjiase. This is exactly what we did. We took a car to Accra and met at the Mall. There was a caveat to the plan. The professor’s friend never came to meet her, so we took her to the airport instead. We then went to the bookstore to purchase the book for three times the amount it could be purchased online. The bookstore was clean and looked like one of the stores you would see in the states where teachers would buy supplies. There were two choices of SAT prep books. One had three practice tests and the other had five. I gave him the money and told him to purchase the one with five tests in it. The book was almost 300 Cedis. This is around seventy American dollars. The books online are between twenty and twenty-five dollars. He purchased the book and was more than grateful. Simon asked if I researched the price before coming because the cost was so high. I assured him that I had.

Afterward, we went to eat lunch at a mall nearby since the traffic was too much to go back to Accra Mall. Our driver agreed to wait for us as we ate. We entered the mall then climbed the stairs to the restaurant upstairs where we sat to eat. We chose to sit outside where we could see the street surrounding us and the buildings across from us as well. The server brought us large menus for us to choose what we would like to eat. Prince looked at the menu and at me and asked, “why did she bring me a book? I want food. I am hungry.” I couldn’t help but laugh and told him to look in the book and choose what kind of food he wanted to eat. Prince was nervous about the prices of the food in the menu. I told him to choose what he wanted. He chose fried rice with chicken and ordered when she returned. It did take some time to get our food because service in Ghana is not the same as in America. It is rare that anyone is in a hurry there. Prince got up a time or two to look around the balcony and also in the door to inquire what was taking so long to get his food. It was comical to see him behave this way. It reminded me just how young he is. We finally got our food. Prince was so excited, like a kid on Christmas morning. He took several selfies and began to eat the large portion of chicken and rice delivered to him. I ate the small bowl of stroganoff that I ordered and the cucumbers and tomatoes. I did not eat my huge mound of rice. Prince asked if I was going to eat the Jollof rice to which I replied “no”. He asked for the rice and said he would

eat all of it. He said that he did not want to disappoint me. I told him I had faith in him. He and Simon both found that very funny. Prince did not disappoint and ate all of the rice he put on his plate in addition to the food he ordered. After eating we joined our Uber driver waiting for us. We had to part ways with Simon to head back to Bawjiase because the traffic back to his house would be too congested. The short drive was made long due to the traffic and came to a standstill in Kasoa. There is a roundabout here that was designed by the British. This infrastructure is unfamiliar to Ghanians and everyone just pushes their way into the traffic with no order creating chaos and often cars are at a standstill. Prince was a happy traveling companion. When he was tired, he leaned over and put his head on my shoulder with the sweetest smile on his face and went to sleep. He calls me Mum ever since. The struggle to obtain an SAT book in rural Bawjiase ended up in an all day trip spanning until after nine pm. The cost of the taxi to Accra, the cost of the meal, and the cost of the book would be next to impossible for him alone. There is no money in the home for such things leaving him without access to the very information that is necessary for him to move forward in his education.

I hear from him often on WhatsApp. The outing to find his book was a rewarding experience for all of us, however, it brings up is the struggle to access education in Ghana.

Literature Review

Educational Access

The Education for All international commitment obligates countries, by 2015, to allow access to complete free and compulsory primary education of good quality for children in difficult circumstances and those belonging to ethnic minorities as reported in the UNESCO, 2008 report (Flemming, 2015). Children who are orphans or are considered vulnerable due to HIV/AIDS are a subgroup of this category. In countries with high incidents of HIV/AIDS, these children are discriminated against when seeking an education or medical care (Flemming, 2015). In addition to the status of orphanhood or vulnerable children, poverty may be more strongly linked to obtaining an education than the status of being an orphan. (Flemming, 2015). The intersection of these two risk factors is apparent in the Children's Home in rural Ghana. Children at the orphanage are vulnerable and attend a school with no certified teachers, violating their basic human right to a good education. Barriers to an education in rural Ghana perpetuates the problem of extreme poverty. Even beyond high school, the lasting effects of the barriers are still apparent.

Educational access has been a topic of focus since Ghana gained independence from colonial rule. The 1992 Ghanaian Constitution spelled out that education should be free, compulsory, and achieve universal access by the year 2005. Education is now free in Ghana but there are still school fees, food to be purchased, books to be purchased, and money is needed to travel to and from school. According to Essuman & Bowsuntwi-Sam (2013) & Nketsia, Saloviita, & Gyimah, (2016), this target was not met. Iddrisu, Danquah, and Quartey (2017) report that in Ghana at least a half million children of primary school age and 11% of adolescents of middle school age are not in school. The Education for all international commitment states 'that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to and complete, free and compulsory primary education of good quality (Flemming, 2015). Even though the limited financial support of public education leads to a poor quality of education in public schools as stated by Iddrisu et. al (2017), it is better than no education at all. Furthermore, only three percent of students with disabilities receive any type of formal education at all (Nketsia et.al, 2016). At the home in Bawjiase, there are no formal diagnoses of disabilities. There are,

however, students with physical impairments at the home. Most students with disabilities are sent to other schools and are marginalized even at the orphanage. Statistically about ten percent of the home's population would have some sort of disability not yet diagnosed based on the United Nations formula for students with disabilities in West Africa, (Adera & Asimeng-Boahene, 2011).

Akyeampong, Djangmah, Oduro, Seidu, & Hunt (2007) & Ashiabi (2007), report that there is a disparity in the access to education between urban and rural areas. The differences were found in the condition of the buildings, textbooks, curriculum, and the level of training of the teachers in each area. In Bawjiase, the rural area where the Children's Welfare Home is located, the teachers are a combination of former students at the school who still live in the orphanage or others who have no teacher training. In a study cited in Akyeampong et.al (2007) researchers found a significant need for teacher supervision and support in areas such as Bawjiase. During the two weeks that I spent at the school, there were several times a teacher left at break and did not return or there was a classroom with no teacher at the beginning of the day. I taught in the JHS Form Three classroom due to this occurring. The classroom age was the equivalent of eighth grade in the United States. The teacher left for lunch and did not return so I taught writing in the afternoon on the first day then returned a few more to complete the lesson with them. These factors further perpetuate a poor education for rural students. This is just one example of the inconsistency of adults in the room to educate the students.

Another factor affecting the access of education in rural areas is the lack of money for school fees, uniforms, transportation, and accommodations for those in secondary school and college (Akyeampong et.al, 2007). Families that don't have the means to supply the basics for children to attend schools often keep children home rather than sending them for an education.

One such story was shared with me in conversation on a trip to Fettah Beach. Simon also grew up in the Children's Home with Prince. His story is another example of the struggle to access education in this area. Simon, the oldest of eight siblings, now lives in Accra but lived at Countryside Children's Home for fourteen years. He was sent to live at the orphanage at the age of eight when his father died. His mother lives in town and he visit her frequently. She lives with the father of her last child, but she is not married. There are times that there is no money in the house. Simon has come to his mother's aid by helping to pay school fees for his sisters and helping with money for food and water when the man of the house could not provide for her. Simon's sixteen-year old sister now lives at the orphanage and attends high school while the other siblings live with his mother. One of the other siblings also has a baby under the age of one. The inability of his mother to provide food for all her children lead to the decision for his sister to attend Countryside as well.

Nutrition as a Barrier

Undernutrition of children leads to poor health and poor school outcomes because of the amount of school days missed due to illness (Ashiabi 2007, Akyeampong et.al, 2007, Essuman & Bosumtwi-Sam, 2013). The decision Simon's mother made to send both children to Countryside Children's Home was an attempt to at least try to address the barrier of basic food. I often witnessed children at the orphanage that seemed hungry after having only rice with some sauce for each meal, not having food or water at all seems much worse as is the case for Simon's mother. At the orphanage, there are trees with fruit, fish ponds, Cassava fields and donors that help. This is an additional resource that would not be otherwise available to them. In Simon's mother's home, if there is no money, there is nothing. This family fits the definition of poverty used by Essuman

& Bosumtwi-Sam (p. 254, 2013) "...the exclusion of the poor from mainstream society and results in the denial of basic human rights." Both of the homes are impoverished but the levels of poverty are not the same.

Materials as a Barrier

The curriculum used throughout Ghana is a centralized national curriculum disseminated from the Ministry of Education's Curriculum Research and Development Division. Since it is a standardized curriculum, there is no room for any modifications and is not suited well for those students who learn differently (Nketsia et.al, 2016). The curriculum lends itself to a teacher centered approach. This type of teaching is not conducive to helping those students that have the most needs. Even when there is more than one adult in the class, there is no co-teaching occurring in the classroom. Co-teaching is an approach whereby two or more teachers share the responsibility for teaching some or all of the students assigned to a classroom (Nketsia et.al, 2016 p. 5). In addition to the rote manner of teaching, students often lack supplies to complete assignments. This was seen first-hand at Countryside Home. In the kindergarten classroom, there were few supplies; the work that was done was memorization and recitation while sitting at wooden desks or on wooden benches. The few resources in the room were a blackboard with chalk, some crayons and paper. The supplies are given to teachers in a miserly fashion. The paint on the wall was a cream color and covered in dirt and scuff marks. Twenty or more students filled the chaotic room. They stood on desks, fought each other, walked in and out of the room with no redirection from the teacher. There was a box of papers that were of no use to the students stored in the room but no new paper for them to use. There were no toys for play or manipulatives to help with counting as are used in America. Although there is a standard curriculum for Ghana, I saw no evidence of the curriculum in the kindergarten classroom during the three days I was in that room.

In the junior high classroom there was evidence of the curriculum and textbooks were present as well. Students in the Junior High form three room, eighth grade, versus the form one room, were very used to sitting and taking notes and working with rote learning. I made notes in my journal of the fast-paced review that I observed and little wait time allotted for students to think through questions before responding. I reflected on my own teaching style and how vastly different it was from the style I was observing.

I had the opportunity to teach one lesson on form letter writing (argumentative in nature). This activity was very enlightening for me. I wanted students to start the formal letter with a hook to secure the reader's attention. The audience here was the head of the school. The argument was for a trip to a foreign destination. This proved to be a difficult task. The students were able to write the hook with little trouble. However, once the hooks were finished, getting them to start the letter with the hook proved more difficult. Just explaining that this should be the first sentence rather than the prescribed greeting example from the text was almost incomprehensible to them. Even as I stood over them and told them to write that one sentence first, I could see the inner struggle to stray from their norm of what was in the textbook. Research has shown that even when trained at the university level, teachers neglect interactive teaching methods and engage in lecture and rote learning instead (Nketsia et.al, 2016).

This phenomenon happened in lower grades as well. Two undergraduate students from the University taught a lesson in which students were to engage in creative expression through drawing. The students copied from one another as if they were unable to produce a new work without the approval of another person. Unfortunately, the students were graded on how well they

drew, subjectively by the teacher, rather than whether or not they followed directions and attempted creative thought. This was upsetting to the undergraduates who had prepared and executed the lesson. They felt as though they should have been the ones to give a score for the work and were particularly upset with low marks for some students. We spent some discussing how a grade could have points taken off without a rubric or some understanding of why they were deducted or even what the expectation was to start with. Something as simple as a rubric was non-existent in the Countryside Children's School.

Teachers as a Barrier

In a study conducted by Nketsia et. Al (2016) on teacher preparation in Ghana, researchers found that there is an “inadequate emphasis and integration of effective instructional strategies in Ghana's colleges of education” (p. 14). Teacher preparation programs teach a “one-size-fits-all” approach to teaching and assessments (Adera & Asimeng-Boahene, 2011). Teachers employed in Ghanaian schools lack preparation due to limited training opportunities pre-service or in-service (Adera & Asimeng-Boahene, 2011). What is even more disturbing than the lack of teacher preparation is the limited number of teachers in schools. Research studies in Ghana have shown that there are pervasive teacher shortages and poor attendance across the country. Akyeampong et. al (2007) describes the situation as endemic in the Ghanaian education system. Of the teachers who are certified and qualified, many refuse to work in poor, rural communities adding to the disparities between the rural and urban areas, (Akyeampong et.al, 2007). I witnessed this first hand in Bawjiase at the Countryside Children's Welfare Home. Although I did not ask every teacher for credentials to see if they had training, it was apparent which of the teachers did not. I might even argue that none had training at the Children's home. Several times in the kindergarten room, there was no teacher or the teacher in the room was sleeping. Toward the end of the two weeks spent at the home, a new teacher was brought in to take over the kindergarten class. She, however, was not a teacher but rather a friend of an employee who was waiting to go to school to be a nurse. At the junior high school level, one of the teachers was a young man who went to college and obtained his bachelor's degree; he taught to fulfill his one year of service that is expected of him by the government upon completion of college. The lack of teacher preparation most apparent was in the preschool setting. The undergraduate students from the university that initially chose to work with this age refused to return to work with them after the first day due to the harsh treatment of the students by the teacher assigned to them. One undergraduate student witnessed a child being hit with a stick while another student bit the same little girl with no explanation for why she was being punished. This information was shared with the social worker at the home for him to investigate. On my second trip to Ghana, I observed this class for myself on two consecutive days. The children ranged in age from around one year to four or five years of age. In the classroom there was a blackboard, benches for students to sit on, and three sentences written on the board for the small ones to recite. I was confused as to how these little ones could read the words on the board since they could not read. Furthermore, the words were in English, a second language not yet learned by this age. This recitation of the sentences was all I saw done that day to teach the students. Other than reciting sentences, one woman told students to put “hands up, hands down” over and over perhaps to gain attention or to give them a brain break. These small children were expected to sit on benches just like the older kids for extended periods of time. This of course was an extremely difficult task which involved one adult trying to gain control of crying children by hitting them with a switch.

Conclusion

The two weeks spent at a Children's Home in Bawjiase revealed a microcosm of the barriers students in Ghana face daily. This school was just one example of what the literature describes from research studies around the country. It seems that from preschool to beyond high school, access is limited for those seeking a quality education in Ghana. Many in poor rural areas are left with no teachers or teachers with no formal training. Even teachers that hold degrees are prepared to deliver a rote curriculum designed to meet the needs of only a select few. Although the Ghanaian constitution calls for compulsory education, this target has not been reached. Many students are still not enrolled in school and some have poor attendance due to family obligations or lack on monetary resources to attend school. In the future, grassroots efforts to secure a better for education for the children in rural areas may be needed to create change in Ghana. In addition, the universities continuing to research and partner with others to understand the plight of school children in Ghana may lead to policy changes or more strict enforcement of those already in place.

References

- Adera, B. b., & Asimeng-Boahene, L. l. (2011). The perils and promises of inclusive education in ghana. *Journal of The International Association of Special Education*, 12(1), 28-32.
- Akyeampong, K., Djangmah, J., Oduro, A., Seidu, A., & Hunt, F. (2007). Access to basic education in ghana: The evidence and the issues. *Country Analytic Report*, June 2007.
- Ashiabi, G. (2007). Associations among poverty and children's nutritional health status and schooling in Ghana. *WESTERN JOURNAL OF BLACK STUDIES*, (2). 11.
- Essuman, A. & Bosumtwi-Sam, C. (2013). School feeding and educational access in rural ghana: Is poor targeting and delivery limiting impact? *INTERNATIONAL JOURNAL OF EDUCATIONAL DEVELOPMENT*, (3). 253.
- Iddrisu, A. M., Danquah, M., & Quartey, P. (2017). Paying for education among households in Ghana. *International Journal of Development Issues*, 16(2), 214. doi:10.1108/IJDI-02-2017-0017
- Nketsia, W., Saloviita, T., & Gyimah, E. K. (2016). Teacher educators' views on inclusive education and teacher preparation in Ghana. *International Journal of Whole Schooling*, (2),

Chinese Graduate Students' Covert Reasons for Studying in Canada

Glenn Rideout and Sirous Tabrizi

Faculty of Education
University of Windsor, Canada

Abstract

Understanding why graduate students choose to study internationally can be beneficial for post-secondary institutions looking to attract new students or better support their current international student populations. Our previous work has explored reasons that international students more readily disclose, but in exploring that issue, it became evident that there were aspects of Chinese culture and society that undergird a more indirect approach to how such students answered questions about their reasons for studying abroad. Family pressure to study abroad, or personal desire to live somewhere other than China are examples of reasons that some Chinese students may find socially unacceptable to openly discuss. This paper presents the results of a follow-up study, where ten Chinese graduate students were interviewed as a means of identifying potential hidden reasons for studying in Canada. The results of this study indicate that some Chinese students may choose to study in Canada as the result of family pressure, desire to immigrate, or job opportunities but say that they are actually interested in learning English or want a degree from a Canadian university. However, only some students seemed to hide such reasons while others were very open about studying in Canada for those same reasons.

Keywords: international students, study abroad, covert reasons, cultural expectations

Introduction

It is common for Canadian post-secondary institutions to recruit graduate international students, from many different countries. In recent years, many of the international students entering Canadian post-secondary institutions are from China (Deardorff, Wit, & Heyl, 2012; New Release, 2015). Given the large numbers of Chinese students choosing to study in Canada, it would be useful to understand why Canada is a preferred destination for their education. Such insights may benefit scholars interested in understanding Chinese student motivations regarding studying abroad, as well as post-secondary administrators who want to know how to attract, accommodate, and retain international students from China.

When students consider international education, destination choice theory suggests that there are three main decisions that need to be made: whether or not to study internationally, the country in which they will study, and the institution in that country in which they will enroll (Doorbar, 2001; Mazzarol & Soutar, 2002; Pimpa, 2005). This research will explore the first two questions (why leave China, and why study in Canada), but with the goal of understanding any hidden or less easily discoverable answers to those questions. For instance, when asked “why did you study in Canada” a student may reply “I thought it would help me get a job” but may actually have studied in Canada because of a ‘hidden’ desire to immigrate. This alternate reason would not be explicitly stated since students may not wish to appear disrespectful to China, or perhaps the student is apprehensive about expressing opinions that they may believe are not aligned with policies of the Chinese government. If these kinds of hidden reasons exist, then a simple questionnaire, the primary data collection tool used in our first study (Rideout & Tabrizi, 2018) may not have been

the appropriate method for this next step. At this level, we believed that students would need to feel a level of trust and connection to the researchers if they were to provide insight into the ‘hidden’ aspects of their motivations for studying in Canada.

Research that examines ‘hidden’ reasons for study abroad is scarce since researchers may have been aware that it is common in many Asian cultures for communication to contain indirect elements, and showing direct disagreement or confrontation is often impolite or disrespectful (Chin, 2005). A culture of respect and avoidance of confrontation may have prevented Chinese students from speaking directly regarding their motivations if they believed their response might be confrontational or disrespectful. In other words, cultural background may have created the possibility of a difference between covert reasons for studying in Canada and the reasons initially disclosed.

This study, conducted at a university in Ontario, Canada, explores this topic. Specifically, we wanted to see if Chinese students have underlying or hidden reasons for coming to Canada to study, what those reasons might be, and whether there are any external pressures on them to remain in Canada or leave China. This was achieved through student interviews in order to gather more in-depth explanations regarding their reasons for studying in Canada.

In the next section of this paper we look at the background literature on this topic. This is followed by the study and its results. We conclude with a brief discussion regarding implications for the study in relation to scholarship, universities and future research.

Literature Review

In this section, we will address the literature pertaining to why Chinese students choose to study internationally, as well as material regarding why Chinese students may have covert, implicit or unspoken reasons for studying internationally.

Potential Value to Chinese Students of Studying in Canada

There are several benefits that may influence an international student to study in Canada. One of these benefits is that while in Canada, students have an opportunity to learn English and/or French, either as part of their studies or as an extracurricular item. Rideout and Tabrizi (2018) identified the opportunity to learn English as an important factor for some Chinese students when deciding where to study. Another benefit is that students may have opportunities to work on the university campus, giving them extra income as well as Canadian work experience. Rideout and Tabrizi further reported that employment opportunities have also been considered by some Chinese students as a reason for deciding where to study, although this reason is more about long-term employment than the short-term opportunities that on-campus employment can provide.

A third benefit is that Canada offers one of the lowest cost, highest quality living opportunities for international students (Wood, 2014). Coupled with this, Canadian international student tuition is among the lowest international fees such students have to pay (Wood, 2014). Interestingly, previous research suggests that some Chinese students consider financial reasons (e.g., cost of tuition, opportunities for financial support) of lesser importance than the perceived quality of the education and prestige associated with the degree (Rideout & Tabrizi, 2018). In other words, Chinese students are willing to pay for education if they believe it is of high value. This can also be seen in the willingness of Chinese students to pay other organizations and agencies to assist

them in applying for education abroad. For instance, Ji (2011) reports on a study where 85% of the students surveyed applied to Canadian schools with the assistance of a ‘study abroad’ agency.

Studying Abroad Generally

In general, the most commonly cited reasons Chinese students choose to study internationally are the prestige of the school, quality of the education that they can get, and the resulting academic achievements available (Hung, Shive, Wang, & Diu, 2005; Hai, 2007; Yang, 2007). Although these are not the only reasons, they are generally cited as the most important. Other common reasons for studying abroad include the opportunity to learn English (Hai, 2007), the cost of living in that country relative to other countries (Yang, 2007), and the possibility of immigrating to that country after graduation (Hung et al., 2005). The literature makes it clear that these reasons apply not only to Canada (Zheng, 2010; Rideout & Tabrizi, 2018), but other international study destinations for Chinese students as well. Although Canada’s quality of education was often considered high by students, and the cost of living in Canada was relatively low compared to other countries, some students reported that the possibility of immigrating to Canada after graduate was sufficiently easy that they chose to study in Canada for that reason (Hung et al., 2005; Zheng, 2010).

Possible Hidden Reasons for Studying Abroad

Despite the previously stated reasons for studying in Canada, certain cultural values or beliefs may encourage Chinese students to study abroad (and in Canada in particular) that are not as readily discoverable. Family influence is one possibility. Some common Chinese values include the importance of family well-being, desire for harmony in interpersonal relationships, respect and reverence towards elders, family recognition through achievement (particularly academic achievement), and avoidance of bringing shame or dishonor to the family (Chin, 2005; Chang & Kemp, 2004; Wang, 2007). These values together may result in a situation where students are encouraged by their family to seek an international education, and the student agrees so as to bring honor to the family or to avoid bringing shame or disharmony by arguing or fighting with their parents. However, since these would be private family matters they are unlikely to be discussed in general public spaces (Chang & Kemp, 2004). In other words, family influence on the decision to study in Canada may exist but is likely to be a hidden reason (i.e., generally unstated).

Post-secondary institutions may want to attract new students because of the new ideas that such students could potentially contribute. From the student perspective, depending on particular factors, it may be either desirable to return to their home country on completion of their study to apply their new knowledge, or to stay in the new country. In this regard, the policies of Canada tend to enable immigration for international students (Tanner, 2005), while Chinese students’ decisions in this regard may be influenced by the Chinese government policy of actively attempting to encourage repatriation after graduation (Shen, 2006). It seems that China is rather effective at doing so: of the 2.64 million Chinese students studying abroad in 2012, 1.09 million (41%) returned to China while, for comparison, only 11% of international students from Iran and 4% from India who studied in the United States returned to their home country (Ditto, 2014). Bearing this in mind, it is possible that a desire for immigration could be a hidden reason for studying in Canada.

Study Methods

A study was conducted to determine whether Chinese graduate students currently enrolled in a Canadian university had unstated reasons for studying in Canada. A qualitative, case-study methodology was used for this study. This methodology was used for two reasons: 1) this research is still exploratory, to determine whether unstated reasons even exist, for which a case study approach can be beneficial (Yin, 2013); and 2) depth and richness of responses was the most important factor, so a case study employing semi-structured interviews was determined to be most suitable.

Participants were interviewed using a series of open-ended questions, allowing them to explain in detail why they chose to study in Canada, what factors influenced that decision, what plans they had after graduation and the factors influencing those plans. Ten Chinese international graduate students participated, all of which were enrolled in one university in Southwestern Ontario. The interviews were conducted in English, and the responses were transcribed and anonymized. The questions that were asked are included in the results section, along with responses from the participants.

Participant Demographics

A summary of the demographic details of participants is presented in Table 1. All of the participants were between the ages of 23 and 34, and were enrolled in a Master's program.

Table 1. Summary of Participant Demographics

P#	Father's Job	Mother's job	Faculty	Status
1	Small factory owner	Housewife	Education	Single
2	Small-business owner	Housewife	Education	Married
3	Small-business owner	Housewife	Education	Single
4	Small-business owner	Housewife	Education	Single
5	Banker	House wife	Education	Single
6	Military	Business woman	Management	Single
7	Retired hotel staff	Hospital staff; officer administrator	Management	Single
8	Engineer	Teacher	Education	Single
9	Small-business owner	Small business owner	Engineering	Single
10	Small factory owner	Housewife	Management	Single

Results

In this section, the results of the interviews are presented. The responses from each participant are organized in terms of the questions that were asked. Summaries of the responses are also given at the start of each sub-section.

What Are the Potential Benefits of Studying in Canada?

Most of the participants believed that improving their proficiency in English, and gaining a high-quality education, were important benefits of studying in Canada. For example, P5 said "Language and high quality education are important potential benefits. I believe other Chinese students agree with me in this regard" and P7 said "I am a business student; hence the English language is very important to me. I have an opportunity to improve my language skills. Also, education here has a high quality." Similarly, P2 said:

In my opinion the first potential benefit is the English language because international students learn this language in a real environment. I learned the English language in China, however, I believe here [in Canada and at University] has a more positive effect. In China many students learn English language from the elementary level and it is more important than Math. Chinese students spent a long period of time for learning this language and it has prestige. A person who studies here will [have] more success to find a job in China. My husband and I believe it is a good deal.

In addition, P8 said:

In my opinion the first potential benefit is the English language. We have a good chance to learn this language in a real English country. Maybe my friends disagree with me and they have another reason(s).

Similarly, P3 said “The first reason is the English language, that I would like to improve it” and P9 said “I would like to have a university degree from Canada, and it is a great opportunity to improve my English as an international language.”

Another important benefit that participants suggested was the increased likelihood of getting a job. For instance, P5 said “many [Chinese students] believe they will find a good job based on their fields.” P4 said:

For me some potential benefits to study in Canada or stay here are the environment for learning language, research [opportunities], and free atmosphere. Even though I would like to continue my Ph.D. here in Canada, I believe I have to find a job here too. Actually, now many students are able and prefer to continue their education in developed countries in the field of humanities [Arts & Humanities or Social Sciences] and it is a common approach. Hence, in the future finding a good job will be hard.

Similarly, P9 said “After finishing my Master’s degree I have another opportunity to apply [for] a work permit. It is my first semester, [so] I do not know if I would like to apply [for] immigration process or not.”

Others suggested that the education could lead not only to a job but also immigration into Canada. For example, P1 said:

I believe with a Masters’ degree from Canada I will be more success, and I can improve my English language [skills]. I will have an opportunity to find a job in my field after graduating. Three years I have time to use a work permit and after that I can apply for PRS [permanent residency status].

As well, P8 said:

Some [of my friends] believe the quality of education is important but many of them focus on the immigration and its positive effects. To be grad students in China is too hard because students have to pass [a] writing exam and interview.

Likewise, P10 said “I think high quality education in Canada is important as well as English language, but Chinese students are motivated with the immigration policies because it is kind with grad students.”

There were some other miscellaneous benefits that participants suggested. For instance, P3 said “The other reasons: I would like to learn about other cultures and [their] education system.” Also, P6 said:

I believe language and high quality of education are important, but I would like to enjoy this experience. Because it is a new and different culture. As well I have some family friends in Canada, so here is a more friendly place to me. They live in Vancouver and Toronto.

In General, What Might Be the Hidden or Underlying Reasons for International Education in Canada, in Your Opinion?

Some participants suggested one hidden reason was family-related pressures, either to stay abroad or to return to China. P1 stated:

Actually, many students are in Canada because their families wanted it. [In other words] students would like to come back to China but their family disagrees. For me, I would like to study here and if I find a job in my field I would like to stay in Canada, otherwise I will come back to China.

In contrast, P2 gave the reason of better life for their family in Canada:

My husband's cousin lives in Canada, he is an immigrant and encouraged us to come to Canada. However, my husband works in China and supports my [basic living] cost. My basic reason can be children. I can [give birth to a child] here and the cost is nothing for us, the education cost is free for my child too. But in China this process [giving birth and educating him/her] is too expensive. I was also a teacher in a college in China, and that supports some of my tuition here. [In other words, I also] have my job in China [to pay for living costs].

Another reason, given by most of the participants, was immigration. Several suggested that this was a primary reason, regardless of other reasons students might give. For instance, P3 said:

Even though many students say we are here to study, [I think] their real reason is immigration. Chinese students have enough information about the Canadian immigration system. For example, they know they will be able to stay here for three years after finishing their study and finding a work permit. It is a [short period of] time for immigration.

P5 said something similar: "I think the students' real reason can be the immigration, because they know after graduation they apply for immigration process. As you know, we can stay in Canada for more than three years on a work permit." As well, P7 said "Many students from my home would like to stay here and apply to immigrate. This could be a real reason for Chinese students." Echoing the comments of others, P4 said:

The relationship between Canada with China is good: we can get Visa in short time compared with other developed countries. Maybe half of students agree with me that immigration is a hidden or underlying reason for Chinese students to study here. We can apply to [the] immigration process after finishing our Master's degree, and we can stay here to find a work permit.

Lastly, P9 and P10 repeated the same comments but indicated that immigration may actually be a reason that students do not want to talk about directly: "I think many Chinese students do not like to talk about immigration, but they will do it before the prescribed deadline" (P9); "I think many students do not like to say that immigration is their first choice. Meaning that they would like to keep it [to] themselves, but in talking with friends we focus on this issue: 'immigration is good for us.'" (P10)

The cost of tuition and living in Canada may also be a factor that students consider but do not talk much about. For instance, P4 said "Actually, one important reason [to study in Canada] is the low tuition of Canadian universities compared with other English language countries like the USA, UK, and Australia." Similarly, P5 said "I and other Chinese students were able to study in China,

but we chose abroad [because] the kind of education as well as tuition here is [more] reasonable than the USA and Britain or even Australia.” The cost of living may also be considered when combined with immigration, as suggested by P6:

I can list [some reasons]: environment factors [clean air, healthy food, etc.], immigration, government supports families and their child or children. I think most students prefer to stay here. Especially, students who are from large cities like Beijing, Shanghai, and Shenzhen because education is more expensive there. It will be good for their new generation.

However, the cost may not be too much for some students, as P8 suggests: “My parents support all my tuition and life costs to continue in upper level, Ph.D. [After that] I have to support all or a part of my costs, so I have to find a job or apply for immigration.”

For You Specifically, Are There Reasons for Your Being in Canada or Studying in Canada That Are More Difficult to Talk About?

Responses to this question revealed three main topics that were difficult for students to talk about, and these topics were comparable to what was suggested in the previous question.

The first topic was immigration, as can be seen in responses from P1, P7, and P9: “As I explained, many students would like to receive a [education] certificate from Canada then apply to PRP [permanent residency]” (P1); “As I explained in my previous question, the real reason for Chinese students to study here is immigration and [getting a] Canadian passport” (P7); “I told you immigration” (P9). However, these comments may not explain much about why students would want to remain in Canada as an immigrant after their initial graduate studies. P8 suggested that immigration was beneficial in this regard:

Yes [it is too hard to apply for a PhD, even though I want to, but I am still in a Master’s degree], I discussed this issue with my close friends who believe after finishing this [degree] I [should] apply to [the] immigration process. Then when I am a Permanent Resident I can study in a better situation.

However, P3 provided an alternative perspective, where students may avoid immigration to Canada unless it is necessary:

Actually, some groups of Chinese students prefer to come back to China, but it depends on their job situation. For example, myself I don’t have any idea yet, it depends on my study and job position. A Master’s degree is important for all of us. Many of us come from large cities and here [the city in which the study took place] is too boring for us. We are from large cities with a subway system, large markets, many streets, different places for visiting our friends but this city and even many other small cities in Canada are too boring for us. For myself I don’t have a reason to live here. I don’t know how many Chinese students think this way, but in private discussions as friends we see these issues.

A second topic was the difficulty associated with access to and cost of schooling in China. For instance, P5 said:

In China, grad students have to pass a writing exam and interview. It is a long and hard process, so many students with families that are able to support their university tuition and life cost prefer to come Canada or other developed countries.

Chinese students also commented on the challenges associated with graduate education in Canada. P1 was asked whether he wanted to continue to a PhD degree after finishing his Master’s, and replied: “I like [the idea], but the time period is too long and it is too experience for international

students: \$6000 [Canadian] tuition per semester as well as life costs.” Likewise, P6 commented on the difficult of work:

Job opportunity for my field [management] is too hard, because they want high quality English [speakers]. My friends believe I am good in it, but I believe I have to improve my different skills like writing, speaking, and listening. I think I can find work in a company with owners from my home country [China]. As well, after finishing this [degree] I would like to continue with Master of Business Administration [MBA degree]. For MBA, I am young and do not have enough experience.

A third topic, similar to immigration, was the idea that life in Canada could be better than life in China when it came to children. For instance, P9 said:

Education, good environment, language, kind citizens are important but immigration can change their future. [By this I mean], it will be good for new generation, for our children. All these processes, from pregnancy until end of education, is supported by government.

Similarly, P4 said:

I can add the pregnancy process as well as giving [birth to a] baby. It’s free and easy, where the Canadian government supports this opportunity but in China it’s too hard and expensive. And being from Canada is important. For example, a person says I am from Canada because this country is more democratic and developed.

Are There any External Pressures for You to Study Abroad or to Stay in Canada That Are More Difficult for You to Address?

Some of the participants thought families pressured students to study in Canada. For example, P1 said “Nearly all students are under families’ pressure to come and stay here. We do not have any governmental pressure.” P6 said something similar:

My father prefers I come back my home country. However, my mom says “no you must stay in Canada.” My family had to follow the one child policy. So, yes, I have pressure from my mom but my father misses me.

P4 provided a similar comment:

I am not a single child, and I have a younger brother who lives in Canada. Hence, my family suggested ([saying to me] “do not argue”) to continue and live in Canada. I was a vice president in an English teaching school in China. Honestly, I saved enough money and these were my reasons to be here. Now, China is a strong economical country, its Gross Domestic Products (GDP) took the second rank in the world, so many families would like to send children to study in other developed countries and teach their children this approach from early period. For example, many students in my school in China would like to pass, and even they were ready for, the ESL, TOEFL, and IELTS exams.

However, other participants suggested that family influence was absent or very limited. This can be seen in comments from P2, P3, and P5: “I do not have any external pressure, to push me to stay here or come to Canada. But I can say that my family prefers I study and learn here” (P2); “My family likes and will be happy that I study and live here, but it is not a pressure” (P5); and

Even though my family likes that I continue my education here, I do not have pressure from family side or government. I just think the tuition is too much, and I am going to argue these costs to them (I am [their only] child). (P3)

In addition, other participants indicated that they felt pressure regarding immigration but it was not as direct or strong as the others indicated. This can be seen in the following comments:

My parents respect my opinion, but the immigration process is so common for graduate students that it is an unconscious external pressure. On the other side, my close friends say “you can find a good job in China” because I am from Beijing. (P7)

My parents respect my opinion but they prefer I stay here to improve my English language, receive more educational certificates, and even apply for immigration. However, I would like to find a job in China. (P8)

This idea can also be seen in these comments: “Several people talked with my parents [about whether] I would like to find a job in China, but they [my parents] believe Canada is a good chance for my future life” (P9); “You see many students from your home country would like to apply immigration process, so you say ‘I must do it.’ Maybe it is a psychological factor” (P10).

Most of the participants said they had no difficulty discussing these topics. For example, P1 said “I do not think it is a problem” and the same sentiment was given by P2, P3, P4, P6, P7, P8, and P10. However, P9 indicated that students often feel a financial pressure that they may not want to talk about: “University Tuition [in Canada] is much better than in US and UK, but we are under [financial] pressure [to pay our education and living costs]. In Germany and France, higher education is free for all students native or international.”

P5 mentioned that “Education in Canada is a good chance for us, even immigration is important, but we will lose our Chinese passport.” When asked how the Chinese government reacts to students immigrating, he replied “They will not be happy but we don’t have pressure from their side. However, we have to get Visa for [visiting] China after receiving [a] Canadian passport.”

Conclusion

In this study, Chinese students were interviewed to determine whether they had any hidden or unspoken reasons for studying in Canada. The results indicated that some of the reasons students had for studying in Canada could be hidden, in the sense that students may feel uncomfortable talking about them or were more likely to share them in a more trusting, conversational setting, as opposed to identifying them on a research questionnaire.

For instance, some participants said Chinese students would tell others that they wanted to study in Canada because of the quality of the education or to learn English but they were actually interested in a job or immigrating to Canada. However, it should be clear that some of the participants were very direct with these reasons and said they were comfortable talking about them (i.e., some students had no problem telling others that they were interested in immigrating to Canada). Immigration, at least, seems to be a common reason for students studying in Canada that is both commonly spoken-about and also unspoken, depending on the circumstances and the student.

A key theme in the literature was the potential influence of family on whether Chinese students study in Canada. The participants provided mixed comments on that topic. Some said they felt their family pressured them to study in Canada, or even to stay and immigrate to Canada. Other participants said their families did not have an influence or the influence was not felt by students as any form of pressure. Overall, in the context of this study, the participants were comfortable talking about influence or pressure from their families. Thus, it seems that family pressure may

exist for some students and that, although they may not talk about it in surveys or general discussion, they are likely to talk about it in settings in which they perhaps feel more secure.

Lastly, although the non-hidden reasons that participants gave for studying in Canada were consistent with existing literature, two participants indicated that they were specifically interested in Canada's governmental programs for families. Although their motivation was to study in Canada so they would have the possibility of immigrating to Canada after their studies were complete, the immigration was because of the healthcare coverage and public education system.

References

- Chang, B.-J., and C. Kemp, China. In C. Kemp & L. A. Rasbridge (2004). (Eds.), *Refugee and immigrant health: A handbook for health professionals* (pp. 132–141). Cambridge: Cambridge University Press.
- Chin, P. (2005). Chinese. In J. G. Lipson & S. L. Dibble (Eds.), *Culture and clinical care*. San Francisco: UCSF Nursing Press.
- Deardorff, D. K., de Wit, H., & Heyl, J. D. (2012). Bridges to the Future. *The SAGE handbook of international higher education*, 457.
- Doorbar, A. M. (2001). The English language market: a global perspective. In Paper presented at annual NAFSA: Association of International Educators Conference, May, accessed.
- Ditto, S. (2014). Red tape iron never the Iranian guest for U.S. Education. Washington, USA, 2014.
- Hai, Y. (2007). A study of the motivations of Chinese students in the United States: Impacts of internationalization on Chinese higher education (Doctoral dissertation, Stanford University).
- Hung, F. S., Shive, G., Wang, X., & Dui, J. (2005). A report on the export potential of Hong Kong's education services. A Consultancy Study for the Hong Kong Trade and Development Council.
- Ji, R. (2011). An analysis of mainland Chinese students' decision to choose Canada as their study destination (Doctoral dissertation, Concordia University).
- Kemp, C., & Rasbridge, L. A. (2004). *Refugee and immigrant health: A handbook for health professionals*. Cambridge University Press.
- Hardee, K., Xie, Z., & Gu, B. (2004). Family planning and women's lives in rural China. *International Family Planning Perspectives*, 68-76.
- Mazzarol, T., & Soutar, G. N. (2002). "Push-pull" factors influencing international student destination choice. *International Journal of Educational Management*, 16(2), 82-90.
- Pimpa, N. (2005). A family affair: The effect of family on Thai students' choices of international education. *Higher Education*, 49(4), 431-448.
- Rideout, G., & Tabrizi, S. (2018). Chinese students' initially disclosed reasons for studying in Canada. *International Journal for Cross-Disciplinary Subjects in Education*. 9(3), 3444-3453.
- Shen, W. (2006). Memorandum. Retrieved from <http://www.publications.parliament.uk/pa/cm200506/cmselect/cmhaff/775/775awe31.htm>
- Tanner, A. (2005). Brain drain and beyond: returns and remittances of highly skilled migrants. *Global Migration Perspectives*, 24(1), 1-13.
- Wang, Z. (2007). Key Factors that Influence Recruiting Young Chinese Students. *International Education Journal*, 8(2), 37-48.
- Wood, R. (2014). Study in Canada special: The experts answer your question. Retrieved from <http://www.studentworldonline.com/article/study-in-canada-special-the-experts-answer-your-questions/194/>
- Yang, M. (2007). What attracts mainland Chinese students to Australian higher education. *Studies in Learning, Evaluation, Innovation and Development*, 4(2), 1-12.
- Yin, R. K. (2013). *Case study research: Design and methods*. Sage publications.
- Zheng, J. (2010). Exploring international student mobility: Neoliberal globalization, higher education policies and Chinese graduate student perspectives on pursuing higher education in Canada.

Connecting Best Practices for Teaching Linguistically and Culturally Diverse International Students With International Student Satisfaction and Student Perceptions of Student Learning

Clayton Smith, George Zhou, Michael Potter, and Deena Wang

University of Windsor, Canada

Abstract

This paper explores promising teaching practices for teaching linguistically and culturally-diverse international students by identifying the teaching practices that have high levels of international student satisfaction and student perceptions of learning. This study is based on the belief that the most effective teaching practices are where promising teaching practices, student satisfaction, and student perceptions of learning meet. Researchers used a mixed-methods research design that included an online-survey questionnaire, focus-group discussions, and individual interviews. All of the promising teaching practices identified as having high levels of student satisfaction have medium/high perceptions of student learning. Some of the promising teaching practices with high levels of student perceptions of learning have moderate levels of student satisfaction. Recommendations for professional practice are presented along with potential areas for further research.

Keywords: teaching, satisfaction, learning

Introduction

Colleges and universities in the U.S. and Canada are increasingly becoming ethno-culturally and linguistically diverse which is partially due to increasing enrollment of international students. Currently 1.4 million international students choose to study at Canadian and U.S. postsecondary educational institutions, which increased by 7.1 percent between 2015 and 2016 (Canadian Bureau of International Education, 2016; Institute of International Education, 2016).

Presently, campus internationalization initiatives focus primarily on external areas including education abroad and student exchange, recruiting international students, and institutional partnerships (Helms, Brajkovic, & Struthers, 2017). However, this is expected to change as more institutions are developing academic-related internationalization initiatives (e.g., international or global student-learning outcomes, related general education requirements, foreign language requirements). A growing number of institutions are increasing faculty engagement in internationalization efforts (Helms, Brajkovic, & Struthers, 2017). To do this, faculty will need to critically examine their role in campus internationalization and implement teaching strategies that address international student success factors.

Few instructors have received formal training for intercultural learning or inclusive education (Paige, & Goode, 2009). However, there are many promising teaching practices that faculty can add to their teaching repertoire, which will improve their teaching of international students and are believed to result in high levels of student learning. This article will explore the promising teaching practices for teaching linguistically and culturally-diverse international students by identifying the teaching practices that have high levels of international student satisfaction and student perceptions of learning. The authors hope that faculty who engage in these teaching

practices will become more engaged in campus internationalization and improve international student success on their campuses.

Literature Review

International Students' Satisfaction

Satisfaction among international students studying at Canadian and U.S. colleges and universities is high. A Canadian Bureau of International Education (2014) reported that 90 percent of international students studying at Canadian institutions are either very satisfied or satisfied with their educational experience. International Student Barometer (ISB) findings (i-graduate International Insight, 2017) also suggest that international students are largely satisfied with their academic experience at Canadian and American colleges and universities. Nearly nine of ten (89%) indicate that they are satisfied with the learning experience, which is slightly higher than non-North American institutions (87%) and the global ISB index (87%).

i-graduate International Insight (2017) found that the topics which American and Canadian international students scored higher than non-North American international students, in terms of student satisfaction, include: academics' English, assessment, careers advice, course content, course organization, employability, good teachers, quality lectures, laboratories, language support, learning spaces, learning support, marking criteria, multicultural environment, online library, opportunities to teach, performance feedback, physical library, size of classes, technology, topic selection, virtual learning, and work experience. It also found that the topics where non-North American international students scored higher than American and Canadian international students include expert lecturers and managing research. American and Canadian international students and non-North American international students scored the same on research. Little variance in international-student satisfaction of the learning experience was found for gender. Some areas where differences are identified include country of origin, study level, program, study time, study stage, and age. Common topics cited by more than one student type include careers advice, employability, language support, managing research, opportunities to teach, research, and work experience.

International Student Success Factors

While international-student satisfaction with their learning experiences is generally high, international students, especially those from additional language backgrounds, face challenges as they enter and move through the North-American student experience. Several academic and non-academic factors have been discovered as influencing the educational success of international students. Academic challenges include language challenges, exclusion from group discussions, culturally-related learning differences, academic support issues, and adjustment to a new educational system. International students also face a wide array of non-academic challenges. These challenges include cultural adjustment, social issues, and finances.

Academic Challenges

International students perceive language barriers, especially oral communications in English, as a major challenge (Zhang, & Zhou, 2010). Language difficulties emerge from different accents, rate of speech, and pronunciation (Wu, Garza, & Guzman, 2015). They result in international students putting in more hours than host students to complete reading, writing, and presentation

assignments (Brunton, & Jeffrey, 2014; Cruikshank, Chen, & Warren, 2012; Wang, & Byram, 2011). They also create a feeling of inequality in the classroom (Foster, & Stapleton, 2012; Kim, & Choi (2014); Valdez, 2015).

Most instructors employ some form of group work in their teaching, which requires students to have good written and verbal English skills. Students with low-language proficiency are often unable to engage in group discussions or participate in class presentations even if they have topic knowledge (Yates, & Thi Quynh Trang, 2012). This frequently results in international students sitting together and speaking their native language, which limits interaction with domestic students (Brunton, & Jeffrey, 2014; Harrison, & Peacock, 2010; Trahar, & Hyland, 2011).

International students with diverse cultural experiences may perceive the learning environment differently, especially when compared with native students (Koul, & Fisher, 2005). In North America, emphasis is placed on independent and critical thinking, problem-based learning, interpreting information, and developing and communicating knowledge. Many international students come from educational cultures where priority is given to memorizing, understanding, and reproducing information (Eaves, 2011; Elmgren, & Henriksson, 2014; Kennedy, 2002; Tavakol, & Dennick, 2010; Valiente, 2008). International students are more accustomed to listening and learning rather than speaking in class (Edwards, & Tonkin, 1990).

Joining a new academic environment is difficult for international students. For many, they have experienced large power-distance-school settings, where instructors are treated with respect and the education process is teacher-centered. In contrast, in North American institutions, teachers and students co-exist in an academic environment where they are more equally treated and the educational process is more student-centered (Hofstede, Hofstede, & Minkov, 2010). International students also report that education moves at a faster pace and instructors use teaching methods that require greater student participation (Zhai, 2002).

Many international students require academic support to be successful. Student services are designed to help students transition to, and be successful in, the North American academic culture. Some of the more common supports needed by international students include academic advising, academic integrity, learning resources (e.g., library, computer center), and verbal and written communication support. Increasingly, institutions are “reimagining and recasting” (Fisher, 2011, para 5) academic support services to make them more responsive to student’s academic, social, and emotional needs.

Non-Academic Challenges

Adjusting to a new culture is difficult. This is because it affects nearly all aspects of life, including living arrangements, community participation, socialization, communication, eating practices, and food consumption (Andrade, 2009). This can lead to culture shock. One study (Zhang, & Zhou, 2010) identified culture shock as the top challenge for international students.

International students perceive isolation and loneliness when they are studying in North America. Their ability to handle academic and social demands is strongly associated with social support (Fritz, Chin, & DeMarini, 2008; Zhang, & Goodson, 2011). Social support reduces stress, promotes positive health outcomes, and moderates the effects of stress on mental health symptoms (Rice et al., 2009). International students experience stereotypes and negative attitudes, some of which result in incidents of inequitable treatment (Smith, & Demjanenko, 2011). Findings from

one study (Charles-Toussaint & Crowson, 2010) found that American students believe that international students pose threats to their social status. This can lead to international students becoming marginalized in class or in social events.

International students are often overwhelmed by financial considerations. The main sources of dissatisfaction for international undergraduate students at U.S. institutions relate to finances (Choudaha, & Schulmann, 2014). Key among their concerns is access to internships, affordability, and availability of scholarships, followed by meal plans and housing quality.

International Student Success Factors

Higher education faculty often pursue a wide variety of teaching practices. Hattie (2009), after reviewing more than 800 meta-analyses of the factors affecting learning, concluded that most learning innovations are effective. In general, when faculty are excited about a new teaching approach, students learn at enhanced levels. The effects are often temporary, as the new pedagogy becomes regular practice. What is lacking, according to Bray (2017), is a comprehensive, validated model of how students learn. Such principles could “guide the design, implementation, and assessment of effective pedagogy across different situations” (p. 2).

Few instructors have received formal training for intercultural learning or inclusive education (Paige, & Goode, 2009). However, there are many promising teaching practices that faculty can add to their teaching repertoire, which will improve their teaching of international students and are believed to result in high levels of student learning.

An important element for teaching international students is creating an inclusive learning environment. Kinsella (1997) suggests using teaching practices that include providing increased contextual information and linguistic support, offering specific learning and study approaches, and having greater opportunities for classroom interaction and participation. Another essential component for enhancing international academic success is putting culturally-responsive teaching into practice in the classroom. Gay (2010) outlines four principles designed to help instructors bring culturally-responsive teaching into their classrooms, including developing a cultural diversity knowledge base, designing culturally-relevant curricula demonstrating cultural caring, building a learning community, and engaging in cross-cultural communication.

Differentiated instruction is used to enhance the learning experience for international students. Traditionally, differentiated instruction is used to influence learning for students with varied learning readiness, personal interests, and culturally-framed ways of knowing (Tomlinson, 2014). It seeks to maximize each learner’s experience by adjusting instructional tasks by building on student strengths (Tomlinson, 1999). It is also helpful with the teaching of international students. One study (Martin-Beltran, Guzman, & Chen, 2017) found that instructors use discourse differentiation to mediate learning opportunities among students with a wide range of language expertise. This can lead to fostering collective thinking to create a fertile context for language learning among students with diverse backgrounds.

Recently, Dimitrov and Haque (2016) developed the Intercultural Teaching Competence Model for instructors to use as a tool for reflection as they look to teach students from differing cultures. The model consists of twenty instructor competencies, which fit into three categories, including foundational skills, facilitation skills, and curriculum design skills. The model should be helpful to instructors who are looking to enhance the learning experience for international students.

The role of faculty goes beyond the classroom. For international graduate students, the academic experience is impacted by the academic supervisory relationship between faculty members and students (Curtin, Stewart, and Ostrove, 2013; Glass, Kociolek, Wongtirat, Lynch, & Cong, 2015). They depend on their supervisors to learn about academic performance standards, research assistant duties, and for advice about their academic programs. Academic faculty members also support their graduate students when they provide post-graduate employment information and assist students with post-graduation employment (Nunes, & Arthur 2013).

Many other promising teaching practices are used to enhance the learning experience of international students. These include practices that fall into these areas: academic integrity, academic skills, assessing needs, assessment, assignments, clarifying expectations, class preparation, classroom climate, communicating outside of the classroom, culturally-responsive teaching, differentiated instruction, diversity and inclusion, expectation clarification, feedback, group work, intercultural teaching competence, language proficiency, lecture design and delivery, note taking, organization, physical environment, reviewing materials, specialized terminology, student-centered teaching, study techniques, verbal communications, and visual communications.

Methods

This study examined the promising teaching practices for teaching linguistically and culturally-diverse international students by identifying the teaching practices that have high levels of international student satisfaction and student perceptions of learning at a mid-sized comprehensive public university in Canada to make recommendations regarding high impact instructional practices. The following two research questions guided the study:

What are the promising teaching practices for teaching linguistically and culturally-diverse international students that have high international student satisfaction?

What are the promising teaching practices for teaching linguistically and culturally-diverse international students that are associated with high international student perception levels of student learning?

Sample

Research participants are international students who study at a mid-sized comprehensive public university in Canada (the pseudonym, Canadian University, is used by the authors). They include students from a wide array of countries of origin, study levels, academic programs, study stages, and ages. The sample size is 3,467 international students. Pseudonyms were selected to represent the names of research participants.

Study participation included 1,056 students completing the online questionnaire, 15 students participating in a focus group, and seven students being interviewed by a member of the research team. Across all methods, a participation rate of 32 percent was achieved.

Pilot Study

A pilot study was conducted to achieve internal validity. A panel of ten international students, representative of the local institutional student profile (half were in their first year and spoke a language other than English as their first language, with the remaining students upper-level

undergraduate and graduate students), reviewed the questions used in the instruments to ensure they matched their intended use. Modifications were subsequently made to the instruments.

Data Collection

Multiple data gathering techniques were employed for this study. An online survey questionnaire was administered in February 2018 to collect information about participants' satisfaction with and learning associated with promising teaching practices for teaching linguistically and culturally diverse international students. The survey also collected a limited amount of demographic data to compare study results with literature findings. Five focus group discussions were held, which grouped students by study stage (e.g., ESL students, undergraduate students, course-based master's students, and research-based master's and doctoral students). Six individual interviews, using the focus group questions, were also conducted to ensure that participants who wanted more privacy could participate in the qualitative portion of the study.

Findings

Survey Data

Survey participants were mostly representative of international student enrollments at Canadian University regarding faculty/department of study, country of origin, gender, age, prior institution, and parents' education. The number of participating graduate students (77.91%) was overrepresented and the number of undergraduate students (17.93%) was underrepresented.

Most respondents (93.9%) reported being somewhat satisfied (28.97%), satisfied (48.29%), or very satisfied (16.64%) with their learning experiences at Canadian University.

Promising teaching practices received from respondents that were reported as satisfied or very satisfied varied from 49.7 percent to 82.9 percent. Teaching practices with the highest respondent satisfaction percentages (greater than 70%) fell into these areas: academic integrity, assessment, assignments, clarifying expectations, communicating outside of the classroom, lecture design and delivery, verbal communications, and visual communications.

Respondents indicated their perceptions of the amount of learning they received, which corresponded with each of the promising teaching practices. The promising teaching practices that respondents identified as resulting in medium or high learning levels varied from 66.11 percent to 89.32 percent. Teaching practices with the highest respondent perceptions of student learning (greater than 70%) fell into these areas: academic integrity, academic skills, assessing needs, assessment, assignments, clarifying expectations, class preparation, climate in classroom, communicating outside of the classroom, culturally-responsive teaching, differentiated instruction, diversity and inclusion, feedback, group work, language proficiency, lecture design and delivery, note-taking, reviewing material, student-centered teaching, verbal communications, and visual communications.

All of the promising teaching practices identified as having high levels of student satisfaction also have medium/high student perception levels of learning. Interestingly, 13 teaching practice areas received medium/high student perception of learning levels that did not receive satisfied/very satisfied satisfaction levels. Table 1 shows student satisfaction and student perceptions of learning for the promising teaching practices, as well as the correlation between student satisfaction and

student perceptions of learning for each of the identified teaching practices. All promising teaching practices reported a positive correlation and all correlations were significant at the 0.01 level. Fourteen correlations were reported at the .700 level or higher including assessing needs, assignments, clarifying expectations, class preparation, culturally-responsive teaching, feedback, and language proficiency.

Table 1. Student Satisfaction and Student Perceptions of Learning for Promising Teaching Practices

Promising Teaching Practice	Student Satisfaction (Satisfied/Very Satisfied)	Student Perceptions of Learning (Medium/High)	Correlation r
Academic Integrity:			
Integrates information about academic honesty in instruction to prevent plagiarism	82.90%	95.60%	.445*
Communicates what constitutes cheating and the consequences of academic dishonesty	77.80%	94.40%	.482*
Makes use of librarians to teach about academic integrity	65.70%	88%	.594*
Academic Skills:			
Encourages students to participate in campus workshops that provide academic support	67.50%	88.30%	.678*
Teaches academic skills (e.g., expressing opinions, paraphrasing and summarizing, referencing, argument structure)	69.10%	90%	.633*
Develops an outline to show students how to organize time and prioritize their work	63.10%	86.50%	.658*
Assessing Needs:			
Makes time for students to share their backgrounds during class	56%	78.20%	.743*
Gains knowledge of student backgrounds and previous educational experiences to determine their needs in the classroom	52%	75.80%	.757*
Assessment:			
Designs assessments that recognize and validate cultural differences in writing and communication styles	58.30%	84.10%	.686*
Explains assessment criteria to students so that they know how they will be evaluated	71.40%	91.40%	.582*
Uses fair assessment practices	70.80%	92.40%	.595*
Assignments:			
Assigns quick writing assignments, such as a “one minute paper” at the end of class, asking students to list anything needing further clarification	55.10%	81.60%	.730*
Collects written questions about the lecture at the end of class	49.70%	77.50%	.718*
Words instructions for assignments clearly	71.30%	92.40%	.543*
Breaks up deadlines for large projects into phases so that students can brainstorm, draft, solicit feedback, revise, and edit throughout the semester	73.60%	92.30%	.596*
Provides step-by-step instructions for assigned tasks	67.70%	92.20%	.633*
Posts assignments and readings ahead of time	76.30%	92.20%	.549*
Asks students to come to class with a written response to an assigned reading	59.80%	86.60%	.678*
Clarifying Expectations:			
Collects and makes available examples of recently completed outstanding student work so that students can see the format and standard of work expected	63.50%	84.60%	.708*
Provides students with rules for discussion, participation, and group work	67.60%	90.10%	.570*
Models how to ask questions, think critically, write good essays or reports, or read analytically by demonstrating these skills in class	63.10%	88.50%	.648*
Provides clarity on course objectives and expectations, and major concepts to be covered	72.50%	92.70%	.614*
Class Preparation:			
Encourages pre-reading of assigned readings	65.60%	88.50%	.692*
Reinforces the importance of adequate preparation	65.10%	89.80%	.641*
Assigns discussion questions as homework so students have time to prepare answers in writing	65.70%	87.20%	.703*
Climate in Classroom:			
Uses activities to encourage students to get to know each other	60.60%	84.30%	.682*
Communicates during the first-class that participation will be encouraged and welcome	69.10%	90.80%	.617*
Respects students who prefer active listening	69.90%	91.80%	.583*
Establishes clear rules at the beginning of the class about communication expectations, including how inappropriate statements will be treated	68.90%	90.50%	.602*

Promising Teaching Practice	Student Satisfaction (Satisfied/Very Satisfied)	Student Perceptions of Learning (Medium/High)	Correlation r
Communicating Outside of the Classroom:			
Sets up online discussion boards where students can pose questions and use email or other communication technologies	64%	85.40%	.664*
Provides alternative ways for students and the instructor to communicate outside of the classroom	66.70%	88.80%	.600*
Actively invites students to come to faculty office hours	71.10%	90%	.574*
Takes every opportunity to enhance student-teacher dialogue outside of the classroom	66.90%	84.90%	.680*
Culturally-Responsive Teaching:			
Designs culturally-relevant instruction demonstrating cultural caring	58.10%	79.50%	.720*
Engages in cross-cultural communications	58.30%	80.80%	.705*
Engages in cross-cultural learning	58.70%	80.70%	.689*
Highlights the unique contributions culturally-diverse students bring to class by allowing students the opportunity to share their backgrounds	60.20%	52%	.699*
Anticipates, values, and accepts differences among learning and ways of learning to create cultural safety and trust	64.60%	88%	.673*
Tries not to single out international students during class	68.70%	90.50%	.652*
Encourages students from other cultures to share how things may be different in their country	64.70%	86.60%	.711*
Helps students to identify cultural assumptions that create challenges to collaborative projects	61.60%	87%	.690*
Uses examples from students' home countries	60.20%	84.60%	.718*
Is intentional about connecting domestic and international students in the classroom	59.70%	83.90%	.711*
Uses culturally-sensitive teaching methods that empowers students by using cultural references to impart knowledge, skills, and attitudes	61.60%	84.20%	.703*
Helps student to identify cultural assumptions that create challenges to collaborative projects	61.60%	87%	.690*
Differentiated Instruction:			
Considers diversity in learning styles	62.60%	84.10%	.693*
Considers differences in educational histories	59.10%	81.40%	.676*
Pays attention to varied learning readiness	61.30%	83.10%	.675*
Pays attention to varied personal interests	57.50%	82.30%	.685*
Recognizes diverse culturally-framed ways of knowing	55.80%	83.20%	.670*
Uses more than one way to present material to mediate learning opportunities among students with a wide range of language expertise	61.10%	84.90%	.678*
Diversity and Inclusion:			
Recognizes student diversity	63%	87.70%	.649*
Appreciates that students come to higher education with a range of educational experiences and expectations	63.90%	87.40%	.668*
Models and encourages non-judgemental approaches to exploring different points of view	64.90%	90.30%	.694*
Builds community among diverse learners	60.50%	85.70%	.641*
Pays attention to varied culturally-frames ways of knowing	60.80%	86.20%	.695*
Focuses on how we can become global professionals	62.50%	86.30%	.681*
Models consideration and acceptance of various perspectives	65.50%	87.50%	.662*
Encourages students to view a situation or concept from another's point of view	68.40%	87.60%	.600*
Models tolerance for responses that have more than one meaning	63.70%	88.40%	.670*
Provides opportunities for students to reflect on and gain a better understanding of their own multiple (e.g., cultural, personal, disciplinary) identities	64.30%	87.90%	.649*
Uses inclusive language to help create a positive classroom climate	66.10%	89.20%	.664*
Invites guest speakers with various perspectives to enrich course content	64.50%	86.30%	.650*
Encourages student participation in extra-curricular events that promote awareness of diversity issues	60.50%	84%	.664*
Encourages students to get involved in various groups on campus	61%	83.80%	.643*
Feedback:			
Provides feedback often using multiple techniques	63.30%	86.60%	.693*
Requests feedback from students	62.30%	86.60%	.671*
Asks for student feedback on how they feel about the classroom climate	59.90%	80.70%	.681*
Encourages anonymous feedback	61.10%	82%	.703*
Encourages public feedback	57.10%	81.30%	.724*
Group Work:			
When creating groups, mixes cultures as much as possible	62.70%	86.10%	.687*
Begins group work assignments by asking students to talk about familiar topics as opposed to new concepts learned in class	60.50%	85.90%	.670*
Requires groups to include several different cultures	60.30%	83.40%	.673*
Initially, uses mixed group or partner work for class work that will not be graded	60.80%	84.20%	.664*

Promising Teaching Practice	Student Satisfaction (Satisfied/Very Satisfied)	Student Perceptions of Learning (Medium/High)	Correlation r
Builds grade percentages for group work through the term as students become stronger and more familiar with working in groups	60.70%	86.20%	.655*
Makes use of in-class group discussions when considering ways to promote interaction among students	64.70%	86.20%	.682*
Language Proficiency:			
Does not assume that because students have basic proficiency they also have academic proficiency	62%	51.50%	.634**
Pre-teaches discipline-specific vocabulary	56.40%	83%	.623*
Provides opportunities for language development within the curriculum	61%	83.40%	.722*
Provides students with a list of relevant dictionaries or other reference materials	60.90%	86.60%	.703*
Lecture Design and Delivery:			
Tells students what topics will be covered that day and how the lecture relates to information presented in previous lectures	73%	92.70%	.587*
Paraphrases, summarizes, and repeats difficult or key concepts so that students have multiple opportunities to grasp main ideas	67.70%	92.60%	.597*
Avoids slang and explains popular culture references	68.80%	90.80%	.628*
Uses verbal sign-posts such as "this is an essential point" to underscore important information	69%	91.80%	.586*
Makes lectures interactive	68.20%	92.20%	.618*
Uses interesting examples, real-life examples, and case studies	70.50%	92.40%	.646*
Distributes electronically lecture notes/slides and handouts with explanations of key concepts and ideas	73%	94.10%	.577*
Uses examples to illustrate and reinforce key concepts and ideas	72.20%	93.10%	.617*
Presents information using advanced structuring strategies by using an outline of material	71.80%	91.70%	.647*
Stresses coherence by referring briefly to material previously presented	67.40%	90%	.598*
Introduces supplemental readings	66.10%	89.50%	.579*
Allows students to contribute information from their country	63%	84.50%	.698*
Provides a summary of the key points to be covered in the class as an outline	68.70%	93%	.597*
Gives explicit summaries and clear transitions between sections	64%	92.20%	.630*
Makes lectures available by audio or video outside of class	58.80%	82.80%	.633*
Incorporates the use of cooperative and collaborative strategies into the classroom	64.40%	90.30%	.583*
Asks students to refer to some writing or reading that they did in preparation for class to engage in class discussion	66.80%	89.10%	.549*
Offers a question and asks students to write a response silently for a few minutes. This is then followed by class discussion focusing on the responses	61.20%	86.60%	.585*
Note-Taking:			
Provides students with tips for note-taking	60.90%	82.20%	.665*
Suggests approaches for studying difficult material	60.20%	84.70%	.654*
Gives directions for and show examples of good lecture and reading notes	64.60%	83.80%	.649*
Creates a peer support/mentor program for lecture note-taking	59.70%	81.40%	.679*
Physical Environment:			
Whenever possible, arranges the physical seating in the room so that the instructor and the students can all make eye contact with each other	65.60%	88.70%	.674*
Periodically arranges the classroom so that students can be seated in face-to-face groups to support group activities	59%	83.40%	.657*
Reviewing Material:			
Reviews material, using a variety of techniques, at regular intervals to check for comprehension	63.70%	90.10%	.632*
Integrates review activities into instructional strategies to link previous concepts with new ideas	63.60%	90.50%	.629*
Student-Centered Teaching:			
Learns student names and correct pronunciation by using name cards, name tags, or other reminders	61.10%	84.40%	.695*
Makes student learning the priority of teaching, which usually involves the use of active learning approaches	62.90%	88%	.625*
Arrives early in the classroom and uses every opportunity to talk individually with students who are also early	62.50%	88.20%	.623*
Stays after class to connect with students who stay behind	67.20%	88.20%	.659*
Pays attention to individual student experiences, especially those which may shape the ways that they participate in the learning process	63.90%	87.90%	.647*
Remembers and acknowledges personal information students share in class	62.90%	87.50%	.644*
Verbal Communications:			
Speaks clearly and at a normal rate, emphasizes key ideas and words, and provides enough pauses to allow time for questions and note-taking	69.70%	90.10%	.0569*

Promising Teaching Practice	Student Satisfaction (Satisfied/Very Satisfied)	Student Perceptions of Learning (Medium/High)	Correlation r
Avoids the use of long-winded or complex sentences	67.60%	91.50%	.626*
Tries not to use idioms or culturally-based examples	68.20%	91.90%	.526*
Doubles or triples the normal wait time for students to respond to questions	63.90%	88.50%	.635*
Asks for clarification when student responses are not clear	72.40%	94.10%	.605*
Encourages students to ask questions	74.20%	93.90%	.548*
Encourages students to respond to each other's comments and questions	69.90%	92.50%	.600*
Visual Communications:			
Uses visuals (e.g., diagrams, charts, pictures, overheads) to aid comprehension	73.80%	95.10%	.539*
Ensures that notes written on the board or on flip charts are legible from the furthest seat in the room	70.40%	93.30%	.601*
Uses print rather than cursive writing	69.20%	93.30%	.601*

* Significant at the 0.01 level.

Focus Group and Interview Data

Interview and focus group participants were mostly representative of international student enrollments at Canadian University regarding faculty/department of study, gender, age, and country of origin. Graduate students (68.18%) were overrepresented.

Student learning experiences were mainly positive. Most identified instructors as a key factor in the student experience. Some characteristics that instructors showed (e.g., humor, valuing of diverse cultures, an encouraging approach) were appreciated by student focus group and interview participants. Students at all educational levels endorsed a student-centered approach, use of interactive teaching methods, specific and prompt feedback, use of practical experiences, pleasant learning environment, and methods that support the learning of additional language learners. Students in the ESL program called for strategies that help improve writing, daily homework, and in-advance agendas. Undergraduates were interested in academic support, updated curricula, and partially filled slides in advance of class. Graduate students spoke of the importance of a free learning environment, multi-modality teaching strategies, use of digital and visual materials, and emotional, physical, and non-judgmental support from their supervisor.

Overall, ESL students indicated that instructor use of a student-centered approach, a supportive learning environment, and effective teaching methods (e.g., noticing individual student progress, use of an enriched English environment, group work) contributed to both their success and satisfaction with their learning. Upper-level ESL students said teaching strategies that resulted in them improving their writing skills incorporated visual materials, mini-assignments, and interactive methods. Games created a “relaxed” atmosphere where students “can stand and move around,” and helped them to practice speaking and develop grammar. In particular, students identified effective strategies including sentence editing, APA format instruction, and specific instructor feedback. Students were dissatisfied with teaching methods that led to boredom, such as too grammar-intensive teaching and use of the repeating-listening pattern, and a lack of encouragement provided by instructors. Students identified a combination of traditional lectures and interactive methods as effective teaching strategies. Mid-level ESL students said that daily homework enabled them to review what they learned, which enhanced their listening skills. They also commented that when class agendas were provided at the beginning of class, they were able to improve their class engagement. Moreover, students liked receiving patient and responsive support from their instructors.

The undergraduate students emphasized the importance of experiential and applied learning, and close interaction with their instructors. Oluwakeme, a Nigerian engineering student, commented, “I enjoyed all the practical projects we have [sic] in class.” They commented positively with regard to instructors being responsive, the availability of extra-curricular activities, systematic guidance, weekly quizzes, a no-phone policy, and receiving partially filled in slides in advance of class. Sarah, an American science student, commented on her experience in an out-of-class volunteer experience: ...I do enjoy working with my research team in the Chemistry Department...It’s volunteering, but it helps me so much with my other courses because I get a feeling of how I can link what I’m learning in my course to...what I’m learning in my lab to what I’m learning in my courses, and that helps make my knowledge and understanding of these concepts stronger. The students were less satisfied with academic support, teaching methods that call for learning by memorization, heavy workloads, the high frequency of tests, assistance in securing a co-op opportunity, and the connection of the curriculum with industry requirements.

Course-based graduate program students were satisfied with the free learning atmosphere, multi-modality teaching strategies, up-to-date course content, instructor attitudes and experience in the field, and use of experiential and applied teaching methods. They also spoke favorably about the following: approachable instructors, teaching that accommodates students’ language and academic abilities, feedback, multiple teaching resources, no phone policy, use of real world examples, digital resources, and hands-on assignments. Students indicated dissatisfaction with instructors who failed to engage international students in class discussions, instructors who were less open to the views of students, instructors who did not define terminology in advance to using it in class, use of student in-class presentations, lack of explanations, lack of class content, insufficient formative feedback, and interactive learning that is not explained in advance.

The research-based program graduate students spoke about the importance of their research supervisor relationship. Celso, a Brazilian law student, said his supervisor was “not judgmental at all” and understood his stress, allowing him flexibility with deadlines. Another student said the lack of supervision resulted in an extended study plan, and a supervisor change. The students emphasized that supervisors should try to understand their cultural backgrounds by listening to them, and helping them cope with culture-related difficulties. Most instructors were seen as very helpful and responsive. Students indicated that desirable assignments are those that resulted in learning that helped them with their thesis research. They also indicated satisfaction with engaging simultaneously in their own research and joint research with faculty. Jeng, a Chinese education student, expressed interest in instructors “giv[ing] us some strategies for us to learn.” Fahad, a Pakistani engineering student commented “...I believe that there should be more collaboration with the industries, so we can have an idea about the work ethics here in Canada.” Some expressed interest in increasing the availability of non-academic support services and course options.

Conclusions

This study identified the promising teaching practices for teaching linguistically and culturally-diverse international students who have high levels of student satisfaction and student perceptions of learning. It also found that most promising teaching practices identified as having high levels of student satisfaction also have medium/high student perceptions of learning. Some of the promising teaching practices with high levels of student perceptions of learning have moderate levels of student satisfaction. This suggests that instructors who use the teaching practices that are associated with high levels of student satisfaction will likely achieve high student perception of learning levels.

This study identified a number of potential recommendations for practice that include both teaching practices and instructor characteristics. In particular, there are many teaching practices that result in both student satisfaction and student perceptions of learning in the following areas: academic integrity, assessment, assignments, clarifying expectations, communicating outside of the classroom, lecture design and delivery, verbal communications, and visual communications. Some of the most frequently-cited teaching practices preferred by students include supportive learning environment, visual materials, mini-assignments, interactive methods, experiential/applied learning, extra-curricular activities, a no-phone policy, posting of partially filled-in slides in advance of class, and frequent formative feedback. Many students called for a multi-modal teaching style that combined traditional lectures and interactive methods.

Research participants also identified instructor characteristics as an important factor in the student experience. In particular, they said that students connect well with instructors who use humor, value diverse cultures, use a student-centered and encouraging approach, provide patient and responsive support, and encourage close interaction with peers and the instructor.

This study has several limitations, including:

- The response rate on the online survey was approximately two-thirds graduate students, which limits what can be said about the international undergraduate-student experience, except in aggregate ways.
- The perceptions of student learning data is self-reported, which makes it hard to discern how much student learning can be accurately associated with each teaching practice.
- The study was completed in the winter semester and is based on one semester of data. Research conducted for the full academic year may have created more response diversity.

Further research is needed to better understand how the identified promising teaching practices that produce high levels of student satisfaction and student perceptions of learning are impacted by individual student characteristics (e.g., study location, program stage, length of time studying outside of the country of origin, study level, country of origin, age, gender, parents' educational level) and whether culture is an intervening variable. We also need to learn more about which teaching practices predict high levels of student satisfaction and student perceptions of learning. Further research is also needed to study how student satisfaction and student perceptions of learning related to promising teaching practices change over time.

References

- Andrade, M. S. (2009). The value of a first-year seminar: International students' insights in retrospect. *Journal of College Student Retention*, 10(4), 483-506.
- Bray, S. (2017, December 5). The need for a theory of learning (opinion). *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/views/2017/12/05/need-theory-learning-opinion>
- Brunton, M., & Jeffrey, L. (2014). Identifying factors that influence the learner empowerment of international students. *International Journal of Intercultural Relations*, 43, 321-334.
- Canadian Bureau of International Education (2014). *A world of learning: Canada's performance and potential in international education*. Ottawa: CBIE.
- Canadian Bureau of International Education (2016). *A world of learning: Canada's performance and potential in international education*. Ottawa: CBIE.
- Charles-Toussaint, G. C. (2010). Prejudice against international students: The role of threat perceptions and authoritarian dispositions in U.S. students. *The Journal of Psychology: Interdisciplinary and Applied*, 144(5), 413-428.

- Choudaha, R., & Schulmann, P. (2014). *Bridging the gap: Recruitment and retention to improve student experiences*. Washington, DC: NAFSA: Association of International Educators.
- Cruikshank, K., Chen, H. L., & Warren, S. (2012). Increasing international and domestic student interaction through group work: A case study from the humanities. *Higher Education Research & Development*, 31(6), 797-810.
- Curtin, N, Stewart, A. J., & Ostrove, J. M. (2013). Fostering academic self-concept: Advisor support and sense of belonging among international and domestic graduate students. *American Educational Research Journal*, 50, 108-137.
- Dimitrov, N., & Haque, A. (2016). Intercultural teaching competence: A multi-disciplinary model for instructor reflection. *Intercultural Education*, 27(5), 437-456.
- Eaves, M. (2011). The relevance of learning styles for international pedagogy in higher education. *Teachers and Teaching*, 17(6), 677-691.
- Edwards, J., & Tonkin, H. (1990) (Eds.). *Internationalizing the community college: Strategies for the classroom*. New Directions for Community Colleges, no. 70. San Francisco, CA: Jossey-Bass.
- Elmgren, M., & Henriksson, A. S. (2014). *Academic teaching*. Lund, Estonia: Studentlitteratur.
- Fischer, K. (2011, May 29). Colleges adapt to new kinds of students from abroad. *The Chronicle of Higher Education*. Retrieved from <https://www.chronicle.com/article/Colleges-Educate-a-New-Kind-of/127704>
- Foster, K. D., & Stapleton, D. M. (2012). Understanding Chinese students' learning needs in western business classrooms. *International Journal of Teaching and Learning in Higher Education*, 24(3), 301-313.
- Fritz, M. V., Chin, D., & DeMarini, D. (2008). Stressors, anxiety, acculturation and adjustment among international and North American students. *International Journal of Teaching and Learning in Higher Education*, 24(3), 301-313.
- Gay, G. (2010). *Culturally responsive teaching: Theory, research, and practice*. New York, NY: Columbia.
- Glass, C. R., Kociolek, E., Wongtirat, R., Lynch, R. J., & Cong, S. (2015). Uneven experiences: The impact of student-faculty interactions on international students' sense of belonging. *Journal of International Students*, 5(4), 353-367.
- Harrison, N., & Peacock, N. (2010). Cultural distance, mindfulness and passive xenophobia: Using integrated threat theory to explore home higher education students' perspectives on 'internationalization at home'. *British Educational Research Journal*, 36(6), 877-902.
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. New York, NY: Routledge.
- Helms, R. M., Brajkovic, L., & Struthers, S. (2017). *Mapping internationalization on U.S. campuses: 2017 edition*. Washington, DC: American Council on Education.
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: Software of the mind* (3rd ed.). New York, NY: McGraw Hill.
- i-graduate International Insight (2017). Data regarding the 2016 international student barometer autumn wave. Surrey, UK: i-graduate International Insight.
- Institute of International Education (2016). *Open doors 2016*. New York, NY: IIE.
- Kennedy, P. (2002). Learning cultures and learning styles: Myth-understandings about adult (Hong Kong) Chinese learners. *International Journal of Lifelong Education*, 21(5), 430-445.
- Kim, J., Tatar, B., & Choi, J. (2014). Emerging culture of English-medium instruction in Korea: Experiences in Korean and international students. *Language and Intercultural Communication*, 14(4), 441-459.
- Kinsella, K. (1997). Creating an enabling learning environment for non-native speakers of English. In A. I. Morey, & M. K. Kitano (Eds.), *Multicultural course transformation in higher education: A broader truth* (pp. 104-125). Boston, MA: Allyn and Bacon.
- Koul, R., & Fisher, D. (2005). Cultural background and students' perceptions of science classroom learning environment and teacher interpersonal behavior in Jammu, India. *Learning Environments Research*, 8, 195-211.
- Martin-Beltran, M., Guzman, N., & Chen, P-J. J. (2017). Let's think about it together: How teachers differentiate discourse to mediate collaboration among linguistically diverse students. *Language Awareness*, 26(1), 41-58.
- Nunes, S., & Arthur, N. (2013). International students' experiences of integrating into the workforce. *Journal of Employment Counseling*, 50(1), 34-45.
- Paige, R. M., & Goode, M. L. (2009). Intercultural competence in international education administration-cultural mentoring: International education professionals and the development of intercultural competence. In D. K. Deardorff (Ed.), *The SAGE Handbook of Intercultural Competence* (pp. 333-349). Thousand Oaks, CA: SAGE.

- Rice, K. G., Choi, C., Zhang, Y., Villega, J., Ye, H. G., Anderson, D., Nesic, A., & Bigler, M. (2009). International student perspectives on graduate advising relationships. *Journal of Counseling Psychology*, 56(3), 376-391.
- Smith, C., & Demjanenko, T. (2011). Solving the international student retention puzzle. Windsor, ON: University of Windsor.
- Tavakol, M., & Dennick, R. (2010). Are Asian international medical students just rote learners? *Advances in Health Sciences Education*, 15(3), 369-377.
- Tomlinson, C. A. (1999). Mapping a route toward differentiated instruction. *Theory into Practice*, 44(3), 183-184.
- Tomlinson, C. A. (2014). *The differentiated classroom: Responding to the needs of all learners* (2nd Ed.). Alexandria, VA: ASCD.
- Trahar, S., & Hyland, F. (2011). Experiences and perceptions of internationalisation in higher education in the UK. *Higher Education Research & Development*, 30(5), 623-633.
- Valdez, G. (2015). U.S. higher education classroom experiences of undergraduate Chinese international students. *Journal of International Students*, 5(2), 188-200.
- Valiente, C. (2008). Are students using the 'wrong' style of learning? A multicultural scrutiny for helping teachers to appreciate differences. *Active Learning in Higher Education*, 9(1), 73-91.
- Wang, L., & Byram, M. (2011). 'But when you are doing your exams it is the same as in China' - Chinese students adjusting to western approaches to teaching and learning. *Cambridge Journal of Education*, 41(4), 407-424.
- Wu, Hsio-ping, Garza, E., & Guzman, N. (2015). International student's challenge and adjustment to college. *Educational Research International*, 2015, Article ID 202753.
- Yates, L., & Thi Quynnh Trang, N. (2012). Beyond a discourse of deficit: The meaning of silence in the international classroom. *The International Education Journal: Comparative perspectives*, 11(1), 22-34.
- Zhai, L. (2002). *Studying international students: Adjustment issues and social support*. San Diego, CA: San Diego Community College.
- Zhang, Z., & Zhou, G. (2010). Understanding Chinese international students at a Canadian university: Perspectives, expectations, and experiences. *Comparative and International Education*, 39(3), 1-16.
- Zhang, J., & Goodson, P. (2011). Predictors of international students' psychosocial adjustment to life in the United States: A systematic review. *International Journal of Intercultural Relations*, 35(2), 139-162.

Part 10: Pre K-12

Teacher Motivation Profiles: Implications for Teacher Beliefs and Perceptions of the Classroom Environment

Jonathan Coker, Sarah Kiefer, and Raven Robinson

College of Education
University of South Florida, United States

Abstract

Teacher motivation is an important yet understudied topic. It is likely that teachers pursue a combination of mastery and performance goals, and that this has implications for teacher beliefs and perceptions of the classroom learning environment. Adopting a multidimensional, person-centered perspective on teacher motivation, the current study aims to identify distinct achievement goal profiles among sixth grade teachers ($N = 44$) and to examine how these profiles may differ in terms of teacher beliefs (i.e., self-efficacy and perceived control) and perceptions of the classroom social environment (i.e., promoting social interaction and promoting mutual respect) in the fall and spring of the school year. Cluster analysis revealed four teacher motivation profiles: mastery-focused, performance-focused, multigoal, and low motivation. Teacher motivation profiles significantly differed in self-efficacy beliefs and promoting social interaction in the fall. Mastery-focused and multigoal had the most adaptive profiles; low motivation had the least adaptive. Findings may inform ways to maintain and enhance teacher motivation, beliefs, and the classroom learning environment in middle school.

Keywords: teacher motivation, achievement goals, person-centered analyses, teacher beliefs, classroom social environment, middle school

Introduction

Teacher motivation is an important but understudied topic (Butler, 2007; Richardson, Karabenick, & Watt, 2014). Given the challenges teachers face and the increased focus on promoting teaching effectiveness, job satisfaction, and reducing rates of attrition (Klassen & Tze, 2014), it is important to better understand teacher motivation and how it may influence teachers' beliefs about instruction and the classroom learning environment. According to achievement goal theory, individuals approach a task with qualitatively distinct goals – to demonstrate or develop competence – and there is individual variability in motivation (Dweck & Leggett, 1988). Although research indicates students (Jang & Liu, 2012; Matos et al., 2017; Wilson et al., 2016) and teachers (Butler, 2014; Kunst, Woerkhom, & Poell, 2018) pursue multiple achievement goals, few studies use a multidimensional, person-centered approach to examining achievement goals (Wormington & Linnenbrink-Garcia, 2017).

Only one study to date has examined teacher achievement goal profiles and their implications for teacher adjustment (Kunst et al., 2018). It is surprising that this is understudied, given that school is an achievement context for teachers as well as students and that teachers may differ in the ways they define success and the goals they strive for (Butler, 2007; Richardson et al., 2014). We propose that examining the goals teachers strive for will provide useful insights into teacher motivation and outcomes, especially at the secondary level where teacher motivation and identity are characterized as complex (Anderman et al., 2011; Beauchamp & Thomas, 2009). Thus, the current study had two main aims: 1) to examine achievement goal profiles among sixth grade (first

year of middle school) teachers using cluster analysis; and 2) to assess whether goal profiles differed regarding teacher beliefs (self-efficacy and perceived control) and perceptions of the classroom learning environment (promotion of social interaction and mutual respect).

Literature Review

Although achievement goals research has primarily used variable-centered approaches, studies have increasingly adopted person-centered approaches (Wormington & Linnenbrink-Garcia, 2017). We distinguish between mastery and performance goals (Wigfield et al., 2006). Mastery goals emphasize skill development, learning new material with deep understanding and self-improvement (Dweck & Leggett, 1998; Meece et al., 2006). Performance goals emphasize the demonstration of skills, characterized by surface learning and comparisons with others (Linnenbrink-Garcia et al., 2012). A multidimensional, person-centered approach may yield important insights into achievement goal theory and teacher motivation. A central tenet of the multidimensional perspective of motivation is that individuals may not be equally motivated (Dweck & Leggett, 1988). Cluster analyses of elementary and secondary level students found distinct student achievement goal profiles (Jang & Liu, 2012; Wilson et al., 2016). Similar to students, teachers also endorse different levels of mastery and performance goals. However, to our knowledge, little research has examined teacher achievement goal profiles. Kunst and colleagues (2018) are the first to examine goal orientation profiles of teachers in vocational and educational training colleges and identified five goal profiles in the work domain. The current study extends prior research by examining teacher achievement goal profiles in middle school using a dichotomous framework (high and low mastery, high and low performance goals).

Outcomes of Profile Membership

Teacher motivation influences the decisions that educators make about choosing, investing, and persisting with goal-directed activity (Richardson et al., 2014). Teachers' endorsement of mastery and performance goals may inform their functioning in school, including beliefs about planning, instruction, and perceptions of the classroom learning environment. Teachers possessing mastery goals may be more likely to use learner-centered and constructivist approaches in their teaching (Butler, 2014). However, when combined with high levels of performance goals, potentially beneficial effects of mastery goals may be undermined. It is unclear whether performance goals for teaching have disadvantages or share benefits of mastery goals, as multigoal theorists believe may be true for students (Senko et al., 2011). Possessing a combination of high levels of mastery goals and any level of performance goals may yield better outcomes than possessing a combination of goals that are mostly below-average (Wilson et al., 2016; Wormington & Linnenbrink-Garcia, 2017). This aligns with previous variable-centered research showing that teacher mastery goals are linked to adaptive outcomes (Nitsche, Dickhauser, Fasching, & Dresel, 2011; Parker, Martin, Colmar, & Liem, 2012). However, little research has examined associations of distinct patterns of teacher motivation with outcomes. Further investigating whether different combinations of teacher goals uniquely relate to outcomes would represent a meaningful advancement to teacher motivation theory.

Teacher Beliefs

Teacher motivation may have implications for teacher beliefs (i.e., self-efficacy and perceived control). Teacher self-efficacy is the belief in one's capacity to successfully teach and includes planning and instruction, classroom management, and promoting a positive learning environment

(Bandura, 1997; Woolfolk Hoy et al., 2006). Self-efficacy guides educators' decisions, effort, and persistence which influences instructional practice (Fives & Buehl, 2012). Teacher self-efficacy is a key predictor of instructional quality and student support (Holzberger, Philipp, & Kunter, 2013), teacher engagement (Durksen, Klassen, & Daniels, 2017), job satisfaction (Klassen & Chiu, 2010), and well-being (Zee & Koomen, 2016). Teacher self-efficacy also influences student academic engagement (Reyes et al., 2012) and achievement (Caprara, Barbaranelli, Steca, & Malone, 2006). Mastery goals may be positively related to teacher self-efficacy and allow educators to engage in adaptive strategies such as help-seeking, readjusting goals, and persisting in the face of challenge and setbacks (Butler, 2014). The current study addresses a call to examine the extent to which achievement goal profiles are associated with teacher self-efficacy (Butler, 2007; Kunst et al., 2018).

Teachers who believe that they have an impact on their students' lives often are able to mitigate negative emotions caused by extrinsic challenges and experience greater job satisfaction and longevity (Ochanji et al., 2016). However, teachers' perceived control over the learning and instruction process is an important yet understudied construct. Teachers' locus of control or perceived control over planning and teaching is linked to instruction quality (Hulleman et al., 2015; Powers et al., 2006). It is theoretically plausible that the endorsement of mastery goals may be related to teachers' perceived control over planning and teaching.

Perceptions of the Learning Environment

Teacher motivation may also have implications for teacher perceptions of the classroom learning environment. Promotion of social interaction and mutual respect are aspects of the classroom social environment that are associated with student motivation, engagement, academic efficacy, and self-regulated learning (Patrick et al., 2007; Ryan & Patrick, 2001), yet are rarely examined together. The promotion of social interaction among peers includes sharing ideas in groups, help-seeking behaviors, and other interactions, whereas the promotion of mutual respect involves a sense of comfort and trust (Ryan & Patrick, 2001). It is important for educators to foster a supportive classroom environment given the unique developmental period of early adolescence when students have unique academic, social, and emotional needs (Ochanji et al., 2016) and when peer relationships and status peak in salience (Cillessen, Schwartz, & Mayeux, 2011). Prior research indicates that students' achievement goals influence student perceptions of social interaction and mutual respect in the classroom (Kiefer et al., 2013). Similarly, teachers' mastery goals may be positively associated with their perceptions of promoting social interaction and mutual respect, due to their focus on deep learning and individual reference norms. In contrast, performance goals may have a null or negative relation with their focus on surface learning and social reference norms (Butler, 2014; Retelsdorf & Gunther, 2011).

The Present Study

The present study adopted a multidimensional, person-centered perspective to examining achievement goal profiles among teachers in the fall and spring of the sixth grade. Additionally, we examined whether goal profiles differed regarding teacher beliefs (i.e., self-efficacy and perceived control) and perceptions of the classroom learning environment (i.e., promotion of social interaction and mutual respect). Although we did not formulate specific hypotheses regarding different goal orientation profiles and their relations to teacher outcomes, we do have some general expectations. First, we expect to identify different goal orientation profiles among teachers: mastery (high mastery, low performance), performance (low mastery, high performance),

multigoal (high mastery and performance), and low motivation (low mastery and performance). Second, we expect mastery to have the most adaptive profile and low motivation to have the least adaptive profile in terms of their relations to teacher beliefs and perceptions of the classroom environment. Given the exploratory nature of the study and mixed evidence regarding multigoal and performance-focused profiles, we did not make specific predictions for these goal profiles. We used hierarchical cluster analysis, as this method does not impose constraints on the combinations of goals.

Methods

Participants and Procedure

Surveys were collected in a year-long investigation that examined motivation at three large, diverse, urban middle schools in a southeastern state. Forty-four social studies teachers participated ($n = 31$ fall, $n = 27$ spring). The sample had 25% males (75% females) and was predominantly White (73% White, 11% Latino, 5% African American, 2% Asian American, 2% Multiracial, 7% missing). There was a range of novice and veteran teachers based on years of teaching experience in the fall ($M = 14.84$ years, $SD = 9.93$, Range = 1-32) and spring ($M = 16.24$ years, $SD = 10.17$, Range = 1-34). A majority of teachers held a bachelor's degree (71% fall, 61% spring) and about a third had earned a master's degree (36% fall, 30% spring). Surveys were given by trained administrators; participation was voluntary and confidential.

Measures

Teacher Goal Orientations

Teacher goal orientations were modified based on student-version scales from the PALS measure (Midgley et al., 2000; 5-point scale). Mastery goals (4 items) focus on teacher perceptions of themselves as emphasizing individual progress and skill development ("I consider how much students have improved when I give them report card grades"). Performance goals (5 items) focus on teachers' perceptions of themselves as emphasizing competition and relative ability comparisons ("I help students understand how their performance compares to others"). Scales were reliable in fall and spring (mastery goals $\alpha = .69, .74$; performance goals $\alpha = .69, .70$).

Teacher Beliefs

A 15-item version of the Teacher Self-Efficacy Questionnaire (9-point scale; Bandura, 1997) was used to assess teachers' confidence in supporting instruction and learning ("How much can you do to get students to do their schoolwork?"), handling student disruptive behavior ("How much can you do to control disruptive behavior in the classroom?"), and creating a positive environment ("How much can you do to get students to trust teachers?"). Responses were summed to create a total self-efficacy score for analyses. Teacher beliefs about perceived control over planning and teaching from the School Teacher Survey in NIHCD's Study of Early Child Care and Youth Development (Griffin & Friedman, 2007; 3 items, 4-point scale) assessed teachers' control over selecting content, evaluating students, and determining homework in their classroom. Scales were reliable in fall and spring (self-efficacy $\alpha = .90, .91$; perceived control $\alpha = .64, .72$).

Classroom Social Environment

Promotion of Social Interaction and Mutual Respect were modified based on student-version scales from the Classroom Social Environment measure (Ryan & Patrick, 2001; Likert-type 5-point scale). Promotion of Social Interaction (4 items) assessed teacher perceptions of themselves as encouraging interaction during academic activities. Promotion of Mutual Respect (5 items) assessed teacher perceptions of themselves as encouraging mutual respect. Scales used similar items as the student-version but was reworded to reflect teacher perceptions (“I” vs. “My teacher”; “I often allow students to discuss their work with classmates”; “I want students to respect each other’s’ opinions”). Scales had moderate reliability in fall and spring (promotion of social interaction $\alpha = .51, .64$; promotion of mutual respect $\alpha = .58, .69$).

Findings

Achievement Goal Profiles Identification

See Table 1 for descriptive statistics and correlations. A two-step analysis was used to determine achievement goal profiles (Punj & Stewart, 1983; Wang et al., 2002). We used hierarchical cluster analysis to identify the number of distinct configurations. Ward’s (1963) clustering algorithm with squared Euclidian distance as the proximity measure was used on goal scores. We determined the number of clusters by examining a scree plot of distance coefficients as a function of the number of configurations at each agglomerative step. Three clusters were retained in fall (no performance); four clusters were retained in spring. Additional configurations minimally reduced distance coefficients. We used a k-means clustering method (4 clusters prespecified) to refine final clusters (Punj & Stewart, 1983; Wang et al., 2002). Validity of final 4-cluster solution was assessed considering within- and between-group heterogeneity in goals.

Table 1. Descriptive Statistics and Bivariate Correlations for All Study Variable (Raw Scores)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
T1 Mastery	-											
T1 Performance	.32	-										
T1 Control	.40*	-.20	-									
T1 Self-Efficacy	.38*	.19	.22	-								
T1 PSI	.59***	.24	-.02	.53**	-							
T1 PMR	-.03	.22	.09	-.03	.00	-						
T2 Mastery	.67**	.35	-.49	.34	.73**	-.16	-					
T2 Performance	.13	.60*	-.07	.34	.23	.17	.19	-				
T2 Control	-.13	.24	.40	-.01	-.47	.11	.02	-.18	-			
T2 Self-Efficacy	.20	.13	-.24	.72*	.37	.16	.49**	.11	.12	-		
T2 PSI	.56*	.23	-.46	.13	.67**	-.21	.46*	-.01	.04	.32	-	
T2 PMR	.40	.18	-.35	.47	.57*	.04	.59**	.15	.06	.34	.30	-
Mean	3.88	3.07	3.50	7.12	4.23	4.92	4.07	3.16	3.70	6.77	4.45	4.88
SD	0.57	0.75	0.52	0.94	0.44	0.15	0.55	0.78	0.40	0.84	0.45	0.30

Note. N = 44. In all instances T1 = Time 1, T2 = Time 2, PSI = Teacher Promotion of Social Interaction, and PMR = Teacher Promotion of Mutual Respect. * $p < .05$. ** $p < .01$. *** $p < .001$.

See Table 2 for means and standard deviations of achievement goal profiles. For descriptive purposes, ± 0.2 was used as a z-score cutoff to differentiate above and below average mean scores. To examine goal profile distinctness, we used a factorial multiple analysis of variance to compare groups on goals variables used in the configuration analysis. Using Pillai’s criterion, there was a significant multivariate effect for cluster membership in fall $F(4, 27) = 20.08, p < .001$ and spring $F(6, 19) = 15.66, p < .001$. All univariate tests of goal profile membership were significant at $p < .01$. In the fall, pairwise comparisons using least significant difference tests indicated all

groups differed significantly in performance and all groups differed significantly in mastery, except for mastery and multigoal teachers, who differed from other groups but not from each other. In the spring, pairwise comparisons using least significant difference tests indicated all groups differed significantly in performance and all groups differed significantly in mastery, except for mastery and performance teachers, who differed from other groups but not each other.

Table 2. Means and Standard Deviations of Achievement Goals by Achievement Goal Clusters

	Mastery		Multigoal		Low Motivation		Performance		
Fall Variables	M	SD	M	SD	M	SD	M	SD	F
Mastery	.60a	.61	.80a	1.07	-.51	.77	-	-	8.40*
Performance	-1.16	.38	1.49	.49	-.20	.46	-	-	59.35**
n	6		7		18		0		
%	19%		23%		58%		0%		
Spring Variables									
Mastery	.04a	.76	1.08	.50	-.91	.91	-.24a	.60	9.43**
Performance	-1.26	.43	.59b	.68	-.24	.23	1.10b	.43	31.37**
n	7		7		7		6		
%	26%		26%		26%		22%		
Cluster Criteria	+0.2 z-score cutoff for mastery.		+0.2 z-score cutoff for mastery.		-0.2 z-score cutoff for mastery.		-0.2 z-score cutoff for mastery.		
	-0.2 z-score cutoff for performance.		+0.2 z-score cutoff for performance.		-0.2 z-score cutoff for performance.		+0.2 z-score cutoff for performance.		

Note. Performance Goal Cluster emerged in the spring only. Achievement goal variables were standardized to provide a common scale for interpretation. Within rows, means that do not share a common subscript differ significantly at $p < .05$ in least significant differences post hoc tests. Mastery Goal Cluster in the fall was the only cluster to not adhere to the ± 0.20 z-score cutoff for mastery goal orientation. * $p < .01$ ** $p < .001$

Outcomes of Profile Membership

We examined whether goal profiles differed regarding teacher beliefs (i.e., self-efficacy and perceived control) and perceptions of the classroom learning environment (i.e., promotion of social interaction and mutual respect) in fall and spring. We provide descriptive comparisons of achievement goal profiles (± 0.2 z-score cutoff) and multivariate analyses of goal profile differences (see Table 3).

Table 3. Means and Standard Deviations of Teacher Beliefs and the Classroom Social Environment by Teacher Achievement Goal Clusters

	Mastery		Multigoal		Low Motivation		Performance		
Fall Variables	M	SD	M	SD	M	SD	M	SD	F
Teacher Beliefs									
Self-Efficacy	.71a	.70	.60a	.74	-.47	.93	-	-	6.48**
Perceived Control	.32	.79	-.28	1.08	.00	1.05	-	-	0.58
Classroom Social Environment									
Social Interaction	.46a	.53	.71a	1.01	-.43	.92	-	-	5.16*
Mutual Respect	-.59	1.75	.13	.99	.14	.61	-	-	1.31
Spring Variables									
Teacher Beliefs									
Self-Efficacy	.06	1.28	.19	.69	-.46	1.11	.25	.88	0.19
Perceived Control	.39	.61	-.69	.87	.03	1.22	.33	1.02	2.16
Classroom Social Environment									
Social Interaction	.11	.64	.35	1.35	.11	1.04	-.63	.76	1.14
Mutual Respect	-.08	1.27	.40	.00	-.60	1.50	.12	.68	1.03

Note. Performance Goal Cluster emerged in the spring only. Achievement goal variables were standardized to provide a common scale for interpretation. Within rows, means that do not share a common subscript differ significantly at $p < .05$ in least significant differences post hoc tests. * $p < .01$ ** $p < .001$

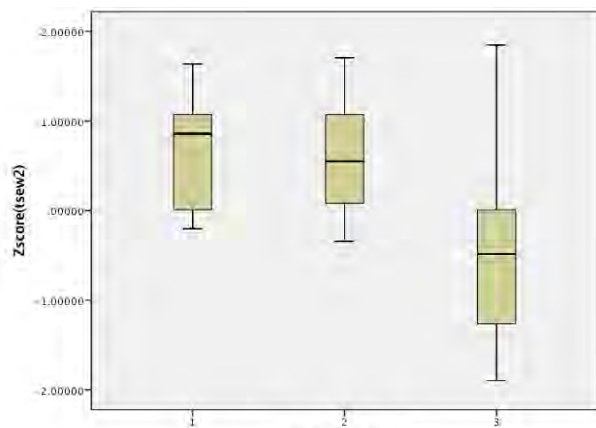
Descriptive Comparisons

In the fall, mastery and multigoal teachers had above-average self-efficacy scores, whereas low motivation teachers had below-average scores. Mastery teachers had above-average perceived control scores, low motivation teachers had average scores, and multigoal teachers had below-average scores. In the spring, low motivation had below-average scores, whereas mastery, performance, and multigoal teachers had average self-efficacy levels. Mastery and performance teachers had above-average perceived control scores, low motivation had average levels, and multigoal teachers had below-average scores.

In the fall, mastery and multigoal teachers had above-average promotion of social interaction scores, whereas low motivation teachers had below-average scores. Multigoal and low motivation teachers had average promotion of mutual respect scores, whereas mastery teachers had below-average scores. In the spring, multigroup teachers had above-average promotion of social interaction scores, mastery and low motivation teachers had average levels, and performance teachers had below-average scores. Multigroup teachers had above-average promotion of mutual respect, mastery and performance teachers had average levels, and low motivation teachers had below-average levels.

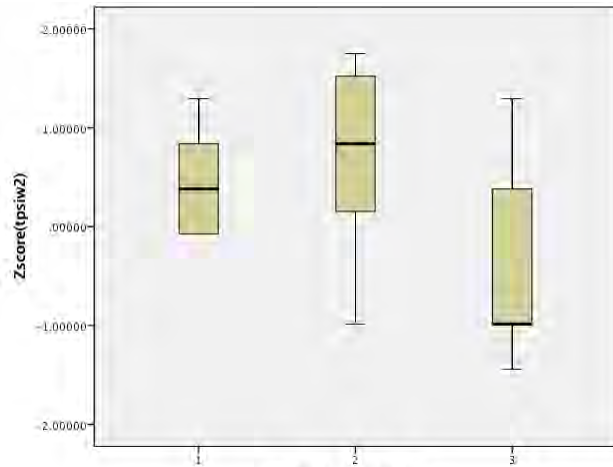
Multivariate Analyses

In the fall, there was a significant multivariate effect for goal profile membership, $F(8, 23) = 2.29$, $p < .05$. Univariate tests were significant for self-efficacy $F(2, 29) = 6.48$, $p < .01$ and promotion of social interaction $F(2, 29) = 5.16$, $p < .05$ (See Table 3). Low motivation teachers had the lowest self-efficacy (See Figure 1) and promotion of social interaction (See Figure 2) compared to mastery and multigoal profiles. Although group differences were non-significant, multigoal profile reported the lowest levels of perceived control and mastery goal profile reported the lowest levels of mutual respect. Multivariate analyses were non-significant in spring, $F(12, 15) = 1.19$, $p = .310$. Although group differences were non-significant, mastery goal profile had the highest levels of perceived control. Multigoal profile had the highest levels of self-efficacy as well as promotion of social interaction and mutual respect, and the lowest levels of perceived control. Low motivation profile had the lowest levels of self-efficacy and promotion of mutual respect. Performance profile had the lowest levels of social interaction.



Note: Group 1 = Mastery (n = 6), Group 2 = Multigoal (n = 7), Group 3 = Low Motivation (n = 18).

Figure 1. Comparisons between teacher achievement goal clusters in standardized scores of teacher self-efficacy in the fall.



Note: Group 1 = Mastery (n = 6), Group 2 = Multigoal (n = 7), Group 3 = Low Motivation (n = 18).

Figure 2. Comparisons between teacher achievement goal clusters in standardized cores of promotion of social interaction in the fall.

Discussions

Drawing on achievement goal theory and using a multidimensional, person-centered approach, the current study investigated achievement goal profiles among teachers in the fall and spring of the first year of middle school. Additionally, we investigated theoretically plausible outcomes of profile membership and examined the extent to which achievement goal profiles are associated with teacher beliefs (i.e., self-efficacy and perceived control) and perceptions of the classroom learning environment (i.e., promotion of social interaction and promotion of mutual respect). The results are discussed below, along with implications for theory and practice.

Teacher Motivation Profiles

The findings contribute to literature on goal orientation profiles among teachers in several ways. First, to our knowledge, this is the first study to demonstrate that teachers possess multiple goals with varying combinations at the secondary level, as indicated by the four motivation profiles (mastery, performance, multigoal, and low motivation). The low motivation group profile was the largest group (58% in the fall and 26% in the spring), followed by multigoal (23% in the fall and 26% in the spring) and mastery (19% in the fall and 26% in the spring). The performance goal profile emerged in spring only (26%) and may have been more salient as state-wide standardized testing took place during this time.

The findings align with prior research examining student achievement goal profiles that have identified mastery-oriented and performance-oriented profiles (Luo et al., 2011; Pastor, Barron, Miller, & Davis, 2007; Tuominen-Soini et al., 2008, 2001, 2012; Wilson et al., 2016). The results also are consistent with the only existing research study investigating teacher goal profiles, which found only a minority of teachers were assigned to the mastery-oriented goal profile (Kunst et al., 2018). The results contribute to research on teacher achievement goal orientation profiles (Butler, 2007; Kunst et al., 2018), which has primarily focused on single goal, variable-centered approach instead of a multidimensional, person-centered approach (Dweck & Leggett, 1988; Wormington & Linnenbrink-Garcia, 2017). Investigating multiple goal orientations may provide insight into teacher motivation and functioning in the school context.

Outcomes of Profile Membership

Achievement goal profiles had meaningful implications for teachers' beliefs and perceptions of the learning environment, but only during the fall of the sixth grade. The findings indicate that most adaptive teacher profiles were mastery (i.e., high mastery and low performance goals) and multigoal (i.e., high levels of mastery and performance goals). Teachers with a mastery and multigoal profile had similarly high levels of self-efficacy and promotion of social interaction. Thus, teachers' goals for developing and demonstrating competence were similarly adaptive in this regard.

Although non-significant, mastery and multigoal profiles diverged in terms of perceived control and promotion of mutual respect. Mastery goal profile teachers reported the highest levels of perceived control, whereas multigoal profile teachers reported the lowest levels. Although both goal profiles had high levels of self-efficacy, a sole focus on developing competence may be more congruent with a strong internal sense of control. In contrast, a focus on developing and demonstrating competence may be viewed as incompatible and constraining in terms of control over actual planning and instruction. Additionally, teachers with a mastery goal profile reported lower levels of promotion of mutual respect than those with a multigoal profile. Given that developing competence may be viewed as less threatening or engendering competition compared to demonstrating competence, the promotion of mutual respect and not be as salient for mastery goal profile teachers.

Teachers in the low motivation group had the least adaptive profile and reported the lowest levels of self-efficacy and promotion of social interaction. Since low motivation was the largest profile, understanding maladaptive motivation profiles may have implications regarding teacher instruction and perceptions of the learning environment. Similar to prior research (Butler, 2012; Butler & Shibaz, 2014), teachers' beginning-of-year reports of goals (fall) but not end-of-year reports (spring) were linked to significant differences in outcomes.

Conclusions

Despite limitations of the current study, including a relatively modest sample size and the use of a dichotomous achievement goal framework, this study contributes to achievement goal literature by highlighting the need for a multidimensional, person-centered approach to examining teacher motivation. The findings identified four achievement goal profiles (i.e., mastery, performance, multigoal, and low motivation) among teachers in sixth grade, and that goal profiles were associated with meaningful differences in teacher beliefs and perceptions of the classroom learning environment in the fall. Given that mastery and multigoal profiles had the most adaptive profiles, it may be beneficial for teachers to encourage the development and demonstration of student skills in large, urban middle schools during an age of school accountability and high-stakes testing (Buchanan, 2015).

This is the first study to investigate teacher achievement goal profiles at the secondary level. Prior research has examined teacher achievement goal profiles in vocational and educational training colleges in the Netherlands (Kunst et al., 2018). Additional research is needed to replicate results in various educational contexts (e.g., primary, secondary, higher education) and to validate the number and content of goal orientation profiles (Kunst et al., 2018). More work is also needed to examine the extent to which goal profiles predict teacher beliefs, behaviors, and instructional practices (Nitsche et al., 2013; Retelsdorf et al., 2010) as well as contextual variables such as

school climate (Kunst et al., 2018). It is also necessary to examine malleability in teacher goal profiles. Future research may inform interventions that influence teachers to endorse and maintain a mastery or multigoal profile.

References

- Anderman, L. H., Andrzejewski, C. E., & Allen, J. (2011). How do teachers support students' motivation and learning in their classrooms? *Teachers College Record*, 113(5), 969-1003.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.
- Beauchamp, C., & Thomas, L. (2009). Understanding teacher identity: An overview of issues in the literature and implications for teacher education. *Cambridge Journal of Education*, 39(2), 175-189.
- Buchanan, R. (2015). Teacher identity and agency in an era of accountability. *Teachers and Teaching*, 21(6), 700-719.
- Butler, R. (2007). Teachers' achievement goal orientations and associations with teachers' help seeking: Examination of a novel approach to teacher motivation. *Journal of Educational Psychology*, 99(2), 241-252.
- Butler, R. (2012). Striving to connect: Extending an achievement goal approach to teacher motivation to include relational goals for teaching. *Journal of Educational Psychology*, 104(3), 726-742.
- Butler, R. (2014). What teachers want to achieve and why it matters and why it matters: An achievement goal approach to teacher motivation. In P. W. Richardson, S. A. Karabenick, & H. M. Watt (Eds.), *Teacher motivation: Theory and practice* (pp. 20-35). New York, NY: Routledge.
- Butler, R., & Shibaz, L. (2014). Striving to connect and striving to learn: Influences of relational and mastery goals for teaching on teacher behaviors and student interest and help seeking. *International Journal of Educational Research*, 65, 41-53.
- Caprara, G. V., Barbaranelli, C., Steca, P., & Malone, P. S. (2006). Teachers' self-efficacy beliefs as determinants of job satisfaction and students' academic achievement: A study at the school level. *Journal of School Psychology*, 44(6), 473-490. doi: 10.1016/j.jsp.2006.09.001
- Cillessen, A. H. N., Schwartz, D., & Mayeux, L. (2011). *Popularity in the peer system*. New York, NY: The Guilford Press.
- Durksen, T. L., Klassen, R. M., & Daniels, L. M. (2017). Motivation and collaboration: The keys to a developmental framework for teachers' professional learning. *Teaching and Teacher Education*, 67, 53-66. doi: <https://doi.org/10.1016/j.tate.2017.05.011>
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95(2), 256-273.
- Fives, H., & Buehl, M. (2012). Spring cleaning for the messy construct of teachers' beliefs: What are they? Which have been examined? What can they tell us? In K. R. Harris, S. Graham, & T. Urdan (Eds.), *APA Educational psychology handbook: Vol. 2. Individual differences and cultural and contextual factors* (pp. 471-499). Washington, DC: American Psychological Association.
- Griffin, J. A., & Friedman, S. L. (2007). *NICHD Study of Early Childcare and Youth Development*. National Institute of Health.
- Holzberger, D., Philipp, A., & Kunter, M. (2013). How teachers' self-efficacy is related to instructional quality: A longitudinal analysis. *Journal of Educational Psychology*, 105(3), 774. doi: <http://dx.doi.org/10.1037/a0032198>
- Hulleman, C. S., Barron, K. E., Kosovich, J. J., & Lazowski, R. A. (2015). Current theories, constructs, and interventions within an Expectancy Value Framework. In A. Lipnevich, F. Preckel, & R. Roberts (Eds.), *Psychosocial skills and school systems in the Twenty-first century: Theory, research, and applications*. Springer.
- Jang, L. Y., & Liu, W. C. (2012). 2×2 Achievement goals and achievement emotions: A cluster analysis of students' motivation. *European Journal of Psychology of Education*, 27(1), 59-76.
- Kiefer, S. M., Matthews, Y., Montesino, M., Arango, L., & Preece, K. (2013). The effects of contextual and personal factors on young adolescents' social goals. *The Journal of Experimental Education*, 81(1), 1-24.
- Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology*, 102(3), 741-756. doi: 10.1037/a0019237
- Klassen, R. M., & Tze, V. M. (2014). Teachers' self-efficacy, personality, and teaching effectiveness: A meta-analysis. *Educational Research Review*, 12, 59-76. doi: <https://doi.org/10.1016/j.edurev.2014.06.001>
- Kunst, E. M., van Woerkom, M., & Poell, R. F. (2018). Teachers' goal orientation profiles and participation in professional development activities. *Vocations and Learning*, 11(1), 91-111.

- Linnenbrink-Garcia, L., Middleton, M. J., Ciani, K. D., Easter, M. A., O'Keefe, P. A., & Zusho, A. (2012). The strength of the relation between performance-approach and performance-avoidance goal orientations: Theoretical, methodological, and instructional implications. *Educational Psychologist*, 47(4), 281-301.
- Luo, W., Paris, S. G., Hogan, D., & Luo, Z. (2011). Do performance goals promote learning? A pattern analysis of Singapore students' achievement goals. *Contemporary Educational Psychology*, 36(2), 165-176.
- Matos, L., Lens, W., Vansteenkiste, M., & Mouratidis, A. (2017). Optimal motivation in Peruvian high schools: Should learners pursue and teachers promote mastery goals, performance-approach goals or both? *Learning and Individual Differences*, 55, 87-96.
- Meece, J. L., Anderman, E. M., & Anderman, L. H. (2006). Classroom goal structure, student motivation, and academic achievement. *Annual Review of Psychology*, 57, 487-503.
- Midgley, C., Maehr, M. L., Hruda, L. Z., Anderman, E., Anderman, L., Gheen, M., Kaplan, A., Kumar, R., Middleton, M. J., Nelson, J., Roeser, R., & Urdan, T. (2000). *Manual for the Patterns of Adaptive Learning Scales*. University of Michigan.
- Nitsche, S., Dickhauser, O., Fasching, M. S., & Dresel, M. (2011). Rethinking teachers' goal orientations: Conceptual and methodological enhancements. *Learning and Instruction*, 21, 574-586.
- Ochanji, M. K., Chen, R., Daniels, E., Deringer, M. L., McDaniel, J., Stowell, L., & Cambra-Adamson, C. (2016). A different kind of kid, a different kind of teacher education: Middle grades teachers reflect on their preparation to teach young adolescents. *Middle Grades Review*, 2(1), 1-17.
- Parker, P. D., Martin, A. J., Colmar, S., & Liem, G. A. (2012). Teachers' workplace well-being: Exploring a process model of goal orientation, coping, behavior, engagement, and well-being. *Teaching and Teacher Education: An International Journal of Research and Studies*, 28, 503-513.
- Pastor, D. A., Barron, K. E., Miller, B. J., & Davis, S. L. (2007). A latent profile analysis of college students' achievement goal orientation. *Contemporary Educational Psychology*, 32(1), 8-47.
- Patrick, H., Ryan, A. M., & Kaplan, A. (2007). Early adolescents' perceptions of the classroom social environment, motivational beliefs, and engagement. *Journal of Educational Psychology*, 99(1), 83-98.
- Powers, S., Zippay, C., & Butler, B. (2006). Investigating connections between teacher beliefs and instructional practices with struggling readers. *Reading Horizons*, 47, 121-157.
- Punj, G., & Stewart, D. W. (1983). Cluster analysis in marketing research: Review and suggestions for application. *Journal of Marketing Research*, 134-148.
- Reyes, M. R., Brackett, M. A., Rivers, S. E., White, M., & Salovey, P. (2012). Classroom emotional climate, student engagement, and academic achievement. *Journal of Educational Psychology*, 104(3), 700-712. doi: <http://dx.doi.org/10.1037/a0027268>
- Ryan, A. M., & Patrick, H. (2001). The classroom social environment and changes in adolescents' motivation and engagement during middle school. *American Educational Research Journal*, 38(2), 437-460.
- Retelsdorf, J., & Günther, C. (2011). Achievement goals for teaching and teachers' reference norms: Relations with instructional practices. *Teaching and Teacher Education*, 27(7), 1111-1119.
- Richardson, P. W., Karabenick, S. A., & Watt, H. M. (Eds.). (2014). *Teacher motivation: Theory and practice*. New York: Routledge.
- Senko, C., Hulleman, C. S., & Harackiewicz, J. M. (2011). Achievement goal theory at the crossroads: Old controversies, current challenges, and new directions. *Educational Psychologist*, 46(1), 26-47.
- Tuominen-Soini, H., Salmela-Aro, K., & Niemivirta, M. (2008). Achievement goal orientations and subjective well-being: A person-centred analysis. *Learning and Instruction*, 18(3), 251-266.
- Tuominen-Soini, H., Salmela-Aro, K., & Niemivirta, M. (2011). Stability and change in achievement goal orientations: A person-centered approach. *Contemporary Educational Psychology*, 36(2), 82-100.
- Tuominen-Soini, H., Salmela-Aro, K., & Niemivirta, M. (2012). Achievement goal orientations and academic wellbeing across the transition to upper secondary education. *Learning and Individual Differences*, 22(3), 290-305.
- Wang, Chatzisarantis, N. L. D., Spray, C. M., & Biddle, J. H. (2002). Achievement goal profiles in school physical education: Differences in self-determination, sport ability beliefs, and physical activity. *British Journal of Educational Psychology*, 72, 433-445.
- Ward, J. H. (1963). Hierarchical grouping to optimize an objective function. *Journal of the American Statistical Association*, 58(301), 236-244.
- Wigfield, A., Eccles, J. S., Schiefele, U., Roeser, R. W., & Davis-Kean, P. (2006). Development of achievement motivation. In N. Eisenberg, W. Damon, & R. M. Lerner (Eds.), *Handbook of child psychology*. Vol. 3: Social, emotional, and personality development (6th ed., pp. 933-1002). Hoboken, NJ: John Wiley & Sons.
- Wilson, T. M., Zheng, C., Lemoine, K. A., Marton, C. P., & Tang, Y. (2016). Achievement goals during middle childhood: Individual differences in motivation and social adjustment. *The Journal of Experimental Education*, 84(4), 723-743.

- Woolfolk Hoy, A., Davis, H., & Pape, S. (2006). Teachers' knowledge and beliefs. In P. A. Alexander & P. H., Winne (Eds.), *Handbook of educational psychology* (2nd ed., pp. 715-737.). Mahwah, NJ: Lawrence Erlbaum.
- Wormington, S. V., & Linnenbrink-Garcia, L. (2017). A new look at multiple goal pursuit: The promise of a person-centered approach. *Educational Psychology Review*, 29(3), 407-445.
- Zee, M., & Koomen, H. M. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research*, 86(4), 981-1015.

Longitudinal Impact of Early Childhood Science Instruction on Middle Grades Literacy and Mathematics

Charlene Charlene¹, Peter Paprzycki², Susanna Hapgood³, and Joan Kaderavek⁴

¹The College of Engineering
University of Toledo, United States

²The College of Education and Human Sciences
University of Southern Mississippi, United States

^{3,4}The College of Education
University of Toledo, United States

Abstract

This study investigated if student placement in a classroom with a [name of program]-trained teacher in grades 1–3 impacted subsequent student achievement in literacy and mathematics. A mixed-regression model was used to assess the effect of the treatment on later student achievement as measured by performance on STAR Renaissance Literacy and Mathematics scores. This study found that students from the treatment group scored significantly higher on literacy and mathematics tests as compared to their peers. Overall, this study suggests that providing Framework-aligned science instruction, coupled with parent support, during early years improves literacy and mathematics skills in later elementary grades.

Keywords: language and literacy, mathematics, professional development, project-based science

Literature Review

STEM as a National Agenda. Science, Technology, Engineering and Mathematics (STEM) education has been a priority in the United States for over 60 years, and numerous influential documents set forth goals to prepare a scientifically literate work force that is ready to compete in an increasingly scientifically and technologically oriented global economy. Prominent reports include the AAAS Project 2061 (Rutherford & Ahlgren, 1991), the National Science Education Standards (NAP, 1996), Opportunity Equation (Carnegie, 2009), Rising Above the Gathering Storm (NAP, 2007), Rising Above the Gathering Storm, Revisited (NAP, 2010), Taking Science to School (NRC, 2007), A Framework for K-12 Science Education [Framework] (NRC, 2012), and the Next Generation Science Standards (NGSS Lead States, 2013).

STEM in Early Childhood (EC) Education. Although STEM education has long been a national priority, calls for very young children to study STEM subjects is a more recent phenomenon among educators, policy makers, and researchers. The National Science Teachers Association's policy on EC STEM was endorsed by the National Association for the Education of Young Children (NSTA, 2014). The White House hosted an event in support of several public and private initiatives focused on STEM for young children (Samuels, 2016). Following The White House call to action, New America hosted a two-day meeting to explore research, practice, and policy for EC STEM education (New America, 2016). These calls are timely and important because there are major gaps in our ability to meet the science teaching and learning needs of our youngest children. Recent research reveals that children enter kindergarten with lower science readiness scores than they

receive in other academic subject areas, and this early science learning is predictive of science learning in 8th grade and beyond (Allen & Kelly, 2015). Morgan and colleagues (2016) found that children with gaps in science knowledge starting in kindergarten rarely catch up resulting lifelong deficits limiting children's future academic career choices.

Fortunately, science can be effective as part of EC education because young children are capable of engaging in science and engineering practices (Bullock et al., 1982; Brennerman et al., 2009; Crisafi & Brown, 1986; Danish & Phelps, 2011; LaParo & Pianta, 2003; Metz, 2008; Nippold & Sullivan, 1987; Penner et al., 1997; Ruffman et al., 1993). Engineering design tasks are motivating to children, and they can engage in sophisticated design activities (Capobianco et al., 2015; Counsell et al., 2016; Hegedus & Carlone, 2015; Tank et al., 2013). Participation in science inquiry creates opportunities to build vocabulary and language skills (French, 1988; French 2004; ODE, 2012), and accelerates the development of many higher-level skills including problem solving and computational thinking (Michaels et al., 2007). Early exposure to science may attract students into science and engineering fields (Maltese & Tai, 2010; Tai et al., 2006), and can spur science interests well into the school years (Alexander et al., 2012). Kindergarten children who participate in exploratory inquiry activities have more positive beliefs about school and their own academic competence (Patrick et al., 2008). Thus, providing a stimulating environment for young children to learn science is likely to have positive life-altering consequences.

Science as a Promising Strategy to Improve Student Achievement Across Subject Areas. The NRC Framework defines learning science, in part, as engaging in science and engineering practices (SEPs) used by scientists and engineers. These inquiry practices overlap with literacy (e.g., obtaining, evaluating and communicating information) and mathematics learning (e.g., analyzing and interpreting data and using mathematical and computational thinking). While there has long been interest in how reading and writing supported science inquiry (e.g., Glynn & Muth, 1994; Holliday et al., 1994; Shymansky et al., 2000; Yore et al., 2004), more recent studies demonstrate the impressive potential of science teaching to achieve gains in reading and writing (e.g., Cervetti et al., 2012; Guthrie et al., 1999; Hapgood & Palinscar, 2007; Palinscar & Magnusson, 2001; Romance & Vitale, 1992, 2001, 2011, 2012; Varelas & Pappas, 2006; Varelas et al., 2014) and mathematics (Sarama et al., 2012; Vukovic & Lesaux, 2013). Thus, teaching science in early grades is a promising strategy with potential to significantly impact literacy and mathematics achievement while concurrently meeting our national STEM agenda.

Intervention

The [insert program name] program was developed from 2011-2016 with a National Science Foundation Mathematics and Science Partnership (MSP) grant. The program intervention included components that were aligned to the U.S. science Framework (NRC, 2012): (a) a two-week Summer Institute for PreK-3 teachers, (b) academic year PD including monthly professional learning community meetings and one-on-one coaching, (c) family science activity take-home packs, and (d) family community science events.

In previous studies, Author (2016) demonstrated the potential of [insert program name] to improve science teaching and learning in PreK-3; and Author (2017) found that a teacher's participation in [insert program name] improved students' standardized test scores in a statistically significant manner in Early Literacy, Mathematics, and Reading.

Research Aims

The objective of this study was to determine if student placement in a classroom with a program-trained teacher in grades 1–3 impacted subsequent student achievement in literacy and mathematics as measured in 5th grade.

Methods

Sample and Data Source

The study was conducted in 41 elementary schools in a large urban school district in the Midwest of the United States. The district had a high degree of racial diversity and 64.8% of students received free or reduced lunch. A longitudinal strip of STAR Early Literacy measure of K students in Spring 2014, 1st-grade students in Spring 2015, and 2nd-grade students in Spring 2016 was extracted from the cross-sectional data provided by the school district. The sample consisted of 47.3% of females and 52.7% of males. The following ethnic status percent were recorded: 50.1% – White, 35.8% – African-American, 7.4% – mixed, 5.9 – Latino and 0.8% – other. Non-White students were classified as minorities. Both gender and ethnicity were self-reported.

With respect to the mathematics sample, a natural longitudinal strip of 2nd-grade students in Spring 2014, 3rd-grade students in Spring 2015 and 4th-grade students in Spring 2016 was extracted from a cross-sectional data. The school district measured very few students (fewer than 100) in grades K-1 in mathematics and the NSF-sponsored intervention concentrated on providing programming to teachers in K–3 grades. The sample consisted of 48.7% of females and 51.3% of males. The following ethnic status percent were recorded: 43.9% – White, 39.6% –African-American, 9.1% – mixed, 6.7 – Latino and 0.7% – other. Non-White students were classified as minorities.

Empirical Model

The model consisted of observations crossed by the following grouping variables: students, teachers and schools; students encountered different teachers between observations (academic years) and some students and teachers switched schools over the measurement occasions. The lmer function in lme4 R package (Bates, Maechler, Bolker, Walker, 2015) used to assess examined models allows crossed random effects, and therefore students and teachers are modeled to flexibility switch between schools over measurement occasions, so long as all groupings are unique in a given measurement time. The support lmttest R package (Hothorn, Zeileis, Farebrother, Cummins, Millo, & Mitchell, 2015) was used to compute approximate degrees of freedom and p-values.

With regard to the early literacy sample, 4744 observations across three measurement occasions defined a student's growth trajectory. The following breakdown of data points was used: 1903 observations in grade K (students assessed in April 2014), 1685 observations in grade 1 (students assessed in April 2015) and 1156 observations in grade 2 (students assessed in April 2016). The fewer number of observations recorded in grade 2 is due to the facet that the school district did not measure early literacy achievement for all students in grade 2. In terms of mathematics sample, the growth trajectory included 4672 observations with 1410 observations in grade 2 (students assessed in April 2014), 1682 observations in grade 3 (students assessed in April 2015) and 1580

observations in grade 4 (students assessed in April 2016). The growth trajectory was assumed to be linear (a straight-line), given only three measurement opportunities.

The following time-varying variables were included in the growth equation: student grade minus 1 (levels: -1, 0, 1) for early literacy data and student grade minus 3 (levels: -1, 0, 1) for mathematics data, retained status (levels: 1 for a student retained in a grade in a given measurement year or otherwise 0), intervention and carry-over. Intervention was coded as 1 = student encounters a program teacher in a given measurement year or otherwise 0. A program teacher was defined as one who had participated in a program (summer institute) in any year(s) prior to the student's given measurement occasion. For example, a student assessed in April 2016 encountered a program teacher who had received a [insert program name] training in June 2013 and/or June 2014 and/or June 2015. The number of times a teacher received an intervention and how distant teacher's participation in a summer institute program was relative to a given student's measurement occasion was not specified in the model. Most program teachers, however, participated in summer institute interventions in 2014 and/or 2015 with the following breakdown of number of teachers' participating: 21 teachers in 2013 (pilot year), 127 in 2014, and 114 in 2015. Therefore, teachers' participation was relatively recent to students' measurement occasions. A carry-over effect was coded as 1 if a student encountered a program teacher in prior measurement occasions (up to two possible) or otherwise 0. The carry-over effect was conceptualized as an over and above effect of a student having a program teacher in a given measurement occasion.

Measurement occasions used in the model to assess students' growth were crossed between the following groups: students ($n = 2504$ and $n = 2169$), teachers ($n = 315$ and $n = 308$) and schools ($n = 41$ and $n = 42$), for early literacy and mathematics samples ($n = 41$ and $n = 41$), respectively. The growth-equation intercept π_{0jkl} was modeled to randomly vary as a function of particular students (j) and teachers (k) as well as schools (l) and the partial slope π_{1jlk} for grade (growth) variable were randomly varying as a function of teachers (k) and schools (l) for the mathematics model and as a function of schools (l) for the early literacy model.

The variability around the mean status θ_0 parameter among students, teachers and schools are denoted by b_{00} , c_{00} and d_{00} respectively. The variability in the θ_1 growth parameter among teachers (mathematics sample only) and schools are denoted c_{10} and d_{10} respectively. The student growth partial slopes for retained status, intervention, and carry-over effects were specified as nonrandom across groups (students/teachers/schools). Student-level variables incorporated the following predictors: gender, minority status and grand-mean centered pre-test to model student-level variability (amount of random variance) in the mean achievement and the mean learning rate. In order to assess the effect of these student-level variables on the mean learning growth, the following interactions were included in the model: gender*growth (measurement occasions), minority status*growth and grand-mean centered pre-test*growth. All student-level predictors were specified as nonrandom. Fall 2013 scaled scores for served as pre-test measures. Because of the transient nature of the students in the examined school district, 601 or 24.0% and 759 or 35.0% of baseline scores were not available for the early literacy and mathematics samples, respectively. The outcome variables were STAR Rasch model-scaled standardized composite achievement scores for early literacy and mathematics.

Imputation of Missing Baseline Data. Multiple imputation (MI) was performed to estimate missing values with the use of *pan* (Zhao & Schafer, 2018) and *mitml* (Grund, Robitzsch, & Lüdtke, 2018) R packages (R Core Team, 2018) using the multivariate empty model. The basic idea of MI is to

replace missing values with an estimate that is based on the observed data and a statistical model (the imputation model).

Findings

Fixed Effects for STAR Early Literacy Outcome Measure. The mean model predicted student achievement or grand-intercept value of 724.48 expressed as θ_0 , $\delta 000$ (see Table 1) represented a minority female in Spring 2015 (grade 1) who was not retained and did not have a program teacher in the measurement year or/and any prior years (carry over effect), controlling for a STAR Mathematics Fall 2013 grand-mean centered pretest score measure. Statistically significant results were observed for gender denoted as $\delta 010$ with males reporting a 9.08 lower mean achievement than females. Non-minority students reported a statistically significant 9.12 higher mean value than minorities ($\delta 020$). In addition a statistically significant effect was observed for grand-mean centered pretest scores, denoted as $\delta 030$, with students who were 10 points higher pre-test measure having a 4.2 points higher outcome measure. All of the above effects were controlling for the effects of all other variables in the model, a *ceteris paribus* rule (given everything equal) applies.

Table 1. Summary of Pooled Model Across 100 Imputed Datasets for STAR Early Literacy Achievement Data – Measurements Nested in Students and Crossed by Teachers and Schools

Fixed Effect	β	SE β	t-ratio	Approx.	p
Model for mean achievement, θ_0					
Mean achievement, θ_0 , $\delta 000$	724.48	3.55	204.03	274661	< .001
Gender, $\delta 010$	-9.08	2.45	-3.71	124443	< .001
Minority status, $\delta 020$	9.12	2.58	3.54	80413	< .001
Pre-test (grand-mean cent.), $\delta 030$	9.12	2.58	3.54	80413	< .001
Model for mean learning curve, θ_1					
Mean learning curve θ_1 , $\delta 100$	59.32	3.76	15.78	291225	< .001
Gender, $\delta 110$	-6.77	2.46	-2.76	704793	.006
Minority status, $\delta 120$	3.77	2.75	1.37	406255	.171
Pre-test (grand-mean cent.), $\delta 130$	0.42	0.02	24.94	2787	< .001
Model for retained status, θ_2					
Retained status, θ_2 , $\delta 200$	-14.66	4.70	-3.12	16633	.002
Model for intervention, θ_3					
Intervention, θ_3 , $\delta 300$	16.12	5.93	2.72	1473256	.007
Model for carry over, θ_4					
Carry over, θ_4 , $\delta 400$	4.61	4.97	0.93	400112	.354

With respect to the growth curve, a statistically significant average 59.32 points year-over-year increase (learning rate) in student achievement measure, expressed as θ_1 , $\delta 100$, was observed.. This average learning rate is, again, estimated for a minority female in Spring 2015 (grade 1) who was not retained and did not have a program teacher in the measurement year or/and any prior years, controlling for a grand-mean centered pretest measure. Females outpaced the growth of males by 6.77 units ($\delta 110$), and this result was statistically significant. A minority status effect on the mean learning curve, expressed as $\delta 120$, was not statistically significant. The effect of the grand-mean centered pretest measure was statistically significant with students who were 10 points higher on the pre-test measure having a 1.7 point slower growth ($\delta 130$).

A student who was retained in a given year was observed to have a statistically significant 14.66 slower growth ($\delta 200$) as opposed to a non-retained student. Most importantly, the effect of a time-varying intervention variable expressed as $\delta 300$ was statistically significant. The model estimated 16.12 points advantage to the learning curve as a function of a student having a program teacher

in a given measurement year, again, controlling for all other variables in the model ($\delta 300$). This intervention effect corresponds to 2.5 months developmental advantage for students who had a program teacher(s) over students who did not have a [insert program name] teacher(s). The carry over effect on the learning curve ($\delta 400$) was not statistically significant.

Random Effects for STAR Early Literacy Outcome Measure. The results for random effects in the mean intercept value for the early literacy achievement data are summarized in Table 2. Student accounted for 58.0%, teachers accounted for 32.4% and schools explained 9.6% of variance in random intercept values (mean achievement) in the unconditional model. Student and teacher variance in random growth slope were not estimated due to model convergence problems.

Table 2. Summary of Variance Components for Unconditional and Fitted Pooled Models (Samples = 100) for STAR Early Literacy Data

Source	Unconditional-model				Fitted-model			
	Intercept Value	%	Growth rate Value	%	Intercept Value	%	Growth rate Value	%
Temporal	3749.5							
Student	2485.3	58.0%			1265.3	48.1%		
Teacher	1390.1	32.4%	NA		1325.7	50.4%	NA	
School	411.5	9.6%	91.9	100.0%	41.5	1.6%	105.9	100.0%

Fixed Effects for STAR Mathematics Outcome Measure. The mean model predicted student achievement or grand-intercept value of 558.54 expressed as θ_0 , $\delta 000$ (see Table 3) represented a minority female in Spring 2015 (grade 3) who was not retained and did not have a program teacher in the measurement year or/and any prior years (carry over effect), controlling for a Fall 2013 grand-mean centered pretest STAR Mathematics score measure. The effect for gender, denoted as $\delta 010$, was not statistically significant in the mathematics sample. There was a statistically significant advantage for non-minority students ($\delta 020$) who outpaced the non-minorities by 7.66 points. In addition, a statistically significant effect was observed for grand-mean centered pretest scores, denoted as $\delta 030$, with students who were 10 points higher on the pre-test measure having a 6.3 points higher outcome measure.

Table 3. Summary of Pooled Model Across 100 Imputed Datasets for STAR Mathematics Achievement Data – Measurements Nested in Students and Crossed by Teachers and Schools

Fixed Effect	β	SE β	t-ratio	Approx.	p
Model for mean achievement, θ_0					
Mean achievement, θ_0 , $\delta 000$	558.54	4.57	122.30	96985.03	< .001
Gender, $\delta 010$	1.28	2.44	0.52	8702.38	.601
Minority status, $\delta 020$	7.66	2.51	3.05	5682.29	.002
Pre-test (grand-mean cent.), $\delta 030$	0.63	0.02	40.31	3210.26	< .001
Model for mean learning curve, θ_1					
Mean learning curve θ_1 , $\delta 100$	68.86	4.14	16.63	159468.73	< .001
Gender, $\delta 110$	2.12	1.93	1.10	24842.39	.272
Minority status, $\delta 120$	-3.61	2.22	-1.63	21536.30	.104
Pre-test (grand-mean cent.), $\delta 130$	-0.05	0.01	-4.14	14635.89	< .001
Model for retained status, θ_2					
Retained status, θ_2 , $\delta 200$	-18.30	10.43	-1.76	3107.44	.079
Model for intervention, θ_3					
Intervention, θ_3 , $\delta 300$	14.46	7.25	2.00	46189.66	.046
Model for carry over, θ_4					
Carry over, θ_4 , $\delta 400$	6.13	6.61	0.93	1363.46	.354

With respect to the growth curve, a statistically significant 68.86 points year-over-year increase (learning rate) in student achievement measure, denoted as θ_1 , δ_{100} , was observed. This average learning rate is, again, estimated for a minority female who was not retained in a grade and did not have a program teacher in the measurement year or/and any prior years, controlling for a grand-mean centered pretest measure. The effect of gender on the mean learning curve was not statistically significant (δ_{110}). The minority students outgrew the non-minorities by 3.69 points (δ_{120}), and this effect was statistically significant. The effect of the grand-mean centered pretest measure was statistically significant with students who were 10 points higher on the pre-test measure experiencing a 0.5 point lower growth (δ_{130}).

A student who was retained in a given year was observed to have a 14.46 slower growth (δ_{200}) as opposed to a non-retained student, but this result was not statistically significant for the mathematics sample. Most importantly, the effect of a time-varying intervention variable, expressed as δ_{300} , was statistically significant. The model estimated 14.46 points increase to the learning curve as a function of a student having a program teacher in a given measurement year, again, controlling for all other variables in the model (δ_{300}). This intervention effect corresponds to 1.9 months developmental advantage for students who had a program teacher(s) over students who did not have a [insert program name] teacher(s). The carry over effect on the learning curve (δ_{400}) was not statistically significant meaning that there was not a statistically significant added effect of having more than one year with a [insert program name] teacher.

Random Effects for STAR Mathematics Outcome Measure. The results for random effects for the early literacy achievement data are summarized in Table 4. Student accounted for 60.4%, teachers accounted for 28.1% and schools explained 11.5% of variance in random intercept values (mean achievement) in the unconditional model. With respect to the variance in random slopes (mean achievement growth), teachers accounted for 93.0% and schools accounted for 7.0% of variance in random growth slopes values; student random-slope variation was not modeled.

Table 4. Summary of Variance Components for Unconditional and Fitted Pooled Models (Samples = 100) for STAR Mathematics Data

Source	Unconditional-model		Growth rate		Fitted-model		Growth rate	
	Intercept				Intercept			
	Value	%	Value	%	Value	%	Value	%
Temporal	1983.2							
Student	4141.8	60.4%			1628.4	53.1%		
Teacher	1927.0	28.1%	1834.6	93.0%	1103.7	36.0%	1357.2	94.4%
School	784.9	11.5%	138.3	7.0%	336.3	11.0%	80.9	5.6%

Conclusions

These findings provide evidence that early science learning can impact later achievement. Our discussion will focus on future research and implications for policy, school administrators, teacher educators and teachers. Particular focus will be on the ability of science instruction in early childhood to impact literacy and mathematics, which persists as students progress to middle school.

References

- Alexander, J. M., Johnson, K. E., & Kelley, K. (2012). Longitudinal analysis of the relations between opportunities to learn about science and the development of interests related to science. *Science Education*, 96(5), 763–786.

- Allen, L. & Kelly, B. B. (Eds.). (2015). *Transforming the Workforce for Children Birth Through Age 8: A Unifying Foundation*. National Academies Press.
- Author (2016).
- Author (2017).
- Bates, D., Maechler, M., Bolker, B., Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, 67(1), 1–48.
- Brennerman, K., Stevenson-Boyd, J., & Frede, E. C. (2009). *Math and Science in Preschool: Policies and Practice*. Policy Brief No. 19, National Institute for Early Education Research.
- Bullock, M., Gelman, R., & Baillargeon, R. (1982). The development of causal reasoning. In W. J. Friedman (Ed.), *The developmental psychology of time* (pp. 209–254). New York: Academic Press.
- Capobianco, B. M., Yu, J. H., & French, B. F. (2015). Effects of engineering design-based science on elementary school science students' engineering identity development across gender and grade. *Research in Science Education*, 45(2), 275–292.
- Carnegie Institute. (2009). *The Opportunity Equation: Transforming Mathematics and Science Education for Citizenship and the Global Economy*. Retrieved from https://www.carnegie.org/media/filer_public/80/c8/80c8a7bc-c7ab-4f49-847d-1e2966f4dd97/ccny_report_2009_opportunityequation.pdf
- Cervetti, G. N., Barber, J., Dorph, R., Pearson, P. D., & Goldschmidt, P. G. (2012). The impact of an integrated approach to science and literacy in elementary school classrooms. *Journal of Research in Science Teaching*, 49, 631–658.
- Counsell, S., Escalada, L., Geiken, R., Sander, M., Uhlenberg, J., Van Meeteren, B. D., Yoshizawa, S., and Zan, B. (2016). *STEM Learning with Young Children: Inquiry Teaching with Ramps and Pathways*, New York: Teachers College Press, 2016.
- Crisafi, M. A. & Brown, A. L. (1986). Analogical transfer in very young children: Combining two separately learned solutions to reach a goal. *Child Development*, 57(4), 953–968.
- Danish, J. A. & Phelps, D. (2011). Representational practices by the numbers: How Kindergarten and first-grade students create, evaluate, and modify their science representations. *International Journal of Science Education*, 33(15), 2069–2094.
- French, L. (2004). Science as the center of a coherent, integrated early childhood curriculum. *Early Childhood Research Quarterly*, 19(1), 138–149.
- French, L. A. (1988). The development of children's understanding of “because” and “so”. *Journal of Experimental Child Psychology*, 45(2), 262–279.
- Glynn, S. M. & Muth, K. D. (1994). Reading and writing to learn science: Achieving scientific literacy. *Journal of research in science teaching*, 31(9), 1057–1073.
- Grund, S., Lüdtke, O., & Robitzsch, A. (2016). Multiple imputation of multilevel missing data: An introduction to the R package pan. *Sage Open*, 6(4). URL: <https://doi.org/10.1177/2158244016668220>. Last accessed, January 19, 2019.
- Grund, S., Robitzsch, A., & Luedtke, O. (2018). mitml: Tools for multiple
- Guthrie, J. T., Anderson, E., Alao, S., & Rinehart, J. (1999). Influences of concept-oriented reading instruction on strategy use and conceptual learning from text. *Elementary School Journal*, 99, 343–366.
- Hapgood, S. & Palincsar, A.S. (2007). Where Literacy and Science Intersect. *Education Leadership*, 64 (4), 56-60.
- Hegedus, T. & Carlone, H. (2015). You and your students as green engineers: Using creativity and everyday materials to design and improve a solar oven, *Science and Children*, 52(9), 74-81.
- Holliday, W. G., Yore, L. D., & Alvermann, D. E. (1994). The reading–science learning–writing connection: Breakthroughs, barriers, and promises. *Journal of Research in Science Teaching*, 31(9), 877-893.
- Hothorn, T., Zeileis, A., Farebrother, R. W., Cummins, C., Millo, G., & Mitchell, D. (2015). lmerTest: Testing linear regression models. R package version 0.9-34, URL <http://cran.r-project.org/web/packages/lmerTest>.
- imputation in multilevel modeling. R package version 0.3-6. URL: <https://cran.r-project.org/web/packages/mitml/index.html>. Last accessed January 19, 2019.
- La Paro, K. M. & Pianta, R. C. (2003). *CLASS: Classroom assessment scoring system*. Charlottesville: University of Virginia.
- Maltese, A. & Tai, R. (2010). Eyeballs in the fridge: Sources of early interest in science. *International Journal of Science Education*, 32(5), 669–685.
- Metz, K. E. (2008). Narrowing the gulf between the practices of science and the elementary school science classroom. *Elementary School Journal*, 109(2), 138–161.
- Michaels, S., Shouse, A., & Schweinburger, H. (2007). *Ready, set, science!: Putting research to work in k-8 science classrooms*. Washington, DC: National Academies Press.

- Morgan, P. L., Farkas, G., Hillemeier, M. M., Maczuga, S. (2016). Science achievement gaps begin very early, persist, and are largely explained by modifiable factors. *Educational Researcher*, Advance online publication. doi: 10.3102/0013189X16633182
- National Academy of Sciences, National Academy of Engineering, and Institute of Medicine. (2007). *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/11463>.
- National Academy of Sciences, National Academy of Engineering, and Institute of Medicine. (2010). *Rising Above the Gathering Storm, Revisited: Rapidly Approaching Category 5*. Washington, DC: The National Academies Press. doi:10.17226/12999.
- National Research Council (2012). *A framework for K-12 science education: Practices, crosscutting concepts, and core ideas*. Washington, DC: The National Academies Press.
- National Research Council. (2007). *Taking science to school: Learning and teaching science in grades K-8*. Washington, DC: The National Academies Press.
- National Research Council. (2012). *A framework for K-12 science education: Practices, crosscutting concepts, and core ideas*. Washington, DC: The National Academies Press.
- National Science Education Standards: An Overview. (1996). Washington, DC: The National Academies Press. doi:10.17226/4962
- National Science Teachers Association. (2014). NSTA Position Statement: Early Childhood Science Education. Retrieved from <http://www.nsta.org/about/positions/earlychildhood.aspx>.
- New America (2016). <http://www.newamerica.org/education-policy/events/fostering-stem-trajectories/>.
- NGSS Lead States. (2013). *Next Generation Science Standards: For states, by states*. Washington, DC: National Academies Press. www.nextgenscience.org/next-generation-science-standards.
- Nippold, M. A. & Sullivan, M. P. (1987). Verbal and perceptual analogical reasoning and proportional metaphor comprehension in young children. 30(3), 367–376.
- Ohio Department of Education. (2012, October). Early learning and development standards. Retrieved from <http://education.ohio.gov/Topics/Early-Learning/Early-Learning-Content-Standards>
- Palincsar, A. S. & Magnusson, S. J. (2001). The interplay of firsthand and text-based investigations to model and support the development of scientific knowledge and reasoning. In S. Carver & D. Klahr (Eds.), *Cognition and instruction: Twenty-five years of progress* (pp. 151–194). Mahwah, NJ: Lawrence Erlbaum.
- Patrick, H., Mantzicopoulos, P., Samarapungavan, A., & French, B. F. (2008). Patterns of young children's motivation for science and teacher-child relationships. *The Journal of Experimental Education*, 76(2), 121–144.
- Penner, D. E., Giles, N. D., Lehrer, R., & Schauble, L. (1997). Building functional models: Designing an elbow. *Journal of Research in Science Teaching*, 34(2), 125–143.
- R Core Team (2018). R: A language and environment for statistical computing. R Foundation For Statistical Computing, Vienna, Austria. URL: <https://www.R-project.org>.
- Romance, N. R. & Vitale, M. R. (1992). A curriculum strategy that expands time for in-depth elementary science instruction by using science-based reading strategies: Effects of a year-long study in grade four. *Journal of Research in Science Teaching*, 29(6), 545–554.
- Romance, N. R. & Vitale, M. R. (2001). Evolution of a model for teaching in-depth science in elementary schools: Longitudinal findings and research implications. *International Journal of Science Education*, 23, 373–404.
- Romance, N. R. & Vitale, M. R. (2011). A research-based instructional model for integrating meaningful learning in elementary science and reading comprehension: Implications for policy and practice. In N. L. Stein & S. W. Raudenbush (Eds.), *Developmental cognitive science goes to school* (pp. 127–142). New York, NY: Routledge.
- Romance, N. R. & Vitale, M. R. (2012). Expanding the role of K-5 science instruction in educational reform: Implications of an interdisciplinary model for integrating science and reading. *School Science and Mathematics*, 112(8), 506–515.
- Ruffman, T., Perner, J., Olson, D. R., & Doherty, M. (1993). Reflecting on scientific thinking: Children's understanding of the hypothesis-evidence relation. *Child Development*, 64, 1617–1636.
- Rutherford, F. J. & Ahlgren, A. (1991). *Science for all Americans*. New York, NY: Oxford University Press.
- Samuels, C. (April 21, 2016). Early-Childhood STEM programs take root at White House event. *Edweek*. Retrieved online at http://blogs.edweek.org/edweek/early_years/2016/04/early-childhood_stem_programs_take_root_at_white_house_event.html.
- Sarama, J., Lange, A., Clements, D. H., & Wolfe, C. B. (2012). The impacts of an early mathematics curriculum on emerging literacy and language. *Early Childhood Research Quarterly*, 27, 489–502. doi: 10.1016/j.ecresq.2011.12.002

- Shymansky, J. A., Yore, L. D., & Hand, B. M. (2000). Empowering families in hands-on science programs. *School Science and Mathematics*, 100, 48–58.
- Tai, R. H., Liu, C., Maltese, A. V., & Fan, X. (2006). Planning early for careers in science. *Science*, 312(5777), 1143–1144.
- Tank, K.M., Pettis, C., Moore, T.J., & Fehr, A. (2013). Designing animal habitats with kindergartners: Hamsters, picture books, and engineering design. *Science and Children*, 50(9), 59–63. *Teaching and Teacher Education*, 24(2), 244–276.
- Varelas, M. & Pappas, C. C. (2006). Intertextuality in read-alouds of integrated science-literacy units in primary classrooms: Opportunities for the development of thought and language. *Cognition and Instruction*, 24, 211–259.
- Varelas, M., Pieper, L., Arsenault, A., Pappas, C. C., & Keblawe-Shamah, N. (2014). How science texts and hands-on explorations facilitate meaning making: Learning from Latina/o third graders. *Journal of Research in Science Teaching*, 51(10), 1246–1274.
- Vukovic, R.K. & Lesaux, N.K. (2013). The language of mathematics: Investigating the ways language counts for children’s mathematical development. *Journal of Experimental Child Psychology*, 115(2), 227–244.
- Yore, L. D., Hand, B., Goldman, S. R., Hildebrand, G. M., Osborne, J. F., Treagust, D. F., & Wallace, C. S. (2004). New directions in language and science education research. *Reading Research Quarterly*, 39, 347–352.
- Zhao, J. H., & Schafer, J. L. (2018). Package ‘pan’: Multiple imputation for multivariate panel or clustered data. R package version 1.6. URL: <https://cran.r-project.org/web/packages/pan/pan.pdf> Last access January 19, 2019.

Making Connections Between Learning and Leading for Principals in Small Districts and Rural Areas

Glady Van Harpen

The College of Education and Human Services
University of Wisconsin Oshkosh, United States

Abstract

This mixed methods study examined and described the phenomenon of how secondary school leaders, in small school districts and rural areas, connect to information and knowledge in order to further their professional learning. Additionally, the study explored how and to what extent technology, informal communities of practice (iCoPs), and personal learning networks (PLNs) have influenced professional learning in small school districts, which are geographically isolated from large urban centers and institutions of higher education. The study sheds new light on how secondary school principals, in the context of small and rural areas, access and utilize professional learning in order to further their leadership development. Key findings also include school leaders' reliance on relationships, established through access to local, state, and national professional affiliations, for answering questions and gaining knowledge.

Keywords: secondary school principals, school leaders, rural schools, communities of practice, personal learning networks, networking, professional learning

Introduction

The purpose of this study was to examine and describe the phenomenon of how secondary school leaders in small school districts and rural areas connect to information and knowledge in order to further their professional learning. The study explored how and to what extent technology has influenced these leaders' professional learning in small school districts, which are geographically isolated from large urban centers and institutions of higher education. Additionally, the study examined how and to what extent these school leaders perceived and accessed fellow educators, private and professional connections, and institutions of higher education, as informal communities of practice (iCoPs) and personal learning networks (PLNs), to further professional learning.

In the United States (US) school districts are categorized based on population and geographic locations (NCES, 2012). The districts are further classified by locales and their proximity to urban areas. The result is 12 locale categories based on population: city-large, city-midsize, city-small, suburban-large, suburban-midsize, suburban-small, town-fringe, town-distant, town-remote, rural-fringe, rural-distant, and rural-remote (Provasnik, Kewal Ramani, Coleman, Gilbertson, Herring, & Xie, 2007). Therefore, small and rural school districts in this study are those located in areas, which not only have fewer inhabitants, but are not in close proximity to urban areas.

Furthermore, in order to better understand the nature and context of the study it is important to note that in the United States (US) secondary school leaders may also be referred to as middle level or high school principals, meaning they are heads of schools, which contain grade levels between six and 12. Principals in small districts and rural areas may serve multiple school levels,

and have multiple administrative titles. The following fictitious scenario illustrates the types of tasks school principals in these areas face daily.

Imagine you are the sole principal of Smalltown High School, in Anywhere, USA. It is 8:30 a.m. and you have already taken a 6 a.m. phone call from the bus company regarding the football trip scheduled for this afternoon. Next, you facilitated a 7 a.m. curriculum meeting. Back in your office, you have taken four in-house calls from teachers regarding computer server issues. Additionally, you replied to three text messages from your superintendent, and one from your teenage daughter asking for money. You are looking over a lesson plan, for your 10 a.m. teacher observation, when you are interrupted by an angry parent wanting to speak with you regarding students' viewing of a controversial video clip shown by the science teacher. As the parent is ushered into the office, you notice two students are being escorted into the office, following a fight.

This hypothetical scenario illustrates the unpredictable and complex nature of leadership for secondary school principals, especially in small districts and rural areas.

For US secondary school principals, leadership titles and roles can be defined by the employing school district, or by the type of license granted by their state. The role of a secondary school leader is situational (Hersey & Blanchard, 1988; Marczynski & Gates, 2013) and contextual. In this complex role, school leaders are responsible a variety of tasks and duties ranging from staffing to public relations (Davis, Darling-Hammond, LaPointe, & Myerson, 2005). In addition to the managerial responsibilities associated with their jobs, school leaders are faced with the challenges associated with continued learning and professional development. School leaders are tasked with keeping informed and up-to-date on a range of professional development topics including: curriculum, educator effectiveness, legal questions, social issues, and technology, just to name a few. In order to access professional development opportunities, school leaders need to choose between attending face-to-face (F2F) or online courses at universities, traveling to regional, state, or national professional association conferences, utilizing synchronous or asynchronous online computer training, or obtaining literary resources online or in print.

It is also important to note that leaders of urban and rural districts face challenges and issues unique to their geographic and cultural settings. Large populations influence urban school districts with greater ethnic and racial diversity than rural areas (Kincheloe, 2010). Small or rural school districts have lower populations, but often serve larger geographic areas than urban schools. Additionally, school leaders in small districts and rural areas are often farther from colleges, universities, and urban centers, which offer professional development opportunities. Because of these urban and rural differences, leadership development and continuing education requires professional learning strategies and applications, which are unique and specific to the needs of the individual school leader.

For school leaders working in rural areas or small districts, which are not in close proximity to urban areas, access to professional learning and continuing education can be challenging. There are multiple reasons for this problem. First, in small districts and rural areas school principals typically work without assistants and/or other administrators. In this solo role these principals are responsible for managerial, curricular, and supervision without backup personnel to fill in when they are gone. Consequently, if a school leader in this circumstance wants to attend a workshop, conference, or course, they risk leaving the school without an acting administrator. Second, since many of these schools are located an hour or more from urban areas, attendance at colleges and universities, and participation in meetings with professional affiliations are limited. A third factor

is proximity to other schools, which limits personal networking with other school leaders. Therefore, the study is important to understand how secondary school leaders in small school districts and rural areas connect to information and knowledge in order to further their professional learning.

Literature Review

Continued learning and professional development is an expectation of most professional occupations. In the field of education there are specific programs designed not only to prepare school leaders for licensure, but to provide continued learning and professional development. In the 1980s Daresh (1986) envisioned that principal preparation in this century would be self-directed. Since the aim of this study was to understand how school leaders connect to and utilize information in order to gain knowledge and further personal and professional learning it was important to understand the role of self-directed learning. In order to conceptualize the study it was important to review literature in the following areas: learning theories, including adult learning, technology and school leaders, as well as school leader preparation.

The study drew upon the social learning theories of the last century and focused on three key theoretical and literary sources. First, the work and social cognitive theory of Bandura (1977; 1986; 2001) was used to explain knowledge acquisition and learning through communication and observation in a social construct. Second, the work of Brown and Duguid (1991), as well as, Lave and Wenger (1991) was used describe situational learning, which comes through the context of related tasks and/or relevant activities among individuals within groups. In addition to situational learning the concept of “communities of practice” (Lave & Wenger, p. 29) was used to describe groups of individuals who share common work-related or life experiences. Within a work setting, a community of practice (CoP) may be either formal or informal. A group or organization can formally create a CoP, or it can exist as an informal community of practice (iCoP). In the CoP or iCoP members utilize the knowledge and experience of one another to share information, seek solutions, answer questions, or gain knowledge from individuals with relevant skills and experience. The third source of social learning theory informing the study explains the role of a personal learning network (Digenti, 1999; Warlick, 2009). Different from CoPs, or iCoPs, personal learning networks (PLNs) describe the resources, personal or social, which are accessed by individuals to gain knowledge, answer questions, or learn skills, but are not necessarily derived from a common group or organization.

Professional learning and learning for adults was also explored through the work of Knowles (1970) andragogy, Mezirow's (1978; 1991; 1996) transformational learning, and also the concept of incidental and informal learning (Marsick & Watkins, 1990). The different perspectives of learning helped to define individual and group learning, and well as identify the methods and modes of communication in the learning process. Therefore, the literature on learning theories helps to understand knowledge access and creation in the school leadership field.

A second area of literature review focused on technology and school leadership. It is well known that technology is an important part of schools in the twenty-first century; however, training and preparation for school leaders in this area may be lacking (Creighton, 2003; McLeod & Lehmann, 2011, Richardson, Flora, & Bathon, 2013). More and more courses in higher education are being offered online, yet there is little research on how these courses specifically impact school leaders. Additionally, national organizations, such as the National Association of Secondary School Principals (NASSP) spend millions of dollars on professional development for school leaders

(CliftonLarsonAllen LLP, 2013), however there is little data to show the return on investment in terms of how impactful it is for practitioners.

Leadership preparation, principal certification, induction, and practice were also explored for this study in order to conceptualize and contextualize school leadership. As identified by Leithwood, Jantzi, and Steinbach (1999) there are multiple concepts of school leadership. According to Leithwood, Seashore Lewis, Anderson, and Wahlstrom (2004) the descriptors given to school administrators are defined in terms of “organizational context” (p. 10). Regarding the conditions of principal preparation and certification much of the recent literature has shifted the role and focus of school administrators from building managers to school leaders (Grogan & Andrews, 2002; Hallinger, 2005). The literature also focuses on the function of school leadership in school improvement and increasing student achievement.

Methods

In order to understand the phenomena of the study a mixed methods parallel convergent design was used (Creswell & Plano Clark, 2011). This method and design were chosen in order to answer the quantitative and qualitative research questions related to the study. Additionally, this method and design was chosen to gain a deeper understanding of the phenomena through concurrently gathering data in the collection phase and mixing them in the results. The quantitative research questions were:

- To what degree do secondary school leaders in small districts and rural areas utilize technology devices to further their professional learning?
- To what degree do secondary school leaders in small districts and rural areas connect online with other educators, private or professional associations, and institutions of higher education to further their professional learning?
- To what degree do secondary school leaders, in small districts and rural areas, connect face-to-face (F2F) with other educators, private or professional associations, and institutions of higher education to further their professional learning?

Sample

All of the secondary school principals (N=70) from a specific geographic region were invited to participate in the study. The geographic region was unique since it included fifteen counties and encompassed more than 16, 000 square miles. The schools in the study were located in areas with populations which ranged from unincorporated to 23,000. All of the schools in the study had enrollments under 1000 students. The study area was within a single US state and all participants were secondary school leaders who were members of one professional state affiliation. Furthermore, the study was unique since there is only one regional university where participants may take preparatory or continuing educational leadership courses.

Data Collection

A researcher-developed 40-item electronic survey instrument was used to answer the first three research questions. The School Leader Professional Learning Assessment (SLPLA) was developed based on five constructs from the review of the literature. The SLPLA survey was emailed to the study population (N = 70) of secondary school principals within pre-identified geographic area. These principals were found to have unique characteristics and commonalities

including: secondary school leadership roles, shared participation in various professional associations and organizations, and relative limited access to a single university offering courses in educational administration. A strength of the study was that all the secondary school principals in the study area were invited to participate. An additional strength was, the number of respondents $n = 46$, giving a response rate of 65.7%. Personal contact with all of the school districts in the study was assumed to increase participation.

Data Sources

Demographic data were collected from school websites and the SLPLA survey responses. It was interesting to note that the percentages of male and female respondents approximated those of a national survey of secondary school principals (MetLife, 2012). Descriptive statistics were also generated for age, school enrollment, level of education, position, and years in school administration. In the study 60.9% of respondents self-identified as “principal” and 39.1% of respondents identified as having multiple titles including “teacher” and/or “superintendent”.

The SLPLA questions were grouped into five constructs in order to assess the independent variables. The five constructs included: technology devices (TD), online resources (OLR), print media (PM), online connections (OLCx), and face- to-face (F2F) connections. A four-point Likert-type scale was used to measure values related to importance and frequency of use. Statistical analyses were used in order to compare the constructs with professional learning. There were several areas of significance, such as use of computer and use of smart phones for professional learning; and some areas of ambiguity such as using a tablet device.

Qualitative data were utilized in order to elicit participant responses and to provide a narrative for better understanding of the research. The open-ended qualitative research questions were developed in order to explore the phenomenon of how a small sample of secondary school leaders in geographically isolated areas use personal and professional learning networks for their own professional learning. The related qualitative questions guiding the study were:

- Who and what resources comprise informal communities of practice (iCoPs) and/or personal learning networks (PLNs) of secondary school leaders in small districts and rural areas?
- How does membership in informal communities of practice (iCoPs) and/or personal learning networks (PLNs) inform the acquisition knowledge, skills, and influence the professional learning of secondary school leaders in small school districts and rural areas?
- What are the preferred methods of accessing professional learning for secondary school leaders in small school districts and rural areas?
- What are some successes and challenges experienced by secondary school leaders utilizing informal communities of practice (iCoPs) and/or personal learning networks (PLNs) for their professional development small school districts and rural areas?

A sample focus group ($n = 5$), and individual interviewees ($n = 4$) were purposefully selected to collect qualitative data and answer the remaining research questions. Participation in the online SLPLA survey was not a requirement for participation in the focus group and/or interviews, however all of the participants were members of the original sample population ($N=70$). The researcher met face-to face with the focus group and individual interviewees.

Findings

Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS). The research question hypotheses were tested using a one sample t-Test. These included utilization of technology devices (TD), connecting online (OLCx) and online resources (OLR), as well as connecting face-to-face (F2F). For each of the null hypothesis was rejected at .000 using $p \leq 0.05$ (5%). Additional tests, including Cronbach's alpha, and a Pearson's Correlation Matrix were conducted. Question one explored the degree to which school leaders used technology devices (TD) to further their professional learning. The construct was further sub-divided in order to define technology devices which included: laptop or desktop computers (TD1), smartphones (TD2), and tablets (TD3). No effort was made to distinguish between operating systems or commercial brands. Figure 1 depicts the importance of TD and the subconstructs. These findings indicate that TD are used for school leader learning.

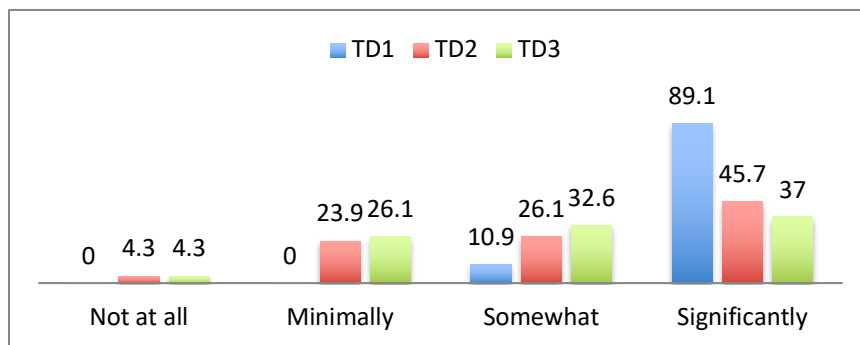


Figure 1. Importance of technology devices grouped by sub-construct

School leaders' online connections (OLCx) with others, including other professionals, professional association, and institutions of higher education were assessed in responding to 14 items of the SLPLA. A Pearson's Correlation matrix was used to analyze the responses and found several items to have a weak correlation, however, most had a positive association. The OLCx construct was further divided into two subconstructs. Eleven items were analyzed regarding the method and importance of OLCx for professional learning shown in Figure 2.

	Importance of OLCx								Mean	Std. Dev.
	Not at all Freq.	%	Minimally Freq.	%	Somewhat Freq.	%	Significantly Freq.	%		
Q11—OLCx Region Admin	2	4.3	13	28.3	19	41.3	12	26.1	1.89	.849
Q12—OLCx OO Region Admin	5	10.9	10	21.7	21	45.7	10	21.7	1.78	.917
Q13—OLCx Univ. Class	9	19.6	17	37.0	11	23.9	9	19.6	1.43	1.025
Q14—OLCx Webinar	2	4.3	17	37.0	18	39.1	9	19.6	1.74	.828
Q17—OLCx Post Q's	4	8.7	12	26.1	21	45.7	9	19.6	1.76	.874
Q19—OLCx Use Twitter	22	47.8	19	41.3	3	6.5	2	4.3	.67	.790
Q20—OLCx Social Net. Sites	17	37.0	17	37.0	12	21.1	0	0	.89	.795
Q30—OLCx OO Reg. Teacher	3	6.5	32	69.6	10	21.7	1	2.2	1.20	.582
Q31—OLCx Neighbor Admin	0	0	6	13.0	30	65.2	10	21.7	2.09	.590
Q32—OLCx OO Reg. Familiar	1	2.2	24	52.2	20	43.5	1	2.2	1.46	.585
Q33—OLCx OO Reg. Stranger	8	17.4	0	0	33	71.7	5	10.9	.93	.533

Figure 2. Importance of online connections (OLCx) for professional learning

Mean scores for this construct show that online connections with other administrators, within and outside of their region, as well as neighboring administrators were important. One surprising finding was the low mean score for social networking connections, specifically the lack of Twitter use.

Overall the quantitative findings are summarized as follows:

- Males outnumbered females nearly three to one (79.9% M to 26.1% F)
- One quarter of participants were over age 44
- More than one-third identify as having multiple roles in their position
- Virtually all use technology for professional learning
- Participants prefer F2F for meetings and workshops with people they know
- There is minimal use of social media—contrary to national poll

Qualitative data were gathered through one focus group meeting and individual personal interviews in order to explore and further understand the research questions. For each meeting, an audio recording was made, and data were transcribed and then checked for accuracy. Following review of the focus group and interview transcripts, data were coded, visually analyzed, and themes were noted. A descriptive profile was created for the interviewees in order to visualize characteristics of individuals and school settings. The qualitative data were organized around these three themes including: support, access, and impact. Sub themes were assessed in terms of successes or challenges. A researcher-created word matrix was used to organize the text data. These data were then compared to quantitative findings. Similarities and differences in the data were noted.

The focus group unanimously agreed that their professional learning opportunities needed to be more focused. The majority of participants also had concerns that their state department of education needed to be more sensitive to travel and time constraints of people in areas that were not in close proximity to state-level meeting locations. This was also discussed relative to state-level meetings for professional leadership associations. Several people agreed that interactive video conferencing should be an option for state-level meetings. Two other factors noted by the focus group included cost and time to attend meetings outside of their region. These findings relate directly to the theme of access. On a positive note, the group reported that face-to-face meetings, with people from their regions provided excellent networking, sharing, and mentoring opportunities. One focus group school leader (FGSL5) stated “I think every time I go to one of those [REA Principal Group meetings] you pick up little things from your colleagues, just from the interactions, you know, that help me professionally”.

Four school leaders were individually interviewed by the researcher at their schools. The interviewees confirmed many of the findings from the SLPLA survey. For example, all of the leaders indicated they used technology devices in order to access information and gain knowledge about school-related issues. The use of technology was preferred over print media (PM). A surprising preference was the use of telephone versus email for communication. School leaders were found to be cautious about was the use of email for communication. School Leader Three (SL3) stated, “...I mean email is fine, but so much can come up in a phone conversation that you’re not going to think of. To send an email it takes so much longer, because you’re waiting for a response...To me the telephone is instant”. Another person, School Leader Four (SL4) stated that he preferred email however, “I will never email something that I cannot explain in that email....if

it's sensitive, or something I don't know how I'm going to word it, or something I don't want someone else reading, I'll make the phone call and have the discussion".

Although none of the leaders indicated having a formal mentor, they all alluded to being supported by other school leaders in their regions, especially at regional meetings when they were face-to-face. For SL3, attendance at a state level association meeting "...is a good place to make those relationships" and those relationships "taught me a lot more than my professional learning opportunities. Similar sentiments were found among all of the interviewees and members of the focus group.

Just as with the focus group, all of the leaders identified time and distance as limiting factor in attending professional learning meetings or events. School Leader One (SL1) noted that attending meetings even at the local level "to get there, it's 45 minutes, almost an hour. By the time you have an hour meeting, it's a three-hour commitment". Add to the time constraints the added expectation of multiple roles and responsibilities and the thought of leaving the building becomes challenging. School Leader Two (SL2) also shared that increased reporting was a problem stating, "...more paperwork to do the same things that, even in my career as a principal, has greatly increased." Therefore, time encapsulated all of the issues shared by the school leaders.

The qualitative phase of the study supported the assumption that the school leaders use informal communities of practice (iCoPs) and personal learning networks (PLNs) at the local and regional levels. The shared practice of school leaders is the common work situated within the concept of secondary education, regardless of enrollment. Attendance at meetings and conferences provide professional learning opportunities and acted as both formal and informal CoPs, as well as PLNs to pose questions, seek solutions, and gain knowledge specific to their situations. In addition, these principals rely on telephone and face-to-face (F2F) communication with trusted peers and consider these social connections to be part of their professional learning and mentoring experiences.

Conclusions

Educational literature is replete with leadership definitions, many of which are contextual and situational. This study focused on secondary school principals in small districts and rural areas within a unique geographic region in the US. Twenty-first century school leaders, regardless of context or situation, function within a social realm. Therefore, leadership, as defined by Kruse, (2013) "a process of social influence, which maximizes the efforts of others, towards the achievement of a goal" (para.11) provided an appropriate descriptor for the school leaders in this study. The social influence of school leaders on one another, within their specific practice, is a key component of this study and describes how they interact with one another to grow professionally.

The results of the study indicated there was significant evidence to support the quantitative research hypotheses that utilization of technology devices (TD), online connections (OLCx), and face-to-face (F2F) connections affect the professional learning of school leaders. Using qualitative methods, including a focus group and personal interviews, leader successes and challenges were identified and described using three key themes associated with school leaders' professional learning: support, access, and impact. Based on mixing the data from both phases of the study, the researcher developed a model (Figure 3) for how school leaders utilize the associated relationships within their iCoPs and PLNs to further their professional learning. The model shows that support, especially the support of the iCoPs and PLNs is the foundation for their knowledge acquisition and learning. The next level identifies the role of preferred method of access which includes

technology, but where F2F and trusted relationships are important. If support and access are in place then the learning may have an impact on the leadership and, ultimately some measurable success for the school community. Finally, all of the components of the model are encapsulated in time. Time was found to be a significant limitation for school leaders, bounding all of the elements support, access, and impact, which either constrains or promotes success and continuous personal and school improvement.

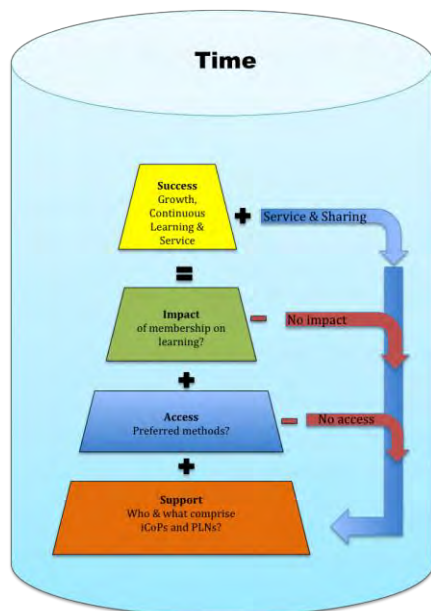


Figure 3. Model for connecting school leaders and professional learning (Van Harpen, 2014).

Based on the preceding presentation of quantitative and qualitative data generated by the study, the key findings and conclusions are summarized as follows:

- School leaders in small school districts, and rural areas, use computers and other technology devices, such as smart phone and tablets, as a means to access professional learning.
- School leaders in small school districts and rural areas connect online (OLCx), for professional learning, but to a lesser degree than in person.
- Face-to-face (F2F) connections are generally preferred by school leaders in small school districts and rural areas to connect with one another and access for the professional learning.
- The informal communities of practice (iCoPs) and personal learning networks (PLNs), although not identified as such, provide networks of support for school leaders in small school districts and rural areas.
- For school leaders in small school districts and rural areas, informal communities of practice (iCoPs) and personal learning networks (PLNs), identified as support networks for school leaders, are made up trusted colleagues, and other educational professionals, with whom they can routinely call or meet F2F.
- Trust, role-modeling, informal mentorship, and informal learning are some of the benefits to personal connections made through the support networks of informal communities of practice (iCoPs) and personal learning networks (PLNs).

- Time limitations, distance to attend functions and multiple roles are among some of the biggest challenges facing school leaders in small districts and rural areas.
- School leaders in small districts and rural areas, which are geographically isolated from large urban centers, cite a lack understanding, by state officials, as to their needs including attending meetings and professional learning.
- Learning, networking, role modeling, and the ability to question peers successfully impact the leadership of school leaders in small districts and rural areas.
- School leaders in small districts and rural areas desire more personalization of their professional learning.

Further study is needed to assess the level of impact that each construct has on professional learning for school leaders. Also, it is recommended that the School Leader Professional Learning Assessment (SLPLA) be administered to school leaders in other locales, such as urban and suburban areas, in order to compare findings and to determine if any significant differences exist for different groups. It is further recommended that this study, or similar studies, be conducted in areas outside of the US for a better global understanding of the phenomena and to increase leadership professional development among school principals. Utilizing iCoPs, PLNs, and F2F connections may be contrary to contemporary models of professional development but may provide professional growth, especially for school leaders in small districts and rural area.

Reference

- Bandura, A. (1977). *Social learning theory*. New York, NY: General Press.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (2001). Social cognitive theory of mass communication. *Media Psychology*, 3(3), 265-299.
- Brown, J. S., & Duguid, P. (1991). Organizational learning and communities of practice: toward a unified view of working, learning, and innovation. *Organization Science*, 2(1), 40-57.
- CliftonLarsonAllen. (2013, October 9). National association of secondary school principals 2013 annual report. Retrieved from http://www.principals.org/Content/158/13-307-EX_AnnualReport_2013.pdf
- Creighton, T. (2003). *The principal as technology leader*. Thousand Oaks, CA: Corwin Press, Inc.
- Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods Research* (2nd ed.). Thousand Oaks, CA: SAGE Publications.
- Davis, S., Darling-Hammond, L., LaPointe, M., & Myerson, D. (2005). *School leadership study: Developing new school principals*. The Wallace Foundation.
- Digenti, D. (1999). Collaborative Learning: A Core Capability for Organizations in the New Economy. *Reflections*, 1(2), 45-47.
- Grogan, M., & Andrews, R. (2002). Defining preparation and professional development for the future. *Educational Administration Quarterly*, 38(2), 233-256.
- Hallinger, P. (2005). Instructional leadership and the school principal: A passing fancy that refuses to go away. *Leadership and Policy in Schools*, 4(3), 221-239.
- Hersey, P., & Blanchard, K. (1988). *Management of organizational behavior: Utilizing human resources*, (5th ed.), Englewood Cliffs, NJ: Prentice Hall.
- Kincheloe, J. L. (2010). Why a book on urban education? In S. Steinberg (Ed), *19 urban questions: Teaching in the city* (2nd ed., pp. 1-28). New York, NY: Peter Lang Publishing. Retrieved from <http://www.rtinetwork.org/learn/diversity/urban-school-challenges>
- Knowles, M.S. (1970). *The modern practice of adult education: Andragogy vs. pedagogy*. Chicago, IL: Association Press/Follet.
- Kruse, K. (2013, April 09). What is leadership? *Forbes*. Retrieved from <http://www.forbes.com/sites/kevinkruse/2013/04/09/what-is-leadership/>
- Leithwood, K. A., Jantzi, D., & Steinbach, R. (1999). *Changing leadership for changing times*. Philadelphia, PA: Open University press.

- Leithwood, K.A., Seashore Lewis, K., Anderson, S. E., & Wahlstrom, K. L. (2004). How leadership influences student learning. Retrieved from <http://www.wallacefoundation.org/knowledge-center/school-leadership/key-research/Documents/How-Leadership-Influences-Student-Learning.pdf>
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. New York, NY: Cambridge University Press.
- Marsick, & Watkins, (1990).
- McLeod, S., & Lehmann, C. (2011). *What school leaders need to know about digital technologies and social media*. San Francisco, CAL Jossey-Bass.
- MetLife (2013). *The MetLife survey of the American teacher: Challenges for school leadership*. New York, NY: MetLife Inc. Retrieved from <http://www.metlife.com/about/corporate-profile/citizenship/metlife-foundation/metlife-survey-of-the-american-teacher.html>
- Mezirow, J. (1978). Perspective transformation. *Adult Education Quarterly*, 28, 100-110.
- Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco, CA: Jossey-Bass.
- Mezirow, J. (1996). Toward a learning theory of adult literacy. *Adult Basic Education*, 6(3), 115-126.
- Marczynski, J. C., & Gates, G. S. (2013). Women secondary principals in texas 1998 and 2011: Movement toward equity. *Journal of Educational Administration*, 51(5), 705-727.
- NCES (2012). *National assessment of adult literacy*. National Center for Education Statistics Retrieved from http://nces.ed.gov/naal/fr_definition.asp October 29, 2012
- Provasnik, S., Kewal Ramani, A., Coleman, M. M., Gilbertson, L., Herring, W., & Xie, Q. (2007). *Status of education in rural America (NCES 2007-040)*. National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, D.C. Retrieved from <http://nces.ed.gov/pubs2007/2007040.pdf>
- Richardson, J. W., & Flora, K., & Bathon, J. (2013). Fostering a school technology vision in school leaders. *International Journal of Educational Leadership Preparation*, 8(1), 144-160.
- Warlick, D. (2009). Grow your personal learning network: Technologies can keep you connected and help you manage information overload. *Learning and Leading with Technology*, 36(6), 12-16.

Part 11: Research Methods in Education

Assessment of Teacher Dispositions With the ETQ2: A Guided-Reflection and Rasch Model Analysis

W. Steve Lang¹, Judy R. Wilkerson², and LaSonya Moore³

^{1,3}University of South Florida, United States

²Florida Gulf Coast University, United States

Abstract

Measuring teacher dispositions is an important aspect of teacher training and accreditation. This paper presents the results of the calibration and validation of the Experiential Teaching Questionnaire version 2 (ETQ2), part of a five-instrument battery that is being revised for consistency with current InTASC teacher standards used in teacher education accreditation. The results indicate that the instrument produces valid and reliable results related to the critical dispositions related to teaching using the Rasch model of item response theory. The instrument has the potential for use in teacher training, program accreditation, and eventually teacher hiring.

Keywords: teacher dispositions, reflections, rasch model, CAEP, InTASC

Introduction

The disposition construct is defined in national standards, and colleges of education are typically required to assess candidate dispositions to meet accreditation requirements. Accreditation by CAEP (Council for Accreditation of Educator Preparation) requires that graduates demonstrate competency in the InTASC Standards (Interstate Teacher Assessment and Support Consortium) as published by the Council of Chief State School Officers (CCSSO, 2013). Dispositions can be conceived as the values and beliefs of the profession. Additionally, there is a need to review teacher dispositions in making hiring decisions about teachers, although this need may not yet be realized.

DAATS (Disposition Assessment Aligned with Teacher Standards) is a five instrument battery developed on the 1992 InTASC Standards (Wilkerson & Lang, 2007). The five instruments include a Thurstone scale (Beliefs About Teaching, or BATS), a projective (Situational Reflection Assessment, or SRA), a focus-group (K-12 Impact Dispositions Survey, or KIDS), an observation (Candidate Dispositions Checklist, or CDC, also called Candidate Belief Checklist, or CBC)), and a reflection (Experiential Teaching Questionnaire, or ETQ). Each instrument in the DAATS battery assesses the degree of consistency between respondent scores and the Critical Dispositions as described in the InTASC Standards.

All the instruments are being revised to address changes in the INTASC standards. In this research, the ETQ2 is piloted, and a discussion of the development, validity, scoring, and reliability is provided. This study reports the use and calibration of the revised version of ETQ2. The overall purpose of this research was to pilot the ETQ2 and perform a Rasch analysis in order to correct items or scoring methods. A secondary purpose was to see if responses and scores provided construct validity to the underlying theory of the instrument and DAATS battery.

Literature Review

The Council for Accreditation of Educator Preparation (CAEP, 2013) requires assessment of teacher dispositions using instruments yielding valid and reliable scores. All five standards touch on dispositions. Standard 1 requires use of the InTASC standards developed by the Council of Chief State School Officers (CCSSO, 2013). The ten InTASC standards include a list of 43 “critical dispositions.” CAEP Standards 2-4 also require assessment of dispositions, and there are multiple references to valid and reliable inferences, especially in Standard 5.

The concept that assessments of dispositions should be more than a single snapshot or should use a single instrument (Wilkerson & Lang, 2007) is one that has not taken hold widely in the teacher preparation community. Many institutions have attempted over the years to assess dispositions through a single tool. The Eastern Teacher Dispositions Index (Singh & Stoloff, 2008) and the Clinical Experience Rubric (Flowers, 2006) are two examples.

The CAEP standard, however, calls for measures (in the plural), and the viability of the use of multiple measures combined into a single Rasch scale for decision-making about teacher candidates has been documented (Wilkerson, 2012). Brindle (2012) discusses this need, too, recommending the use of varied methods to assess dispositions, providing students with ongoing feedback regarding dispositions, employing multiple assessors including student self-assessment, creating remediation plans when needed, and stressing the value and role of dispositions in effective teaching. For a decade, we have advocated for multiple measures (Wilkerson & Lang, 2006; Lang et al, 2016, 2018a, 2018b, 2018c), noting that like knowledge and skills, we cannot rely on a single measure or a single point in time.

This research involves the second edition of a battery of affective assessments called DAATS. The Dispositions Assessments Aligned with Teacher Standards (DAATS) Battery measures the commitment of teachers and teacher candidates to the standards-based skills of teaching (Wilkerson & Lang, 2007). The first version was built on an earlier version of the InTASC Standards and is, therefore, in need of revision. The previous versions of the DAATS Battery had already demonstrated predictive validity and strong (Wilkerson & Lang 2006), including rater consistency using the Rasch model of item response theory (Lang, et al., 2014).

Methods

Instrument: Experiences in Teaching Questionnaire (ETQ):

ETQ is a ten-item, guided-reflection that includes sub-sets of questions targeting the Critical Dispositions included in the InTASC Standards. There are two forms of the ETQ2 (A and B), and the questions directly align with the ten InTASC Standards, and the associated Critical Dispositions. It is scored manually and is a little more difficult to fake than the Thurstone agreement Beliefs About Teaching Scale, so it provides the next level of useful assessment of dispositions beyond self-report. Responses are rated using a six-level rating scale for each Standard, based on the Krathwohl Affective Taxonomy. Each set of items is hierarchically ordered from low on the Taxonomy (unaware or receiving) to high on the Taxonomy (characterizing), with the expectation that most in-service teachers will reach the valuing level. Ratings of 4 and 5 are rare. ETQ2 is scored based on a modification of the Bloom and Krathwohl Affective Taxonomy:

- 0 = Unaware (considered to be dangerous to practice)

- 1 = Receiving (beginning level teacher candidates))
- 2 = Responding (acceptable for beginning teachers)
- 3 = Valuing (target for teachers at all levels)
- 4 = Organizing (target for teacher-leaders)
- 5 = Characterizing (highest level for teacher-leaders)

The ETQ2 is more time-consuming to complete and to score than BATS or the Candidate Dispositions Checklist (CDC), but, as a constructed response assessment, along with the Situational Reflection Assessment (SRA), it provides the next level of useful assessment of dispositions and a clearer picture of what the teachers really believe about the Principles and their own behaviors related to them. Rubrics include commitment levels hierarchically ordered from low on the Taxonomy (unaware or receiving) to high on the Taxonomy (characterizing), with the expectation that most teachers will reach the valuing level. Scores can be influenced by the teacher's willingness to write a thoughtful response and the rater's willingness to read it. It is useful as a complete instrument to refine the measure of teacher dispositions, or individual questions can be used to fine-tune the evaluation of a teacher on an individual Standard (Wilkerson & Lang, 2012).

For example, an example of an InTASC Critical Disposition is "1(h) The teacher respects learners' differing strengths and needs and is committed to using this information to further each learner's development." The associated ETQ2 reflective question would be "Think about a lesson that did not work as you had hoped it would. Did the students perform lower than you expected as a group or just several? Did you deal with some students individually? If it happens again, would you do something differently?" Typical scores for response to this item would be:

Table 1. Example Scoring for an Item in ETQ2, Form A

Taxonomic Level	Sample Response From Students
Unaware	A handful of students performed lower than expected because they weren't paying attention and the instructions had to be repeated several times.
Receiving	Just several (about 2 out of 7). I did not set expectations I'm the beginning of the lesson so that's something that I would do differently for next time.
Responding	There were times during my lessons where student performed lower than expected. In order to provide remediation for these students I would work individually with students and would gear my instruction towards their individual learning styles or preferences.
Valuing	In a lesson that did not work as I had originally expected or hoped for, I noticed that it was a select amount of students who struggled with the concept. To remediate, I create literacy groups based on the struggle and worked with these students one-on-one and in small groups to ensure understanding. If something like this occurred again in the future (which I'm sure it will), I would use the same strategy of remediation and also monitor student progression very closely.
Organizing	My class does group PBL in the classroom at least once a semester. My students always enjoy group projects and being part of a group. Working together with other teachers and having students see this and creating lesson plans for them that integrates working together is always something that I do in my classroom, whether its a small project or a big project like a PBL. The collaboration with other students bring in a positive vibe in my classroom. They tend to push aside their differences and it shows through their work.
Characterizing	No example found in this sample.

Sample and Data Collection

Sixty undergraduate and graduate students answered the ETQ2 Form A in this study online. The graduate students were in-service teachers. The undergraduate students were placed in an upper division internship where they were actively teaching. The ETQ2 requires that participants respond to their actual experiences while teaching, and reflect on their own values and beliefs that

guided their decisions, so one student who did not have access to relevant experience was dropped. The students were all enrolled in an accredited teacher education program in a state university in Florida.

Empirical Model: Rasch Analysis

The data were calibrated using the rating scale Rasch model and Winsteps software. The Rasch model is the simplest of the Item Response Theory models and works well with small samples. IRT is a relatively new technique that differs greatly from Classical Test Theory, a.k.a. CTT or True Score Theory, which is sample dependent. Conceptually, the idea behind the Rasch model is simple.

The ability (or, in this case, level of commitment) of individuals and the difficulty of items influence each other and are related. IRT models envision a continuum of knowledge, skills, or dispositions that can be placed on a ruler that measures them concurrently (or conjointly) with item difficulty, without regard to a particular sample. The units of measurement of difficulty and commitment are called “logits” and the scores are called “measures.” One of the most well-known uses of Rasch is the Lexile reading scale (Stenner, 2004). Bond and Fox (2007) summarize the technique well.

The initial analysis with Winsteps items which were completed in a single calibration for both people and items. This is described by Linacre (2018) as:

$$\log \left(\frac{P_{nij}}{P_{ni(j-1)}} \right) = B_n - D_{gi} - F_{gj} \quad (1)$$

where P is a probability, and the Rasch parameters are B_n , the ability of person, D_{gi} , the difficulty of item i of grouping g, and F_{gj} , the Rasch-Andrich threshold between categories j-1 and j of grouping g.

In this study, the analysis followed the guidelines provided in Smith & Wind (2018).

Findings

Quantitative Results

In the initial calibration of a modest sample size ($N=59$), the Real Item Separation = .78 which suggests that the scale discriminates between the persons adequately. The Real Person Separation = .82 (Cronbach's Alpha = .89) indicates a reasonably defined variable. The Outfit MNSQ = .98 (expected value = 1.0) and ZSTD = -.06 (expected value = 0.0) indicate that the data variability fit the Rasch model.

An examination of the item analysis is provided in Table 2. All of the 10 items have positive point-biserial correlations above .5, none have either Infit or Outfit ZSTD > 2.0. As such, there is no evidence to suggest multidimensionality or item misfit.

Table 2. Item Statistics

Entry Number	Total Score	Total Count	Measure	Model S.E	Infit MNSQ	ZSTD	Oufit MNSQ	ZSTD	Ptmeasur-AL CORR.	EXP.	Exact Match OBS%	EXP%	Item
1	78	59	47.26	1.84	1.05	0.31	1.09	0.54	0.69	0.69	50	49.2	I0001
2	82	55	44.76	1.88	1.11	0.68	1.07	0.44	0.66	0.68	49.1	49.5	I0002
3	78	58	47.27	1.84	1.06	0.38	1.08	0.49	0.7	0.68	51.7	49.2	I0003
4	71	57	49.39	1.88	0.97	-0.1	0.99	0.01	0.62	0.68	51.8	49.4	I0004
5	61	57	53	1.93	1.11	0.74	1.06	0.37	0.69	0.67	41.1	51.7	I0005
6	76	58	48.05	1.84	0.73	-1.6	0.77	-1.35	0.71	0.67	57.1	48.7	I0006
7	76	58	48.05	1.84	0.8	-1.16	0.79	1.22	0.7	0.67	51.7	48.9	I0007
8	69	57	50.3	1.87	0.85	-0.86	0.81	-1.11	0.74	0.67	54.4	49.5	I0008
9	42	55	60.35	2.12	1.13	0.73	1.09	0.49	0.65	0.65	52.7	57.3	I0009
10	63	56	52.28	1.91	1.18	1.04	1.19	1.06	0.58	0.67	44.6	51.3	I0010
Mean	69.6	56.8	50	1.9	1	0	0.99	0			50.4	50.5	
P.SD	11.2	1.2	4.19	0.08	0.15	0.9	0.14	0.8			4.4	2.4	

Table 3. Summary of Category Structure

OBSVD Sample										
Category Label	Score	Observed Count	%	AVRGE	EXPECT	Infit MNSQ	Outfit MNSQ	Andrich Threshold	Category Measure	
0	0	152	27	-28.46	-28.8	1.08	1.08	None	(-40.25)	0
1	1	200	35	-21.09	-20.6	0.95	1.02	-27.75	-21.4	1
2	2	154	27	-11.13	-11.3	0.93	0.88	-13.5	-4.3	2
3	3	60	11	-0.11	-0.67	0.97	0.99	3.44	20.94	3
4	4	2	0	3.45	7.83	1.14	1.06	27.8	-49.03	4
Missing		32	5	-38.13						

Table 4. Person Statistics: Measure Order

Entry Number	Total Score	Total Count	Measure	Model S.E.	Infit		Oufit		Ptmeasur-AL		Exact Match		Person
					MNSQ	ZSTD	MNSQ	ZSTD	CORR.	EXP.	OBS%	EXP%	
13	28	10	59.1	5.08	1.16	0.46	1.35	0.74	-0.46	0.22	90	66.2	STEM Teacher
1	23	10	49.17	3.92	0.74	-0.44	0.67	-0.61	-0.03	0.28	50	43.3	ESOL Teacher
8	23	10	49.17	3.92	0.97	0.09	0.96	0.07	0.07	0.28	30	43.3	Teacher
10	23	10	49.17	3.92	0.96	0.07	0.87	-0.11	0.07	0.28	40	43.3	Teacher
5	22	10	47.7	3.77	1.31	0.78	1.2	0.57	0.19	0.29	30	43.4	Math Teacher
6	20	10	45.03	3.55	1.77	1.67	1.72	1.56	0.15	0.31	20	39.6	ELL Teacher
7	16	10	40.36	3.33	0.86	-0.3	0.84	-0.35	0.29	0.32	70	37.9	Tutor/Teacher
16	16	10	40.36	3.33	0.66	-0.97	0.67	-0.94	0.83	0.32	50	37.9	Science Teacher
9	14	10	38.16	2.21	0.48	-1.81	0.49	-1.74	0.61	0.32	20	34.2	English Teacher
14	12	10	37.06	3.33	0.47	-1.86	0.47	-1.83	0.59	0.32	50	32.4	Math Teacher
3	12	10	35.94	3.36	0.71	-0.83	0.7	-0.84	0.7	0.31	40	32.5	Teacher
4	12	10	35.94	3.36	1.02	0.16	0.99	0.08	0.28	0.31	20	32.5	Teacher
2	11	10	34.8	3.14	1.11	0.42	1.17	0.56	0.32	0.31	40	32.3	Teacher
11	11	10	34.8	3.41	1.1	0.38	1.14	0.5	0.05	0.31	20	32.2	Voc Counselor
15	7	10	29.63	3.87	1.35	0.88	1.23	0.61	0.35	0.27	30	41.9	Nanny
17	5	10	26.23	4.41	1.77	1.38	1.43	0.86	0.45	0.23	50	50	Social Researcher
12	3	10	21.38	5.57	0.66	-0.33	0.85	0.05	0.01	0.18	70	75.6	PE Coach
Mean	15.2	10	39.65	3.82	1.01	0	0.99	0			42.4	42.3	
P.SD	6.9	0	9.21	0.64	0.38	1	0.33	0.9			19.6	11.8	

Note: Graduate students in bold are alternative certification candidates.

An examination of the Krathwohl scoring scale indicates ordered thresholds as expected. There were no scores in the highest “5” rating (characterizing) in this sample. The results follow in Table 3, which confirms the expected category structure and thresholds.

To determine if preliminary results are consistent with expectations some sample questions were explored. Next, a qualitative discussion of two individuals’ responses also aided the interpretation of results. These examinations were not exhaustive, but simply to confirm validity of the instrument scale with the authors’ logical expectations.

For example, one expectation is that in-service graduate students may differ from preservice students in their dispositions in areas where experience is the most influential teacher. The results showed that students in an internship found it significantly more difficult ($p < .0063$) to be consistent with InTASC Standard #3 than in-service teachers. InTASC Standard #3 is Learning Environments, and a typical critical disposition is “3(n) The teacher is committed to working with learners, colleagues, families, and communities to establish positive and supportive learning environments.”

Results such as these cannot be interpreted simply as a statistic, and that is the power of reflective answers. Given a place to look, faculty can examine group differences for understanding, but the goal in this effort was to test if results were logical and fit the construct as assessed by the ETQ2.

In another example, a question compared the in-service teachers (graduate students) who were traditionally trained vs those from alternative certification. In Table 4, it can be seen that all four alternative-teachers were the four scores that were least consistent with InTASC Critical Dispositions. Again, this research leaves it up to others to consider program change, but to instrument designers these results support the implied construct in the InTASC standards.

Qualitative Results

Here we present two contrasting students as examples with a subset of student comments taken from their ETQ2 reflections [edited to protect identity] as evidence of construct validity and utility. First is a student we will call “Red”. Red was an undergraduate student who was rated as consistent with the critical dispositions of InTASC. Red had one of the highest student scores of the 59 scored in the sample. Red usually scored at the “responding” or “valuing” level on our Krathwohl scale. When responding to the ETQ2 items, Red reported the following:

- If I were to do things differently I would have worked on my differentiation of instruction to ensure that all students were receiving the education that they deserve in the way they can understand it best.
- I learned his niches and what made him upset versus what did not upset him and we worked on that.
- The students would get in a circle and we would discuss a certain topic, they loved listening and sharing ideas and thoughts with one another.
- I do not see it as a chore because it is something that I generally enjoy doing.
- I was an advocate for an EBD student that was in my class as I got to know him and learn more about him I realized that he is just like the other students he just struggles a little bit and misbehaves occasionally. My school supported me as I was an advocate for this students and I gained respect because I stood up for a student who nobody is usually

fighting for. They understood that this meant a lot to me and that I was doing it because I cared about this student.

We compared the dispositions expressed by another undergraduate that we will call “Blue” in the same course who scored in the bottom five of the 59 students in the sample. Here is a composite of selected comments for Blue, who often scored “unaware” or “receiving” on the Krathwohl scale.

- It's difficult to get into students' heads.
- I now look at lesson plans with a bit of disdain and feel that it is just busy work, instead of a valuable learning tool for me, as I become an educator.
- I am teaching in a high school right now, and I have not really reflected on issues involving other subjects. That is a struggle for me, I have a hard time incorporating other subjects.
- I had students who weren't trying their hardest which led the scores to be lower.
- I haven't done any local or global issues in my lessons.

When considering a set of reflections as a whole, Red appears to be a student whose values and beliefs are consistent with InTASC critical dispositions; especially for a preservice teacher with minimal experience. Red seems to be empathetic, child-centered, and takes responsibility for learning. On the other hand, Blue struggles with empathy, dislikes planning for class, and blames students. Presumably, all the students in a final internship (or alternative certification program for that matter) meet the academic requirements demanded by the state and university, yet they may differ greatly in their dispositions promoted by the profession of teaching.

Conclusions

The Experiential Teaching Questionnaire, version 2 (ETQ2) meets the requirements of the Rasch model; the items are performing as expected. The score distribution is normal, and separation reliability is appropriate. Threshold analysis supports the Krathwohl scoring taxonomy, and qualitative observation of responses is consistent with scores. Scoring between raters may need a scoring guide or use of FACETS to detect lenient or harsh scorers, but that is recommended for future research. Also indicated for future research would be a larger and more heterogeneous sample.

The use of ETQ2 for teacher education and program accreditation for assessment of dispositions is supported by evidence of construct validity, while reliability and instrument structure is evidenced by the Rasch analysis. Concurrent validity with the other instruments in the DAATS battery (BATS, SRA, KIDS, and CDC) would also validate the construct and scoring. The instrument has the potential for use in hiring teachers, as well.

References

- Bloom, B. S. (ed.) (1956). *Taxonomy of Educational Objectives, the classification of educational goals – Handbook I: Cognitive Domain* New York: McKay
- Bond, T. & Fox, C. (2007). *Applying the Rasch model: Fundamental measurement in the human sciences* (2nd). Mahwah, NJ: LEA.
- Brindle, S. (2012). *An exploratory study on the assessment of pre-service teacher dispositions by teacher education programs in Iowa*. Dissertation: Drake University. ProQuest Accession Number ED551821.
- Council for Accreditation of Educator Preparation (2013). *The CAEP standards*. Washington, D.C.: Author. Retrieved from <http://caepnet.org/standards/introduction>.
- Council of Chief State School Officers. (2013). *InTASC Standards*. Washington, DC: Author.

- Flowers, C. (2006). Confirmatory factor analysis of scores on the Clinical Experience Rubric: A measure of dispositions of preservice teachers. *Educational and Psychological Measurement*, v66, n3, p 478-488.
- Krathwohl, D. R., Bloom, B. S., & Masia, B. B. (1973) Taxonomy of educational objectives, the classification of educational goals. Handbook II: Affective domain. New York: David McKay Co., Inc.
- Lang, W. S., & Wilkerson, J. (2006) Measuring teacher dispositions systematically using INTASC principles: Building progressive measures of dispositions. *Resources in Education*. (ERIC Document Reproduction Service No. ED502887).
- Lang, W. S., & Wilkerson, J. (March, 2008). Measuring teacher dispositions with different item structures: An application of the Rasch Model to a complex accreditation requirement. Paper presentation to the American Education Research Association, New York.
- Lang, W. S., Wilkerson, J. W., Rea, D. C., Quinn, D., Batchelder, H. L., Englehart, D. S., & Jennings, K. J. (2014). Measuring teacher dispositions using the DAATS battery: A multifaceted Rasch analysis of rater effect. *Journal of Applied Measurement*. 15(3), 240-215.
- Lang, W., Wilkerson, J., Moore, L., Fields, L., Parfitt, C., Greene, J., Kratt, D., Martell, D., LaPaglia, K., Johnston, V., Gilbert, S., Zhang, J. (2016). Beliefs About Teaching (BATS2) – Construction and validation of an instrument based on InTASC critical dispositions. Paper presented at the annual meeting of the Eastern Educational Research Association, Clearwater, Florida, February 9, 2018.
- Lang, W., Wilkerson, J., Gilbert, S., Wang, C., Kratt, D., Parfitt, C., Martelli, M., Zhang, J., Fields, L., LaPaglia, K., Greene, J., Johnston, V. (2018a). Measuring teacher dispositions systematically using multiple measures. Panel session presented at the annual meeting of the Eastern Educational Research Association, Clearwater, Florida, February 9, 2018.
- Lang, W., Wilkerson, J., Moore, L., Fields, L. (2018b). Beliefs About Teaching (BATS2) – Assessment of InTASC Dispositions. Paper delivered at the annual meeting of the American Association of Colleges of Teacher Education. Baltimore, MD.
- Lang, W.S.; Moore, L.; Wilkerson, J.R.; Parfitt, C.M.; Greene, J.; Kratt, D.; Martelli, C.D.; LaPaglia, K.; Johnston, V.; Gilbert, S.; Zhang, J. (2018c). Beliefs About Teaching (BATS2) – Construction and validation of an instrument based on InTASC critical dispositions. *International Journal of Learning, Teaching and Educational Research* (17)8, 56-77. <https://doi.org/10.26803/ijlter.17.8.4>
- Linacre, J. M. (2018). Winsteps [Computer program Ver. 3.93.2]. Chicago, IL: winsteps.com.
- Sing, D., and Stoloff, D. (Dec. 2008). Assessment of Teacher Dispositions. *College Student Journal*, v42, n4, pp. 1169-1180.
- Smith, R. M., & Wind, S. A. (2018). Rasch measurement models: interpreting Winsteps and Facets output (2nd). JAM Press: Maple Grove, MN.
- Stenner, A.J. & Wright, B. (2004). Uniform Reading and Readability Measures. In Wright, B. D. & Stone, M. H. (Eds.). *Making Measures*, Chicago, Phaneron
- Wilkerson, J. & Lang, W. S. (2006). Measuring teaching ability with the Rasch model by scaling a series of product and performance tasks. *Journal of Applied Measurement*. Vol. 7(3), 239-259.
- Wilkerson, J. R., & Lang, W. S. (2007) Assessing teacher dispositions: Five standards-based steps to valid measurement using the DAATS model. Corwin Press: Thousand Oaks, CA.
- Wilkerson, J. R. (January 2012). Measurement and evaluation perspectives on scaling teacher affect with multiple measures. *The International Journal of Educational and Psychological Assessment* 9(2), 165-191. Retrieved August 1, 2011 from http://tijepa.books.officelive.com/Documents/V9.2_TIJEPa.pdf.

