



DREXEL UNIVERSITY

School of

Education

# Doctoral Student

RESEARCH BRIEFS

VOLUME 2



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► RESEARCH BRIEF NO. 1

## Developing a 4D Curricular Unit for Middle School Students: Combining Next Generation Science Standards with Career Awareness

WRITTEN BY: **RASHEDA LIKELY**, PhD Student

SUPERVISING PROFESSOR: **DR. NANCY SONGER**

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*October 2017*

### ABSTRACT

This research is focused on designing a curriculum that incorporates Next Generation Science Standards with Career Awareness pieces for students in fourth - sixth grade. The curriculum fosters the use of professional science technology through a mobile data application, which allows students to gather data alongside scientists to create a biodiversity index of their urban city. Web-based resources allow for large-scale data sharing, visualization, and analysis in order to foster solution generation. The 4D curriculum aims to provide youth with an opportunity for science learning to gain career awareness and make a real-world impact on urban planning in their city.

## AIM

Students in low socioeconomic urban areas have been found to not see science content as useful, and frequently have a decreased interest in classroom science (Songer, Lee & Kam, 2002). A decreased interest in science education is particularly problematic in light of extensive research that confirms that young students are capable and supported when such knowledge development should begin well before secondary school (Metz, 2000; NRC, 2012). This research focuses on creating a middle school curriculum that fuses Next Generation Science Standards with Career Awareness and technology- integrated activities for fourth - sixth grade students. Designing corresponding professional development and supportive curriculum for teachers is a necessary component of the curriculum design, particularly with the science and technology content. Each piece of the project is designed to foster 21st century critical thinking about urban ecology.

## PROBLEM

In 2014, the Obama administration created the Promise Zone designation for an area of West Philadelphia that includes a population faced with challenges of deep and persistent poverty (The White House, 2014). The “Philly Scientists” project seeks to interweave biodiversity activities with career awareness and mentoring opportunities that put students in the role of knowledge-providers rather than just knowledge-consumers. The students and their teachers, including in-school and out-of-school-time instructors in the Promise Zone, are being supported with a mobile application and 13-hour curriculum. By combining youth science knowledge and career awareness, this project is designed to challenge the patterns of persistent poverty through engaging science and technology learning and mentoring by university students and professionals. All resources are designed to support youth’s abilities to gather, analyze and generate evidence-based solutions to increase the biodiversity of their urban neighborhoods.

## RESEARCH FINDINGS

The primary focus of this project thus far has been developing the 13-hour curricular unit (fourth - sixth grade) with a team of scientists, doctoral students and education experts. Bybee et al. provided the 5E (Engage, Explore, Explain, Elaborate, and Evaluate) structure for the order of the lessons and types of activities included (1990). The 5 E’s were modified to 4E’s and an S (Engage, Explore, Explain, Elaborate, and Synthesize) to better fit the goals of this curriculum. The 5Es have been used both in the individual lessons as well as to guide the overall curricular unit which ends with a student presentation of biodiversity findings and solutions. Because of the comprehensiveness of this project, several persons of varying expertise, including technology with badging and professional development experts have been working diligently alongside the curriculum development team to ensure continuity of lessons and activities throughout all aspects of this work.

“Philly Scientists” will conduct its first beta test in the Fall of 2017. This will include a professional development workshop for the participating in-school and out-of-school instructors. A smaller scale beta test conducted previously to measure student engagement with the curricular activities and mobile application provided insight on how to best modify the lessons for the Fall beta. After the Fall beta test, the students’ urban biodiversity solution and teacher professional development feedback will be analyzed in the re-design for a Spring 2018 beta test.

## CONCLUSION/DISCUSSION

In conclusion, beta tests indicated that the students’ knowledge has value for urban ecology planning and the capability to become a local resource for their area of their city. Students think critically about the data they have collected in order to analyze their data and propose a solution that draws from their evidence-based conclusions. Through these activities, students not only participate in actual science activities, but they recognize the value of presenting and discussing valid solutions for what can be done to improve their city. These activities require the students to demonstrate a suite of 21st century skills including communicating, critical thinking, problem solving, and interpersonal skills.

## RESEARCH IMPLICATIONS

This curriculum design is tailored specifically for students in the West Philadelphia Promise Zone to provide the experience of interacting with career science professionals they may not have otherwise encountered. A goal of this research is to provide students with an immersive learning experience by “acting as scientists” in their urban neighborhood. With this curriculum, students are encouraged to think critically about the data they have collected for analysis, and to propose a solution from their evidence-based conclusions. Through these activities, students not only participate in actual science activities, but they recognize the value of presenting and discussing valid solutions for what can be done to improve their city.

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## ABOUT THE AUTHOR



Rasheda Likely received her Bachelors of Science and Masters of Science in Biology from the University of North Florida. Before moving to Philadelphia, she worked in Virology (the study of viruses) for the Florida Department of Health for three years testing patients exposed to the Zika virus. While working in Virology, she also taught "Principles of Biology" laboratory sections at University of North Florida. Rasheda is currently in her second year in the PhD program at Drexel focusing on STEM education. While at Drexel, she has been a teacher assistant for the

Biology department, and is the newest member of the Critical Conversations in Urban Education Committee. Her research interests include underrepresented minorities in Biology, including teachers and college students.

► RESEARCH BRIEF NO. 2

## University-Community Partnerships as Learning Organizations: A Case Study

WRITTEN BY: **WILLIAM RYAN**, EdD Student

SUPERVISING PROFESSORS: **DR. KRISTINE LEWIS  
GRANT & DR. JAMIE CALLAHAN**

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*October 2017*

### ABSTRACT

The goals of University-Community Partnerships (UCPs) are often not fully achieved due to limited financial or human resource commitments, a change in leadership, or different/changing priorities (Bortolin, 2011; Bushouse, 2005; Dempsey, 2010). Often, the differences in culture, decision-making and adaptation preferences of the participating organizations prevent the formation of a strong, productive working relationship (Callahan & Martin, 2007). This study sought to understand the different preferences partners have within a UCP. Data derived from this study evidenced that there are Organizational Learning (OL) preference tendencies among members of a particular segment (e.g., higher education institutions, or government entities) and among segments that share similar characteristics (e.g., size, structure, or mission). Overarching themes that impact the OL system model in a more holistic manner were also identified.

## A I M

The aim of this study was to use OL theory to gain insights into the challenges experienced by UCPs between different types of organizations, with the goal to offer guidance as to how these partnerships can be more successfully developed and sustained. This study used the Organizational Learning System Model (OLSM) (Schwandt & Marquardt, 1999) to highlight the similarities and differences in learning preferences among organizations that potentially form UCPs. These insights could be used by stakeholders to engage more successfully in UCP development and management.

## P R O B L E M

The lofty goals that UCPs set for themselves are often not fully achieved. There are many reasons for these shortfalls, whether it is the limited financial or human resources committed to the UCP, a change in leadership, or different/changing priorities (Bortolin, 2011; Bushouse, 2005; Dempsey, 2010). Other reasons include differences in the culture, decision-making and adaptation preferences of participating organizations, and the resulting challenges these differences create impede forging a strong, productive working relationship (Callahan & Martin, 2007).

## R E S E A R C H F I N D I N G S

An interpretive approach to describing and understanding the phenomenon, through semi-structured interviews were conducted among 25 experienced UCP participants from higher education, corporate, non-profit and public entities. Through thematic coding, pattern matching and explanation of the data, this study showed that there are OL preference tendencies among members of a particular segment (e.g. higher education or non-profits) and among segments that share similar characteristics (e.g. size, structure, mission). However, these tendencies are not universal across a segment due to the particular approaches to partnering taken by either the organization or the individual representing the organization. The research also identified overarching themes (culture, trust, collaboration and shared vision) that impact the OL system model in a more holistic manner. These themes were described as critical to the overall success of the partnership and the ability of the UCP to function as a learning organization.

## C O N C L U S I O N

This study showed that organizational learning theory can be used to understand the challenges organizations face when forming and managing UCPs. It also demonstrated that the typical segments (higher education, corporations and non-profits) that form UCPs do not share the same OL preferences. These preference differences are potential areas of conflict and disagreement within a UCP, potentially causing the UCP to fall short of expectations.

## RESEARCH IMPLICATIONS

Findings of this study may inform the development of OLSM best practices for UCP participants that can be delivered in a conference or workshop setting. Future research and actions related to this study could include a more focused study on the impact that the overarching themes (culture, trust, collaboration and shared vision) have on the Organizational Learning System Model (Schwandt & Marquardt, 1999). Future related research could also compare the stated preferences of participants going into a UCP versus actual OL behaviors once the UCP is engaged.

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► RESEARCH BRIEF NO. 3

## Teacher Activism and Social Media

WRITTEN BY: **KATELYN ALDERFER**, PhD Student

SUPERVISING PROFESSORS: **DR. KRISTY KELLY &  
DR. BRIAN SMITH**

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*November 2017*

### ABSTRACT

Based upon the status of politics within the educational sphere in the last few decades, and, specifically, the rapidly changing state of politics within the U.S. recently, it is reasonable to say that teachers have had more and more of a reason to be upset. The aim of this research is to complete a preliminary investigation of how teachers voice their dissent to macro and micro level politics via social media, and the strategies that teachers use via social media to act in an activist role.

## PROBLEM

Within the last few decades, teachers have had more and more of a reason to be upset with the status of politics in the educational sphere. They are upset about the reproduction of class through the educational system (Bourdieu, 1977), the lack of movement within policy (Tyack & Cuban, 1995), the attempt at “universal” standards (Kincheloe, Steinberg & Tippins, 1990), and topics around inclusive education (Margolin, 2017; Stolberg, 2017). More recently, the instability of the political climate in the United States, since the 2016 election, has led to more teachers taking on roles as activists inside and outside their classrooms in order for their voices to be heard (Berkovich, 2011). However, due to common belief that teachers should stay out of political discourse (Dunn, 2016), attention has not been brought to these teacher voices or their response to this changing climate within their classroom.

## AIM

The purpose of research is to complete a preliminary investigation to inform my dissertation on teachers’ use of social media platforms to voice their resistance to macro and micro level educational policies and current social issues. The primary goal of this study is to understand how teachers resist authority in a political atmosphere that is constantly changing, and by understanding what issues teachers are showing resistance to, we can hopefully take steps towards effective change.

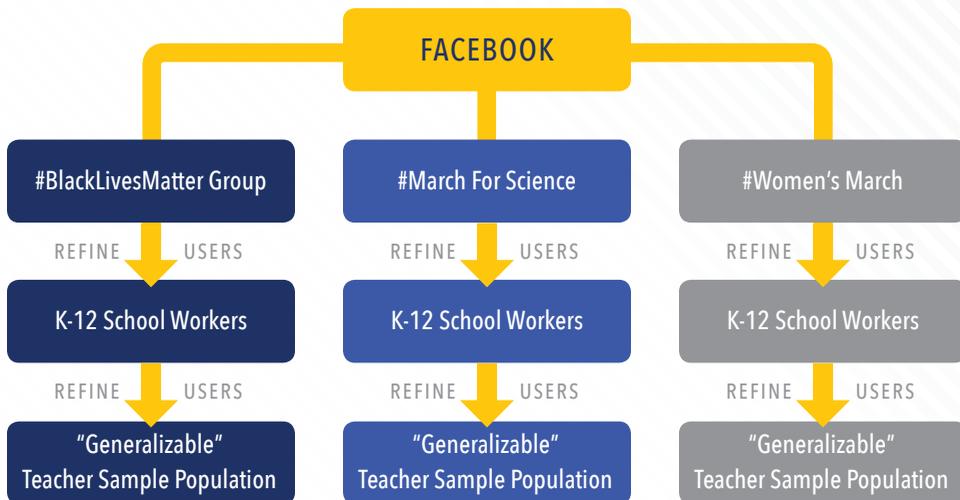
### **The foundational questions for this pilot research include:**

- (1) What types of actions are teachers taking part in on Facebook that might constitute them as working in an activist capacity?
- (2) How are teachers using social media alone or in consort with other activist strategies and what role does social media play in this?

## METHODS

In order to meet the previously mentioned goals, a pilot study was conducted to take a look at teachers’ public social media profiles through their connection to the #BlackLivesMatter Movement, the March for Science, and the Women’s March, and to try to determine how teachers are acting in an activist capacity and what role social media plays in this. For this pilot study, ten teacher activists were selected based on the recruitment criteria found in Figure 1.

Facebook posts were collected from January 1st, 2017 onward, creating a collection of 922 politically charged/activist Facebook posts made amongst the ten teacher activists. These posts included shared stories about politics in the news, the teacher’s posts about their reactions to political stories, as well as these teachers call to action. Teacher posts covered a wide array of topics, and main topics seemed to vary from teacher to teacher.



## FINDINGS

Based on these posts, and the codes produced through an open coding process, the codes were organized into four general categories of actions that teachers are taking on Facebook, these included:

- (1) **Correspondence:** where teachers were taking action by writing letters or calling politicians
- (2) **Marches:** where teachers took part in activist marches
- (3) **Calls to Action:** where teachers were encouraging others to join in social activism
- (4) **Grievances:** where teachers were posting about their thoughts and feelings on political matters

It was also clear that teacher activists vary in their use of these actions, with some teachers partaking in things like activist marches while others are just encouraging others.

## CONCLUSION

After having gathered the data from this pilot study, it was clear that teacher activists are falling into a pattern of social activism often seen by other social activists online. McCaughey & Ayers (2003) outline levels of online activism including awareness, organization, and action, and the teacher activists within this study fit nicely into these levels. It was also made clear that teacher activists act as communities of practice (Lave & Wagner, 1991) with a core and periphery to involvement of online activism. The core being those teachers central to activism, having partaken in activist activities, with the periphery being those teachers that are not quite partaking in activist activities, but rather commenting on them or encouraging others to partake. This clarity does raise several questions though, including how do teachers move from the core to the periphery in these online communities of practices. With that being said, more research needs to be conducted in this area to determine how teachers move amongst these spaces.

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## ABOUT THE AUTHOR



Katelyn Bright Alderfer received her Bachelor's of Science in Education from West Chester University of Pennsylvania and her Master's in Education from Pennsylvania State University. Prior to entering Drexel University's PhD program, she was an English teacher and department head at a North Philadelphia charter school, and a math teacher at juvenile detention center during the summer.

Katelyn is currently a second-year PhD student in Drexel's "Educational Leadership and Learning Technologies" program with her focus on educational leadership. While at Drexel, Katelyn has served on the University Conduct Board, the Doctoral Student Run Journal Committee, and is the newest student editor for the Doctoral Student Research Briefs. Her research interests involve teacher activism and teacher activists use of social media.

► RESEARCH BRIEF NO. 4

## Perceptions of School Principals on Participation in Professional Learning Communities as Job-Embedded Learning

WRITTEN BY: **JENNIFER GAUDIOSO**, EdD Student

SUPERVISING PROFESSOR: **DR. MARY JEAN  
TECCE DECARLO**

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*November 2017*

### ABSTRACT

This phenomenological study focused on the perceptions of school principals who participated in Professional Learning Communities (PLCs) as a form of job-embedded professional development. Principal Professional Learning Communities (PPLCs) have emerged as a vehicle for the professional development of principals, but there is little research available on how principals experience PPLCs or how districts can support principal learning in a PLC. This research sought to increase understanding of how principals experience learning in a PPLC, and to provide recommendations to districts interested in building leader capacity through PPLCs.

## AIM

The purpose of this research was to explore principal perceptions of a PPLC experience that took place over the course of a year under the direction of a central office facilitator. The Principal PLC (PPLC) was nested within a larger PLC made up of a district's full administrative team. The layered PLCs were designed to increase support for principal learning as part of the larger leadership community. Research on PLCs as models of adult situated cognition and social learning systems helped provide a framework for understanding principal learning in PPLCs (Wenger, 2000). The questions guiding this interpretive research were the following:

- (1) How do principals describe their experience in a district-wide administrative PLC?
- (2) How do principals describe their experience in a Principal Professional Learning Community (PPLC), led by a central office administrator?
- (3) What have principals experienced in these PLCs that is beneficial to them?

## PROBLEM OR ISSUE

The school principal plays a critical role in supporting development of the school as a learning organization (Wahlstrom, Seashore, Leithwood, & Anderson, 2010), but principals often have little training, experience or support to help them lead the work (Cranston, 2009; Wahlstrom, et al., 2010). Beginning and veteran principals frequently need more support through job-embedded professional development to face the complexity and demands of their role (Wahlstrom, et al., 2010).

The new professional standards suggest principals are expected to demonstrate proficiency in leading a school as a system-wide learning community made of teacher PLCs (NPBEA, 2015). Principal professional development is often supported by a district's central office. However, there is a gap in research on the role of the central office in facilitating PPLCs as a means of professional development for principals (Honig & Rainey, 2014).

## RESEARCH FINDINGS

Research questions focused on principals' descriptions of their experiences and their learning in these PPLCs. Multiple interviews, observation data and PPLC meeting transcripts were analyzed to identify themes and develop a description of the essence of the lived experience of principals participating in a PPLC nested within a district administrative PLC and facilitated by a professional from the central office.

The primary findings from the study included that:

- (a) Participants described participation in PPLCs as valuable in providing connection, collegial support, collaboration, shared vision and dedicated time to focus on instructional leadership
- (b) Principals experienced new learning and the collaborative work in PPLCs in relation to direct relevance as something they can apply to lead change in their building contexts

- (c) Principals experienced a complex interior journey that included feelings of doubt efficacy, trust, risk and self-awareness as part of PLC participation
- (d) Principals described that through participation in PLCs they gained greater understanding of the focus, structures and leadership of PLCs.

## CONCLUSION/DISCUSSION

The results of this study suggested that in a nested learning community, the diverse PLC layers can provide supported practice, common vision, purpose, and collegial support across the system. The use of a district level PLC can provide a vehicle for delivery of topical professional development for principals and central office leaders. The use of protocols, activities and simulations in the PPLC experience provided supported practice and helped leaders envision their work in their contexts. This supports previous research on PPLCs (Honig & Rainey, 2014) and aligns with the theoretical framework of situated cognition (Wenger, 2000). The PLC may help districts create more supportive and collaborative systems, which have been found to increase leader efficacy (Leithwood & Jantzi, 2008).

Recommendation for districts included that central office leaders interested in implementing PPLCs focused on supporting development of principals as instructional leaders need to ensure system supports are structured for access to job-embedded leadership opportunities. Central office leaders also need to evaluate the system structures to identify obstacles and alignment challenges that prevent principals from being able to conduct turnaround work with teachers. Further, the district's alignment of leadership calendars and opportunities will better support the development of joint enterprise for principals in a PPLC. Preplanned instructional leadership opportunities may ensure principals have opportunities for experiential learning as they apply new learning in their buildings.

## RESEARCH IMPLICATIONS

The findings of this research suggest there may be a complex relationship between autonomy, investment, meeting the needs of individual leadership contexts and achieving joint enterprise. This may be an area for future research. This study followed the first year of an initiative to develop principal professional learning communities (PPLCs) within a nested learning communities model facilitated by central office. The use of one district layer of common professional development through a PLC book study and a subsequent PPLC layer focused on supporting implementation of learning demonstrated one pathway to support principal learning. However, the study represents a first year in what is planned to be a long-term initiative. As a first-year effort in PPLC development, this study only provides a glimpse of the start of a change process and does not look closely at subsequent years, group discourse or interactions, or the effects on teacher or student layers. These would be important areas for future research on PPLCs.

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## ABOUT THE AUTHOR



Jennifer Gaudio has worked in education for twenty-seven years. She held various teaching roles in K-12 literacy and for the past twelve years has worked in school and district administration. She earned a Master's degree in reading followed by leadership certifications at St. Joseph's University. She graduated from Drexel's Ed.D program in Education Leadership and Management in August, 2017.

# Exploring Portals and Participation in Europa Universalis' Affinity Spaces

WRITTEN BY: **MAGDALENE MOY**, PhD Student

SUPERVISING PROFESSOR: **DR. BRIAN SMITH**

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*December 2017*

## ABSTRACT

Although there is disagreement among researchers about when, how, and which digital games should be used in formal educational settings, digital games are already present in classrooms. Affinity spaces provide both a theoretical framework and methodology for addressing this issue. Europa Universalis IV and its affinity space was explored as a source of novel insight for educational researchers, teachers, and game developers interested in serious games, learning through affinity spaces, and scaffolding within online gaming communities. This research aims to extend our understanding of games' affinity spaces and learning within their communities.

Despite the abundance of research on digital games in educational settings, there remains a general lack of consensus among educational researchers on the topic. This may be due to the ever changing technological and digital gaming landscape or to the perpetual difficulty of describing the contexts suited for learning through digital games. "[H]ow can one theoretical framework account for both the moment-to-moment interactions that constitute gameplay (including the player's goals and interactions) while also accounting for the broader socio- cultural contexts that constitute the activity?" (Squire, 2002). Research on affinity spaces help to bridge the *context* gap in games by attempting to describe both physical and virtual informal learning. This research applies Gee's theoretical framework of affinity spaces (2004) to *Europa Universalis IV* (EUIV), a complex grand-strategy game, to identify novel portals for learning in its affinity space.

## GAMES & LEARNING IN AFFINITY SPACES

Affinity Spaces are described as informal learning spaces where a common endeavor connects all participants (Gee, 2004). These informal learning spaces are spread across physical and virtual environments including the game's technological affordances, online forums (Reddit, Steam, and Paradox forums), social media (Facebook and Twitter), video sharing sites (Youtube and Twitch), blogging platforms (Tumblr and WordPress), and creative sites (DeviantArt and FanFiction.net). Therefore knowledge in affinity spaces is dispersed throughout its many participants, online tools, and technology (Lammers, Curwood, & Magnifico, 2012). Digital games<sup>1</sup>, are particularly interesting for studying affinity spaces because gaming communities primarily are connected by online networks, which leave a 'digital trail' of the community's activities and interactions (Lammers et. al., 2012). Game-focused affinity spaces can therefore provide a more holistic description of how learning is facilitated by the game itself and through its affinity space.

### Selection of Europa Universalis IV

EUIV was selected by the researcher as a possible game for teaching and facilitating self-regulated learning of history content. As an avid gamer the researcher played EUIV over the last three years and developed a research interest around this game. Past research on Europa Universalis II, the second edition of EUIV, showed empirically that EUII had potential for teaching history (Egenfeldt-Nielsen, 2012). Therefore this research focused on three broad questions:

- (1) What are people learning through EUIV's affinity spaces?
- (2) What motivates people to engage and contribute to EUIV's affinity spaces?
- (4) What is the content of EUIV's affinity spaces?

## PROPOSED METHODS

### Game Affinity Space Analysis (GASA)

A modified framework, Game Affinity Space Analysis (GASA), utilizes Foster, Mishra, & Koehler's TPACK framework (2011) and applies it to affinity spaces in order to describe what is learned through EUIV's affinity space. The GASA framework uses EUIV as the common endeavor that the affinity space develops around (Lammers et. al., 2012). The technological lens of the GASA framework is used to identify the game and its affordances as the 'T'. The pedagogical, 'P' lens describes the in-game pedagogy or the set of scaffolds the game provides to allow its players to engage with the game. Lastly, the 'CK' refers to the game content knowledge across affinity spaces.

### Portal Network Analysis (PNA)

This study is also interested in the different media and portals participants use to create and share content through EUIV's affinity space. Therefore, by using the GASA framework and applying PNA this study can elucidate which portals are used by players, developers, or core participants by analyzing the game content knowledge in the affinity space.

### Playing Research Methodology

This research aims to describe EUIV's in-game pedagogy and technology. The Playing Research Methodology can be used to provide an in-depth game analysis (Foster et. al., 2011). By deconstructing the game through first-hand play EUIV's technological affordances will be qualified.

<sup>1</sup> computer and videogames

## Interviews & Observations.

Participant voices and perspectives will be obtained through observations and interviews. Participants are identified as players of EUIV and are categorized as players, core members, and/or developers. Both methods will be used to gain deep knowledge about participants learning through EUIV and its affinity spaces.

## IMPLICATIONS

This ongoing project aims to establish a basis for further research into EUIV's gaming community and culture. The potential of games for learning remains shrouded in questions about which games should be used, what content games teach, and how they should be implemented.

In an ever changing technological climate we must find the ways and reasons that people are already leveraging affinity spaces to teach and learn. This study proposes application for:

- (1) Researchers interested in motivation and socially shared-regulation of learning in affinity spaces.
- (2) Teachers and teacher educators interested in designing meaningful gaming experiences for learning.
- (3) Game developers interested in game affordances that encourage player buy-in and affinity space mediated content support.

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## ABOUT THE AUTHOR



Magdalene Moy is a second year PhD student in the Educational Leadership Development and Learning Technologies program with a concentration in STEM education. Magdalene has received a M.S. in microbiology from Thomas Jefferson University and worked at Drexel University for two years as an Assistant Director of Teaching Laboratories before starting this program. Her interests explore self-regulation of learning, informal learning environments, and gaming. Currently, Magdalene works with Dean Nancy Songer on the Philly Scientists project as part of the curriculum team. She also co-designed and co-instructs a community, course-based research experience, Mobilizing the Scientific Method, with Dr. Karen Kabnick through Drexel's Biology Department and Robeson High School. One of her passion projects includes opening a closed elementary school in Pittsburgh as a community and educational resource center. When Magdalene has free time she enjoys gaming, especially Europa Universalis IV.

► RESEARCH BRIEF NO. 6

## Mixed Methods Design: Examining Secondary Teachers’ Perceptions about the Efficacy of First Year Implementation of the Collins Writing Program on Students’ Academic Performance on State Mandated Tests

WRITTEN BY: **BARBARA A. MAY**, EdD Student

SUPERVISING PROFESSOR: **DR. JOYCE PITTMAN**

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*December 2017*

### ABSTRACT

The Common Core State Standards Initiative explains that a key purpose of writing is to communicate clearly (Common Core State Standards, 2017). This study aims to determine the efficacy of, and the teachers’ perceived efficacy of, the first year implementation of the Collins Writing Program at the high school level. The research combines findings from the research site, state standards, and School Performance Profile (SPP) and investigates the Literature Keystone exam scores of matched cohorts before and after the implementation of the program. While predominately a quantitative study, semi-structured interview with a minimum of teachers surveyed will provide insights to the richness of the experience or areas for improvement.

## AIM

This research study serves to investigate potential changes in the scaled scores earned at the research site's administration of the Literature Keystone exams, pre- and post-implementation of the Collins Writing Program.

## PROBLEM & PURPOSE

Previously, the research site experienced a declining trajectory in its literature scores on the state mandated exam, resulting in a non-characteristic School Performance Profile (SPP) score during each of the last four years. This nonequivalent, quasi-experimental, mixed methods study will examine the relationship of how and to what extent the first year implementation of the CWP, effects the scaled scores of grade 10 students on the state mandated, standardized tests in a selected school district in the State of Pennsylvania. This problem warrants additional research as other school districts may be seeking similar treatments to address their declining scores and may turn to CWP.

## RESEARCH QUESTIONS

### **Quantitative Question:**

To what extent does the Collins Writing Program effect the scaled scores of the grade 10 matched pairs on the state standardized and mandated end of course Keystone Language Arts Exam from testing year 2014-2015 to the testing year of 2015-2016?

### **Qualitative Question:**

How do Grade 10 English teachers describe their perceptions about the Collins Writing Program's implementation and instructional changes to classroom practice?

## PROPOSED METHODS

A mixed methods sequential design is deemed best suited for this study because “the basic assumption is that the use of both quantitative and qualitative methods, in combination, provides a better understanding of the research problem and questions than either method by itself” (Creswell, 2012, p. 552). With that in mind, the quantitative data will help the researcher explain the impact of the Collins Writing Program implemented to answer the first question. The use of both quantitative and qualitative data yields the best perspectives for determining answers to the second question.

Participant selection will come from the archived grade 8 PSSA scores housed on campus. The researcher will use the PA secure ID of the students in grade 8 during the 2012- 2013 and 2013-2014 school years, respectively. Through using the PA Secure ID to drill down by defining characteristics and determine statistically similar students. From there, a process of deriving matched pairs follows to arrive at a purposive sampling (Creswell, 2012). Another phase is conducted via teacher surveys and interviews. The researcher forgoes traditional statistical controls and, instead, must rely on a pre- and post-test design. For pre-test purposes, the researcher will use the end of course Keystone literature exam scores of the Grade 10 students from the academic year of 2014-2015 who were taught in the language arts curriculum prior to implementation of Collins Writing Program. The second group of grade 10 students is from the year 2015-2016. These students receive instruction by teachers in a post adoption of the Collins Writing Program. Through a post-test review, the researcher will use the grade 10 Keystone language arts exam of the matched pairs.

Because these are matched pairs through a process of characteristics, the results will yield more reliable data than if the classes were compared via a t-test to determine likeness. The researcher will use a two-tailed t-test of the two cohort groups. The purpose for a two-tailed test is that the researcher does not want to assume, but rather determine the extent that the Collins Writing Program has a statistically significant, positive effect on student performance, as measured by the end of course Keystone Literature exam. The cohorts are arranged as follows:

	BELOW BASIC		BASIC		PROFICIENT		ADVANCED			
▶ COHORTS ◀	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE		
Grade 10 Language Arts Instructions received 2014–2015	1	2	3	4	5	6	7	8		
Grade 10 Language Arts Instructions received 2015–2016	9	10	11	12	13	14	15	16		
▶ COHORTS ◀	WHITE		BLACK		HISPANIC		ASIAN		MULTI	
Grade 10 Language Arts Instructions received 2014–2015	17		18		19		20		21	
Grade 10 Language Arts Instructions received 2015–2016	22		23		24		25		26	

Reliability of the PSSA assessment is continually monitored against and correlated within similar ranges of prior administrations of the PSSA tests. This data is interpreted and reported across the same administration and compared to prior year’s assessments. The validity ranges from 71% to 93% within year comparison, while the across-year range is from high 60’s to low 80’s (PDE, 2010). In addition, the Pennsylvania State Board tries diligently to minimize ethnic and gender differentials by addressing the item construct – irrelevant variance. PDE recently commissioned a study to assess the tests’ items, statistical relationships, and validity (PDE, 2010). This data is significant because the PSSA’s are used to determine the matched pairs for the rest of the study.

The second part of the study involves teacher perceptions regarding the effectiveness of implementing the CWP. A short survey of 10 questions developed and administered in 2007 by the Minneapolis, Minnesota public schools will be repeated with the teachers of this research site to “evaluate the effectiveness...based on the teachers’ perceptions...of their own teaching practice and...students’ writing performance” (Collins, 2015, p. 10). The instrument evolved through a partnership between Dr. Collins, Collins Education Associates (Collins, 2015), and the Minneapolis public schools coupled with review of previous studies and literature reviews. Using the same instrument demonstrates the same perceived issues regarding implementation faced by any district who adopts curricular change.

Follow up to these responses will be semi-structured interviews with at least 2 grade 10 English teachers who implemented the CWP through the various phases of the curriculum. A possible unmeasured source of change may be attributed to the implementation of CWP by the other core and elective teachers.

## RESEARCH IMPLICATIONS & SIGNIFICANCE

The process of learning to write and express ideas in a manner that can be understood by others is recursive and cyclical. One of the underpinnings of the CWP program is frequent writing and publishing. An extension of this research would be the investigation of how the use of texting and use of textisms influence students’ abilities to express themselves. It is the students’ awareness of phonemes that create the textisms, such as “GR8” to represent “great.” Most students publish hundreds of times daily, another pillar of the CWP, via social media platforms. The idea of a possible relationship between the frequent informal writing and standardize testing would benefit from exploration.

If the CWP is able to improve the writing abilities of the students, then the research garnered through this study can address the deficit identified through the research streams in the literature review.

- (1) **Role:** The cultural and historical role of education is to produce independent thinkers who are also writing proficient learners. Evolution often sparks the role to be redefined or reexamined.
- (2) **Process:** The process of writing begins with language acquisition expressed through symbols on paper undergoing drafting, editing, and publishing steps. Practicing writing increases the ability of expression through significance of frequency.
- (3) **Reform:** This is government driven, cyclical response to social and economic changes. Accountability drives change in the form of school improvement initiatives focused on student achievement.
- (4) **Evolution:** The emerging practices in education are designed to leverage academic change. From change comes the renegotiation of acceptable standards, known as curriculum, across the global perspective.

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## ABOUT THE AUTHOR



Barbara May has worked in the field of education for over 20 years and in multiple states, with the majority of time spent at Fort Hood, Texas, and Lebanon, Pennsylvania. She has served as a teacher of students identified as Talented and Gifted, a Campus Instructional Specialist to mentor new teachers to Killeen Independent School District that serves Fort Hood, a Curriculum Director, and an Assistant Principal. She earned her Master of Education degree from Tarleton State University, part of the Texas A&M University System, in 2001. Shortly after moving to Pennsylvania, she began her studies at Drexel University

in the EdD program of Educational Leadership and Management in Administration. Barbara is looking forward to her final defense in the next five months. She has arrived at this point with the support, help, and guidance of many talented mentors through the School of Education at Drexel.

► RESEARCH BRIEF NO. 7

## Comparing Engineering Labs for Organizational Analysis from Global Perspective

WRITTEN BY: **LEONA DONALDSON**, PhD Student  
SUPERVISING PROFESSORS: **DR. KRISTY KELLY &  
DR. PENNY HAMMRICH**

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*January 2018*

### ABSTRACT

Underrepresentation of women in STEM exists in the world. In the United States, engineering has one of the largest gender imbalances in STEM and nearly 40% of female engineering degree holders leave the field or never enter the field after graduation from college. Several factors contributing to the phenomenon have been identified. However, the majority of them focus on women's individual preferences and skills. In this study, intersectional analysis of gendered organizational practices including gendered leadership in diverse engineering labs from global perspective is proposed.

## AIM

The purpose of this research brief is to provide descriptions of factors contributing to gender imbalance in STEM from the literature, to discuss how each student's lab experience might be different depending on her/his backgrounds, leadership of the lab, and peers, and to propose a future research plan with an aim of deconstructing gendered organizational practices in engineering labs.

## BACKGROUND & LITERATURE

Gender imbalance in STEM exists in the majority of the countries in the world. The average across regions, only less than 30% of women were employed in scientific research and development in the world in 2013 (Catalyst, 2016).

In the United States, female students became the majority at college in 1979, and nearly 60% of all college students have been female for the last decade. However, the gender gap has been persistent in STEM. In the 1990s, the metaphor of leaky pipeline between undergraduate and PhD STEM students seemed to be closed because an equal percentage of female and male STEM bachelor's degree holders have been pursuing and earning PhDs in STEM although the gap in actual number of STEM degree holders among male and female students is significant (Miller & Wai, 2015). Even if a female student in STEM made it to a PhD program, nearly 40% of women who earned engineering degrees left the engineering field or never entered the profession. The field of engineering has one of the largest gender gaps in all the STEM fields and less than 20% of bachelor's degrees were awarded to women in 2015.

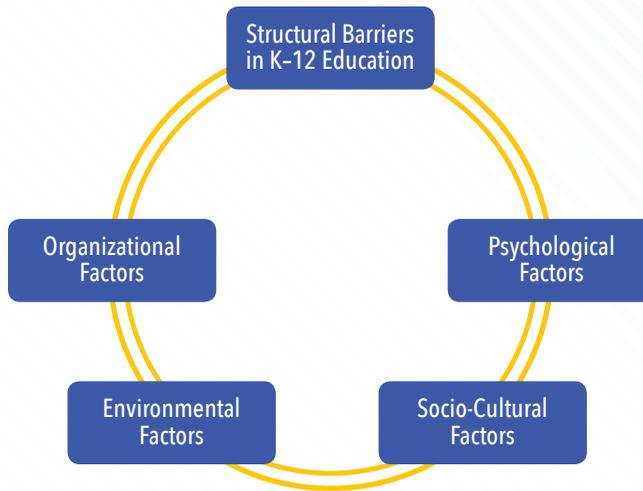
This phenomenon also applies to the workforce. In the United States, women made up of less than 15% of all engineers in 2016. Some of the factors contributing to the phenomenon revealed in the literature are structural barriers in K-12 education, socio-cultural factors, psychological factors, environmental factors, and organizational factors (Pollack, 2015; Kanny, Sax, and Riggers-Piehl, 2014).

Some researchers argued that individuals' background characteristics such as gender, race, class, and parents' highest education are the dominant factors contributing to gender imbalance in STEM (Kanny, Sax, and Riggers-Piehl, 2014). However, those characteristics are not inherently problematic. The issue is the stereotypes associated with those characteristics and patriarchal hegemonic culture of white race and class privilege in the American society through which problematic structures are reproduced.

Ely and Meyerson (2000) proposed a new approach to organizational analysis. They asserted that it is important to recognize organizational culture and issues around social practices that are designed by and designed for white heterosexual class-privileged men being the norm or the basis of the culture.

Thus, I propose a study with an organizational analysis in engineering labs at graduate level in order to deconstruct gendered organizational practice that might be contributing to gender imbalance in various engineering contexts.

► FIGURE 1: THEORETICAL FRAMEWORK



## RESEARCH QUESTIONS

- (1) How do engineering-major graduate students negotiate and construct meanings about their identities from their personal background characteristics and organizational practice that is led by leadership style of their professors in their labs?
- (2) How does their experience in the culture of their labs influence their motivation for success in the lab work and desire for pursuing a career in engineering?

## HYPOTHESIZED FACTOR NEGOTIATION

People who have personal characteristics (gender, race, ethnicity, class, cultural values and norms) that deviate from the ones of her/his leaders and peers tend to experience disadvantage in engineering labs and less likely to succeed in the lab work and more likely to leave the engineering field or never become engineers.

## METHODS & FUTURE RESEARCH PLANS

This study is approached with ethnographic multiple case studies involving semi-structured interviews and observation in engineering labs. The participants will be engineering-majoring graduate students and professors. Maximal variation sampling in terms of gender, race, ethnicity, class, nationality, and study or research abroad experience will be conducted. The focus of the study will be the students' lab experiences and leadership practices of the professors in four different types of labs:

- (1) Female-led female-majority
- (2) Female-led male-majority
- (3) Male-led female-majority
- (4) Male-led male-majority.

The culture of gendered organizational practice in each lab through the lens of the theoretical framework will be recorded and analyzed. Additionally, each student's lab experience and her/his career aspiration will be analyzed from an intersectionality perspective.

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## ABOUT THE AUTHOR



Leona Donaldson is a second-year PhD student. Her research interests focus on gender, intersectionality, STEM, global, and social justice. She earned two degrees—one in Japanese and another one in Education—from two universities in Japan and taught Japanese calligraphy in Japan. After she moved to the United States, she earned a master's degree in Education at Portland State University. She is a certified PreK-12 teacher and taught in high school prior to entering the PhD program at Drexel. Currently she teaches Japanese to adults at Japan America Society of Greater Philadelphia.

► RESEARCH BRIEF NO. 8

## A Second Chance: A Phenomenological Study of African American Student Perceptions of Urban Secondary Alternative Schools

WRITTEN BY: **TRACI COHEN DENNIS**, EdD Student

SUPERVISING PROFESSOR: **DR. AYANA ALLEN**

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*January 2018*

### ABSTRACT

The purpose of this study was to understand the lived experiences of African American students in urban alternative schools. Alternative schools have been criticized for not holding students to the same academic standards as traditional schools and for failing to provide the same opportunities for students as traditional schools; thus, the study examined how participants' perceptions of their school environment, educational opportunities and teachers impacts their achievement, motivation and educational outcomes. Findings revealed that participants felt that there is a genuine investment in their success in these environments and that they receive ample support and resources to accomplish their goals.

## AIM

The purpose of this brief is to share findings related to how African American students in urban alternative schools perceive their school environments, their educational opportunities and their teachers and how these perceptions impact their achievement, motivation and educational outcomes

## PROBLEM OR ISSUES

Alternative schools, which are usually housed in a separate facility, are typically designed to address the needs of students who are at risk for educational failure as indicated by poor grades, truancy, disruptive behavior, pregnancy, or similar factors associated with temporary or permanent withdrawal from school (Carver & Lewis, 2010). Many students who attend alternative schools have not been successful in regular schools, often because of behavior, discipline or safety concerns and may be at risk for educational failure (Carver & Lewis, 2010). This research topic is significant because in the large urban school district where the research study takes place, African American students currently make up 62 percent of the district population; yet, they make up 97 percent and 94 percent of the student populations in the two alternative schools studied (Mirvale School District<sup>1</sup>). A 2014 report from the U.S. Commission on Civil Rights, which analyzes school discipline data, revealed that Black children represented 16 percent of K–12 enrollment in the United States but accounted for 43 percent of the student population who received multiple out-of-school suspensions during the 2011–12 school year (Lindsay and Hart, 2017). The overrepresentation of African American students in this district’s alternative schools supports research which reveals that African American males and females receive more disciplinary infractions and are suspended and expelled at higher rates than other racial groups (Blake, Butler, Lewis & Darensbourg, 2011; Lewis, Butler, Bonner III, & Joubert, 2010).

## QUESTIONS/METHODS

Data for this study was collected through one-on-one and focus group interviews, classroom observations and field notes. Each study participant was interviewed one time and two focus group sessions were conducted. Each focus group was comprised of three students from the two participating alternative schools. The phenomenological approach allowed the researcher to explore the lived experiences of African American students enrolled in alternative schools.

The research questions that guided this study were:

- (1) How do African American students in urban secondary alternative schools describe their lived experiences related to success, empowerment and motivation?
- (2) How do African American students in urban secondary alternative schools perceive the environment/culture and the educational opportunities available to them?
- (3) How do African American students in urban secondary alternative schools describe the teachers who push them to excel and succeed?

<sup>1</sup> *Mirvale School District is an alias*

## CONCLUSION/DISCUSSION

The six emerging themes from this study are:

- (1) Maturity and self-advocacy
- (2) A better opportunity/a second chance
- (3) Feeling respected and heard
- (4) It takes a village
- (5) Relevant and rigorous instruction
- (6) No feelings of disconnection or exclusion due to race

During the interviews, study participants recounted how maturity has helped them to see the importance of school, how positive relationships with teachers, staff and administrators have helped them to overcome challenges, and how the resources and support they are receiving have kept them on track to graduate despite obstacles that they have encountered. Study participants also shared that they believe that the alternative school environment is unique in terms of providing them with a “second chance” at obtaining their high school diploma. According to study participants, caring and supportive relationships with teachers, staff and administrators have helped them to overcome challenges that they face and a positive school climate and multiple options and resources keeps them on track to graduate despite obstacles that they encounter. The participants also noted the culturally responsive teaching practices that effective educators in their schools employ. School cohesion, cultural congruity and culturally responsive teaching were theories that surfaced multiple times as factors contributing to the participants’ motivation and success.

## RESEARCH IMPLICATIONS

Based on the themes that emerged from this study, in order for alternative schools to successfully serve and support all learners, such schools should:

- (1) Establish reciprocal and bidirectional relationships with students,
- (2) Create school cohesion and multiple pathways to graduation based on students’ individual circumstances and needs, and
- (3) Develop a caring and supportive community that implements culturally responsive teaching practices.

The findings of this study led the researcher to conclude that it is necessary to validate and affirm the cultural assets and knowledge of African American students in alternative schools, advocate for support and resources that will ensure that they have equitable access to educational opportunities, and provide compassionate and encouraging advocates who will help them forge a successful path to college and career success. Going forward there are additional populations that would be of interest for future studies. In the future it would be beneficial to understand the lived experiences of African American alternative school students who are younger than 18. The 17 and under demographic may provide insightful information regarding the formation and development of academic identity and academic self-concept in younger students. In the future it will also be important to study and understand the lived experiences of Hispanic students in urban alternative schools.

Research indicates that the number of Hispanic students attending alternative schools is increasing; therefore, it will be imperative to find out if these students feel disconnected or excluded in school due to their race and also to find out how to best support their academic and emotional needs in alternative schools.

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## ABOUT THE AUTHOR



Traci Dennis is an EdD candidate in the Drexel University School of Education. She is an urban educator who has focused on social justice for 15 years. Traci is currently an Instructor and Director of Undergraduate Teacher Education at American University in Washington, DC. Traci's strong record of teaching and leadership experience in K-12 urban schools include mentoring, coaching and training new and experienced teachers. She is a seasoned curriculum designer and developer who has worked in Los Angeles, Chicago and Washington, DC as a middle and high school English teacher, English Language Arts Content Specialist, Literacy Coach, Curriculum and Professional Development Manager, Acting Principal and Teacher Education Fieldwork Coordinator/Supervisor. Traci was also a Manager of Professional Services with Houghton Mifflin Harcourt (HMH), an educational publishing company.

► RESEARCH BRIEF NO. 9

## Teachers' Views toward Integrating Visual Technological Simulations in Teaching Science: A Case Study in Urban Planning

WRITTEN BY: **HAMIDEH TALAFIAN**, PhD Student

SUPERVISING PROFESSOR: **DR. PENNY HAMMRICH**

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*February 2018*

### ABSTRACT

In today's world, children are acquainted with various technological tools from early ages and use these tools in many aspects of their everyday lives. From the educational perspective, the impact of using technology as an instructional tool to enhance the students' learning outcomes have been supported by many studies (NSTA, 2003). However, the abundance of technological tools for enhancing students learning outcomes does not always encourage their learning and motivation. While many studies have blamed teachers' ineffective strategies in using technology, some others believe that teachers' resistance to change and fear of the unknown is a barrier to technology implementation. Yet, the underlying factors that inhibit or encourage teachers in using technological tools are still unknown.

## AIM

Simulations have a great impact in sparking students' interest (Honey & Hilton, 2011). Good simulation allows learners to manipulate multiple variables in the process of engaging in an activity (Gredler, 1996). The literature says that despite having good computer simulations especially in science education, the students still do not value science in scientific ways and do not develop an interest in science beyond the classroom (Resnick, 1987). Since teachers' incorporation of new technologies is of paramount importance, this study first tries to focus on underlying factors that might inhibit or encourage them to teach science using simulations. Then, some teaching strategies in teaching science using visual simulations will be proposed that might be effective in keeping students motivated in science in general and in Urban Planning in particular as a simulation game.

## BACKGROUND & PROBLEM STATEMENT

The United States Department of Education views the integration of technology in education so important that the department issued the 'Enhancing Education through Technology Act of 2001' (USDE, 2001). It says that in addition to using technology in the science classroom, teachers should also be prepared for teaching students on how to incorporate computer technology (NSTA, 2003).

Yet, Ertmer (1999) believes that the effective integration of new technologies is impacted by first-order and second-order barriers. While the first order barriers address the external resources, training, and support, the second order barriers comprise of internal factors such as teachers' beliefs confidence, and values. A few studies support the view that teachers' value beliefs (Vongkulluksn, Xie, & Bowman, 2018) resistance to change from traditional methods to new technological approaches, as well as fear of the unknown, are the main barriers in the way of teachers (Mannino, 2004; Shane & Wojnowski, 2005). Nonetheless, these factors might not be valid for science teachers who have more opportunities for using technological tools in practice. More focused studies need to be done to shed light on teachers' views toward using technological tools in teaching STEM in general and science in particular.

## METHODOLOGY

**This study aimed to answer the following research questions:**

- (1) What are high school science teachers' views toward using visual technological simulations in science teaching?
- (2) What motivating effects (if any) do the teachers see in using visual simulation for science students?
- (3) What teaching strategies are suggested by teachers to enhance the quality of learning by incorporating technological simulations?

To answer the research questions, a case study was used which is the study of a case within its real-life setting (Yin, 1998). Convenient sampling enabled the researcher to recruit a science teacher who had incorporated Philadelphia Land Science (PLS) as a simulation

in teaching Urban Planning course. An observation session was also organized in which the researcher visited the site while the same teacher was using the simulation to teach Urban Planning. The validity of interview and observation session was ensured by member checking (Yin, 2013).

## PRELIMINARY RESULTS

**The interview and observation results after two rounds of analysis (open and axial coding) (Creswell, 2002) revealed the following themes:**

- The teacher had very positive views toward using technology and especially simulations. Regarding Philadelphia Land Science (PLS) simulation, she believed that these sorts of technologies allow users to virtually make an important impact on environmental and economic variables and see the changes. Simulations “can offer experiences for learners that they might not have access to anywhere else” or “simulation can offer a connection to real-world issues/problems”. Therefore, she believed teachers need to incorporate them more.
- The first-order barriers were also observable in the research site such as internet connection and difficulty in accessing the simulation with the students’ personal laptops. The teacher believed that the first-order barriers can even impact the teachers’ beliefs and values which are the second-order barriers negatively.
- Well-designed simulations can be motivating if used properly. By well-designed simulations, the teacher meant a simulation that provides enough engaging opportunities as well as enough interaction between the players.
- Two fundamental barriers emerged out of results of this study which were neither first-order barriers nor second-order barriers:
  - (1) “teachers do not know how to integrate the simulation,” she believed that teachers generally don’t know when and how to use technologies. They don’t know if they should use them as assessment tools, as the core content of the lesson plan, or as an after-school program.
  - (2) “teachers do not know which simulations are appropriate for their class,” she said that teachers are unaware of affordances that different simulation can provide for the players. They need to know what type of content is taught, what digital literacy skills are needed and how the simulation is going to deliver the content.

## RESEARCH IMPLICATIONS

Generally, the positive perception of teachers toward using visual technological simulations could provide policymakers and school administrators with a basis for change needed for technology implementation in science teaching. Yet, some of the teachers’ concerns such as choosing appropriate simulations need to be addressed by game analysis researchers.

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## ABOUT THE AUTHOR



Hamideh Talafian is a second year PhD student in Educational Leadership and Learning Technologies (STEM concentration) at Drexel University. Hamideh received her Master's degree in Teaching English as a Foreign Language and her Bachelor's Degree in English Literature from the top-ranked universities in Iran. Prior to her education at Drexel, she has taught English for seven years in a number of high schools, art schools, elementary schools and English institutions in Iran. Her research interests focus on the role of new technologies and students' motivation in STEM.

► RESEARCH BRIEF NO. 10

## Parent Involvement in Early Childhood Education and its Impact on the Development of Early Language and Literacy Skills: An Exploration of one Head Start Program's Parent Involvement Model

WRITTEN BY: **LINDSAY MITCHELL**, EdD Student

SUPERVISING PROFESSOR: **DR. VERA LEE**

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*February 2018*

### ABSTRACT

This qualitative study explored one specific Head Start program's parent involvement practices and the impact it has on preschool children's early language and literacy development. Findings revealed that this program utilizes a variety of methods to enhance parent involvement, however, it also identified that there are a variety of challenges facing this program when it comes to implementing best practices and attempting to create a reciprocal parent-teacher relationship.

## AIM

The purpose of this basic interpretive study was to explore one Head Start center's parent involvement practices to understand: Are parents learning from the information they are given? Are they utilizing the center's information and resources? Do parents believe that they are fostering early language and literacy skills in the home? By studying the essential components of the parent involvement model, this research sought to identify the parent involvement practices that contribute to the development of literacy and language acquisition in early childhood.

## PROBLEM

A universal problem in our nation is the need to ensure that all children are provided the resources and environment to develop the early language and literacy skills that are needed to succeed.

Prior research has shown that the earlier parents become involved in their child's literacy practices, the more profound the results, as well as the longer-lasting the effects (Mullis, Mullis, Cornille, Ritchson, & Sullender, 2004). Furthermore, research has found that there is an overwhelming connection between literary resources in the home and the development of children's reading skills (Sheldon, 2009). Parental involvement in early childhood education is a significant factor in the development of language and literacy skills prior to entering school (Melhuish & Phan, 2008). Both participation in preschool-based activities and regular communication between families and teachers are related to young children's outcomes (Weiss, Caspe, & Lopez, 2006). Parent involvement in early childhood continues to positively affect a child's academic achievement well into primary school, secondary school and even high school (Sanders and Sheldon, 2009).

## METHODS

Qualitative research methods were utilized for this basis interpretive study in order to analyze the practices (e.g. parent communication, distribution of resources, and parent education) of one early childhood center over a period of time. Qualitative methods were appropriate for this study because they allowed the researcher to develop relationships with the participants through in- depth interviewing and observations (at the center and their homes) during the research timeframe (Creswell, 2014).

The triangulated methods used for this study were one-on-one interviews with administrators, teachers, and parents/families, field observations of home visits and parent workshops, and a survey distributed to parents/families. Content analysis and pattern coding were used to analyze the data and identify trends, patterns, and relationships.

## RESEARCH FINDINGS

The data demonstrated that parents rely heavily on the program to teach them strategies and activities that can be used to engage in learning at home. The workshops proved to be the most valuable parent involvement piece of the program, however, attendance was very low with only about 12%-20% of parents attending.

Additionally, the research shed light on the challenges teachers and administrators face, both foreseen and unforeseen, when attempting to involve and educate parents. Lastly, the research revealed the significance of using home visits to establish relationships with and educate parents. Specifically, the role of fathers during home visits and the opportunity that these visits afforded teachers to engage with fathers.

## DISCUSSION

This study evidenced that the foundation of this program revolves around building relationships with families that support their overall well-being, and the need to create ongoing learning and development for parents and families. This program emphasizes the importance of educating, forming relationships with, and supporting families, however, there are numerous challenges this program faces, most noticeably, communicating with and educating parents from diverse cultural and educational backgrounds.

### **The following conclusions emerged from the data:**

- Teachers face significant challenges (both foreseen and unforeseen) when trying to involve and educate parents: language barriers, cultural differences, education level of parent, space to hold events, scheduling, and childcare
- The hands-on approach of the workshops with opportunities for rich discussions, adaptable and usable resources offered to parents, and inclusion of a bilingual facilitator proved to be the most effective way to educate and involve parents
- Conducting home visits provided teachers with an opportunity to engage with fathers and incorporate them into discussions regarding their child's learning and development
- A collaborative approach to goal-setting would prove to further engage and educate parents

## RESEARCH IMPLICATIONS

Information from this study provided a greater understanding of the value of using a variety of parent involvement methods, including hands-on learning through the use of workshops, to meet the needs of diverse families. Additionally, this research provided recommendations to the program to further improve their parent involvement approach, such as utilizing a strength-based approach, building on opportunities to involve fathers, and exploring the use of technology to communicate with families. The ultimate goal is for this program to educate teachers to best meet the needs of their diverse families through meaningful professional development opportunities' and nontraditional methods of communication. Lastly, long-term research studies that work to identify how schools can sustain the parent involvement efforts of early childhood programs would benefit students as they progress through formal schooling.

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## ABOUT THE AUTHOR



Lindsay Mitchell is a third year EdD student with research interests focusing on early literacy and language development. Before entering the EdD program, she was a reading specialist (K-5), and prior to that a classroom teacher. Lindsay has two Bachelor's degrees in Elementary Education and Early Childhood Education. While teaching, she pursued a Master's degree in Reading/Writing/Literacy from the University of Pennsylvania. Currently, Lindsay works as an adjunct professor of Early Childhood Education at Lebanon Valley College.

► RESEARCH BRIEF NO. 11

## Exploring Identities and Patterns of Participation in Virtual Environments

WRITTEN BY: **AMANDA BARANY**, PhD Student

SUPERVISING PROFESSOR: **DR. AROUTIS FOSTER**

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*March 2018*

### ABSTRACT

This research examines the patterns of participation that emerge in video games and the participatory affinity spaces that develop around them, to better understand how learning occurs in these informal online environments. This work presents a preliminary social network analysis (SNA) of 838 members in a community group focused on the space flight engineering game Kerbal Space Program. SNA was used to visualize friendships between players and to map individual participation attributes. Findings suggest the importance of designing for intentional whole-group engagement in affinity spaces used for targeted educational goals, such as curating rich modes of engagement, balanced by thoughtful user regulation.

## LEARNING & IDENTITY IN AFFINITY SPACES

As participation in online communities gains increasing prominence in the lives of learners, harnessing the potential of these spaces to offer powerful learning opportunities and transformative experiences has become an increasingly valuable endeavor for educators, designers, and policy makers (Collins & Halverson, 2010). Video games in particular have been lauded for their potential to support student learning and motivation, as players participate, share, and curate game-specific affinity spaces: collections of loosely organized social and cultural settings in which teaching and learning is shared by many participants and across many locations, connected through shared interests and passions in the game and game topics (Gee, 2007). It is through shifting allegiance, access, and participation in specific group practices that players learn and develop affinity identities (Gee, 2000), yet this process has proven difficult to measure as it crosses digital platforms (Lammers, Curwood, & Magnifico, 2012). Consideration is also warranted for the effects of game design (Gaydos, 2015) and affinity space design (Gee, 2018) on players' learning experiences and identity development.

The aim of this research is to examine the patterns of participation that emerge in video games and the affinity spaces that develop around them, to better understand how learning occurs in informal online environments. A secondary goal of the work is to explore how design features of these online environments shape user experiences, to offer targeted design implications for formal educational integration and use.

## KERBAL SPACE PROGRAM ON THE STEAM COMMUNITY PLATFORM

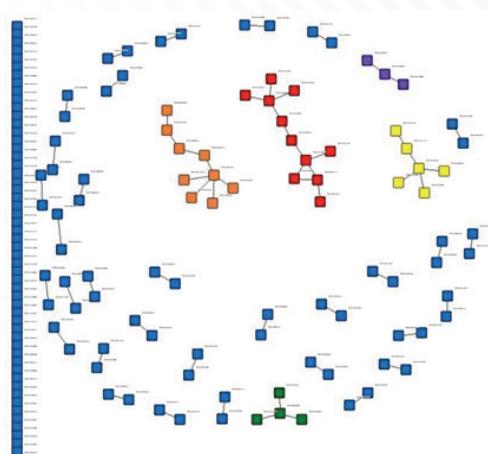
This research presents a preliminary social network analysis of a community group on Steam, an online gaming platform that also houses, promotes, and regulates the development of affinity spaces around online games. The 125 million Steam users may purchase, virtually store, and play over 25,000 games, while the community feature offers collaborative gaming and social network services including friend lists, player-to-player chats and gifts, game ratings and reviews, and user badges and achievements. The sample consisted of 838 members of a community group for the game Kerbal Space Program (KSP), a space flight design and simulation engineering game. KSP is the highest ranked educational game on the site, and the selected group was the largest English-speaking community of voluntary members.

Social network analysis (SNA) was used to explore the relationships between social actors in a connected group (a network), and "what passes through these networks" (Kadushin, 2012, p. 4). Steam makes user data on gameplay and social networks freely accessible for download and analysis through their Application Programming Interface (API), which was used to visualize friendships between players and to map individual attributes (which games users played and how often, users' earned achievements, and community bans).

## FINDINGS

- 122/838 users were friends (sparse network).
- 31/35 friend clusters were dyads (pairs).
- Most dyads were friends before the community was created; larger friendship clusters were newer and likely developed through affinity space participation.
- Most users were active on Steam in the last 3 months, but had not played KSP.
- The range of earned achievements varied widely (0 – over 400) suggesting unique individual goals and affinity identities.
- No users earned community bans, but off-topic participation was visible.

► FIGURE 1: VISUALIZATION OF FRIENDSHIPS IN THE KSP GROUP



## DISCUSSION & IMPLICATIONS

Findings from an examination of the network of friends in the KSP suggest that the network is largely disconnected through friendship. These patterns reflect existing research on online participation, such as the “90-9-1” principle, which suggests 90% of members engage passively, while only 1% of the group account for most activity (Nielsen, 2006). Measuring more diverse types of connections between users could provide a richer understanding of group participation, such as records of discussion posts between players. These findings illustrate the need for designers to implement intentional motivational features in affinity spaces to more broadly engage communities with a targeted educational goal. Educators may also need to consider triangulating participation in online learners across different patterns and connections.

Patterns of friendship acquisition suggest that most dyads were formed before the creation of the KSP group, while larger clusters were newer and may have formed as a result of community engagement. Larger clusters were also more likely to demonstrate other types of participation, such as achievement acquisition. This suggests that friendship itself should serve as only a preliminary design goal in the development of educational spaces, as it may serve only as a catch factor to support initial engagement (joining the group). Design attention should be paid to facilitating rich learning experiences, from which user connections may develop naturally.

Finally, KSP group members earned no community bans, despite instances of off-topic or inappropriate postings. While such freedom may encourage broader participation in informal spaces, educators and designers should consider a careful balance between focus on a learning goal, and limiting engagement through over-regulation.

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## ABOUT THE AUTHOR



Amanda Barany is a third year PhD candidate in the Educational Leadership and Learning Technologies program with a concentration in STEM education. Her current research explores the design of online communities of practice to support user identity exploration and patterns of participation to support learner experiences.

Amanda currently works with Dr. Aroutis Foster as a graduate researcher in the Games and Learning in Interactive Digital Environments (GLIDE) lab, which unifies her interests in games, the design of computer-based learning environments, identity, and interest and motivation in game-based learning. She has 9 years experience studying the design of games and learning.

Amanda's current areas of interest stemmed from her prior research and professional experiences. She earned an undergraduate and master's degree in social work at the University of Wisconsin-Madison, with a focus on psychology and criminal justice. For five years, she worked in the UW Madison psychology department conducting lab studies of college students' developing interest and motivation in science content. From 2011 - 2014, she also served as project manager for the educational game Citizen Science at the Games + Learning + Society research and design lab. Amanda also worked as curricular designer for the game Fair Play, a game that provides immersive experiences of racial bias in higher education environments. Amanda was the co-lead organizer for volunteers at CSCL 2017 and co-editor for conference proceedings for GLS 2016.

# A Qualitative Case Study: Exploring Parents' Support Needs When An Adolescent with Autism Spectrum Disorder Is Preparing To Transition to Adult Services

WRITTEN BY: **REBECCA MARCH**, EdD Student

SUPERVISING PROFESSOR: **DR. JOYCE PITTMAN**

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*March 2018*

## ABSTRACT

Autism spectrum disorder (ASD) is a pervasive disorder that impacts an individual's ability to interact appropriately with others. Individuals with an ASD diagnosis struggle with communication impairments and restricted behaviors that cause them to be isolated from others. Individuals with more severe diagnosis of ASD are reliant on others for daily care throughout their lifetimes. Parents of individuals with the more severe ASD diagnosis assume the responsibilities of managing this life-long disorder.

This study will seek to understand parents' support needs when an adolescent with a more severe ASD diagnosis is preparing to transition to adult services. While juggling the daily responsibilities of running a household and managing social skill deficits and challenging behaviors, parents are also working as advocates for their child. Therefore, parents of adolescents with an ASD, when compared to parents of non-disabled peers, experience a need for greater support from special education teams as their child moves from a traditional high school program into adult services.

## PROBLEM

Currently, there is no system in place to assist parents of adolescents with a more severe diagnosis of ASD during the transitional phase from a high school certificate program to working with an adult services agency that will provide supported employment and independent living skills training (McDonough & Revell, 2010). Prior to high school completion, parents need to be connected with knowledgeable high school special education teams to avoid situations where individuals with a more severe ASD diagnosis may “fall through the cracks” (Taylor & Seltzer, 2011, p. 572). High school special education teams are best positioned to provide families and future related service providers with information about routines and strategies that benefit the individuals with ASD.

## PURPOSE

This qualitative case study is being conducted to explore parents’ support needs when an adolescent with a more severe ASD diagnosis is preparing to transition to adult services that provide supported employment and skill training programs.

## SIGNIFICANCE OF THE PROBLEM

This research seeks to describe the complex difficulties that face adolescents with ASD and their parents during the transition from traditional secondary school to adult services agencies. As Carter (2014) noted,

On the brink of adulthood, most youth aspire to pursue a range of personally important experiences, relationships, and outcomes in the years after high school. Although youth with more severe intellectual and developmental disabilities share many, if not all, of these aspiration for their futures, having a significant disability continues to be a powerful predictor of the degree to which desired outcomes will materialize in early adulthood. (p. 245)

Adolescents with ASD are experiencing the same hormonal and mood changes as typically functioning adolescents with the added complexity of social skill deficits and restricted behaviors. These complex forces can directly impact these adolescents’ ability to maintain appropriate social behaviors and function independently in workplace and community settings. Therefore, the responsibility falls to the parent to ensure that the individual with ASD can maintain a high quality of life.

In addition to managing the stresses that are associated with adolescence, parents of individuals with more severe ASD to play the role as an advocate into adulthood as well. This researcher used the literature review to examine prior research findings on the challenges that are associated with being an advocate for a person with ASD, and to understand how IEP teams need to work together to create meaningful transition plans. The problems that exist in the post- secondary transitional phase have been identified as needing significant attention from policy makers and local communities to ensure that quality services are provided for adolescents with ASD and their parents. In the meantime, parents and educators need to continue to work together to alleviate the stresses that are prevalent for adolescents with ASD and their families.

## CONCLUSION/DISCUSSION

Parents of adolescents with ASD have many support needs as their children with a more severe ASD diagnosis transition from high school certificate of completion programs to an adult service agency. If the gap is not bridged between secondary certificate of completion programs and acceptance into an adult services agency, this population of parents are likely to experience stresses that may be toxic to themselves and their families. In today's modern society, educators need to be working more closely with these parents and adult service agency providers to support the responsibilities and alleviate the concerns of parents of adolescents with more severe ASD diagnoses.

## RESEARCH IMPLICATIONS

Research findings from this study will allow high school special education teams to have a better understanding of the problems that exist for students with a more severe ASD diagnosis, and their families, leading up to high school graduation from a certificate program. With this knowledge, high school special education teams can create more meaningful transition plans that will allow individuals with more severe ASD to reach their greatest potential.

Future research will be needed to explore the transition process for adolescents with more severe ASD diagnoses. Specifically, researchers should investigate the most influential factors (ex. community-based learning, related service therapies, parental support, job coach, etc.) that allow individuals to achieve their greatest sense of independence. These factors need to be better understood by policy makers, high school administrators, curriculum specialists, and special education teachers to create more comprehensive transition planning for students with more severe ASD diagnoses. Additional research is needed to identify therapies and community services that would better support parents and families of students with more severe ASD diagnoses during this transitional time leading up to high school graduation.

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## ABOUT THE AUTHOR



Rebecca has been a Special Education Teacher at Kennedy Krieger High School (KHHS) in Baltimore, MD for the past four years. She works primarily with students with more severe diagnoses of autism spectrum disorder (ASD) and intellectual disabilities. For the past two years, she has been the chairperson of the PBIS (Positive Behavioral Intervention and Supports) committee. This committee works to implement and support a school-wide positive behavioral system that meets the needs of a diverse population of students. Prior to working at KHHS,

Ms. March worked with at-risk students at the Upper Merion Vantage Academy located in Bridgeport, PA.

In addition to teaching special education, Rebecca is currently pursuing her doctorate in educational leadership from Drexel University. Her dissertation will explore parental anxieties as adolescents with more severe diagnoses of ASD transition from a traditional public school settings to placements with adult service agencies. Through her work at Kennedy Krieger, Ms. March has repeatedly seen the difficulties that adolescents with more severe ASD diagnoses and their parents experience during this transitional phase leading up to graduation. Once Rebecca finishes her doctorate, she hopes to work with future special education teachers at the undergraduate and graduate levels.

► RESEARCH BRIEF NO. 14

## Evaluation of a Summer Literacy Camp for Struggling Readers

WRITTEN BY: **ALIA AMMAR**, PhD Student

SUPERVISING PROFESSORS: **DR. LORI SEVERINO & DR. MARY JEAN TECCE DECARLO**

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*April 2018*

### ABSTRACT

Summer reading programs have many purposes. One purpose is to counteract what has become increasingly known as summer slide, also known as summer loss, in academic achievement. The theoretical framework used included the Simple View of Reading and Scarborough's Reading Rope. The intent was to provide struggling readers with specific, targeted intervention in their area of need. This evaluation study of a community summer reading camp for children ages 7-10 aimed to determine if student reading scores could be affected in a 4-week program. Pre and post tests were used to determine statistical significance.

## RESEARCH AIM

The aim of this evaluation study of a community summer reading camp for children ages 7-10 was to determine if student reading scores could be affected in a short four-week program. Participants attended a four-week, three hours per day camp that focused on individual tutoring and small group sessions for reading and writing. Participants were given pretests and posttests using the Wilson Assessment for Decoding and Encoding (WADE) and two items from the Woodcock Reading Mastery Test (WRMT-III).

## PROBLEM OR ISSUE

Reading is a valuable skill that many students struggle with. Summer reading programs are essential for students, as they provide the means for them to maintain their reading skills during their summer break. Summer reading programs have gained popularity over the years. They are particularly important because they serve multiple purposes. According to Malin, Iacullo, and Drapastsky (2007), students who participated in a summer reading group no longer perceived reading as a chore, but rather as an enjoyable activity. They also realized that it provided them with the opportunity to think critically about various topics. They also commented that it helped them not just deepen their understanding about some topics in general, but it also helped them understand more about their own personal perspectives.

Another purpose of summer reading programs is that they counter what has become increasingly known as summer slide, also known as summer loss in academic achievement. Borman and Boulay (2004) define summer slide as the decrease in students' reading achievement or skills that occurs during summer break. Allington and McGill-Franzen (2003) define summer loss as the "decline in children's reading development that can occur during summer vacation times when children are away from the classroom and not participating in formal literacy programs (Mraz and Rasinski, 2007, p 784).

Paris et al. (2004) states that Heyns (1978) found that students who were poor or came from minority backgrounds were the ones who were more prone to summer loss when it comes to their academic achievement. This is more commonly known as the "achievement gap" or the "Mathew effect" because "the academically rich get richer and the poor get poorer" (Paris et al, 2004, p 122). Stanovich (1986) suggests, based on existing literature, that students who have poor reading skills are more likely to be vulnerable to summer slide. This is believed to be due to their lack of motivation when it comes to reading because of the difficulties they experienced.

Dynia, Piasta, and Justice (2015) believe that summer reading programs can counter summer slide, since they increase students' participating in reading activities. Heyns (1978) and Allington et al. (2010) believe that students' lack of access to books over summer break may also be a factor in their susceptibility to summer slide. Mraz and Rasinski (2007) believe that access to reading material is an essential factor in the development of reading skills. Coats and Taylor- Clark (2001) found that students with poor reading skills are generally those who are not offered the opportunity to read outside the classroom in order to improve their reading skills. McQuillan (1998) found that students who come from lower-income families tend to have a more limited selection of reading materials at home.

While Dynia, Piasta, and Justice's (2015) note that there is still little research on the effectiveness of library-based summer reading programs, they found that participants' literacy achievement was average for coding and comprehension. They also found that were "several significant correlations between literacy activities and achievements" (Dynia, Piasta, and Justice, 2015, p 398).

Summer programs can be instrumental in overcoming the summer slide. They can also be beneficial for students who struggle with reading and want to maintain and/or improve their reading skill level so that they do not struggle more when the school year starts. They can also provide a means for students from lower-income families to improve their reading proficiency and fluency, as they will have more access to reading materials while attending summer reading programs. It is important to note that not only will students have access to reading materials that they may not otherwise have access to, but that such materials would be age-appropriate and at the students' reading level.

The research hypothesis being addressed in this study is that student scores will improve after participating in the four-week, three-hour per day summer camp.

## RESEARCH FINDINGS

The theoretical framework that supported this research included The Simple View of Reading and Scarborough's Reading Rope, as the intent was to provide struggling readers with specific, targeted intervention in their area of need. Gough and Tunmer's (1986) Simple View of Reading divides reading into two components: word recognition and language comprehension. Word recognition consists of phonological awareness, decoding, sight word reading, and fluency. Language comprehension incorporates background knowledge, syntax, vocabulary, and text structure. Scarborough's (2001) Reading Rope utilizes the various strands discussed in the Simple View of Reading. More specifically, it explains how each component is a smaller strand that intertwines to become tightly woven with the others. This continues until the various component strands form the larger the two rope strands, one for word recognition and the other for language comprehension. Those two rope strands continue to intertwine until, they too, are tightly woven together to achieve fluency and skilled reading.

Throughout the duration of the camp, students received one-on-one Wilson Reading System (WRS) intervention daily. They also received one hour of group intervention with a reading specialist for writing strategies and another hour for reading strategies. This intervention focused on enhancing the students' ability to decode and encode in order to improve their overall language and language comprehension skills. WRS targets students starting the 2nd grade and adults who have language-based learning disabilities.

As previously stated, it was hypothesized that students who participated in the camp will show gains in their posttests when compared to their pretests. Students were given pre-tests to determine their intervention eligibility prior to the start of the camp. Posttests were then given at the end of the camp. As previously stated, the WADE and WRMT-III were used for both the pre and post-tests. From the WRMT-III, only the Word Identification (word reading) and Word Attack (nonsense words) items were used. Paired T-tests were used to determine statistical significance. Raw scores on all subtests of a curriculum-based assessment (WADE) showed statistical significance between the pretests and posttests. On the standardized, normed reading test (WRMT-III), no statistical significance was found between pre and post scores.

## CONCLUSION/DISCUSSION

Based on the analysis of the quantitative data alone, students benefited from the camp. As previously stated, the pretest and posttest results for the WADE showed statistical significance when analyzed using paired T-tests (see Table for Reading 1, Table 2 for Spelling, and Table 3 for Total Reading and Spelling). This confirmed that the students did in fact achieve gains throughout the duration of their intervention. While the WRMT-III results were not statistically significant, we did see gains in the Word Attack scores (see Table 4). It was not expected that the WRMT-III would show significant results, since it is a standardized test meant to show yearly gains and we used it in a four-month period instead of only four weeks of intervention.

Our limitations included our small sample size, since we only had 15 students enrolled in our camp. Due to attendance issues, some students were absent on testing days. Thus, we had incomplete data for some students and subtests.

► **TABLE 1: WADE READING: PAIRED SAMPLES T-TEST**

TEST COMPONENT	N	PRE M (SD)	POST M (SD)	t	SIG. (1-TAILED)
REAL WORDS	12	72.58 (36.395)	93.08 (31.245)	-2.879	.0075*
NONSENSE WORDS	12	22.83 (18.775)	36.42 (15.132)	-4.537	.0005*
SIGHT WORDS	12	67 (6.755)	69.08 (4.441)	-1.923	.0405*

► **TABLE 2: WADE SPELLING: PAIRED SAMPLES T-TEST**

TEST COMPONENT	N	PRE M (SD)	POST M (SD)	t	SIG. (1-TAILED)
REAL WORDS	9	29.56 (26.001)	41.44 (26.120)	-2.423	.021*
NONSENSE WORDS	10	51.90 (15.545)	36.42 (15.132)	-3.348	.0045*
SIGHT WORDS	9	3.67 (3.354)	69.08 (4.441)	-2.634	.015*

► **TABLE 3: WADE TOTAL: PAIRED SAMPLES T-TEST**

TEST COMPONENT	N	PRE M (SD)	POST M (SD)	t	SIG. (1-TAILED)
READING	11	157.55 (57.951)	195.55 (57.951)	-3.600	.0025*
SPELLING	9	80.11 (36.092)	105.33 (36.024)	-4.463	.001*

► **TABLE 4: WRMT-III: PAIRED SAMPLES T-TEST**

TEST COMPONENT	N	PRE M (SD)	POST M (SD)	t	SIG. (1-TAILED)
READING	12	25 (5.222)	24.67 (4.773)	-.374	.356
SPELLING	14	14 (4.899)	15.43 (5.585)	-1.272	.113

\*The mean difference is significant at  $p = 0.05$

## RESEARCH IMPLICATIONS

There are several research implications for this study, such as implications regarding summer camps in general, our camp in specific, and for myself as an emerging researcher. This could potentially be a possible means to counter the effects of the summer slide and perhaps the Matthew effect. We are planning on retesting the students who participated in the camp before the end of the school year to assess whether they have maintained the gains they achieved over summer. We are also planning on replicating our study in the summer of 2019 with a larger sample.

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Alia Ammar earned her Bachelor of Arts in Psychology with a minor in English Literature (2007) and Master of Arts in International and Comparative Education with a concentration in international education development and policy (2014) from the American University in Cairo. Alia served as an International Baccalaureate (IB) English Language and Literature Department Leader and taught IB English Language and Literature, Humanities, and Drama for six years at Green Land Pré Vert International School (GPIS) in Cairo, Egypt. Since coming to Drexel, she

has been working with Drs. Lori Severino and MJ DeCarlo on the Adolescent Comprehension Evaluation (ACE) and reading intervention summer camp. She also works as a teaching assistant for Dr. Severino and recently taught Fundamentals of Special Education at Drexel. Her research interests include special education policy and reading intervention programs. She is currently finishing her 2nd year in the PhD program and working on her Wilson Reading System certification.

▶ RESEARCH BRIEF NO. 14

## Principals' Perceptions of Changing the Age=Grade Traditional Model of Schooling

WRITTEN BY: **HOPE FUSS**, EdD Student

SUPERVISING PROFESSOR: **DR. JOYCE PITTMAN**

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*May 2018*

### ABSTRACT

The traditional education system has roots in the colonial and industrial eras but the purpose of education in today's dynamic and global economy has vastly changed. Schools need to produce creative thinkers and problem solvers. This research reviewed existing literature to explore the intersections of multi-age learning, mastery learning, and blended learning in elementary schools. Centered on research questions that examined principals' perceptions of moving to a new model of elementary schooling that breaks down the barriers of age=grade (students are placed into classroom because of their age) traditional schooling, this study sought to support the implementation of instructional strategies to meet elementary student's needs in the digital age.

## AIM

The purpose of this study was to examine the perceptions of elementary school principals when implementing a new model of schooling that breaks down the barriers of the age = grade traditional model. This study also identified best practices for multiage learning, mastery learning, and blended learning in elementary schools.

## PROBLEM

Elementary schools in the United States are increasingly called upon to produce creative thinkers and problem solvers to compete in the dynamic and global economy of the future (Mitra, 2014). However, the traditional model of elementary schooling that has roots in the colonial and industrial eras does not meet today's standards. Students' learning to collaborate with all ages and types of people is a needed skill in the digital age. According to Hoffman (2002), "What is interesting, and perhaps unique to the multi-age classroom, is how students have learned to accept differences in abilities and social behaviors" (p. 49). Moving to a multi-age mastery based model of schooling within a blended learning environment promises to give students the skills they need to be successful collaborators and problem solvers.

## RESEARCH FINDINGS

A phenomenological qualitative research design was used for the study. Six elementary school principals in schools that have implemented some aspects of multiage learning, mastery learning, and blended learning were interviewed to construct a description of their experience of breaking down the barriers of age = grade traditional elementary schooling. The findings showed that teacher capacity, progression of the curriculum, technology, time/master scheduling, and principal/teacher readiness for change emerged as barriers to moving to a new model of elementary schooling. Many conclusions were revealed in the data, but perhaps the most important was that barriers to changing the age = grade model of elementary schooling are not insurmountable.

## CONCLUSION/DISCUSSION

This study showed that there is a willingness and eagerness to make changes to the traditional age = grade elementary school model to meet the needs of students in the digital age. District administrators and principals who are looking for ways to help schools in moving towards a more innovative approach for students in the digital age could use the information learned in this study. This study also provided recommendations of best practices for multi-age learning, mastery learning, and blended learning in elementary schools as well as factors that may enhance or impede principals from taking a step in a new direction.

## RESEARCH IMPLICATIONS

The findings, results, interpretations, and conclusions of this study revealed the importance of professional development and teacher commitment when embarking on implementing a new model of elementary schooling. Finally, the important aspects of political, parental, and community beliefs revolving around changing the age = grade traditional model of schooling did not surface in the data in this study. Given these facets, the researcher recommends the following for further study:

- Replicate this phenomenological study in another school district where aspects of multiage, mastery, and blended learning are transpiring in elementary classrooms and compare with this study.
- Conduct a mixed-methods study that brings in the quantitative aspect of student-achievement data to analyze the impact of these learning strategies on student performance.
- Conduct a qualitative phenomenological study that focuses on the impact of professional development and teacher commitment when implementing strategies that change the age = grade traditional model of elementary schooling.
- Conduct a research study on the impact of political, parental, and community beliefs when implementing strategies that change the age = grade traditional model of elementary schooling.

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## ABOUT THE AUTHOR



Dr. Hope Fuss has been an educator for 20 years. She completed her Doctorate at Drexel University focusing on Educational Leadership and Management with a concentration in Educational Administration. She taught middle school science for eight years before going into educational administration. She has served students as an elementary assistant principal, elementary principal, district office supervisor of literacy instruction, and an adjunct professor and supervisor of student teachers for Frostburg State University. She is currently an elementary school principal in Hagerstown, MD. She is passionate about breaking down the barriers of the traditional model of schooling to meet the needs of learners in the digital age.

► RESEARCH BRIEF NO. 15

## Uncovering Pedagogical Beliefs and Practices in Higher Education through the Lens of Mind, Brain, and Education Science

WRITTEN BY: **TAMARA GALOYAN**, PhD Student

SUPERVISING PROFESSORS: **DR. KRISTEN BETTS & DR. PENNY HAMMRICH**

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*May 2018*

### ABSTRACT

The purpose of this study is to investigate the prevalence and predictors of neuromyths and to examine learning sciences literacy among instructors, instructional designers, and professional development administrators who work in higher education across onsite, online, and blended environments at four-year and two-year higher education institutions. This study seeks to identify factors that may predict beliefs in neuromyths and an understanding of varying levels of learning sciences literacy, including demographics, educational attainment, professional development, and neuroeducation exposure.

## BACKGROUND

### Mind, Brain, and Education Science

Advances in brain research and brain imaging technology in the past few decades has completely reshaped the areas of cognitive psychology and neuroscience and served as basis for the emergence of Mind, Brain, and Education (MBE) science. MBE science has been defined as a discipline that has been shaped by the different histories, philosophies, and epistemologies guiding education, psychology, and neuroscience (Tokuhama-Espinosa, 2008; 2017). One of the major goals of the MBE science is to understand how to translate neuroscience findings into pedagogy (Sousa, 2010). A major contribution to this process was the seminal work by Tracey Tokuhama-Espinosa, whose thesis focused on developing standards for the emerging field, which she referred to as mind, brain, and education (Tokuhama-Espinosa, 2008).

The discipline of MBE science calls for constant interaction between scientific research and practical knowledge in addressing research questions about mind, brain, and education (Fischer 2009). Research findings from neuroscience have important implications for instructional design, including onsite, online, and blended learning. MBE science makes the educational application of neuroscience findings possible. Neuroscience findings support student-centered learning models, which allow for flexible learning experiences and account for individual learning differences (Hinton, Fischer, & Glennon, 2012).

### Neuromyths

One of the challenges that the MBE science faces is the misinterpretation of neuroscience findings by researchers and educators from other areas, which, in its turn, may lead to the formation of neuromyths and result in ineffective instructional practices. Neuromyths have been described as misconceptions that arise from misunderstanding, misquoting, or misreading information about the brain (Goswami, 2006). Examples of some neuromyths include the beliefs that people are either “left-brained” or “right-brained, that we regularly use 10 percent of our brain capacity, or that there are visual, auditory, and kinesthetic learners (Geake, 2008).

Research shows that an educator’s conceptualization of knowledge can greatly impact her/his pedagogy, which, in turn can influence learners’ epistemological beliefs (Johnston, Woodside-Jiron, & Day, 2001). With increasing research about the role of the human brain in education, it is important to understand the pedagogical beliefs of instructors, instructional designers, and professional development administrators in higher education and their awareness of evidence-based practices that build upon the literature and advancements in neuroscience, cognitive psychology, and the learning sciences.

Over the past decade there has been tremendous growth in publications on the human brain both in academia and the media. Therefore, it is necessary to be able to critically evaluate relevant information sources and the impact on the formation of one’s knowledge of and beliefs about the human brain (MacDonald, Germine, Anderson, Christodoulou & McGrath, 2017; Papadatou-Pastou, Haliou & Vlachos, 2017; Dündar & Gündüz, 2016; Dekker, Lee, Howard- Jones & Jolles 2012). Previous research has shown a relationship between an instructor’s beliefs and her/his instructional practices in general (Nie, Tan, Liao, Lau, & Chua, 2013). However, this connection has mainly been established with

regards to teacher self-efficacy and primarily within K-12 education. Past studies on neuromyths and pedagogical beliefs have also focused primarily on traditional teaching in face-to-face environments.

## PURPOSE & SIGNIFICANCE

The purpose of this study is to investigate the prevalence and predictors of neuromyths and to examine learning sciences literacy among instructors, instructional designers, and professional development administrators who work in higher education across onsite, online, and blended environments at four-year and two-year higher education institutions. This study seeks to identify factors that may predict beliefs in neuromyths and an understanding of varying levels of learning sciences literacy, including demographics, educational attainment, professional development, and neuroeducation exposure. This study seeks to obtain a large sample of educators involved in instruction, course design, and training in the United States and internationally from a diverse range of higher education institutions and across disciplines. This study is significant since it is the first study that will compare the prevalence and predictors of neuromyths and examine learning sciences literacy among these three groups in higher education across onsite, online, and blended environments.

## RESEARCH QUESTIONS

**There are three research questions guiding this study:**

- (1) Are there differences among professional roles (instructor, instructional designer, professional development administrator) with respect to susceptibility to believing in neuromyths?
- (2) Are there differences among types of institutions (two-year/four-year, community college, public/private, selective/open) with respect to evidence-based best practices and learning sciences literacy?
- (3) Do professional development and training experiences predict lower susceptibility to believing neuromyths or higher levels of learning sciences literacy and awareness of evidence-based best practices? If so, are some experiences more strongly predictive than others?

## PARTICIPANTS & PROCEDURE

This study includes an online survey that was sent out electronically to the Online Learning Consortium (OLC) membership list which includes 750 higher education affiliated institutions in the United States and worldwide. OLC is a non-profit, professional organization that aims at improving the quality of online and blended learning through instruction, professional development, publications of best practices, and guidance to educators, online learning professionals and organizations around the world. OLC members include instructors, administrators, instructional designers, and professional development administrations who work across online, blended, and onsite environments.

To increase participation in this study, a snowball sampling technique has been used. Members receiving the email have been asked to share the invitation with professional and personal contacts who work as instructors, instructional designers, or professional development administrators at two-year and four-year higher education institutions in the United States and worldwide.

## MEASURES

The survey includes three sections. The first section consists of 24 items focusing on general statements about the brain. The second section consists of 29 items focusing on general statements from the learning sciences. The third section consists of 21 items focusing on participant demographics, professional experience, professional development, as well as experience and interests related to education and brain.

## RESEARCH IMPLICATIONS

This study has important implications for future research in learning sciences and Mind, Brain, and Education science. Pedagogical application of neuroscience findings is the primary goal of Mind, Brain, and Education sciences (Tokuhama-Espinosa, 2008; 2017). This study will assist in advancing understanding of the important connection between knowledge of brain research and related pedagogy practices in higher education.

### Research Team

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Tamara Galoyan is a doctoral candidate enrolled in the Educational Leadership Development and Learning Technologies program in the School of Education at Drexel University. Tamara holds a Master's degree in TEFL (Teaching English as a Foreign Language) from the American University of Armenia and a Master's degree in linguistics from the Yerevan State Linguistic University, Armenia. Her broader research interests focus on the neurocognitive, behavioral, and social factors affecting acquisition, retention, and transfer of learning across

different instructional modalities, including onsite, online and blended learning environments.

► RESEARCH BRIEF NO. 16

## A Case Study: Exploring Mindfulness Practices in Pennsylvania Elementary School Settings

WRITTEN BY: **JESSICA QUINTER**, EdD Student

SUPERVISING PROFESSOR: **DR. RAJASHI GHOSH**

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*May 2018*

### ABSTRACT

This brief presents an analysis of current research and details the protocol for a qualitative case study, which is currently being conducted. The study explores teacher perceptions about the implementation of mindfulness practices in elementary school settings. Mindfulness practices involve the act of paying attention to the present moment without judgement and serve as a gateway skill to developing social emotional well-being.

## RESEARCH FINDINGS

The research findings presented here are based on the literature review conducted in preparation for the data collection, which is currently underway. The completed study will analyze qualitative data obtained through transcribed participant interviews and journals. Both will be coded to identify themes and categories that emerge from data analysis (Saldaña, 2016). The three literature streams informing the research focus on social emotional learning, the classroom climate, and the outcomes of mindfulness practices.

The implementation of mindfulness practices can serve as a gateway to developing emotional intelligence and social emotional well-being in students. The research is based on the social emotional competencies of self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (Collaborative for Academic, Social, and Emotional Learning, 2015b). Neuroscience research has shown that regular mindfulness practice can lead to decreased grey matter in the amygdala, increasing self-regulation of responses to stressors, and an increase in executive functioning (Hölzel et al., 2011).

Additionally, students who demonstrate social emotional well-being are better able to attend to tasks and are more likely to maintain an optimistic outlook (Napoli et al., 2005; Schonert-Reichl & Lawlor, 2010). Student interactions with others also benefit through an increase in positive social interactions and a decrease in negative behavior (Schonert-Reichl et al., 2015). Academically, students who engage in mindfulness practices are less likely to experience test anxiety, receive better grades, and are more likely to attend school (Davidson et al., 2012; Napoli et al., 2005).

## AIM

The purpose of this research is to explore teachers' perceptions about how the implementation of mindfulness practices is helping to develop social emotional competence in students in their elementary classrooms. Specifically, the research questions explore teachers' views regarding the effects of mindfulness practices on the following:

- (1) Students' social emotional well-being.
- (2) Students' interactions with others and (3) the overall classroom environment, and students' ability to make responsible decisions in the school setting.

## PROBLEM

While mindfulness practices have been identified as one way to increase social emotional well-being, enhance classroom climate, and improve academic achievement, its use in elementary school classrooms is extremely limited (Weare, 2013). Research supports the value of social and emotional learning and safe and supportive classroom environments (Flook et al., 2013; Jennings & Greenberg, 2009), yet the current research base regarding mindfulness as a means of developing these conditions for learning has not been well-established and is limited.

Students who engage in prosocial peer interactions and feel a connectedness to school are more likely to experience growth in their social emotional competence and academic performance. Often, students from lower socio-economic settings (which research has concluded are high stress environments) come to school with inadequate skills affecting their ability to self-regulate, attend, and interact with others (Bigelow, 2006; Black & Fernando, 2014; Costello & Lawler, 2014). Growing recognition of the value of mindfulness practices, where these skills can be taught, have supported their application in social emotional instruction in elementary schools.

## METHODS

This qualitative, instrumental, case study will explore how mindfulness practices within elementary classrooms in Pennsylvania are being incorporated into teaching pedagogy to influence students' social emotional well-being, classroom interactions, and responsible decision-making in the school setting. Semi-structured interviews and participant journals will be used to gather data from teachers implementing mindfulness with their students in the classroom setting. The case is bounded by the parameters of a specific group of teachers who have participated in professional development on mindfulness facilitation, and who have subsequently implemented mindfulness practices into their classrooms (Yin, 2014).

## DISCUSSION

Social emotional competence has an effect on student interactions, school performance, and participation. As a result, the development of SEL competencies should be addressed within the school setting. Yet, this is an area that is traditionally under acknowledged in instruction. This trend may be changing as research and legislation have supported the importance of social emotional competence in both students and teachers. Mindfulness practices are one way to acknowledge and develop these skills in students.

## RESEARCH IMPLICATIONS

Mindfulness practices are an emerging method being used to support the well-being of both teachers and students. Mindfulness practices have been used and are gaining popularity among educators because they have shown a direct connection to the development of social emotional skills and resiliency (Lantieri, 2008; Weare, 2013). Mindfulness practices are also attractive to school districts and teachers as they are fairly inexpensive and easy to implement. Additionally, early research is supportive of the benefits of the implementation of mindfulness practices, indicating potential changes in social emotional learning pedagogy. This study will enhance the existing body of research by adding first-hand perspectives of teachers who are implementing mindfulness in their classrooms and are sharing their pragmatic experiences with others. While the research base is growing, additional research is needed to address gaps that exist in terms of the implementation of mindfulness practices with elementary students.

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Jessica Quinter is the Elementary Principal and Federal Programs Coordinator at Juniata Valley Elementary School in Alexandria, PA. She earned her B.S. in elementary education from Juniata College and an M.Ed. from Saint Francis University, where she also completed Principal and Reading Specialist certifications. She is currently a doctoral candidate pursuing her Ed.D. in Educational Leadership and Management, completing a concentration in Education Administration at Drexel University. Jessica also serves

on the Pennsylvania Principals Association Board, as the elementary principal representative to the Pennsylvania School Study Council, and is a steering committee member for the Commonwealth Education Blueprint.

Her research focuses on the implementation of mindfulness practices in elementary school settings. This research is a result of her passion for developing social emotional competence in students and the overall effect on the classroom and school environment. During Jessica's tenure as principal, Juniata Valley Elementary has implemented a Positive Intervention and Behavioral Support (PBIS) program which has received recognition for fidelity at the Tier I and Tier II levels. The implementation of this program demonstrates the school's commitment to supporting the social emotional development of its students.

