

STARS

University of Central Florida
STARS

Electronic Theses and Dissertations, 2004-2019

2015

An Applied Organizational Analysis of School Factors Affecting Technology Integration within the Context of Literacy Instruction

D'Ann Rawlinson
University of Central Florida

 Part of the [Education Commons](#)

Find similar works at: <https://stars.library.ucf.edu/etd>

University of Central Florida Libraries <http://library.ucf.edu>

This Doctoral Dissertation (Open Access) is brought to you for free and open access by STARS. It has been accepted for inclusion in Electronic Theses and Dissertations, 2004-2019 by an authorized administrator of STARS. For more information, please contact STARS@ucf.edu.

STARS Citation

Rawlinson, D'Ann, "An Applied Organizational Analysis of School Factors Affecting Technology Integration within the Context of Literacy Instruction" (2015). *Electronic Theses and Dissertations, 2004-2019*. 1467. <https://stars.library.ucf.edu/etd/1467>



AN APPLIED ORGANIZATIONAL ANALYSIS OF SCHOOL FACTORS AFFECTING
TECHNOLOGY INTEGRATION WITHIN THE CONTEXT OF LITERACY INSTRUCTION

D'ANN M. RAWLINSON
B.S. University of Central Florida, 1993
M.A. University of Central Florida, 1999

A dissertation in practice submitted in partial fulfillment of the requirements
for the degree of Doctor of Education
in the College of Education and Human Performance
at the University of Central Florida
Orlando, Florida

Fall Term
2015

Major Professor: David N. Boote

© 2015 D'Ann Rawlinson

ABSTRACT

The purpose of this Dissertation in Practice was to analyze the organizational factors affecting technology integration within the context of literacy instruction at a single school site that was preparing to implement a 1:1 mobile device initiative in all K-5 classrooms the following academic year. This was achieved through conducting an organizational analysis using a multi-frame model developed by Bolman and Deal (2008).

This study used a convergent parallel mixed methods research design consisting of teacher and administrator interviews, a quantitative and qualitative survey, and classroom observational data. One main evaluation question was designed to frame this organizational analysis: What organizational factors support and impede technology integration within the context of literacy instruction? To answer the main evaluation question, the evaluator collected data to answer six evaluation sub-questions. The evaluation sub-questions were developed to ensure that data was being collected among Bolman and Deal's (2008) four frames.

In the context of integrating technology into literacy instruction, the data collected in this study suggest that the organizational strategies and issues within the human resource frame are impacting, and are impacted by, the organization's political, structural, and symbolic practices. The teachers' lack of opportunities to develop the requisite knowledge, experience, and skills needed to integrate technology into literacy instruction seem to have impacted the teachers' level of technology integration as well as their levels of concern. Data from this organizational analysis indicated that the lack of time was a major obstacle in learning how to integrate mobile devices into literacy instruction. The school's current team-based organizational model, while

supporting other aspects of their education practices, may create structural and political barriers to effectively implement the 1:1 mobile device initiative. Observations and interviews suggested that the school values technology to support basic literacy skills, but not the transformative role of technology on literacy in today's society.

Using all four frames of the Bolman and Deal's (2008) model allows an organization to look beyond one frame, such as developing human resources through professional development, when working towards implementing a school-wide initiative effectively. Although tailored professional development is necessary for teachers to learn how to integrate technology into literacy instruction, the professional development will not be effective without greater stability in the instructional staff, and focused political and structural solutions that will support the instructional staff's professional learning and implementation.

I dedicate this work to my parents, Ron and Jean Rawlinson. Thank you for raising me to believe that anything is possible and continuously reminding me to trust the journey.

ACKNOWLEDGMENTS

I would like to express my sincere gratitude to those who supported and guided me throughout my doctoral studies. I extend a special thank you to my dissertation committee. Each of you came into my life at different times throughout my professional and educational career, making a positive impact throughout my journey.

I would like to thank my major professor, Dr. David Boote. Thank you for being gracious with your time over the last three years. I pursued doctoral school as I wanted to be intellectually challenged. Whether it was in class or during individual meetings, you did just that. I am especially grateful for your guidance throughout the dissertation process. Thank you for making me laugh when I took things too seriously. Thank you for believing in my abilities when I doubted them. Thank you for respecting and supporting my work. Your expertise, humor, patience, and “counseling” helped me achieve my goal.

Dr. Vicky Zygouris-Coe, thank you for your mentorship, “mothering”, and investment in my learning. I have learned so much from you – academically, professionally, and personally. Thank you for investing your time and heart into our reading group and providing us with meaningful experiences. I appreciate being involved in a community of strong, unique, and caring women.

Dr. Mary Little, thank you for the rich professional opportunities that you have provided for over a decade. I appreciate the faith and trust you had in my abilities to lead projects that meant so much to you (and me). Thank you for mentoring me throughout all those years. You were a great teacher and motivator. I value those times and know it helped pave this path. It was

only fitting that you be part of this process and that you were right there, seated across the table during my dissertation defense.

Dr. George Pawlas – I am touched that you agreed to serve on my dissertation committee. I have fond memories of your classes and will always remember the “human element” of leadership. Relationships and people matter. I appreciate you encouraging me to pursue doctoral school. By the way, I still have the “random acts of kindness” card you gave me many, many years ago.

Dr. Cherie Behrens – Thank you for your encouragement and kindness throughout my doctoral studies. As one of my cheerleaders during the writing process, your passion and thoughtful feedback was and is appreciated.

Ron and Jean Rawlinson, my parents - You have been my rock and life support throughout doctoral school. Without you, I would have not achieved this life-long goal. This has been a challenging journey and I thank you. Words cannot express how grateful I am for your love and encouragement.

Most importantly, to the school administrator and teachers, thank you for welcoming me into your school and classrooms. It was an honor to learn about your important work.

TABLE OF CONTENTS

LIST OF FIGURES	xi
LIST OF TABLES	xii
LIST OF ABBREVIATIONS/ACRONYMS	xiii
CHAPTER ONE: CONTEXT AND HISTORY OF THE PROBLEM.....	1
Problem of Practice.....	1
Evaluator Positionality.....	4
Conceptual Framework.....	6
Significance of the Problem.....	9
The Organization: Mid-Florida Elementary	11
History and Conceptualization.....	14
Factors that Impact the Problem	24
Organizational Analysis.....	32
Summary.....	37
CHAPTER TWO: METHODOLOGY	38
Introduction.....	38
Purpose of the Study	38
Design of the Study.....	38
Evaluation Question.....	39

Participants.....	40
Instrumentation	40
Summary.....	50
CHAPTER THREE: RESULTS	51
The Human Resource Frame	51
The Political Frame.....	69
The Symbolic Frame.....	72
The Structural Frame	77
Summary.....	84
CHAPTER FOUR: DISCUSSION AND CONCLUSION.....	85
Evaluation Question.....	85
Discussion.....	88
Recommendations.....	93
Limitations of the Organizational Analysis	98
Recommendations for Further Research.....	100
Summary.....	102
APPENDIX A: IRB APPROVAL LETTER	103
APPENDIX B: IRB APPROVAL LETTER ADDENDUM.....	105
APPENDIX C: ADMINISTRATOR INTERVIEW PROTOCOL.....	107

APPENDIX D: CLASSROOM OBSERVATION	109
APPENDIX E: QUALTTATIVE SURVEY QUESTIONS	111
APPENDIX F: CLASSROOM TEACHER INTERVIEW PROTOCOL	113
LIST OF REFERENCES	115

LIST OF FIGURES

Figure 1: TPACK Conceptual Framework	31
Figure 2: Mid-Florida Elementary School' Organizational Chart.....	78
Figure 3: Sociogram - Literacy Support	82
Figure 4: Sociogram - Technology instruction and integration support	83

LIST OF TABLES

Table 1: Overview of the Four Frame Model	6
Table 2: Stages of Concern Descriptions	36
Table 3: Evaluation Sub-questions	39
Table 4: Data Collection Plan	41
Table 5: Peak Stage Score	53
Table 6: Frequency Distribution of Second Highest Stage of Concern in Relation to First Highest Stage of Concern	54
Table 7: SoC K-5 Group Profile	55
Table 8: Open Response Data: Emerging Themes Related to Concerns with Technology Integration	57
Table 9: Alignment of Open-Response Data with SoC Stages	59
Table 10: Years of Experience Using Mobile Devices within Reading Instruction	60
Table 11: Identified Level of Experience Using Mobile Devices within Reading Instruction	60
Table 12: Professional Development Using Mobile Devices within Reading Instruction	61
Table 13: Levels of Observed Technology Integration	64
Table 14: The Role Technology Plays in Literacy Instruction	74
Table 15: K-5 Neighborhoods	80

LIST OF ABBREVIATIONS/ACRONYMS

1:1	One to one (mobile device initiative)
ICT	Information Communication Technologies
SAMR	Substitution Augmentation Modification Redefinition Model
SoC	Stages of Concern
TIM	Technology Integration Matrix
TPACK	Technological Pedagogical Content Knowledge

CHAPTER ONE: CONTEXT AND HISTORY OF THE PROBLEM

Problem of Practice

Mid-Florida Elementary School [pseudonym], a full-inclusive charter school, is planning to implement a school-wide initiative to provide one-to-one (1:1) mobile device access in all K-5 classrooms starting in the 2015 – 2016 academic year. This 1:1 model will provide a mobile device to each student. At the time the study was conducted, the school did not have a clearly defined implementation plan to guide the 1:1 mobile device initiative that will be implemented the following academic year. The problem of practice that is addressed is the school's lack of a formal implementation plan aligned to technology integration. The purpose of this Dissertation in Practice is to identify school factors affecting technology integration within the context of literacy instruction. This will be achieved through conducting an organizational analysis using a multi-frame model developed by Bolman and Deal (2008). The intended outcome is to provide recommendations to help support the organization's development of a formal implementation plan for the 1:1 mobile device initiative.

Historically, Mid-Florida Elementary School has not adopted school-wide reading and math curricula as they have been unable to identify specific curricular programs to meet the diverse learning needs of their students. According to the school administrator, the 1:1 mobile device initiative will provide teachers access to multiple resources to increase the ability to differentiate for a diverse group of learners. Additionally, this initiative will support the development of a school-wide data analytics system that will assist teachers with differentiation and monitoring student reading and math performance.

Mid-Florida Elementary School recognizes the importance of integrating technology into instruction as it has been written into their charter since its opening. Walking through the halls of the school, technology is present in each of the classrooms including interactive white boards and computer centers consisting of various types of desktop computers and laptops. The 1:1 mobile device initiative will significantly increase student access to technology and the homogeneity of the equipment. Furthermore, the initiative will allocate sustained instructional time to integrate technology into instruction as the school's expectation is that the mobile devices will be integrated daily for at least 25% of the instructional day. Although the teachers at Mid-Florida Elementary School use technology in their classrooms, this level of access and integration is a significant change in typical practice. In their position statement on 21st century literacies, the International Reading Association (2009) stated that the Internet and information and communication technologies (ICTs), such as mobile devices, require new social practices, skills, strategies, and dispositions for their effective use. Integrating mobile devices school-wide will require careful and thoughtful planning to ensure this newly adopted initiative will reach full implementation. This new initiative has the potential to increase teachers' access to materials and resources. However, the integration of mobile devices will require teachers and students at Mid-Florida Elementary School to develop new social practices, skills, strategies, and dispositions within the context of technology and new literacies (International Reading Association, 2009).

As Mid-Florida Elementary School continues to build their technology integration efforts, careful analysis and planning need to occur in order to sustain the 1:1 mobile device initiative. Billig, Sherry, and Havelock (2005) referred to sustainability as an innovation or

initiative that endures over time and becomes valued and supported as part of an organization's culture. The Center for Implementing Technology in Education (CITED) works with schools in achieving full-scale implementation of technology. CITED (n.d.) noted that schools may find themselves trapped in many initial implementation efforts and never reach full implementation without considering all of the necessary organizational factors. Everett Rogers, author of *Diffusion of Innovations*, conveyed that the people who make up the organization adopt an innovation, a new initiative, at different rates of time (2003). He reminded us that all organizations experience implementation barriers and resistance to change, but also notes that innovation is a common occurrence in most organizations (Everett, 2003, p. 405). Organizations should keep in mind that implementation occurs in stages and time is needed to reach full implementation (Blase, Fixsen, Sims & Ward, 2015). When supporting a new initiative it is important for the organization to understand the characteristics of the population who are being asked to implement the program; who will help or hinder the adoption of the innovation (Everett, 2003).

The school administrator identified professional development as one of the organizational factors that needed to be addressed as teachers' knowledge and skills related to integrating technology into instruction was a reported concern. The school change literature has identified several school factors that support and facilitate technology integration implementation (Billig et al, 2005; CITED, n.d.; Hew and Rush, 2007). Professional development is one of the factors. Organization and school structure, leadership, resources and support, and school culture also play important roles in sustaining an initiative (Billig et al., 2005; Center for Implementing Technology in Education [CITED], n.d.; Hew & Bush, 2007). When implementing a school-

wide initiative, it is important to view the organizational context through a variety of perspectives. Bolman and Deal (2008) developed a multi-frame model that includes four organizational constructs: structural, human resources, political, and symbolic. Although professional development is one of the school factors that the principal identified as an immediate need, all of these factors will be analyzed through Bolman and Deal's multi-frame model to determine how school factors affect Mid-Florida Elementary School's technology integration within the context of literacy instruction.

Evaluator Positionality

The context and topic of this dissertation is a professional interest of mine. I support the integration of technology into literacy instruction as I believe the rapid growth and changes in technology have developed new forms of literacy. Traditional reading skills are important and relevant, but I also believe that students need to develop new literacies due to the ubiquitous nature of technology. At the organizational level, I believe school factors can either support or hinder a school's efforts in implementing a school-wide initiative. In my experience, I have observed schools investing their resources into professional development to support the implementation of an initiative. Professional development is certainly an important part of implementation. However, I believe other factors are equally important in reaching full implementation, such as allocation of appropriate resources, time for teachers to learn and implement, alignment to school culture, the structure of the organization, and leadership support.

I worked closely with the school administrator of Mid-Florida Elementary School to design an organizational analysis with the purpose of providing the school with organizational

data and recommendations to help support a 1:1 mobile device initiative that will be implemented in the following school year. Although my role was considered as an external evaluator, I had a previous professional relationship with the school administrator. However, I did not know any of the instructional staff members prior to the study. The school administrator introduced me to the instructional staff as a doctoral student via email versus a previous colleague.

I am a doctoral candidate in a professional practice doctorate program specializing in reading education at the University of Central Florida. The program is designed to prepare practitioner scholars to address complex problems of practice situated within organizations. Coursework aligned to organizational theory, program evaluation, data analysis, digital literacy, and literacy research provided the necessary skills to conduct this organizational analysis. I worked closely with my major professor throughout this study. More specifically, I met with him on a weekly basis while I was analyzing the data and interpreting the results as a safeguard against evaluator bias.

My past educational and professional experiences also provided a strong foundation in working with schools implementing and evaluating school-wide initiatives. I have a master's degree in exceptional education and a bachelor's degree in communicative disorders. I also completed graduate coursework in reading education and educational leadership. My professional experience related to this dissertation in practice includes K-12 teaching experience (Exceptional Student Education), directing state-wide professional development initiatives for a training and development grant (train the trainer and school-wide professional development models), serving on a state-wide professional development evaluation review committee

focusing on individual, school, and district professional development plans, and directing a federal research grant at a distal site focusing on early reading intervention within the context of response to intervention (RtI).

Conceptual Framework

Bolman and Deal’s (2008) Four Frame Model provided a conceptual framework for this organizational analysis. To understand organizations better, the authors developed four organizational constructs or frames: structural, human resources, political, and symbolic.

Bolman and Deal (2008) described the term frame as “a coherent set of ideas forming a prism or lens that enables you to see and understand more clearly what goes on from day to day” (p. 43).

Applying all four frames to an analysis can help an organization identify its strengths and anticipate potential factors that affect performance (Bolman & Deal, 2008). Table 1 displays an overview of the Four-Frame Model.

Table 1: Overview of the Four Frame Model

Bolman’s and Deal’s Four Frames				
Frames	Structural	Human Resources	Political	Symbolic
Central Concepts	Rules, roles, goals, policies, technology, environment	Needs, skills, relationships	Power, conflict competition, organizational politics	Culture, meaning, ritual, ceremony, stories, heroes

Note. From “Reframing Organizations: Artistry, Choice, and Leadership,” by L. Bolman & T. Deal, 2008, p. 18

The Structural Frame

The structure of an organization is a blueprint of its inner workings. Structure is unique to an organization's goals, type of work, and environment (Nicholas & Steyn, 2012).

Organizational structures typically evolve in response to planned and unexpected changes and problems (Nicholas & Steyn, 2012).

Bolman and Deal (2008) refer to the structural frame as the architecture of an organization. Salient features of the structural frame include the organization's units and sub-units, rules, roles, goals, and policies. According to Bolman and Deal (2008), "Structural form both enhances and constrains what an organization can accomplish" (p. 50). Differentiation and integration are two key elements that are central to organizational structure (Bolman & Deal, 2008). Differentiation is the foundation of structure and refers to division of labor (Bolman & Dean, 2008). Organizations create specialized roles, for those with appropriate expertise, to address new situations and emerging problems (Nicholas & Steyn, 2012). Once these roles are identified and developed, the organization considers how to develop working groups. Integration is described as how different teams or units coordinate their efforts. This can be achieved through vertical and lateral coordination. Vertical coordination relies on chain of command, hierarchy, and rules. Whereas lateral coordination is less formal and consists of working in teams, committees, and task forces.

The Human Resource Frame

The human resource frame emphasizes the connection between employees and the organization (Bolman & Deal, 2008, p. 137). In the context of educational organizations, human

resources has often been recognized as one of the most valuable assets in creating and maintaining high-performing schools (Owens & Valesky, 2011). Investing financially in the professional growth of employees can result in higher effectiveness and should be considered a return on investment (Owens & Valesky, 2011). Bolman and Deal (2008) identified the following effective human resources strategies of supportive organizations: building and implementing a human resource strategy, hiring the right people, keeping them, investing in them, empowering them, and promoting diversity (p. 142). When studying the human resource frame, evaluators look for evidence of transparency, performance and satisfaction of groups, human assets, and coaching and support of employees (Bolman & Deal, 2008).

The Political Frame

The heart of the political frame is decision-making (Bolman & Deal, 2008). Bolman and Deal (2008) stated that “politics is the realistic process of making decisions and allocating resources in a context of scarcity and divergent interests” (p. 190). The process of bargaining and negotiating influences the goals, structure, and policies of an organization (Bolman & Deal, 2008). This can cause conflict within an organization as individuals and sub-units are competing for limited resources. In the context of the political frame, conflict is normal and expected (Bolman & Deal, 2008). Bolman and Deal (2008) stated that “the political prism puts more emphasis on the strategy and tactics than on resolution of conflict” (p. 207).

The Symbolic Frame

The symbolic frame focuses on the culture of the organization, which is conveyed through its symbols (Bolman & Deal, 2008). Symbols are manifested through many forms, such

as values, vision, rituals, ceremonies, and stories. Culture is not static and is constantly being influenced through interactions with others (Kaplan & Owings, 2013). An organization's culture evolves over time as members develop shared beliefs, values, and practices (Bolman & Deal, 2008). Sub-units within organizations can also develop their own culture and unique features. According to Owens and Valesky (2008), "Sub-units regularly bring together people who share some constellation of interests, purposes, and values ... and facilitate the sharing and cooperative effort required to get the work done" (p. 148).

Significance of the Problem

Technology integration should be routine, seamless, and aligned to supporting school goals (Lawless & Pellegrino, 2007). Although national data indicate that the majority of schools in the United States have access to technology and the Internet (Gray, Thomas, Lewis, & Tice, 2010), there is evidence that it is not being integrated into literacy instruction in meaningful ways (Hutchison, 2012; Hutchison & Reinking, 2011; Stolle, 2008). Previous research has identified several obstacles to integrating technology into instruction including teachers' beliefs and views, lack of professional development, and limited resources (Billig, Sherry, & Havelock, 2005; Hew & Brush, 2007; Hutchison & Reinking, 2010; Hutchison & Reinking, 2011; Koehler & Mishra, 2008; Lawless & Pellegrino, 2007; Stolle, 2008).

Teachers' mixed views and beliefs on technology integration is one of the reported barriers. Koehler and Mishra (2008) labeled this issue as "somebody else's problem" and noted that pedagogy and technology are often seen as two separate domains - teachers focus on pedagogy and technology coordinators manage technology (p. 9). Literacy teachers have better

access to Information Communication Technologies (ICTs), but there is still a gap in integrating technology into literacy instruction (Hutchison & Reinking, 2011). Surveying literacy teachers on their perceptions of technology integration, Hutchison and Reinking (2011) found that many literacy teachers conceptualized integration primarily as a technological rather than curricular responsibility. Furthermore, they learned that the teachers used technology for more perfunctory activities instead of developing new instructional goals involving new activities (Hutchison & Reinking, 2011). Participating teachers perceived integration as a way to teach how to use technology tools or to use tools for conventional instructional goals rather than adopting new instructional goals that are aligned to 21st century skills (Hutchison & Reinking, 2011).

Another barrier to effective technology integration that was identified in the literature was professional development (Hutchison, 2012; Hutchison & Reinking, 2011; Lawless & Pellegrino, 2007). Lawless and Pellegrino (2007) noted that professional development is critical...“to learn how to make the most effective instructional use of new technologies for teaching and learning” (p. 575). Hutchison and Reinking (2011) reported that 82% of literacy teachers perceived that their lack of professional development in technology integration was a significant barrier to effective implementation. Although teachers are beginning to receive professional development on digital technologies, Hutchison (2012) found that 81% of literacy teachers believed that they did not have adequate professional development to integrate technology into literacy instruction. In a study on understanding teachers’ perceptions on how to improve professional development on technology integration, Hutchison (2012) identified four emerging themes that would help increase the quality of learning: follow-up support; time to explore, practice, and implement; access to necessary technologies during and after professional

development; and opportunities to gain background knowledge in technical concepts and develop higher knowledge in technology integration.

Insufficient resources was found as a common obstacle to technology integration (Billig, Sherry, & Havelock, 2005; Hew & Brush, 2007; Hutchison & Reinking, 2010; Hutchison & Reinking, 2011; Stolle, 2008). The lack of time was reported as a resource barrier in prior research (Hew & Bush, 2007; Hutchison & Reinking, 2010; Stolle, 2008). Stolle (2008) found that time limitations contributed to the teachers' lack of knowledge. Even though teachers had access to technology, Stolle (2008) indicated that they did not have adequate time to practice integrating ICTs into literacy instruction. In the context of planning for technology-integrated instruction, time was identified as a barrier as more hours were needed to search for websites and online resources (Hew & Bush, 2007). Hutchison and Reinking (2010) found that the lack of time during a class period was perceived as one of the most common barriers to technology integration. The lack of access to technology and limited technology support were also reported as barriers to technology integration (Hew & Bush, 2007).

The Organization: Mid-Florida Elementary

Florida Charter Consortium

Mid-Florida Elementary School is one of the seven Florida Charter Consortium [pseudonym] school sites in Florida. This consortium consists of seven public charter schools serving students with and without disabilities in three Florida counties. Six of the school sites serve children from birth to intermediate elementary grades. One of the campuses specializes in middle and high school students with disabilities. Florida Charter Consortium began in the 1950s

when a group of parents of children with special needs opened up a small program in Orlando, Florida. The program expanded in 1980 when a major donor and other contributors provided funding to building a larger facility. At this time, Florida Charter Consortium broadened their services to students with other types of disabilities and developmental delays. In the 2000s, Florida Charter Consortium began serving children with, and without, disabilities through inclusive models. In 2009, Mid-Florida Elementary School opened its doors. In partnership with a local university, this campus expanded its charter school to fifth grade with a focus on technology and art integration.

A senior management team leads the Florida Charter Consortium. A core leadership team provides specialized support to various campuses. For example, the Director of Curriculum and Instruction provides professional development support to the K - 12 teachers of the consortium.

Mid-Florida Elementary School

Mid-Florida Elementary School has experienced rapid growth over the last six years. Starting out serving children from birth to third grade, they now offer educational programs ranging from infants to 5th grade. For the purpose of this dissertation in practice, the evaluator focused on grades kindergarten through fifth as the 1:1 mobile device initiative will be implemented in the K-5 classrooms. In the elementary grades, the school has 195 students, one school administrator, and 20 certified teachers and 10 paraprofessionals. In 2014 – 2015, the school's student demographics were as follows: 44% economically disadvantaged, 50% students with disabilities; 41% white, 37% Hispanic, 13% black, and 5% other.

Each K-5 classroom has a 50/50 ratio of students with disabilities to general education students. Some of the students have significant disabilities and require a greater level of instructional staff support. For the first time since its inception, Mid-Florida Elementary School met the criteria to be graded by the Florida Department of Education in 2014. They received a school grade of an F in the 2013 – 2014 academic year. Mid-Florida Elementary School did not meet Florida’s state reading and math proficiency standards. Results of their 2013 – 2014 Florida Comprehensive Assessment Test (FCAT) 2.0 Reading indicated that 48% of the 3rd – 5th grade students scored 3 and above. The majority of these students who scored at a Level 3 or above were those without identified disabilities. To demonstrate the range of reading abilities in a specific grade level, the mid-year Developmental Reading Assessment (DRA) reading scores for the 3rd grade ranged from 1st grade to 5th grade including some non-readers. Both reading and math proficiency standards were not met. However, this dissertation in practice focused on reading as this was identified as a greater concern.

School Provided 1:1 Mobile Device Initiative

During the 2014 – 2015 academic year Mid-Florida Elementary School entered into a partnership with the Council for Educational Change by becoming a Partnership to Advance School Success (PASS) school. PASS is a principal mentorship model that focuses on improving student achievement in underperforming schools (Council for Educational Change, 2009). This partnership provided financial support through a matching grant to help support a school model that addressed student performance. Mid-Florida Elementary School received a

matching grant to integrate a 1:1 mobile device initiative in all K-5 classrooms with the goal of improving reading and math performance, and expanding their technology integration efforts.

The funds for this initiative will be used to purchase the hardware, network connectivity, data management system, and instructional applications. Each K-5 student will have access to a new iPad. To monitor student performance, teachers will be provided with new laptops for data management. To operate effectively, mobile devices need network connectivity and access to data, voice and video, and cloud services. The internet infrastructure at Mid-Florida Elementary School has been updated to fiber optics with the goal of increasing speed and connectivity.

History and Conceptualization

The problem of practice can be better understood by understanding the factors that affect the problem at the international, national, and state levels.

International Context

Today, there is greater access to technology worldwide due to the availability of the Internet and mobile devices. The Broadband Commission for Digital Development reported that more than 40 percent of the world's population has access to the Internet (International Telecommunications Union [ITU], 2014). In 2014, 77 countries reported that half of their population had access to the Internet (ITU, 2014). Out of the total human population, approximately 7 billion people, there are 5.9 billion mobile phone subscriptions worldwide (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2012, p. 6). Over

70% of these mobile subscriptions came from developing countries with China and India having the largest number of mobile users (UNESCO, 2012).

Mobile Devices and Education

This growth in the use of mobile devices has also transferred to education. Globally, there are two mobile learning models that are becoming widely accepted in educational settings: school provided one-to-one (1:1) programs and Bring Your Own Device (BYOD) initiatives (Shuler, Winters, & West, 2013). The 1:1 model provides a device per student and is prevalent in lower income communities and developing countries. This model allows for all students to have access to technology. There are some barriers to this model, such as high costs and device maintenance and upgrades. Furthermore, Shuler, Winters, and West (2013) reported that some 1:1 initiatives fail as the focus is on access to technology versus preparing teachers and students on how to use technology to facilitate learning (p. 12). The BYOD model is a viable option for schools as the device costs are the responsibility of the owner. This model has been successful in higher education settings (Shuler, Winters, & West, 2013). One of the challenges, however, is that the BYOD model is only as good as the bandwidth at the school and the quality of the devices. Schools must also consider those students who don't have the financial resources to acquire personal mobile devices.

Access to technology is an important factor in mobile learning initiatives, but equally if not more important is how people use and view technology in the context of education (Shuler, Winters, & West, 2013). UNESCO conducted an analysis on educational mobile learning initiatives to better understand how mobile technologies can be used to improve educational

access, equity, and quality around the world (West, 2012, p. 3). Five geographic divisions were included: North America, Africa and the Middle East, Asia, Europe, and Latin America.

In UNESCO's analysis of mobile learning initiatives, five central findings emerged. First, mobile learning carried a stigma internationally. West (2012) reported that mobile devices are viewed as isolating, distracting, and dangerous to youths (p. 7). Furthermore, West (2012) found that people made assumptions about mobile devices inability to provide quality educational content. The second finding was that existing education policies did not include mobile learning. The policies that were developed to support technology integration did not include the use of mobile devices. Therefore, some policies banned mobile devices from schools (West, 2012). Thirdly, mobile learning can help reach marginalized populations and assist those who have historically lacked educational opportunities (West, 2012). The fourth finding was related to cost, access, and equity. Mobile phone ownership is very expensive in certain parts of the world. Variability in Internet services and bandwidth impact access and equity. The last central finding centered on the importance of developing diverse partnerships to sustain mobile learning initiatives. Education systems will need to broaden their partnerships and include stakeholders within the context of telecommunications, device manufacturers, mobile network operators, and regulating agencies (West, 2012).

Online Reading Performance

With the expansion of the Internet and mobile devices, online reading comprehension is a new concern at the international level. The Progress in International Reading Literacy Study 2016 (PIRLS 2016) recently included a measure to assess students' online reading

comprehension due to the rapid growth of information that is available on the Internet (Mullis, Martin, & Sainsbury, 2015). This extension in the PIRLS assessment is called ePIRLS 2016. PIRLS provides internationally comparative data about children's reading performance after four years of primary schooling in countries across the world (International Association for the Evaluation of Educational Achievement [IEA], 2011). Data are collected in five year increments.

The Internet presents unique challenges to readers due to non-linear text, text being distributed across multiple pages and websites, and the multimodality of the text (Mullis, Martin, & Sainsbury, 2015). Reading on the Internet requires students to navigate their own path while using navigation strategies and offline reading skills and strategies. With a focus on informational reading, the purpose of ePIRLS 2016 is to assess students' ability to use the Internet in a school context (Mullis, Martin, & Sainsbury, 2015). According to Mullis, Martin, and Sainsbury (2015), "Reading for informational purposes on the Internet requires all of the reading comprehension skills and strategies assessed by PIRLS, but in a different environment containing much more information" (p. 22). The ePIRLS reading tasks are set in a simulated Internet environment, which includes interconnected web pages with a variety of visual information.

National Context

Technology and Internet Usage in the U.S.

In the United States, there are more mobile phone subscriptions than the entire U.S. human population (Fritschi & Wolf, 2012). It is important to note that not all have access to

mobile devices as some users have multiple phones, but this fact demonstrates the prominence of mobile technology in the United States. Common Sense Media (2011) reported that 52% of all children have access to newer mobile devices at home in the U.S. (as cited in Fritschi & Wolf, 2012, p. 8). The pervasiveness of mobile devices in the U.S. provides educators opportunities to take advantage of the connectivity and content that mobile learning provides (Fritschi & Wolf, 2012).

Internet and media usage is increasing at drastic rates among youths and adults (Pew Research Center, 2014; Rideout, Foehr, & Roberts, 2010). The U.S. Census Bureau through the American Community Survey, part of the 2008 Broadband Data Improvement Act, measured American's computer and Internet usage. The 2013 results indicated that 74.4% of U.S. households use the Internet, and 83.3% of households own a computer (File & Ryan, 2014). More specifically, 78.5% of the households reported that they owned a desktop or laptop, and 63.6% acknowledged owning a handheld device (File & Ryan, 2014). This rise in ownership and usage expresses the importance of digital technologies in American homes.

The increase in computer ownership and Internet usage also influences how young people interact with technology. The Kaiser Family Foundation funded three studies to learn more about young people's use of media in five- year increments – 1999, 2004, and 2009. The 2009 study, *Generation M2: Media in the Lives of 8- to 18-Year-Olds*, included a large, national sample of 2,000 youths. Rideout, Foehr, and Roberts (2010) surveyed young people from ages 8 to 18 across the United States with the goal of tracking changes of their media use through the transitions from childhood to tweens to teenagers. The study also measured media multi-tasking;

using multiple medias simultaneously. Rideout, Foehér, and Roberts (2010) included the following media activities in the study: watching television and movies, playing video games, listening to music, using computers, and reading newspapers, magazines, and books (p. 6).

Outside school hours, Rideout, Foehér, and Roberts (2010) found that young people spent more than 7.5 hours a day using media. Twenty-nine percent of the time, young people were multi-tasking using more than one source of media concurrently. The amount of media exposure varied significantly by age. Young people 11 and older reported higher exposure to media compared to the 8 – 10 year olds whose average overall daily media use was 7:51 hours, which is the sum of time spent with media. The tweens and teens reported their overall average use from 11:53 hours to 11:23 hours, respectively.

Rideout, Foehér, and Roberts (2010) reported that 70% of young people participate in online activities daily. The majority of the time the Internet was accessed at home (57%) compared to school access (20%) (Rideout, Foehér, & Roberts, 2010). The highest reported activities were social media and watching video websites, such as YouTube (Rideout, Foehér, & Roberts, 2010). While on the computer, the least reported activity was reading online. The young people in the study reported that they spend on average two minutes a day reading online (Rideout, Foehér, & Roberts, 2010).

National Initiatives and Policies

There is a national push for K-12 schools to adopt and integrate technology as it is being supported by government initiatives, national partnerships, and professional organizations (International Reading Association, 2009; National Council of Teachers of English, 2013;

Partnership for 21st Century Skills, 2009; UNESCO, 2012; USDOE Office of Educational Technology, n.d.). Integrating technologies into instruction also comes with expectations of teaching for 21st century learning and literacies. This change in teacher practice is also supported at the national level (International Reading Association, 2009; National Council of Teachers of English, 2013).

Essential Conditions for Mobile Learning

UNESCO (2012) examined mobile learning initiatives and policy implications across five geographical locations including North America. In UNESCO's (2012) working paper on North America's mobile learning initiatives, five essential conditions for mobile learning were identified based on the analysis of major initiatives supported by Canada and the United States. Successful mobile device initiatives included the following conditions: visionary leadership and commitment, robust technology capacity, professional development, scalability, and policies that promote and support the initiative (UNESCO, 2012, p. 30).

USDOE and Educational Technology

The United States Department of Education (USDOE) is leading two initiatives that are specific to K-12 education and technology with the goal of providing students the opportunities to learn and interact with new and current technologies. To address Internet access and quality within public schools, the ConnectED initiative was designed to connect 99% of American students in their classrooms and libraries with next-generation broadband and wireless connectivity by 2018 (White House, n.d.). According to the 2013 Census, 98% of American citizens have access to the Internet, but only 75% have it in their homes (as cited in the White

House, 2015). The lowest median income homes have approximately a 50% home adoption rate (White House, 2015). The White House (n.d.) reported that fewer than 40% of schools have the appropriate broadband needed to teach with the digital tools of today. To ensure that all students have access to high quality Internet and current technology tools, the ConnectEd initiative is focused on upgrading connectivity in schools, preparing teachers how to use educational technology, and encouraging private-sector innovations.

Through the Enhancing Education Through Technology (EETT), the United States Department of Education (USDOE) plans to lead an initiative to provide support and professional development to administrators and teachers on how to select appropriate technologies and how to use them to improve student learning outcomes (Office of Educational Technology, n.d.). President Obama's administration will request \$200 million in fiscal year 2016 for the EETT initiative. If passed, these funds will be used for Educational Technology State Grants to assist states in preparing leaders and teachers in using technology effectively to improve instruction and student learning (USDOE Office of Educational Technology, n.d.).

21st Century Learning and Literacies

Preparing students for the 21st century requires a deliberate focus on developing the types of skills needed to succeed in the dynamic, knowledge-rich marketplace of ideas (Bean, 2014). The Partnership for 21st Century Skills (P21) partners with states, districts, and schools to build 21st century outcomes into educational standards, professional development, and student assessments (National Education Association, n.d.). 21st century skills is a broad term that has been used to describe the needed skills, knowledge, and dispositions that are critical to attain in

order to succeed in today's global society. To help contextualize this term, P21 developed a framework that identified 18 skills students must master to succeed in life and work – a blend of content knowledge, specific skills, expertise, and literacies (P21, 2009). In addition to core subject knowledge, the P21 framework includes essential skills, such as creativity and innovation, communication and collaboration, and information, media, and technology skills (P21, 2009). Information, media, and technology skills are critical in the 21st century as our environment is inundated with a constant feed of information and media along with ubiquitous technology.

Through position statements, professional organizations expressed their stance on literacy in the context of digital technologies. Both the International Literacy Association (ILA), formally known as the International Reading Association, and the National Council of Teachers of English (NCTE) acknowledged that literacy is changing and literacy educators must take an active role in adapting to these changes.

The International Literacy Association expressed their point of view on new literacies and 21st century literacies through the following position statement:

To become fully literate in today's world, students must become proficient in the new literacies of 21st-century technologies. As a result, literacy educators have a responsibility to effectively integrate these new technologies into the curriculum; preparing students for the literacy future they deserve (IRA, 2009).

The ILA position statement on 21st century literacies expressed that there is much to learn about new literacies, however, there are common themes emerging to help inform future research:

- the Internet and other ICTs require new social practices, skills, strategies, and dispositions for their effective use;
- new literacies are critical to civic, economic, and personal participation in a global community;
- new literacies rapidly change as defining technologies change; and
- new literacies are multiple, multimodal, and multifaceted (IRA, 2009).

The National Council of Teachers of English (NCTE) acknowledged the need for literacy educators to address the changing context of literacy that technology brings. In their position statement on 21st century literacies, the NCTE identified skills that active participants of the 21st century must acquire:

- develop proficiency and fluency with the tools of technology;
- build intentional cross-cultural connections and relationships with others so to pose and solve problems collaboratively and strengthen independent thought;
- design and share information for global communities to meet a variety of purposes;
- design and share information for global communities to meet a variety of purposes;
- manage, analyze, and synthesize multiple streams of simultaneous information;
- create, critique, analyze, and evaluate multimedia texts; and
- attend to the ethical responsibilities required by these complex environments (NCTE, 2013).

State Context

At the state level, the Florida Department of Education (FLDOE) plans to establish digital classrooms statewide by integrating technology into curriculum and instruction. According to FLDOE (2014b), “Technology integration in the curricula entails the teachers and students seamless use of technology as a tool to accomplish a given task in a disciplined study that promotes higher-order thinking skills.” Section 1001.20, Florida Statutes, was updated in 2014 and required FLDOE to develop a five-year strategic plan in supporting school districts in creating Florida Digital Classrooms (FLDOE, 2014b). All Florida school districts are required to develop and submit a Digital Classrooms Plan including a needs analysis, implementation plan, and evaluation plan. Furthermore, professional development in the context of digital learning is an integral part of the plan. Districts are required to identify their digital professional learning needs through the Technology Integration Matrix (TIM) developed by the Florida Center for Instructional Technology (FLDOE, 2014b). TIM is an evaluation tool that helps the user to identify the level of technology integration in K-12 classrooms (Florida Center for Instructional Technology, 2014).

Factors that Impact the Problem

The definition of literacy evolves as it is subject to societal, political, cultural, technological, and economic trends. In traditional terms, literacy means being able to read and write in the shared language of the culture (Hague & Williamson, 2009). The International Literacy Association (ILA) now defines literacy as “the ability to identify, understand, interpret, create, compute, and communicate using visual, audible, and digital materials across disciplines

and in any content” (ILA, 2015). Literacy is considered dynamic, situationally specific, and constantly changing (Coiro, Knobel, Lankshear, & Leu, 2008; Greenhow & Gleason, 2012). Technology has a great influence on how literacy is conceptualized. Today, the Internet and information communication technologies (ICT) are rapidly changing how we learn, read, write, and communicate. Literacy is shifting in the context of these new technologies and will continue to do so (Coiro & Dobler, 2007; Hutchison & Reinking, 2011).

New Literacies

New forms of literacy emerge on an ongoing basis in the context of technology. Learning, reading, writing, and communication via the Internet and ICTs require traditional literacy skills as well as new forms of literacy. The rapid development of new technologies makes it difficult to identify a static set of skills (Karchmer-Klein & Shinas, 2012). This impacts how teachers operationalize new literacies. These ongoing developments come with implementation challenges. Yet, there is a responsibility to prepare students how to use the tools effectively to support their learning when adopting technology into the classroom (Karchmer-Klein & Shinas, 2012).

Defining new literacies in a concrete manner is a difficult task as this topic is fairly new in the field of literacy education research. New literacies is an emerging theory and has been conceptualized through various lenses. This variation in perspectives led to collaborative work that resulted in the development of the new literacies theory. Leu, Kinzer, Coiro, Castek, and Henry (2013) stated that this theory takes an “open source” approach inviting everyone who studies the Internet’s impact to contribute to theory development” (p. 1156). The new literacies

theory, also known as a dual-level theory, functions at two levels: lowercase (new literacies) and uppercase (New Literacies) (Leu et al., 2013). Lowercase theories focus on specific areas of new literacies within the context of new and developing technologies (Leu et al., 2013). For example, navigating non-linear text on the Internet is a lowercase new literacy. New Literacies, a broader and more comprehensive theory, is influenced by the bodies of work within the lowercase theories (Castek, Zawilinski, McVerry, O’Byrne, & Leu, 2011). The uppercase theory is continually changing due to the rapid changes in technology development (Castek et al., 2011). Coiro et al. (2008) found that most lower-case new literacies perspectives share four common elements that define the larger theory of New Literacies:

- New literacies include the new skills, strategies, dispositions, and social practices
- New literacies are central to full participation in a global community
- New literacies regularly change as their defining technologies change
- New literacies are multi-faceted and our understanding of them benefits from multiple points of view (as cited by Castek et al., 2011, p. 94).

The changing nature of new literacies makes it challenging for teachers to operationalize and implement in a school setting. One of the scholars, Donald J. Leu, posed a question during his presidential address at the 2006 National Reading Conference focusing on the concern of school implementation. Leu (2006) asked his research colleagues, “Why do schools not prepare students for the new literacies of the Internet, especially in the U.S. and especially in economically challenged school districts?” (p. 1). He discussed several key points in his address. As new literacies are influenced by technology, literacy educators and researchers may

categorize the Internet and ICTs as a technology concern versus considering it as a literacy matter (Leu, 2006). Throughout history, technology has always defined the nature of literacy (Leu, 2006; Manguel, 1996; Mathews 1966). Print media, such as books, newspapers, and magazines are all considered a technology. Today, the Internet is the defining technology that influences literacy as we read when we use the Internet, and we write when we use the Internet (Leu, 2006, p. 8).

Unsworth (2008) described new literacies as being diverse, dynamic, immediate, interactive, multimodal, and rapidly evolving (p. 377). According to Leu, Kinzer, Coiro, and Cammack (2004):

The new literacies of the Internet and other ICT include the skills, strategies, and dispositions necessary to successfully use and adapt to the rapidly changing information and communication technologies and contexts that continuously emerge in our world and influence all areas of our personal and professional lives (p. 1570).

When using the Internet or other ICTs, new literacies allow the user to “identify important questions, locate information, analyze the usefulness of that information, synthesize information to answer those questions, and then communicate the answers to others” (Lue, Kinzer, Coiro, & Cammack, 2004, p. 1570). Scholars who study new literacies assert the importance of print-based literacies as well as the evolving role of digital literacies (Greenhow & Gleason, 2012). According to Leu et al. (2013):

New literacies build upon foundational literacies rather than replace them completely.

Foundational literacies include those traditional social practices of literacy and the elements of literacy required for traditional text reading and writing, such as word recognition, vocabulary, comprehension, inferential reasoning, the writing process, spelling, response to literature, and others required for the literacies for the book and other printed material (p. 1159).

It is expected that literacy educators and their students will learn how to use a variety of technological resources and tools to synthesize information to communicate knowledge (Schmidt & Gurbo, 2008). Knowing how and when to make decisions about which technologies and which forms and functions of literacy to use are skills that literacy educators will need to develop (Coiro et al., 2008). This has implications for teaching and professional learning. Traditional reading skills are still important and necessary to teach and learn, however, they are not enough to read, write, and communicate in this new context (Coiro & Dubler, 2007). Today's educators must continue to develop their content and pedagogical knowledge along with developing technology knowledge (Schmidt & Gurbo, 2008, p. 61). Literacy educators have a responsibility to integrate these new technologies into their instruction and teach new literacies as they develop, as the Internet is considered a literacy issue (Leu, 2006). Teachers must have opportunities to learn about effective reading with new technologies (Coiro, 2003). Professional development should include time for teachers to experience the online learning opportunities that students are expected to engage in, such as using the Internet, engaging in online exchanges, and using technology as a tool for learning (Coiro, 2003, p. 463).

Online Reading Comprehension

Some scholars view the Internet as a “powerful context for literacy” (Castek, Zawilinski, McVerry, O’Byrne & Leu, 2011, p. 91). Reading web-based text requires developing new skills and strategies for online reading comprehension (Castek et al., 2011; Leu, Zawilinski, Castek, Banerjee, Housand, Liu, & O’Neil, 2007). Recent work has shown that there appears to be some differences between online and offline reading (Coiro, 2003; Coiro, 2015; Leu, 2006). Coiro (2003) reported that “the Internet provides new text formats, new purposes for reading, and new ways to interact with information that can confuse and overwhelm people taught to extract meaning from only conventional print” (p. 459). The purpose of reading on the Internet is often driven by the need to answer questions or solve problems (Leu, Kinzer, Coiro, & Cammack, 2004). Online reading requires the reader to identify useful questions, locate information aligned to the questions, evaluate information checking for accuracy and reliability, synthesize information from multiple sources, and communicating information using online tools (Castek et al., 2011; Leu et al., 2004).

According to Coiro (2015), “Our (literacy) field assumes online reading skills are primarily the same as offline reading skills or sets them aside as technology skills rather than new comprehension reading skills” (p. 353). However, the characteristics of web-based texts often differ from printed texts. These characteristics can be challenging for readers. Web-based texts are embedded with hypertext and hypermedia links, and can be non-linear, multi-modal, and interactive (Coiro, 2003). When reading text on the Internet, the reader is responsible for navigating the progression of the text by identifying which hyperlinks and hypermedia features to use (Coiro, 2003). Another skill set that is needed for online reading is the ability to conduct

electronic searches (Coiro, 2003). Identifying key words to search for information and answers to posed questions relies heavily on the readers' background knowledge.

Castek et al. (2011) argued that students of all abilities including struggling readers benefit from online reading opportunities. According to Casket et al. (2011), "Many struggling readers appear to benefit in important ways from online reading experiences and instruction in the new literacies of online reading comprehension" (p. 105). Online features such keyword searches, shorter text units, supportive multimedia components, and electronic organizational tools were found to be effective supports for online reading (Castek et al., 2011). Furthermore, Castek et al. (2011) found that online reading can actively engage struggling readers as they have opportunities to construct their own texts through making choices on which hyperlinks to follow.

Technological Pedagogical Content Knowledge

Integrating technology into instruction can be a daunting process for educators. To address the complexity of integrating technology into teaching, Koehler and Mishra (2008) developed the Technological Pedagogical Content Knowledge (TPACK) as a way to identify and understand the knowledge needed to successfully integrate technology in classrooms. TPACK builds on Lee Shulman's work on pedagogical content knowledge by including technological knowledge. TPACK focuses on three core components of teaching with technology: content, pedagogy, and technology. Technology knowledge is knowledge about standard and advanced technologies. This type of knowledge includes how to operate the technologies, installing and upgrading hardware and software, and maintaining data archives (Koehler & Mishra, 2008). Content knowledge refers to the subject matter that is taught and learned. Pedagogical knowledge is the understanding of teaching practices and methods. Koehler and Mishra (2008)

stated that pedagogical knowledge is a generic form of knowledge that includes student learning, classroom management, lesson plan development and implementation, and student evaluation (p. 6).

The interactions among the three core components are as equally as important (Koehler & Mishra, 2008). Figure 1 displays the core components and interactions.

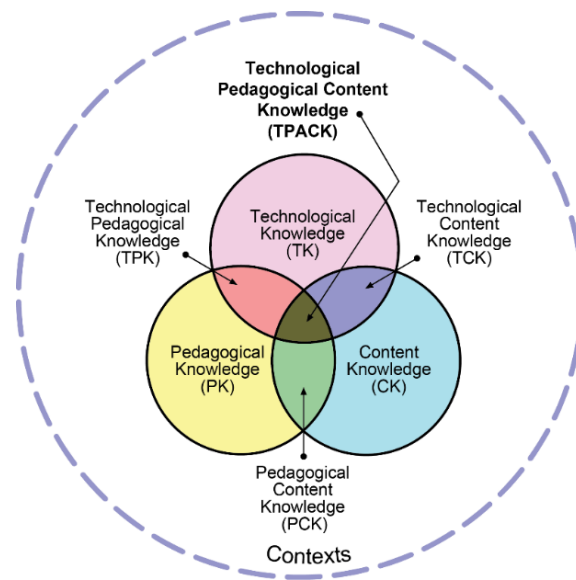


Figure 1: TPACK Conceptual Framework

Note. Reproduced by permission of the publisher, © 2012 by tpack.org

Pedagogical content knowledge considers the discipline and how it should be taught. Koehler and Mishra (2008) defined technological content knowledge as “the understanding of the manner in which technology and content influence and constrain one another” (p. 7). Teachers need to learn which technologies are best to address the subject-matter within their given discipline. Technological pedagogical knowledge is the understanding of how teaching and learning shifts

or changes when specific technologies are integrated into instruction (Koehler & Mishra, 2008). Technological pedagogical content knowledge is the understanding of how all three forms interact with each other. Koehler and Mishra (2008) argues that effective teaching with technology requires TPACK.

Organizational Analysis

The purpose of this Dissertation in Practice is to identify school factors affecting technology integration within the context of literacy instruction through conducting an organizational analysis using a multi-frame model developed by Bolman and Deal (2008). At the time this study was conducted, Mid-Florida Elementary School did not have a clearly defined implementation plan to roll out their 1:1 mobile device initiative. To prepare for the 2015-2016 implementation, the school administrator requested assistance with conducting an analysis of their current technology integration efforts with the goal of using the results and recommendations to assist in the development of a formal implementation plan that included professional development. The school administrator of Mid-Florida Elementary School approved this project as it will provide the stakeholders, administration and instructional staff, with needed organizational data to support their initiative

Evaluation Questions

This organizational analysis will answer the following evaluation question: What organizational factors support and impede the integration of technology within the context of literacy instruction? To answer the main evaluation question, the evaluator will also collect data to answer the following evaluation sub-questions:

1. How are teachers currently integrating technology into instruction? (Human Resource Frame)
2. What are the teachers' current level of concern about integrating technology into literacy instruction? (Human Resource Frame)
3. How is professional development currently being planned, delivered, and supported? (Human Resource Frame)
4. How are decisions about resource allocation made at the school? (Political Frame)
5. How is technology integration viewed at the school? (Symbolic Frame)
6. How does the school's organizational structure affect technology integration? (Structural Frame)

Frameworks for Data Analysis

In the analysis of the data, the evaluator used the Substitution Augmentation Modification Redefinition (SAMR) Model (Puentedura, 2008) and Stages of Concern (SoC) as frameworks in interpreting levels of technology integration and teachers' levels of concern related to the integration of mobile devices.

The SAMR Model

The Substitution Augmentation Modification Redefinition (SAMR) Model was developed to determine “what types of technology use would have greater or lesser effects on student learning” (Puentedura, 2008, p. 5). The model consists of four types of technology use: substitution, augmentation, modification, and redefinition. The two lower levels of the SAMR model use technology to enhance learning tasks (Puentedura, 2008). At the substitution level,

technology is used as a replacement or a direct substitution to complete a task that previously did not require the use of a computer. Instructional practices, student learning processes, and learning goals do not change when technology serves as a replacement (Hughes, 2005). At the augmentation level, the tasks remain the same yet the features of the new technology are leveraged for the purpose of increasing efficiency and effectiveness (Hughes, 2005; Puentedura, 2008). Puentedura (2008) indicated that student learning outcomes are not significantly influenced by tasks at the substitution and augmentation levels yet they can still be useful depending on the purpose.

The upper two levels of the SAMR model transform the learning tasks (Puentedura, 2008). Teaching and learning transitions from teacher centered to student centered when technology is integrated at the modification and redefinition levels (Puentedura, 2008). The modification level is when the task is redesigned by the introduction of a new technology (Puentedura, 2008). Puentedura (2008) described the redefinition level as using technology to create new tasks that were previously inconceivable (p. 7). Student learning outcomes significantly improve when technology is integrated at the upper two levels of SAMR (Puentedura, 2008).

Concerns Based Adoption Model – Stages of Concern Questionnaire

The Stages of Concern questionnaire (SoC) is one of the three diagnostic instruments of the Concerns-Based Adoption Model (CBAM), a conceptual framework used to measure the process of change within an organization (George, Hall, & Stiegelbauer, 2006). The SoC was developed by members of the Concerns-Based Adoption Model Project at the Research and

Development Center for Teacher Education at the University of Texas at Austin in the 1970s. George et al. (2006) revised and updated the latest manual, which is the version being used in this organizational analysis.

SoC is a tool that is used to help leaders understand, monitor, and guide the complex process of implementing new and innovative practices (Hall, Newlove, George, Rutherford, & Hord, 1991). When adopting a new initiative, members of an organization experience many types of concern at different levels of intensity (George et al., 2006). George et al. (2006) stated, “Although we can experience many types of concerns about an innovation concurrently an individual will perceive certain aspects of the innovation (initiative) as more important than others at a given time” (p. 7). The developers of CBAM identified seven Stages of Concern: unconcerned, informational, personal, management, consequence, collaboration, and refocusing (George et al., 2006; Hall, George, & Rutherford, 1977). The term stage was used as concerns are developmental in nature. The stages are organized into three categories: self, task, and impact. Table 2 displays the descriptions of each of the seven stages.

Table 2: Stages of Concern Descriptions

Category	Stage of Concern		Description
Impact	6	Refocusing	Focus is on exploring ways to reap more universal benefits from the innovation, including the possibility of making major changes to it or replacing it with a more powerful alternative.
	5	Collaboration	Focus is on coordination and cooperation with others regarding use of the innovation.
	4	Consequence	Attention focuses on impact of the innovation on students in immediate sphere of influence.
Task	3	Management	Attention is focused on the processes and tasks of using the innovation and the best use of information and resources.
Self	2	Personal	Uncertain about the demands of the innovation, adequacy to meet those demands.
	1	Informational	General awareness of the innovation and interest in learning more details about it.
	0	Unconcerned	Little concern about or involvement with the innovation.

Note. Adapted from *Measuring Implementation in Schools: The Stages of Concern Questionnaire*, p. 8, by George, Hall, & Steigelbauer, 2006.

The purpose of the SoC questionnaire is to diagnosis the personnel’s concerns who are involved in the adoption of a new initiative (George et al., 2006). George et al. (2006) stated that “concerns are neither good nor bad, and it is inappropriate to analyze them in those terms” (p. 55). An individual’s concerns must be addressed before higher levels of concern emerge (George et al., 2006). Understanding the instructional staff’s levels of concern can assist school administrators in determining what types of support are needed to improve and sustain the

implementation of an initiative, such as resources, time for planning, and professional development (George et al., 2006).

Summary

Chapter 1 provided an explanation of the complex problem of practice that was studied in this organizational analysis. A description of the organization and conceptual framework for this organizational analysis were provided. The factors that impact the problem at the international, national, and state levels were described. An overview of the organizational analysis was shared along with descriptions of the two frameworks that were used to analyze the data. The subsequent chapter will discuss the methodology of the organizational analysis.

CHAPTER TWO: METHODOLOGY

Introduction

Chapter Two contains an explanation of the methods of data collection and analysis used in this study. This chapter includes the purpose of the study, evaluation questions, study design, participants, instrumentation, data collection and analysis procedures.

Purpose of the Study

The purpose of this study was to identify organizational factors affecting technology integration within the context of literacy instruction at a single school site that was preparing to implement a 1:1 mobile device initiative in all K-5 classrooms.

Design of the Study

This study used a convergent parallel mixed methods research design. According to Creswell and Plano Clark (2011), “The convergent parallel design occurs when the researcher uses concurrent timing to implement the quantitative and qualitative strands during the same phase of the research process, prioritizes the methods equally, and keeps the strands independent during analysis and then mixes the results during the overall interpretation” (p. 70).

Conceptually, the convergent parallel design relates to the term triangulation as separate data are collected to triangulate the results about a single topic (Creswell & Plano Clark, 2011). The purpose of this design is to “obtain different but complementary data on the same topic” (Morse, 1991, p. 122) (as cited in Creswell, Plano Clark, p. 77). The convergent parallel design was chosen because the evaluation sub-questions called for different kinds of data sources. There is

value in collecting and analyzing both qualitative and quantitative to better understand the problem (Creswell & Plano Clark, 2011, p. 122).

Evaluation Question

One main evaluation question was designed to frame this organizational analysis. What organizational factors support and impede technology integration within the context of literacy instruction? To answer the main evaluation question, the evaluator collected data to answer six evaluation sub-questions. The evaluation sub-questions were developed to ensure that data were being collected among Bolman and Deal's (2008) four frames. Table 3 displays the evaluation sub-questions aligned to the respective frames.

Table 3: Evaluation Sub-questions

Evaluation Sub-questions	Four Frames
1. How are teachers currently integrating technology into literacy instruction?	Human Resources
2. What are the teachers' current level of concern about integrating technology into instruction?	Human Resources
3. How is professional development being planned, delivered, and supported?	Human Resources
4. How are decisions about resource allocation made at the school?	Political
5. How is technology integration viewed at the school?	Symbolic
6. How does the school's organizational structure affect technology integration?	Structural

Participants

The study was conducted at Mid-Florida Elementary School and every K-5 staff member that had instructional responsibilities was included in the sample. The population consisted of 20 teachers, 10 paraprofessionals, and one school administrator. To conduct an organizational analysis, the evaluator invited the entire teaching, paraprofessional, and administrative population to participate in the study. Therefore, a census was used over a specific sampling method as there was an attempt to collect data from the entire population. Overall, 27 of the instructional and administrative staff participated in the organizational analysis.

Instrumentation

Data that are used to influence decisions on teaching and learning within an organization must be trustworthy (Sagor, 2011, p. 109). The technique used most frequently in practitioner research or action research is triangulation (Sagor, 2011). Sagor (2000) defined triangulation as using multiple sources of independent data to answer questions.

The data collection plan for this organizational analysis was aligned to Bolman and Deal's (2008) four frames. To establish the trustworthiness of the data, multiple and independent sources were chosen. Primary and secondary sources of data were identified for each evaluation sub-question. Table 4 displays the data collection plan for this organizational analysis. Primary sources of data are noted in the table.

Table 4: Data Collection Plan

Evaluation sub-questions	Data Type	Instrument	Participants	Frame
1. How are teachers currently integrating technology into literacy instruction?	Observation	Classroom Observation	K-5 instructional staff	Human Resources
	Interview, Teacher	Question 1, 2, 4, 6	Classroom teachers	
2. What are the teachers' current level of concerns about integrating technology within literacy instruction?	Survey, quantitative	CBAM, Stages of Concern Questionnaire	K-5 school administrator and instructional staff	Human Resources
	Survey, qualitative	Question 5	K-5 school administrator and instructional staff	
	Interview, Teacher	Question 9	Classroom teachers	
3. How is professional development currently being planned, delivered, and supported?	Interview, Teacher	Questions 7 – 8	Classroom teachers	Human Resources
	Interview, Administrator	Questions 4 - 5	K-5 school administrator	
	Survey, qualitative	Questions 1 – 2	K-5 school administrator and instructional staff	
4. How are decisions about resource allocation made at the school?	Interview, Administrator	Questions 7 - 8	K-5 school administrator	Political
	Interview, Teachers	Question 3	Classroom teachers	
5. How is technology integration viewed at the school?	Interview, Administrator	Questions 9 – 12	K-5 school administrator	Symbolic
	Survey, Qualitative	Questions 3 - 4	K-5 school administrator and instructional staff	
6. How does the school's organizational structure affect readiness for technology integration?	Interview, School Administrator	Questions 1-3	K-5 school administrator	Structural
	Survey, Qualitative	Questions 1-2	K-5 school administrator and classroom teachers	

Note. Bolded text indicates primary source of data.

Interview with the School Administrator

The school administrator interview protocol was designed to gather data to help answer the following evaluation sub-questions:

- What are the teachers' current level of concerns about integrating technology within literacy instruction?
- How is professional development currently being planned, delivered, and supported? (Primary source of data)
- How are decisions about resource allocation made at the school? (Primary source of data)
- How is technology integration viewed at the school?
- How does the school's organizational structure affect readiness for technology integration? (Primary source of data)

Instrument

Bolman and Deal's (2008) Four Frame Model was used to organize the interview protocol as questions focused on structural, human resources, political, and symbolic frames. The protocol was designed by the evaluator and was reviewed by two experienced researchers to ensure content validity. The full administrator interview protocol is available in Appendix C.

Sample

At the time of the study, Mid-Florida Elementary School had two school administrators. The school administrator who directed the K-5 elementary program and who was designated as the lead for overseeing the 1:1 mobile device initiative was of interest to the evaluator.

Purposeful sampling was used for the school administrator interview (Patton, 2002). The K-5 school administrator agreed to and participated in the interview.

Data Collection Procedures

The evaluator emailed the K-5 school administrator inviting her to participate in an interview with an expected duration time of sixty minutes. The interview was conducted in April 2015 by the evaluator. The school administrator agreed to being audio-taped for the purpose of ensuring accurate note-taking and reporting.

Data Analysis Procedures

The qualitative data from the responses of the open-ended questions were transcribed. Using the transcription, the evaluator identified the school administrator's answers to the respective evaluation sub-questions. The school administrator's answers were triangulated with the other data sources. Inconsistencies were not found.

Classroom Observations

The classroom observations were conducted to provide data to answer the following evaluation sub-question: How are teachers currently integrating technology into literacy instruction? (Primary source of data)

Instrument

The purpose of the classroom observation was to learn if, and how, teachers were integrating technology within literacy instruction. The focus was on the teacher, the learning

environment, and how technology, pedagogy, and content were being delivered and used. Furthermore, the evaluator was interested in learning what presence technology had in the classroom, and more specifically during literacy instruction. The classroom observation protocol was reviewed by two experienced researchers to ensure content validity. The full protocol is available in Appendix D.

Sample

At the time of the study, Mid-Florida Elementary School had ten K-5 classrooms. The entire K-5 instructional staff population was invited to participate in the classroom observations. All K-5 teachers and paraprofessionals agreed to participate and one teacher asked to limit the number of observations to one.

Data Collection Procedures

One to two classroom observations were conducted in each of the K-5 classrooms during their 90 minute reading block. Each observation lasted for 20 minutes. The focus was on the teacher and the classroom environment. Detailed field notes about teachers' practices, technology tools being used, and content being taught were gathered during the observation period. During each observation period, detailed field notes were taken in five minute intervals to answer the following questions:

- What types of technology were being used during reading instruction?
- If applicable, how was technology being used during reading instruction?

- What pedagogical approaches were being used during reading instruction? With technology?
- What content was being taught during reading instruction? With technology?

Data Analysis Procedures

After each observational period, the evaluator used the field notes to complete a classroom observation protocol. The observational data were coded to identify emerging themes related to the level of technology integration, pedagogical approaches, and content that was delivered. Puentedura's (2008) *Substitution Augmentation Modification Redefinition (SAMR)* model was used to determine the level of technology use of the observed learning tasks.

Survey

The survey instrument was designed to gather data to help answer the following evaluation sub-questions:

- What are the teachers' current level of concerns about integrating technology within literacy instruction? (Quantitative questions – Primary source of data)
- How is technology integration viewed at the school? (Qualitative question – Primary source of data)
- How does the school's organizational structure affect readiness for technology integration?
- How is professional development currently being planned, delivered, and supported?

Instrument

A survey was developed to gather information from the instructional staff and administration regarding their level of concern about integrating mobile devices within literacy instruction. The survey was organized in two parts and consisted of 44 qualitative and quantitative questions. The questions came from two sources, evaluator designed questions and a published survey. Part 1 was developed by the evaluator and included five qualitative questions designed to explore the following areas: expertise in the school related to literacy and technology instruction, beliefs about the role technology plays in literacy instruction, current understanding of literacy, and current concerns about technology integration. The five evaluator-designed questions were reviewed by two experienced researchers to ensure content validity. One of the qualitative questions was developed to align with the quantitative part of the survey which focused on the respondent's concerns about technology integration. The evaluator felt a qualitative question was needed to ensure this data was collected if respondents chose not to complete Part 2, the lengthier portion of the survey. Part 1 of the survey is available in Appendix E.

Part 2 consisted of the quantitative portion of the survey. The SoC questionnaire was used to measure the respondent's level of concern about integrating mobile devices within literacy instruction. The instrument is a two page, 35 item questionnaire that uses a 0-7 Likert scale. Respondents answer by marking each item according to how true the item is at the time they are completing the survey. Additionally, the SoC questionnaire has four qualitative questions intended to gather background information about the respondent's previous experience with the initiative.

Sample

The survey was a census of all K-5 administrative and instructional staff. The survey was provided to the entire administrative, teaching, and teaching assistant population, which included one school administrator, 20 classroom teachers, and 10 paraprofessionals. In total, 87% (27 of 31) of the instructional and administration staff completed and submitted the survey. On the quantitative portion of the survey, two of the respondents drew a line through the items indicating they were unconcerned on all 35 items. It was unclear if these two participants read the questions and their responses were removed from the data set. However, the respondents completed the qualitative questions and their responses were included in the analysis.

Data Collection Procedures

In April 2015, paper copies of the surveys were provided to the administrative and instructional staff along with a sealed envelope and consent form as the school administrator shared that this was the preferred method. For those who agreed to participate, they were instructed to provide the completed and sealed surveys to their lead teacher. The administration and instructional staff were given two weeks to complete the surveys. One team emailed the evaluator communicating that they misplaced their survey packets and requested additional copies. A second survey packet was provided to them. The lead teachers provided the sealed packets to the school administrator who provided them to the evaluator.

Data Analysis Procedures

After the SoC data were collected and scored, the evaluator completed three levels of data interpretation for the group data: peak stage score, first and second highest stage scores, and group profile (George et al., 2006). The respondents were not asked to provide demographic information as the sample was small and the evaluator was concerned that disaggregated data would identify the respondents' identities. Quantitative survey data were displayed in an aggregate form to protect the confidentiality of the respondents.

The evaluator read over the qualitative open responses, developed codes, and identified major themes to help answer the evaluation sub-questions.

Interview with Classroom Teachers

During the classroom observations, several teachers approached the evaluator and provided examples on how they integrated technology within their instruction. These activities were not present during the time of the observation, which prompted the evaluator to submit an Institutional Review Board (IRB) addendum requesting permission to interview a small sample of classroom teachers. The addendum was approved on April 24, 2015. The interview protocol for classroom teachers focused on providing data to answer the following evaluation sub-questions:

- How are teachers currently integrating technology into literacy instruction?
- What are the teachers' current level of concerns about integrating technology with literacy instruction?

- How is professional development currently being planned, delivered, and supported?
- How are decisions about resource allocation made at the school?
- How does the school's organizational structure affect readiness for technology integration?

Instrument

The classroom teacher interview protocol was designed by the evaluator after receiving the completed surveys and conducting the classroom observations and school administrator interview. The interview protocol was reviewed by one experienced researcher to ensure content validity. The design of the interview was driven by several unanswered questions and the informal conversations with teachers and paraprofessionals during and after the classroom observations. The questions were developed to gather more information on how teachers use technology in their classrooms at Mid-Florida Elementary School. Furthermore, there were still some unanswered questions about professional development, and how teachers were supported when new initiatives were introduced. The full protocol is available in Appendix F.

Sample

Purposeful sampling was used for the classroom teacher interviews (Patton, 2002). Three teachers representing each multi-age grade level team (K-1, 2-3, and 3-5) were invited to participate in an interview. The identified teachers were the individuals who approached the evaluator during the classroom observations offering additional information about how technology was used in their classrooms. All three teachers agreed to and participated in an individual interview.

Data Collection Procedures

For the interview, the teachers were solicited in person and received an email confirmation. Appointments for interviews were scheduled before and after school hours. The interviews were conducted by the evaluator in May 2015. To ensure accurate note-taking and reporting, two of the three teachers were audio-taped with permission. The other teacher's interview was not audio-taped due to equipment malfunction. Detailed notes were taken in lieu of recording the interview. The duration of the interviews ranged from 15 to 55 minutes.

Data Analysis Procedures

The qualitative data from the responses of the open-ended questions were transcribed. The evaluator read over the responses, developed codes, and identified major themes to help answer the evaluation sub-questions.

Summary

In this chapter, the framework for the organizational analysis was described. This organizational analysis was designed to identify organizational factors that support and impede technology integration within the context of literacy instruction at a single school site. Six evaluation sub-questions were organized using Bolman and Deal's (2008) four frame model. Primary and secondary sources of data were identified for each of the evaluation sub-questions for the purpose of triangulating the data. The instrumentation and data collection and analysis procedures used in the organizational analysis were discussed. The results of the data analysis are presented in the following chapter.

CHAPTER THREE: RESULTS

Chapter 3 presents the results of the data analysis, which include data from both qualitative and quantitative surveys, teacher and administrator interviews, and classroom observation data. The results pertaining to each evaluation sub-question are given and organized per organizational frame (Bolman & Deal 2008): human resources, political, symbolic, and structural. The evaluator presents the answer to each evaluation sub-question followed by the data to support the answer.

The Human Resource Frame

Levels of Concern

Evaluation sub-question: What are the teachers' current levels of concern about integrating technology into literacy instruction?

The majority of the participating teachers indicated on the SoC questionnaire that their highest level of concern fell within the unconcerned, informational, and personal stages. On the SoC questionnaire some teachers reported experiencing higher levels of concern associated with students and teacher collaboration. The secondary data did not corroborate the results from the primary data as many teachers described experiencing higher levels of concern related to the management stage. Additionally, there were conflicting data related to the instructional staff's professional experiences with integrating mobile devices into literacy instruction. The majority of the teachers did not receive formal professional development on mobile device integration. Many of the instructional staff reported having 0 – 1 years of experience with integrating mobile devices into literacy instruction. However, more than half of the instructional staff identified

their level of experience at the intermediate level. It is plausible that the instructional staff's self-efficacy beliefs were overinflated.

Stages of Concern

The SoC questionnaire was administered one time in April 2015 before the implementation of the 1:1 mobile device initiative. All completed surveys were hand scored by the evaluator. The SoC questionnaire was scored by calculating the raw scores of each of the seven stages of concern and converting them into percentile scores. Three methods were used to interpret the SoC group data: Peak Stage Score Interpretation, First and Second Highest Stage Scores Interpretation, and Profile Interpretation (George et al., 2006).

Peak Score Interpretation

The Peak Score Interpretation is the simplest form of interpretation to identify the highest stage score (George et al., 2006, p. 31). Table 5 displays the frequency of individuals with peak scores at each of the seven stages of concern. Based on these data, the group peak score was Stage 0 - Unconcerned. The peak score suggests that the participants reported showing little concern or engagement in the innovation, integrating mobile devices within literacy instruction, compared to other initiatives that the group may be involved in. Thirty-eight percent (n = 9.5) of the participants' peak score fell within the self-stage (Stages 1-2). At the self-stage, individuals want more information about the initiative and want to learn how it will personally affect them (George, Hall, & Stielbauer, 2006, p. 4). Eighteen percent (n = 4.5) of the participants indicated that their highest stages of concern were impact related (Stages 4-6).

Table 5: Peak Stage Score

Highest Stage of Concern Stages	Unconcerned 0	Informational 1	Personal 2	Management 3	Consequence 4	Collaboration 5	Refocusing 6	Total
Number of Participants	11	4.5	5	0	1	3	0.5	25
Percent of Participants	44	18	20	0	4	12	2	100

Note. Two participants had tied peak stage scores. These were represented by a half count score (.5).

First and Second Highest Stage Scores Interpretation

The second method used to interpret the SoC group data was the first and second highest stage scores interpretation. George et al. (2006) recommended analyzing the second highest stage of concern in relation to the peak score due to the developmental nature of concerns as the second highest stage of concern will often be adjacent to the individual's peak score (p. 34).

Table 6 features a matrix of cross-tabulated participants' peak scores and second highest stages of concern.

Table 6: Frequency Distribution of Second Highest Stage of Concern in Relation to First Highest Stage of Concern

Highest Stage of Concern	Second Highest Stage of Concern							Percentage of Participants	Number of Participants
	0	1	2	3	4	5	6		
0 Unconcerned	0	1.5	3.5	1.5	1	2	1.5	44	11
1 Informational	0	0	3	1	.5	0	0	18	4.5
2 Personal	1	3.5	0	0	.5	0	0	20	5
3 Management	0	0	0	0	0	0	0	0	0
4 Consequence	0	0	1	0	0	0	0	4	1
5 Collaboration	0	2	1	0	0	0	0	12	3
6 Refocusing	0	.5	0	0	0	0	0	2	.5
								100	25

Note. The half count score (.5) represents tied second highest stage of concern scores. The bold text indicates highest stage of concern. The shaded cell indicates second highest stage of concern.

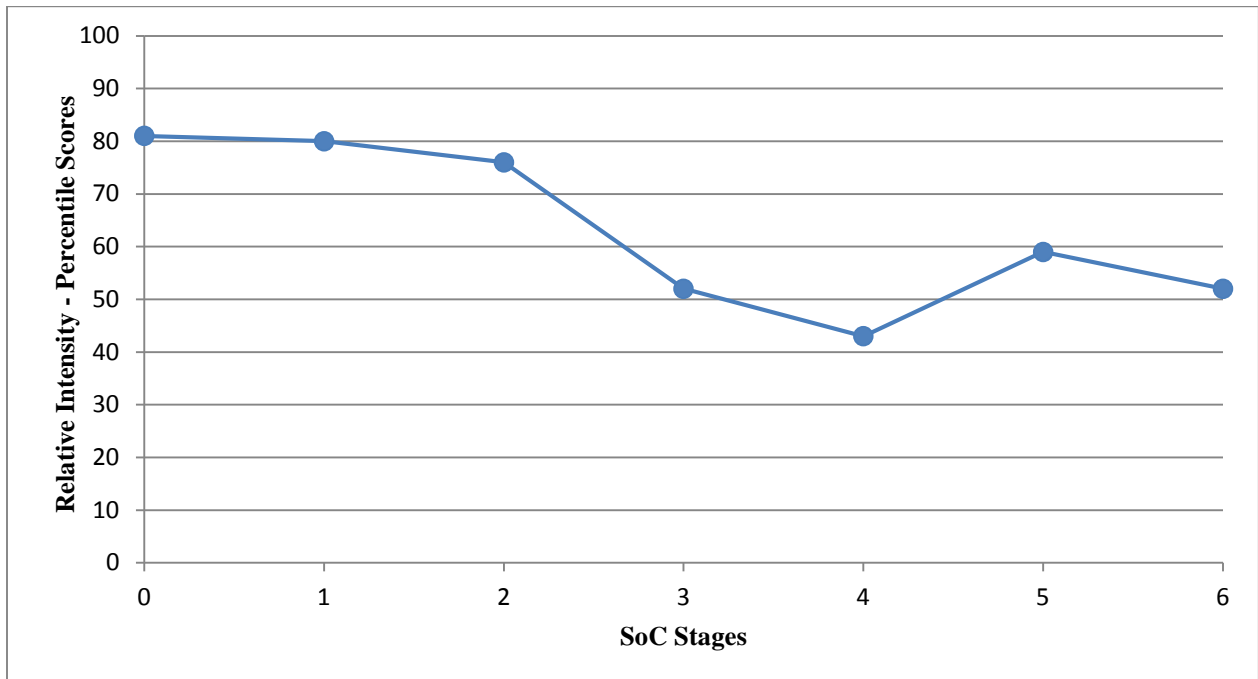
The relationship among the peak score and the second highest stage of concern did not follow the general pattern as expected. For example, for the 11 participants whose peak score was Stage 0 only 1.5 of the individuals rated Stage 1 as their second highest stage of concern. There was little evidence of adjacent scores in Stage 0 as the second highest stage of concern scores were evenly distributed across the six stages except for Stage 2. The data show that the majority of second highest stage of concern scores fell under the self-stage (Stages 1-2).

SoC Group Profile

Table 7 displays the SOC group profile data of the participating K-5 instructional staff and administrator. The group profile was determined by averaging the raw scores for each stage and then converting them to percentile scores using the Percentile Conversion Chart for the

Stages of Concern Questionnaire (George et al., 2006, p. 29). George et al. (2006) refer to the profile analysis as the richest and most common method for interpreting SoC data (p. 37).

Table 7: SoC K-5 Group Profile



As a group, the data indicate that the most intense concerns fall within the self category: Stage 0 (81%), Stage 1 (80%) and Stage 2 (76%). Within the context of integrating mobile devices within literacy instruction, the instructional staff's greatest concerns fell within the following: (a) being unconcerned and uninvolved in the initiative, (b) wanting to learn the general aspects of the initiative, and (c) having personal concerns about the demands of the initiative.

Qualitative Open-Responses

To better understand the administrative and instructional staffs' concerns related to integrating technology within literacy instruction, the survey and interview participants were asked to respond to an open-ended question related to this topic. The survey and interview results are reported separately.

Twenty-six instructional staff and one administrator responded to the open-ended question on the survey providing their unique concerns about integrating technology within literacy instruction. Eight major themes emerged from the open-ended responses: unconcerned, logistics and maintenance, insufficient resources, off-task behavior, mishandling of the device, time, device knowledge, and learning and instruction. The theme with the highest response rate (n=6) was off-task behavior. For example, a teacher stated, "I'm concerned about students changing from educational apps to inappropriate apps." Five teachers reported on insufficient digital resources, such as the lack of appropriate programs, slow internet services, and unreliable hardware. Four of the 27 teachers indicated that they had no concerns. Some teachers (n=3) were concerned about their students' knowledge or ability related to using the mobile device. There were five concerns related to learning and instruction. One teacher shared her concern about online reading and recorded, "Yes, technology concerns me...My students' ability to interpret the reading portion provided by technology (in reference to online reading assessments)."

The eight major themes were aligned to CBAM's Stages of Concerns. The majority of the qualitative responses were considered management concerns. Table 8 displays each theme,

examples of responses related to the theme, the number of responses per theme, and the aligned Stage of Concern. Some teachers provided several responses to the open-ended question.

Table 8: Open Response Data: Emerging Themes Related to Concerns with Technology Integration

Theme	Examples of responses	Number of responses	Stages of Concern
Off-task student behavior	Distraction rather than engagement	6	Management
Insufficient resources	Lack of available programs; Internet capabilities	5	Management
Unconcerned	I don't have any present concerns	4	Unconcerned
Learning and instruction	Teachers being able to individualize and guide instruction to multiple students on multiple devices	5	Consequence
Mishandling of devices	Misuse or abuse by students and teachers	3	Management
Device knowledge	Children not having the knowledge to operate devices properly	3	Management
Logistics and maintenance	Updating devices; maintaining equipment	2	Management
Time	The time it will take to prepare differently	1	Management

Three teachers representing each multi-grade team and the school administrator responded to the interview question indicating their concerns about technology integration within

the context of literacy instruction. One teacher expressed her excitement about the upcoming 1:1 mobile device initiative. However, she was concerned about maintaining balance between teaching reading with digital text and printed text. She further stated,

I want them (students) to also enjoy print. How do we balance it? Children now a days are very connected to technology. I don't want them to be overly connected to it. If the iPads aren't working one day, I don't want a complete melt down.

Another teacher was concerned about the day to day management of the mobile devices. For example, the teacher shared that she didn't know how to efficiently manage the daily distribution of the iPads and headphones. The teacher reported that she recently tried using iPads for the weekly spelling test. It took twice the amount of time to finish the spelling test due to the management issues of the devices. Another teacher reported that she had no concerns about technology integration.

The school administrator expressed four concerns regarding technology integration: teacher knowledge, external support, students' abilities related to online reading, and parental concerns. Her primary concern is how to prepare teachers to integrate technology effectively that results in improved student learning outcomes. The school administrator stated, "Ninety percent of the staff here are digital natives. However, the digital tools are only as good as the instruction personnel implementing them." She further described that the teachers need to learn how and when to use the mobile devices. The school administrator expressed her desire to secure external support from university partners to help with teacher professional development.

The analyzed open response data from both the surveys and interviews were aligned to the SoC stages. Table 9 displays the alignment between the stages of concern and the analyzed survey and interview data. The qualitative data fell within the unconcerned, management, and consequence stages of concern.

Table 9: Alignment of Open-Response Data with SoC Stages

Stages of Concern	Survey Open-Responses	Interview Open-Responses
Unconcerned	Unconcerned	Unconcerned
Informational	N/A	N/A
Personal	N/A	N/A
Management	Logistics and maintenance; time; insufficient resources; mishandling of the devices; off-task behavior; student knowledge related to use of device	Logistics and maintenance; parental concerns; students' abilities (using the device)
Consequence	Learning and instruction	Instructional balance between print and digital resources; professional development; teacher knowledge
Collaboration	N/A	N/A
Refocusing	N/A	N/A

Experience with Mobile Devices

To learn about the administrative and instructional staffs' experience with using mobile devices in literacy instruction, the participants were asked to respond to SoC demographic questions related to their years of experience using mobile devices in reading instruction and

identify their level of experience related to mobile device integration. Lastly, respondents were asked about their professional development experience on the topic of using mobile devices within reading instruction.

Based on the analyzed data, 20 of the instructional staff indicated that they had 0-1 years of experience using mobile devices within reading instruction. Table 10 displays the data.

Table 10: Years of Experience Using Mobile Devices within Reading Instruction

Experience using mobile devices within reading instruction							
Number of Years	0	1	2	3	4	5+	Total
Number of Participants	9	11	4	1	1	1	27
Percent of Participants	33	41	15	4	4	4	100

Also, more than half of the instructional staff considered themselves at the intermediate level when it comes to using mobile devices within reading instruction. Forty-eight percent of the instructional staff identified themselves at the non-user and novice levels. Table 11 displays the data.

Table 11: Identified Level of Experience Using Mobile Devices within Reading Instruction

Identified level of experience						
Level of Use	Non-user	Novice	Intermediate	Old Hand	Past User	Total
Number of Participants	4	9	14	0	0	27
Percent of Participants	15	33	52	0	0	100

Furthermore, two out of the 27 respondents indicated that they received formal professional development on using mobile devices within reading instruction. Table 12 displays the data.

Table 12: Professional Development Using Mobile Devices within Reading Instruction

Formal professional development			
	Yes	No	Total
Number of Participants	2	25	27
Percent of Participants	7	93	100

Emergent Findings

During the interview with the school administrator, she reported on the challenges of maintaining personnel. Mid-Florida Elementary School has experienced high attrition rates among teachers and paraprofessionals over the last couple of years. In the 2013 – 2014 academic year, 32% of the teachers and 32% of the paraprofessionals left Mid-Florida Elementary School. In the 2012 – 2013 academic year, 22% of the teachers and 25% of the paraprofessionals did not continue their employment. The school administrator reported that she expects that the attrition rate will be high in 2014 – 2015. The high attrition rate is a challenge for the school administrator in terms of maintaining and developing the human assets at Mid-Florida Elementary School. The school administrator expressed that the salary package for teachers is not as competitive after three years of teaching compared to the public school system. She identified this as one of the major contributors to teacher retention. Furthermore, student

and parental challenges have also been reported reasons for leaving Mid-Florida Elementary School.

Current Use of Technology

Evaluation sub-question: How are teachers currently integrating technology into literacy instruction?

Based on the analyzed classroom observation data, all of the participating teachers integrated technology into literacy instruction using substitution and augmentation tasks. The data from the teacher interviews mostly supported the results from the primary data. However, one teacher reported assigning technology tasks at the modification level.

Classroom Observations

The evaluator observed eight out of the ten K-5 classrooms during the 90 minute reading block one to two times during the month of April for approximately 20 – 30 minutes of the reading block. Several factors impacted the number of conducted observations and duration of the observation. The testing window for the Florida State Assessment, a state-wide assessment to measure student progress on Florida Standards (Florida Department of Education, 2015), was still open at the time data collection occurred. Several of the classrooms scheduled snack time during the reading period, which reduced the amount of time the class was observed. The evaluator conducted a total of 11 classroom observations.

The evaluator recorded detailed field notes during each of the observations gathering specific information on the types of technology being used and how it was being integrated into

literacy instruction. There was specific interest in learning what type of presence technology had in each of the classrooms. Furthermore, data were captured on the types of pedagogical approaches and content that was delivered with the use of technology.

During the classroom observations, the instructional staff and students used technology during center time and whole group instruction. The majority of the technology was located on the periphery of the classroom. However, there were a few occasions where technology was more centralized. During two of the classroom observations, teachers and individual students were observed using iPads and laptops at their desks, on the floor in a reading center, and at a teacher-directed center. The teachers used the interactive white boards (IWB) during eight out of the 11 observations. The primary use was to display content for the students, such as spelling words, vocabulary definitions, and a sentence of the day. Two times, the teachers showed educational videos on the IWBs. During four of the observations, the teachers assigned students to the computer centers to independently practice reading skills through a variety of reading programs. The computers in the centers were turned off during five of the observations. On three occasions, the evaluator observed paraprofessionals working with individual students using technology, such as tablets, laptops, and communication devices.

The evaluator observed 18 learning activities using technology. To determine the current level of technology integration, Puentedura's (2008) SAMR model was used to identify the level of technology use. Eleven of the learning activities were identified at the substitution level. At this level, a new tool serves as a replacement for an older technology and the learning task remains the same (Puentedura, 2008). Using an IWB to display content during a lecture was a common learning activity observed at the substitution level. Seven learning activities were

identified at the augmentation level. At this level, the task still remains the same. However, there is some functional improvement. For example, students received immediate feedback using an educational program to practice spelling words. The evaluator did not observe learning activities at the modification and redefinition levels. Table 13 displays the results of the analysis.

Table 13: Levels of Observed Technology Integration

SAMR Level	# of Tasks Observed	Observed Activities
Substitution	11	<p>Teacher presented content on Interactive White Boards for students to view</p> <p>A student used an iPad to type spelling words from paper flash cards.</p> <p>Teacher presented weekly spelling and vocabulary list using PowerPoint.</p>
Augmentation	7	<p>Students assigned to computer center worked on online reading games that provided immediate corrective feedback (letter-sound correspondence and phonics).</p>
Modification	No tasks observed at this level	Not applicable
Redefinition	No tasks observed at this level	Not applicable

Teacher Interviews

Teachers who participated in the interviews reported on how they used technology in their classrooms during literacy instruction. The analyzed open-response data served as a secondary source in answering the sub-evaluation question. The open-response data was categorized using the SAMR levels of technology use: substitution, augmentation, modification, and redefinition (Puentedura, 2008). Additionally, teachers discussed the frequency of technology use as well as some of the barriers they faced.

The majority of the learning activities that the teachers reported were at the substitution and augmentation levels. Examples of learning tasks at the substitution level included using PowerPoint presentations to display content, interactive whiteboards to display information, laptops with a web-based spelling program without additional features, and e-readers for independent reading. Learning activities at the augmentation level included students publishing stories using review features (spelling and grammar checks), developing presentations using PowerPoint, and practicing reading skills in the computer center (reading programs with corrective features). There was evidence that some learning activities were at the modification level. For example, one teacher reported that her grade level requires their students to reflect on their nightly readings through blogging. For homework, students were asked to post and respond to their peers five times a week.

Teachers were asked to report on the amount of time students interact with technology during a typical day or week. The responses varied. One teacher shared that her students had opportunities to use technology approximately 15 – 20 minutes a day through the computer

center. However, the Internet and instructional games often took too long to load due to slow connectivity. She reported that her students often chose printed books versus using the computer center. Another teacher shared that her students interacted with technology at least once a week through the use of the laptop cart. She indicated that the computers in her classroom were not working effectively. The third teacher reported that her students interacted with technology daily as they were required to blog five times a week. Students who were reading below grade level practiced their reading skills through online reading programs. On occasion, the teacher utilized the laptop cart and co-taught with the technology support teacher on how to conduct online searches for research projects and developed presentations using PowerPoint and Prezi.

Professional Development

Evaluation sub-question: How is professional development currently being planned, delivered, and supported?

Based on the data from the school administrator's interview, professional development events were planned and delivered by representatives from the agency and school-based administration, university partners, and lead teachers. Professional development support was provided by the lead teachers of the multi-grade level teams. Although teachers received opportunities to participate in professional development at the school site and off-site, the school did not have a formal, defined professional learning plan and model that was aligned to specific school goals. The teacher interview data corroborated the primary data as teachers reported participating in different professional development offerings and that support was available, but there was no evidence that Mid-Florida Elementary School had a coordinated professional development plan.

School Administrator Interview

To learn about their professional development process, during the interviewing the school administrator was asked to report on how professional development was planned, delivered, and supported. She shared that the needs for professional development were reviewed annually at the agency and school level before the following academic year. A small committee, including the two agency-level directors of curriculum and instruction, planned the pre-planning agency-wide professional development offerings. An education academy was offered for all new employees, which was an intensive agency-based professional development. The week prior to the beginning of the school year, instructional staff members from all of the Florida Charter Consortium Florida campuses met annually during pre-planning for agency-based professional development. This was facilitated by the agency's core leadership. A variety of break-out sessions were offered on topics, such as teacher evaluation, guided reading, writers' workshop, and applications to build a class web-site.

There were some agency-based and school-based professional development offerings throughout the year. Alternating Wednesday afternoons were allocated for faculty meetings, team meetings, and professional development. It was reported that when professional development occurred on-site, it lasted for approximately 30 to 60 minutes and was facilitated by the school's lead teachers, university partners, agency's core leadership, or school administration.

Attending off-campus professional learning opportunities was supported by the school administrator. Limited funds were available for teachers who were interested in attending

conferences. Teachers were also encouraged to attend workshops and trainings from the district office, Florida Diagnostic and Learning Resources System (FDLRS), and other organizations.

The school administrator was asked to report on the types of support that were available to the teachers when implementing new programs, approaches or initiatives. The multi-grade level teams were led by lead teachers who had at least 30 years of teaching experience. One of their roles was to provide mentoring and professional development support to the teachers and paraprofessionals on their respective teams. The school's technology coordinator provided support on hardware, software, and technology integration concerns and issues. The school did not have funds to hire a literacy coach, but the school administrator shared that they would benefit from coaching services if they were able to obtain funds for this position.

Teacher Interviews

To better understand the instructional staffs' perceptions about their professional development related to literacy and technology integration, the interview participants were asked to respond to two open-ended questions related to the topic. Two out of the three teachers reported that professional development occurred on Wednesdays after school during the faculty meetings, and that the sessions typically last for 30 – 60 minutes. When there was a large scale roll-out of a new initiative, one teacher shared that more professional development time was offered. For example, the teacher described that the K-5 teachers met two times after school for three hour increments to learn how to use a new data management program that was being developed by an external company that partnered with Mid-Florida Elementary School. The third teacher noted that she received professional development beyond what the school offers.

The teacher stated, “Whatever we need, we get it from the district office, FLDRS, and UCF (University of Central Florida).”

The teachers expressed mixed views regarding the topics covered during the various professional development sessions. Some sessions were reported as helpful, but others were not aligned to the specific needs of the teachers. For example, a teacher shared that one of the sessions was on how to conduct a reading running record. The teacher reported that she was knowledgeable in conducting running records and felt this session was not appropriate for her needs. Furthermore, time was expressed as being sacred at Mid-Florida Elementary School as the teachers received minimal planning time and often ate lunch with their students. Afternoons are needed for teachers to develop their lesson plans.

Professional development support was available at Mid-Florida Elementary School. One teacher shared that support was provided by the technology support teacher and agency administrators. Another teacher indicated that the three teacher leads were responsible for providing the instructional staff guidance, professional development, and mentoring. However, it was noted that the lead teachers need specific professional development and support aligned to the upcoming 1:1 mobile device initiative.

The Political Frame

Evaluation sub-question: How are decisions about resource allocation made at the school?

The decision-making process on how to allocate limited resources was often driven by the teachers due to the organizational structure of Mid-Florida Elementary School. A common

theme emerged from the administrator and teacher interviews – the resources were scarce especially in the context of instructional materials, software, technology, and time. Rather than operating in a state of conflict to secure the available resources, the data from the interviewees indicated that sharing the limited resources across multi-grade level teams was a common practice at Mid-Florida Elementary School. The organization did not make decisions to consistently allocate time for teacher planning and job-embedded professional development due to financial resources. Although financial resources were limited at Mid-Florida Elementary School, the school had experienced some success in securing technology through partnerships, networking, grant writing, and fundraising.

The school administrator and two out of the three teachers reported that Mid-Florida Elementary School was a “teacher-led school.” The school administrator reported, “Teachers have more autonomy than they would in a traditional school. We attract the teachers who want to think outside of the box. That do not want to use a packaged curriculum.” The teachers made their own curriculum and program decisions for their multi-grade level teams. At times, the teachers took the initiative to secure additional resources from external sources. For example, one teacher shared that her team generated enough funds to purchase a set of ten iPads.

To learn more about the allocation of digital resources, the respondents reported on how their team shared the resources. Two of the teachers indicated that the school had a laptop cart that was available for checkout to all grade levels. Additionally, the interviewees identified the technology support teacher as a resource that was shared among the grade levels. Teachers had the opportunity to co-teach with him on technology related lessons, such as teaching students

how to design a PowerPoint presentation. One teacher shared another example related to the set of iPads her team secured that demonstrated making team-based decisions on limited resources. When the team initially purchased the iPads, the teachers in the team rotated the resources where each class had an opportunity to integrate technology into their instruction. After a few months of using the iPads, the team decided to assign them permanently to the class with the students who they felt needed them the most – students who were taking the Florida Alternative Assessment. Another teacher stated that there was not a lot of resources to share. She did share that her team used Google Drive, a file storage service, as a way to collect and share online resources.

The grant for the 1:1 mobile device initiative will significantly increase the available resources to improve their technology integration efforts. The school administrator shared, “This (1:1 mobile device initiative) wouldn’t have happened without their (teachers) buy-in and willingness.” She further noted that the teachers and administration will seek out best practices and resources to increase their knowledge in digital literacy and technology integration.

Based on the interview data, Mid-Florida Elementary School did not make clear and consistent decisions to allocate sustained time for teachers during their contractual schedule for instructional planning and job-embedded professional development. Time was reported as a limited resource by teachers and the school administrator. The school administrator shared that Mid-Florida Elementary School does not have the depth of resources to share some of the teacher duty responsibilities like a traditional school would. Consistent, daily planning time was not built into the teachers’ schedule due to the limited number of human resources. The school

administrator shared that the grade level teams met once a week for two to three hours after school for instructional planning. Teachers reported that they often ate with their students in the cafeteria or in the classrooms to work on feeding and language acquisition goals as some of their students were medically fragile and had significant communication disorders. The students did receive an art and physical education special, which allowed for classroom teachers to receive 90 – 120 minutes of planning time a week. However, the planning time was inconsistent. The instructional staff's teaching schedule did not allow for much time to receive professional development support and practice during the school day. The lack of protected time for teacher planning and professional learning and practice can impact the implementation efforts of the 1:1 mobile device initiative.

The Symbolic Frame

Evaluation sub-question: How is technology integration viewed at the school?

Based on the open-response data from the surveys, technology integration was viewed as a way to differentiate, support, and supplement literacy instruction at Mid-Florida Elementary School. The survey data also revealed that the instructional staff had a more traditional view of literacy. The data from the school administrator and teacher interviews supported the results from the primary data. The school administration's actions reflected that technology integration was an integral part of Mid-Florida Elementary School's educational program especially in the context of differentiated instruction to meet the diverse learning needs of their students.

Survey Open Response Data

To further understand how technology integration was viewed within the context of literacy instruction, the administrative and instructional staff were asked to respond to an open-response survey question about the role technology plays in literacy instruction. Six major themes emerged about the role technology plays in literacy instruction from the open-ended responses: serves as a supplemental resource to core literacy instruction, serves as an instructional tool for independent practice, enhances curriculum and instruction, supports various learning styles through multi-media components, serves as a resource for materials, and supports 21st century learning. One of the themes with the highest response rate (n=5) was related to how the multi-media components of technology support different learning styles. For example, a teacher stated, “Technology provides a multimedia approach to literacy instruction. It assists students with a variety of learning styles.” Five teachers reported on the availability of online resources. A teacher shared, “Technology can support literacy instruction by supporting infinite amounts of resources.” Four of the 27 teachers indicated that technology can serve as a good resource to supplement core instruction. Some teachers (n=3) reported that technology can enhance literacy instruction. In the context of independent practice, one teacher stated, “Computer programs and apps assist with leveled drills and practice.” Table 14 displays each theme, examples of responses related to the theme, and the number of responses per theme. Some teachers provided several responses to the open-ended question.

Table 14: The Role Technology Plays in Literacy Instruction

Theme	Examples of responses	Number of responses
Multi-media	Visual integration of new concepts; multi-media approach to education; supports a variety of learning styles	5
Literacy resources	Videos; resources to inform research; variety of reading materials; apps; online dictionaries	5
Supplement	Supplement to core instruction; supports traditional forms of instruction	3
Enhancement	Enhances the learning experience; enhances education	3
Independent practice	Leveled drills and practice; immediate and corrective feedback	2
21st century skills	Prepares children for future skills; learn how to read different types of print to use in the future	2

A follow up survey question was asked to determine the administrative and instructional staff's views on literacy. The evaluator was interested in learning if their views were aligned to current perspectives on literacy. The majority (n = 26) of the respondents shared that literacy was the ability to read and write with slight variations. One teacher connected literacy to

technology. The respondent shared, “Literacy is the ability to read and write. Also, the ability to interpret technical information and communicate.”

Open Response Interview Data

The administrator’s view on technology integration and literacy instruction seemed to focus on how assistive technology can provide tools to increase the functional abilities of their students with disabilities. To better understand the administrative staff’s views on technology integration, the school administrator was asked to respond to an open-ended question related to this topic. The school administrator stated, “We really embrace technology. We believe that technology levels the playing field for diverse learners in a way that so many other things cannot. Students with significant disabilities really can access anything from a communication device to showing what they know from a mastery-based teaching and learning approach utilizing technology.”

The school’s views were also reflected in their actions. For example, the school administrator shared that technology integration has been part of the school’s charter since its inception. The school started out equipping classrooms with interactive white boards and virtual learning labs stations (computer centers). Mid-Florida Elementary School also endorsed a Bring Your Own Device policy where teachers and families can bring their own devices from home. “As long as the use of technology is tied to the curriculum and instruction needs of the students, I support it” stated the school administrator. She also pointed out the importance of integrating assistive technology into instruction as several of their students with disabilities use communication boards, switches, and applications to communicate with their teachers and

classmates. “Now we are taking it to the next level with the 1:1 iPad rollout,” stated the school administrator.

During the teacher interviews, each was asked to report on their team’s expectations related to integrating technology within literacy instruction. The expectations varied among the different teams due to the age levels of the students. However, there was common element related to differentiation.

One teacher indicated that her team discussed the viability of introducing a computer special to their rotation next year. She shared that their students needed to learn how to open up a Word document, learn how to keyboard, and understand how to log-in with a username and password. She shared, “I want them to learn computer elements that they really don’t know as we haven’t had the proper technology.” In terms of literacy, the teacher reported that her team wants their students to learn how to open applications and read online.

Another teacher communicated that their expectations varied depending on the student’s ability. She stated, “The expectations are different and they have to be different.” The teacher shared different examples of her students’ abilities. During the same class period, one student may need to learn how to identify letters on a keyboard at the same time another student requires assistance with publishing a paper using a laptop computer.

The third teacher indicated that her students were expected to blog five times a week. Students who were reading below grade level were expected to practice fluency skills using Starfall, a free education website with reading and math activities.

The Structural Frame

Evaluation sub-question: How does the school's organizational structure affect technology integration?

Mid-Florida Elementary School's organizational structure does not fully support technology integration within the context of adopting a school-wide 1:1 mobile device initiative due to the current professional development model and teacher retention issues within the human resource frame. Based on the data from the school administrator, Mid-Florida Elementary School is a teacher-led school that uses a self-managing team structure within their organizational design. Although teams are comprised of instructional staff who have specialized roles, their high attrition rates hinder the development of professional capital, a necessary component of a team structure. The open response data from the teacher interviews supported the primary data.

Division of Labor

To learn about Mid-Florida Elementary School's division of labor, the school administrator's open responses were transcribed and used to answer the evaluation sub-question. Mid-Florida Elementary School is led by two administrators. The school administrator leads the K-5 programming and the assistant school administrator oversees the infants to pre-kindergarten programming. The focus of this organizational analysis was the K-5 program and the remaining description of the organizational structure will focus on the elementary program. In grades K-5, there were 20 classroom teachers, ten paraprofessionals, and one technology support teacher. Three of the classroom teachers also served as faculty lead specialists, also referred to as lead teachers, for their respective multi-grade level team. The school had a technology support

teacher who provided assistance with technology hardware and software and technology integration. Figure 2 displays the organizational chart for the K-5 program at Mid-Florida Elementary School.

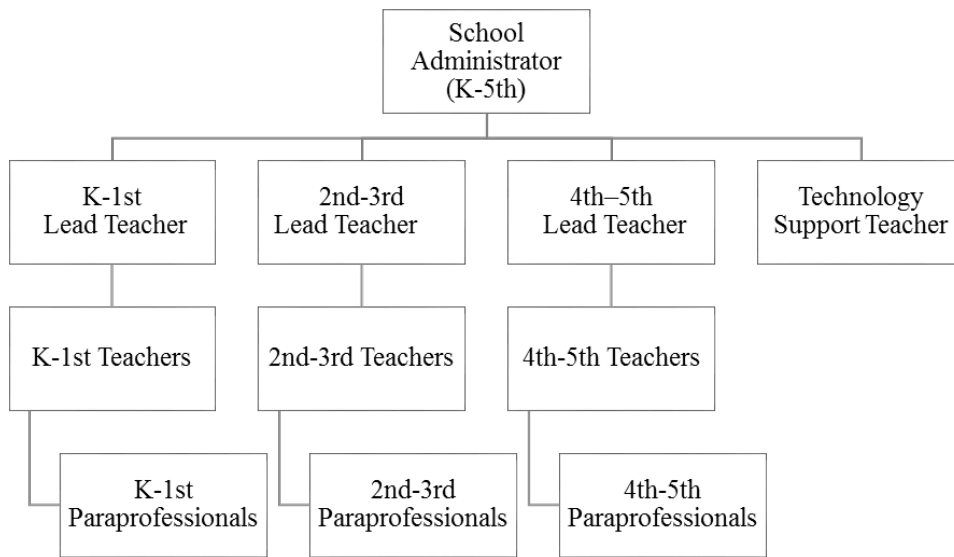


Figure 2: Mid-Florida Elementary School' Organizational Chart

Mid-Florida Elementary School's structure was created to support their full-inclusive elementary program. Teams were staffed with teachers with specialized backgrounds. The faculty lead specialists were experienced teachers and dually certified in exceptional education and early childhood or elementary education. They had chair duties as well as professional development responsibilities for the school and assigned team. The school administrator shared that she hired faculty who supported the unique needs of the grade level teams. The teams were designed with teachers who had specialized skills in elementary education, exceptional education, technology integration and art integration. The technology support teacher worked

with all K-5 teams. The paraprofessionals are classified as non-instructional support personnel; however, they provided instructional support often carrying out lessons designed by the lead teachers during centers and small group instruction. Many of the paraprofessionals were university students who had a bachelor's degree in psychology or communicative disorders. While they worked on their graduate degree, they were working as paraprofessionals to obtain professional experience in an educational setting.

Team Structure

To understand how the team structure was developed and maintained, the open response data from both the school administrator and teacher interviews were analyzed. The school administrator reported that Mid-Florida Elementary School used a co-teach model in grades K-5. To address the diverse academic needs of their students, the school used flexible grouping. The school referred to this grouping as a neighborhood design. There were three multi-grade level groups (neighborhoods) in the elementary grades: K-1st, 2nd – 3rd, and 4th – 5th. The K-1 team was located on the first floor of the school building and the 2nd – 3rd and 4th – 5th teams shared the second floor.

Flexible grouping was used throughout the school day; students were grouped homogeneously or heterogeneously depending on the content or activity of the day. Based on the open response data from the teacher interviews, each multi-grade level team grouped their students differently when it came to literacy instruction. One teacher shared that her team departmentalized based on their specializations such as language arts or mathematics.

The school administrator indicated that a faculty lead specialist oversaw each multi-grade level team. Three instructional staff managed each classroom: two dual certified teachers and a paraprofessional. Each team had personnel with specialized skills in technology and art integration. Table 15 displays the K-5 team structure for Mid-Florida Elementary School.

Table 15: K-5 Neighborhoods

Neighborhood	Number of Classrooms	Number of Certified Teachers	Number of Paraprofessionals
K-1	5	10	5
2-3	3	6	3
4-5	2	4	2

The school administrator shared that the goal of designing each team with faculty with specialized skills was to help them become a self-sufficient group. The interview data from both the school administrator and two of the teachers indicated that Mid-Florida Elementary School was a teacher-led school. The multi-grade level teams made the decisions on student grouping, scheduling, instruction, curriculum, and student discipline.

Survey Open-Response Data

To develop a better understanding of the organization’s structure related to professional learning support, the instructional staff were asked to record the names of the individuals who they contact when they need assistance with literacy instruction and technology integration. The analyzed data were displayed visually using sociograms to communicate the relationships among the organization in the context of professional learning support.

In terms of literacy instruction support, the majority of the instructional staff members indicated that they refer to their lead teachers within their multi-grade level teams. This supports the data from the school administrator interview indicating the faculty lead specialists serve as the professional development support for their respective teams. Two out of the three lead teachers identified working with each other when they had questions regarding literacy instruction. One instructional staff member noted that they refer to professional resources when needed. Some instructional staff conveyed that they seek assistance from fellow teachers on their multi-grade level team. Two participants indicated that they are their own support. Figure 3 visually depicts the relationships among the instructional staff members and the individuals they identified as a source of support for literacy instruction.

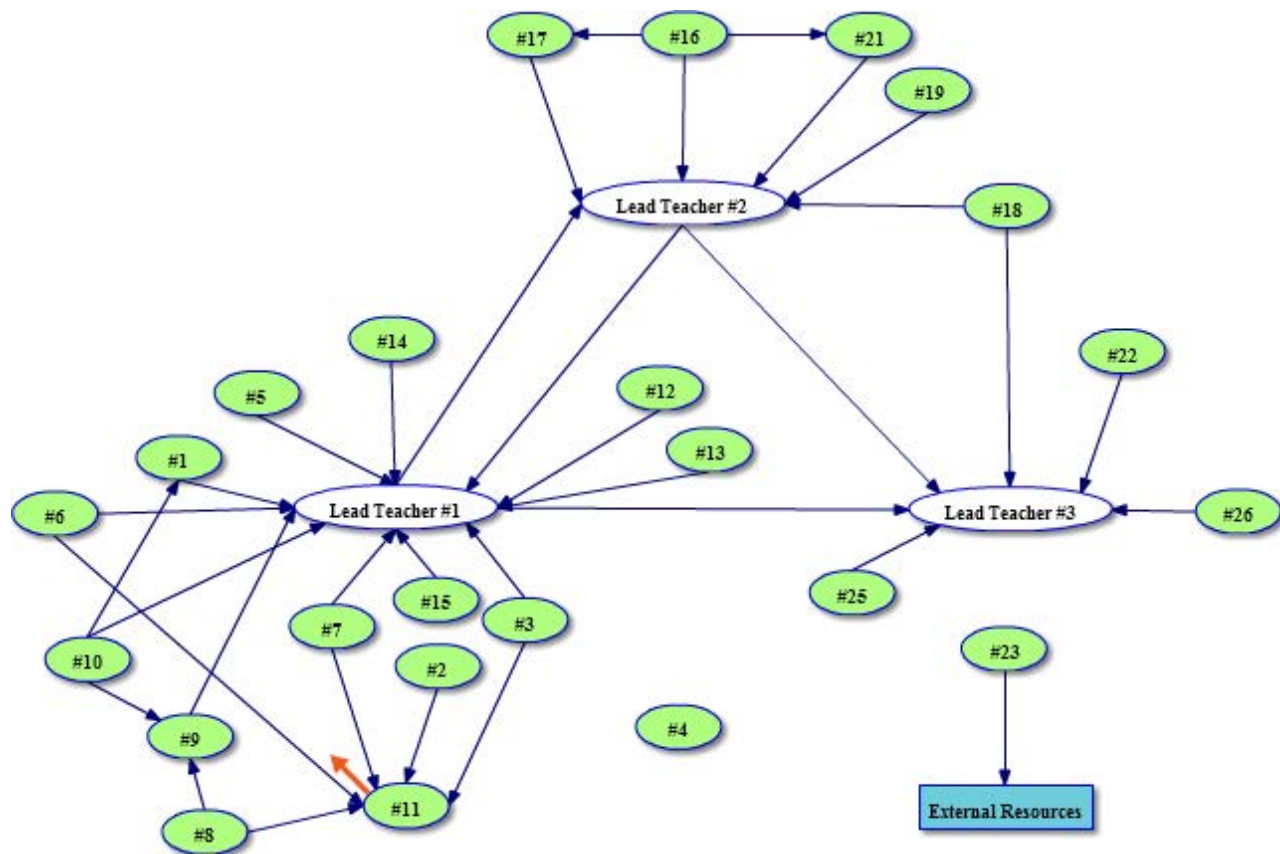


Figure 3: Sociogram - Literacy Support

Note. Orange arrow indicates respondent considers all teachers on team as a literacy support. Green circle with an identified number indicates individual instructional staff members. Those without an arrow indicate that the respondent considers themselves as their own literacy support.

The instructional staff members were also asked to indicate who they go to for technology integration support. The data show that there was not one direct source of support for technology integration at Mid-Florida Elementary School. The school administrator shared that when she designed multi-grade level teams, she placed an instructional staff member on each team who had a background in technology integration. Fifteen teachers indicated that they elicit support from the technology support teacher. Nine teachers shared that they receive support from the information technology support team at the agency level. There was also one

paraprofessional and one classroom teacher who was reported as a source of technology integration support. Two participants indicated that they serve as their own resource. Figure 4 visually displays the relationships among the instructional staff members and the individuals they identified as a source of support for technology integration.

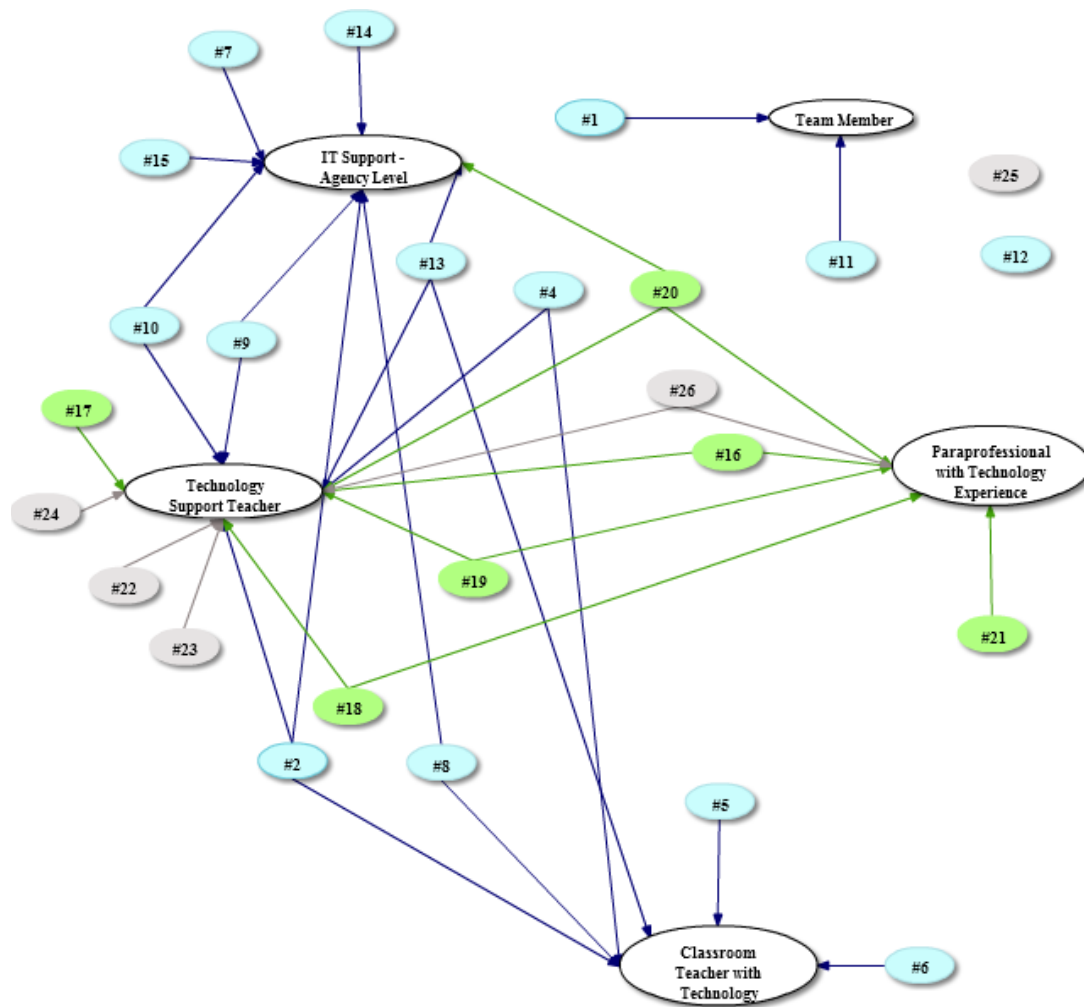


Figure 4: Sociogram - Technology instruction and integration support

Note. Numbered circles represent individual instructional members. The color coding represents multi-grade level teams. Numbered circles without an arrow indicate that the respondents consider themselves as their own support.

Summary

In this chapter, results from the survey, teacher and school administrator interviews, and classroom observations were reported. Results were organized per Bolman and Deal's four frames: human resources, political, symbolic and structural. The answers to each of the evaluation sub-question were discussed. The instructional staff's highest levels of concern, professional experiences with integrating mobile devices into literacy instruction, and current levels of technology integration were provided. The school's views on the role technology plays on literacy instruction were reported. The school's organizational structure and decision-making process related to allocating resources for technology integration were described. The following chapter presents the answer to the main evaluation question, discussion, recommendations, and limitations.

CHAPTER FOUR: DISCUSSION AND CONCLUSION

The purpose of this study was to identify organizational factors affecting technology integration within the context of literacy instruction at a single school site that was preparing to implement a 1:1 mobile device initiative in all K-5 classrooms. Chapter 4 answers the main evaluation question of this organizational analysis. The subsequent sections present a discussion of the results, recommendations for the organization, limitations of the study, and next steps.

Evaluation Question

What organizational factors impede and support technology integration within the context of literacy instruction?

In the context of integrating technology into literacy instruction, the data collected in this study suggest that the organizational strategies and issues within the human resources frame are impacting, and are impacted by, the organization's political, structural, and symbolic practices. Examining the school through the human resources frame revealed that the school does not have a focused, systematic plan for professional development to develop the teachers' knowledge, skills, and experience needed to effectively implement the 1:1 mobile device initiative. The majority of the instructional staff reported that they have not received professional development on integrating mobile devices into literacy instruction. The instructional staff need timely professional development tailored to their reported highest levels of concerns for technology integration which include awareness, personal, informational, and management stages of concern. Although the lack of professional learning opportunities seem to be impeding the teachers' level of technology integration, the focus of professional development should focus on

their immediate concerns before progressing to higher-stage concerns that would include developing teachers' Technology Pedagogical Content Knowledge. The school's high teacher and paraprofessional attrition rates are also impeding the development of human capital. A large portion of the school's investments in professional development is lost every year when these teachers and paraprofessionals leave the school.

Mid-Florida Elementary School's self-managing team design, teacher-led teams, is a structural strategy that seems to have fostered a collaborative work culture and supported teacher autonomy. The multi-grade level teams include teachers who have specialized roles to support their full inclusion program. This team structure seems to be supporting literacy instruction as the majority of instructional staff indicated that their faculty lead specialist serves as a professional development resource. However, in terms of technology integration, the teacher-led team structure may impede their implementation efforts, as this design requires individuals with requisite knowledge, skills, and experience in integrating technology into literacy instruction. Although the school had a technology support teacher on staff, the data showed that he did not serve as a professional development resource for all of the K-5 teachers and paraprofessionals.

The school's organizational structure, teacher-led teams, has significant implications for the allocation of the school's limited resources. On the positive side, teacher-led teams has encouraged open sharing of technology resources. However, this organizational structure has also made it difficult for teachers at the school to preserve the planning time necessary for the effective integration of technology into literacy instruction. The limited resources present additional challenges for the school as it was reported that the lack of professional development,

working technology and Internet services, and time for teachers to learn and practice how to integrate technology into literacy instruction were identified obstacles. Teacher-led teams are responsible for making many of their instructional and curricular decisions. The high teacher and paraprofessional attrition rates and the lack of professional development on integrating technology into literacy instruction may impede the instructional decision-making practices related to the 1:1 mobile device initiative. It must be noted that Mid-Florida Elementary School's recently overcame their technology and Internet barriers by obtaining grant funding to provide the technology resources needed to support their upcoming 1:1 mobile device initiative.

At the symbolic level, the majority of the instructional staff viewed technology integration as a way to support and supplement literacy instruction. This is likely the result of inadequate, focused professional development. Some of the instructional staff indicated that technology can support students' reading and learning through the multi-media components that an online environment can offer. The school's view of literacy was aligned to a traditional understanding - the ability to read and write. Their view of literacy seemed to influence how they integrated technology as it was observed being used as a way to accommodate the reading, writing, and communication needs of students with disabilities, provide opportunities for students to work on basic reading skills through a drill and practice method, and display information for students during small and whole group instruction. There was little evidence that the instructional staff identified how new technologies and the Internet require new forms of literacy.

Discussion

The results of this organizational analysis suggest the advantages of studying a school's preparedness for technology integration within the context of literacy instruction from an organizational perspective. Using all four frames of the Bolman and Deal's (2008) model allows for organizations to reframe its challenges by gaining clarity of its inner workings and developing effective solutions.

Knowledge, Skills, and Concerns

All of the data collected in this study – survey, interview, and observation – suggest that the majority of the Mid-Florida Elementary School's instructional staff reported that they have not received professional development on how to integrate mobile devices into literacy instruction. Furthermore, 74% (n= 20) of the instructional staff conveyed having limited years of experience (0 – 1 years) with integrating mobile devices into literacy instruction. Interview data indicated that the lack of teachers' knowledge and skills related to integrating technology into literacy instruction was an organizational concern. The lack of opportunities to develop the requisite knowledge, experience, and skills needed to integrate technology into literacy instruction seem to have impacted the teachers' implementation efforts as well as their levels of concern. One of the reported barriers that teachers face when integrating technology into literacy instruction is the lack of professional development (Hutchinson, 2012; Hutchinson & Reinking 2010; Stolle, 2008). Hutchinson and Reinking (2010) reported that 82% of literacy teachers perceived their lack of professional development on how to integrate ICTs as a barrier to implementation.

It seems plausible that the lack of professional development on technology integration influenced the teachers' levels of concerns about integrating mobile devices into literacy instruction. Previous research has found that affective factors play an important role in the success of technology integration (Fletcher, 2006; Hew & Brush, 2007; Hutchinson, 2012; Hutchinson & Reinking, 2011). The majority of the instructional staff at Mid-Florida Elementary School reported experiencing intense levels of concerns within the lower-stage concerns of the SoC framework. Their high level of concerns were focused on the 'nuts and bolts' of integrating mobile devices into literacy instruction. It can be reasonably inferred that these were developmentally appropriate levels of concern for the instructional staff who had not received professional development related to the 1:1 mobile device initiative. Chen & Jang (2014) found that teachers progress to higher-staged concerns only after they develop the necessary knowledge related to technology integration.

Levels of technology integration may also be influenced by the limited professional development opportunities to learn how to integrate technology into literacy instruction. According to the classroom observation and teacher interview data, the majority of the teachers at Mid-Florida Elementary School integrated technology within literacy instruction at the substitution and augmentation levels. It seems reasonable that the low levels of technology integration were due to the teachers' low levels of TPACK. Many of the teachers were observed using a technology tool within literacy instruction for functional purposes, such as displaying literacy content for their students. Stolle (2008) found that teachers who did not receive effective professional development on how to integrate technology into instruction used technology to complete tasks that were previously completed without the use of technology. During the

teacher interviews, one of the teachers explained that their students used laptop computers to publish their work only after their handwritten drafts were edited and revised. This practice provided an example of how the teachers are fully not understanding how to integrate technology into literacy instruction. This practice placed a boundary between literacy instruction and the technology. Honan (2008) found a similar occurrence in her study and emphasized that when literacy teachers do not have sufficient knowledge and skills related to technology integration, the literacy work was downplayed and moved towards technological production. However, while the data clearly suggest that the lack of focused, effective professional development is one major hurdle to effective integration of technology, the data also suggest that other aspects of the organization need to be addressed before teachers will be able to make effective use of that professional development.

Resources

Integrating technology into literacy instruction requires countless resources. However, while discussions of “resources” often focus on the technology needs of the school, it is too easy to ignore that time is also a precious resource in any effort to change instruction. Data from this organizational analysis indicated that the lack of time was an obstacle to integrating mobile devices into literacy instruction. Insufficient time has also been recognized in the literature as a barrier to integrating technology into literacy instruction (Bauer & Kenton, 2005; Hutchison, 2012; Hutchison & Reinking, 2010; Hutchison & Reinking, 2011). Time was reported as a scarce resource that impacted teachers’ planning and instructional time. It was conveyed that more time will be required to prepare differently when integrating mobile devices into literacy

instruction as teachers will need to research appropriate and educationally relevant online resources and websites. Hutchison and Reinking (2011) also found that literacy teachers perceived insufficient planning time as an obstacle to preparing lessons using technology. The lack of instructional time was also reported as a concern regarding mobile device integration as more time was required to manage the logistics of the devices during a lesson, such as passing out mobile devices and ensuring students were logged-in. Hutchison and Reinking (2010) found that the most common reported barrier to integrating technology into instruction was the lack of time during a class period.

Other reported concerns for the instructional staff of Mid-Florida Elementary School were the lack of current and available technology, high speed Internet, and educational applications and software. Previous research has also found that equipment, software, and the Internet were reported as major obstacles to overcome (Bauer & Kenton, 2005; Hew & Brush, 2007). The technology resources for the school included a computer lab, laptop cart, and iPads that were shared amongst the K-5 teachers. Each classroom at Mid-Florida Elementary School was also equipped with an interactive white board and four to five classroom computers. However, it was reported that the computers in the classrooms were outdated and often times did not load programs properly. The Internet service was described as being consistently slow, which deterred some students from working in the computer center. Although the school had technology available, it was considered unreliable. It seems reasonable that the insufficient resources contributed to the teachers' low levels of technology integration. In a national study to learn about barriers to integrating technology into literacy instruction, Hutchison and Reinking

(2010) found that 54% of the literacy teachers attributed unreliable technology as a perceived barrier to technology integration.

Data from this organizational analysis showed that teachers had access to technology support. A technology support teacher was housed at the school site. Additionally, information technology support personnel from the consortium were reported as a resource to teachers at Mid-Florida Elementary School. The instructional staff at Mid-Florida Elementary School indicated that they had the necessary resources when it came to technology support. Previous literature found that technology support was an important factor to the success of integrating technology into literacy instruction (Bauer & Kenton, 2005; Hutchison, 2012; Hutchison & Reinking, 2010; Hutchison & Reinking, 2011).

Supportive Culture

Data from this organizational analysis found that Mid-Florida Elementary School's culture was highly influenced by their full inclusion model. The term "support" was a symbolic message that was embedded throughout the data within the four frames. The concept behind their organizational design was to develop a supportive climate for teachers and students alike. The design of the teacher-led teams included personnel that could serve as a source of professional support for elementary education and exceptional education. Furthermore, classroom observation data revealed that teachers and paraprofessionals fostered a supportive learning environment for their diverse students. Mid-Florida Elementary School deliberately implemented these practices to sustain their inclusion practices.

The school's focus on inclusion and support were evident in both the school's structure and symbolic interpretations of technology. The data suggest that while the structure and symbolism seem effective for Mid-Florida Elementary School's full-inclusion practices, they are likely to thwart effective technology integration within literacy. Billig et al. (2005) found that developing a supportive culture and climate is necessary to sustain technology initiatives. However, the structure of the school has to accommodate technology integration professional development at the same time the professional development has to align to the needs and views of the teachers (Billig et al., 2005).

Recommendations

Based on the findings of this organizational analysis, the following recommendations are presented to assist in supporting the implementation of Mid-Florida Elementary school's 1:1 mobile device initiative. These recommendations are offered to help facilitate effective technology integration within the context of literacy instruction.

Shared Vision and Technology Integration Implementation Plan

Developing a shared vision related to the role technology plays in teaching, learning, and literacy can provide the school community a platform to coherently communicate what technology integration means to Mid-Florida Elementary School (Hew & Brush, 2007). As a vision is a shared understanding among the members of the organization, teachers and paraprofessionals should be actively involved in the development process. Other stakeholders such as parents, consortium administration, university faculty, and business partners may also be useful contributors to this shared vision. However, this vision needs to be grounded in concrete,

specific examples of educational practices that align with the school's existing mission and values, and cannot remain vague. As discussed above, the school seems to be confusing at least two meanings of technology integration and literacy instruction. The school needs to understand these distinctions and decide if they want to pursue the traditional meanings of assistive technology and literacy instruction, or if they also wish to pursue integrating technology into literacy instruction with the goal of preparing students to effectively read, write, and communicate in an online environment.

The next step is for the school to develop or choose specific metrics aligned to the educational goals. Developing or identifying clear metrics to measure student performance will help operationalize what "improve" means to the instructional staff of Mid-Florida Elementary School. Identifying clear metrics to measure levels of technology integration and student performance is necessary to inform instruction, goal setting and decision making, designing and evaluating professional development, and measuring effectiveness of the 1:1 mobile device initiative. There are several models that are available to measure teachers' technology integration. For example, Puentedra's (2008) SAMR model was used for this organizational analysis. A recommended model for Mid-Florida Elementary School is the Technology Integration Matrix (TIM), which was developed by the Florida Center for Instructional Technology. This organization provides schools with a continuum of support related to technology integration. TIM is a framework that can be used to define and evaluate technology integration (Florida Center for Instructional Technology, 2015). TIM is widely used in the state of Florida and the Florida Center for Instructional Technology provides online resources, professional development, and consulting services to schools.

Once the shared vision has been developed and metrics have been identified, it is recommended that Mid-Florida Elementary School creates a technology integration implementation plan. Hew and Brush (2007) described a technology integration plans as a “detailed blueprint of the steps needed to translate the school technology vision into reality” (p.234). The focus should be on teaching, learning, and literacy as the goal for the 1:1 mobile device initiative is to improve student performance in reading and mathematics. Technology should transition from the periphery of the classroom to the center of instruction and learning (Zygouris-Coe, 2013). Although time at the computer center to practice reading skills is important, it is recommended to integrate technology into whole group and small group literacy instruction. Hew and Brush (2007) recommended including monitoring activities into the technology integration plan as a way to ensure technology is being integrated into literacy instruction.

Professional Development

It is recommended that Mid-Florida Elementary School develops a school-wide professional development plan aligned to technology integration and literacy instruction. A professional development plan is a navigational tool for teacher learning. The plan focuses on the specific content, learning designs, implementation support, and evaluation of professional learning (Killion, 2013). Seven areas that are recommended to be addressed are as follows:

1. Identify champions within the organization to promote and support the 1:1 mobile device initiative (Billig et al., 2005). Develop site-based expertise with support from university partners, state resources (training and development projects), school district resources,

and exemplar programs and schools. This team can serve as facilitators, mentors, and peer coaches. Billig et al. (2005) found that a school-based team of educators served as an effective resource for building capacity for technology integration.

2. Protect time for professional learning, teacher practice, peer coaching, and mentoring. Identify strategies to allocate time during the teachers' contractual schedule for ongoing professional development. For example, schedule the instructional support personnel (paraprofessionals) to cover classes to support common collaborative learning times for teachers (Sackey, 2012). Stagger scheduled times or days to avoid pulling all certified teachers from the classrooms at the same time. Groups can be organized based on differentiated needs or multi-level teams. Mid-Florida Elementary School should communicate with the students' parents about the change in the schedule for the purpose of transparency and buy-in (Sackey, 2012).
3. Provide teachers with ongoing professional development. Research has shown that effective professional development is intensive, ongoing, connected to practice and school initiatives, and collaborative (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009).
4. Provide sustained professional development related to technology integration. It is important that the duration of professional development is considered. Duration is the span of time of which professional development is spread and the amount of hours in a given activity (Desimone & Smith, 2013). One of the goals for the 1:1 mobile device initiative is to improve student learning. Darling-Hammond et al. (2009) reported on studies that were reviewed on contact hours and found that teachers who participated in

professional learning programs between 30 to 100 hours showed student achievement gains.

5. Differentiate and customize the professional development content according to the needs of the teachers (Billig et al., 2005). The teachers' highest levels of concern about the 1:1 mobile device initiative should be addressed before proceeding to student impact. If the school's vision about technology integration includes teaching students how to read, write, and communicate in an online environment, the content for the professional development should align to developing teachers' TPACK related to literacy including new literacies and online reading comprehension. Furthermore, the content should also cover how technology can support struggling readers as well as explore the challenges of online reading.
6. Provide teachers with opportunities for professional development support. Hutchison (2012) found that literacy teachers requested four forms of professional learning support: follow up support after professional development, ongoing support (multiple exposure to concepts), individual support, and small group support. A school-based team, site-based expertise, with knowledge in technology integration and literacy instruction can provide this level of support. However, an external resource may also be helpful.
7. Include a professional development evaluation plan. Thomas Guskey's (2002) five critical level of professional development evaluation is a recommended framework. The five levels include participants' reactions, participants' learning, organizational support and change, participants' use of knowledge and skills, and student learning outcomes (Guskey, 2002).

Celebrate Technology Integration

As art integration is celebrated through displaying student artwork in the school's hallways and showcasing students' singing and dancing skills during school performances, Mid-Florida Elementary School can also highlight students' literacy projects that were developed through the integration of technology in a celebratory manner. For example, students can develop digital stories, poetry, and comics to showcase at high profile events planned by the Central Florida Consortium. The intermediate grades can include a short film assignment to their research projects and host a short film festival. Videos can be posted to the school's website for the outside community to view. Practicing rituals, celebrations, and ceremonies can communicate the importance and meaning of technology integration to the students, teachers, and parents.

Limitations of the Organizational Analysis

The limitation of this organizational analysis were:

1. The evaluator was unaware that the school had a technology support teacher on staff until the conclusion of the data collection. This was discovered during the analysis of the open-response qualitative data as teachers identified this teacher as support personnel for technology integration assistance. Therefore, the technology support teacher was not invited to participate in the study. Understanding this teacher's role within the organization would have benefitted the organizational analysis.
2. A significant portion of the data collected were self-reported. The data were only as good as the genuineness and validity of the participants' responses. Primary and secondary

sources of data were collected per evaluation sub-question to attempt to confirm the responses.

3. Classroom observations were conducted during the testing window for the Florida Standards Assessment for grades K-3. Although testing did not occur in the identified grades during the conducted observations, it was noted that the classroom routines were altered. Several times the students took a snack break during the reading block. This limited the duration of the classroom observations. The evaluator decided to conduct teacher interviews as a secondary source of data to support the classroom observation data.
4. It was possible that some teachers perceived that they were being evaluated during this project, despite repeated efforts to make it clear that this was not the purpose of the organizational analysis. This may have affected the openness of a few participants to fully cooperate with the evaluator.
5. The evaluator was introduced to the instructional staff through an email sent by the school administrator. Introducing the evaluator at a staff meeting would have provided a venue for all instructional staff members to receive a formal overview of the organizational analysis and pose questions to clarify their understanding of the study.
6. The sample was limited to the instructional staff members of Mid-Florida Elementary. This limits the ability to generalize the results to other educational organizations. However, a case-to-case transfer is plausible if another school is considering adopting similar practices or programs (Firestone, 1993).

Recommendations for Further Research

The main purpose of this organizational analysis was to identify organizational factors affecting technology integration within the context of literacy instruction at a single school site that was preparing to implement a 1:1 mobile device initiative in all K-5 classrooms in the following academic year. Based on the findings and the limitations of this organizational analysis, the following recommendations are suggested for further research set within the context of Mid-Florida Elementary School:

1. Collect and analyze K – 5 student reading performance data to determine the students’ strengths and needs. Understanding how the students are performing in reading can inform professional development, instructional decision-making, and teaching and learning.
2. Investigate how technology can support the literacy learning of struggling readers and students with reading and language disabilities. Furthermore, explore the challenges of online reading for these students.
3. Conduct a more in-depth analysis on how literacy instruction is being planned delivered, and monitored. Collect specific information related to the pedagogical approaches, content, assessments, curriculum, and decision-making process for student grouping and differentiation.
4. Conduct a more in-depth analysis of the school’s professional development by collecting professional development schedules, titles of sessions, collective hours of professional

development, observations of team meetings, and observations of professional development offerings.

5. Investigate how to directly measure the teacher's Technology Pedagogical Content Knowledge (TPACK) within the context of literacy (direct measure of knowledge).
6. Explore how to best develop a teacher's TPACK within their respective context and subject area, such as literacy.
7. Research what types and levels of professional development support are needed for teachers to effectively integrate technology into literacy instruction and curriculum.
8. Explore the roles of technology support coordinators and literacy professionals in the context of implementing a 1:1 mobile device initiative.
9. Investigate the type of knowledge and skills needed for self-managing teams to lead 1:1 mobile device initiatives effectively.
10. Examine the type of knowledge and skills needed for self-managing teams to make instructional decisions about integrating technology into literacy instruction.

The following recommendations are suggested for further research using an organizational analysis to study school-wide initiatives:

1. Extend the length of the study from two months to one semester or academic year.
2. Increase the frequency of school-site visits to collect more in-depth classroom observation data.
3. Observe professional development sessions throughout the school year as well as pre-planning professional development days.

4. Observe grade level planning meetings and coaching and mentoring sessions.
5. Collect attrition data from teachers and paraprofessionals who plan on leaving the school, if applicable.
6. Collect data on the school administration's role in implementing a school-wide initiative.

Summary

The purpose of this study was to identify organizational factors affecting technology integration within the context of literacy instruction at a single school site that was preparing to implement a 1:1 mobile device initiative through conducting an organizational analysis using a multi-frame model developed by Bolman and Deal (2008). Organizational factors were identified that can support and impede the implementation of Mid-Florida Elementary School's 1:1 mobile device initiative. This study highlights the importance of viewing an organizational context through a variety of perspectives before implementing a school-wide initiative as a school can develop and implement organizational strategies to overcome identified barriers.

APPENDIX A: IRB APPROVAL LETTER



University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **D'Ann Rawlinson**

Date: **March 09, 2015**

Dear Researcher:

On 03/09/2015, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review: Exempt Determination
Project Title: An Applied Organizational Analysis of School Factors to Determine an Elementary School's Digital Literacy Instruction Readiness
Investigator: D'Ann Rawlinson
IRB Number: SBE-15-11071
Funding Agency:
Grant Title:
Research ID: N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the [Investigator Manual](#).

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

A handwritten signature in black ink that reads "Joanne Muratori".

Signature applied by Joanne Muratori on 03/09/2015 12:12:30 PM EDT

IRB Coordinator

APPENDIX B: IRB APPROVAL LETTER ADDENDUM



University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **D'Ann Rawlinson**

Date: **April 24, 2015**

Dear Researcher:

On 04/24/2015, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review: Exempt Determination
Modification Type: Additional study participants will be recruited for this study: five teachers will be asked to take part in interviews. A revised protocol and the interview questions document have been uploaded to the study and a revised Informed Consent document has been approved for use.

Project Title: An Applied Organizational Analysis of School Factors to Determine an Elementary School's Digital Literacy Instruction Readiness

Investigator: D'Ann Rawlinson
IRB Number: SBE-15-11071
Funding Agency:
Grant Title:
Research ID: N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the [Investigator Manual](#).

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 04/24/2015 12:15:01 PM EDT

IRB manager

APPENDIX C: ADMINISTRATOR INTERVIEW PROTOCOL

Interview Protocol: Administrator

Structural Frame

1. What is the organizational structure of your school?
2. What does the teachers' schedule look like?
3. What are the school policies (expectations) related to digital technologies? How much time are you allocating for technology? When is it used?

Human Resource Frame

4. What type of support do teachers receive when implementing new innovations (practices, programs, curriculum, logistics (infrastructural – how to charge technologies, how to download apps, etc.)?)
5. What does professional development look like at your school (types of professional development, levels of support)?
6. What concerns do you have about digital literacy instruction (especially related to integrating digital tablets into reading instruction)?

Political Frame

7. What type of resources (tools, instructional materials, internet, and human resources) are available for digital literacy instruction?
8. What resources are available for school-based professional development (time, materials, funds, and human resources)?

Symbolic Frame

9. What role does technology play in your school for teaching and learning?
10. Why did you introduce technology into your school?
11. What is digital literacy?
12. What is the school's philosophy on literacy, instruction, and student learning?

APPENDIX D: CLASSROOM OBSERVATION

Teacher Classroom Observation

Grade Level:

Date:

Beginning Time:

Ending Time:

Observation #:

What types of technology are being used during reading instruction (90 minute reading block)?

Where?

How Often?

For what purposes?

What presence does technology have in this classroom (environment)?

Where is it positioned? Periphery? Other?

If applicable, how is the technology being used during reading instruction? By teachers? By students? For what purposes (whole-group, small-group, 1-1, guided reading, reading support beyond instruction)?

What pedagogical approaches are being used during reading instruction? with technology (e-readers, computers, etc

What content is being taught during reading instruction? With technology (e-readers, computers, etc.)?

APPENDIX E: QUALTTATIVE SURVEY QUESTIONS

Part 1: Teacher Qualitative Survey Questions

1. Who in the school do you go to when you need assistance with reading or literacy instruction?
2. Who in the school do you go to when you need assistance with technology instruction and/or integration?
3. What is literacy?
4. What role does technology play in literacy instruction?
5. What are your concerns about using mobile devices (tablets, e-readers, Kindles, Nooks, iPads, laptops, etc.) within reading instruction?

APPENDIX F: CLASSROOM TEACHER INTERVIEW PROTOCOL

Teacher Interview Protocol

Name: _____

Date: _____

Time: _____

1. How is reading instruction delivered in your classroom/grade level? (Prompt for grouping, content, pedagogy, etc.)
2. How is technology being used in your classroom/grade level for reading instruction? (Prompt for what types of technology, frequency, duration, pedagogy, and content)
3. How are the digital resources allocated and shared amongst your neighborhood (team)?
4. Can you tell me how technology is being used for grade level planning especially related to literacy instruction?
5. What are the school and/or grade level (neighborhood) expectations related to digital literacy instruction?
6. How is the technology in your classroom and grade level maintained? (Prompt for charging tablets, updates, purchasing apps, etc.)
7. What type of support do teachers receive when implementing new innovations (practices, programs, curriculum, logistics (infrastructural – how to charge technologies, how to download apps, etc.)?)
8. What does professional development look like at your school (types of professional development, levels of support)?
9. What concerns do you have about digital literacy instruction (especially related to integrating digital tablets into reading instruction)?

LIST OF REFERENCES

- Barron, B., Cayton-Hodges, G., Bofferding, L., Copple, C., Darling-Hammond, L., & Levine, M. (2011). *Take a Giant Step: A Blueprint for Teaching Children in a Digital Age*. New York, NY: The Joan Ganz Cooney Center at Sesame Workshop.
- Bauer, J., & Kenton, J. (2005). Toward technology integration in the schools: Why it isn't happening. *Journal of Technology and Teacher Education*, 13(4), 519-546.
- Bean, J. (2014, June 5). Deeper learning and high expectations in the secondary classroom. Retrieved from: <http://www.p21.org/news-events/p21blog>
- Billig, S. H., Sherry, L., & Havelock, B. (2005). Challenge 98: Sustaining the work of regional technology integration initiative. *British Journal of Educational Technology*, 36(6), 987 - 1003.
- Blasé, K. A., Fixsen, D. L., Sims, B. J., & Ward, C. S. (2015). *Implementation science: Changing hearts, minds, behaviors, and systems to improve educational outcomes*. Oakland, CA: The Wing Institute.
- Bolman, L. G., & Deal, T. E. (2008). *Reframing organizations: Artistry, choice and leadership* (4th Ed.). San Francisco, CA: Jossey-Bass.
- Castek, J., Zawilinski, L., McVerry, J. G., O'Byrne, I. A., & Leu, D. J. (2011). The new literacies of online reading comprehension: New opportunities and challenges for students with learning difficulties. In Wyatt-Smith, C., Elkins, J., & Gunn, S. (Eds.), *Multiple Perspectives on Difficulties in Learning Literacy and Numeracy* (pp. 91- 110). New York, NY: Springer.
- Center for Implementing Technology in Education (n.d.). Technology implementation in schools: Key factors to consider. Retrieved from: http://www.cited.org/index.aspx?page_id=187

- Chen, Y. H., & Jang, S. J. (2014). Interrelationship between Stages of Concern and Technological, Pedagogical, and Content Knowledge: A study on Taiwanese senior high school in-service teachers. *Computers in Human Behavior, 32*, 79-91.
- Coiro, J. (2003). Rethinking comprehension strategies to better prepare students for critically evaluating content on the Internet. *New England Reading Association Journal, 30*(2), 29-34.
- Coiro, J. (2011). Predicting reading comprehension on the Internet: Contributions of offline reading skills, online reading skills, and prior knowledge. *Journal of Literacy Research, 43*(4), 352-392.
- Coiro, J. (2015). Understanding what students know: Evaluating their online research and reading comprehension skills. *Journal of Adolescent and Adult Literacy, 58*(7), 546-549.
- Coiro, J., & Dobler, E. (2007). Exploring the online reading comprehension strategies used by sixth-grade skilled readers to search for and locate information on the internet. *Reading Research Quarterly, 42*(2), 214-257.
- Coiro, J., Knobel, M., Lankshear, C., & Leu, D. (2008). Central issues in new literacies and new literacies and new literacies research. In Coiro J., Knobel, M., Lankshear, C., Leu, D. (Eds.), *Handbook of Research on New Literacies* (pp. 1-21). New York: Lawrence Erlbaum Associates.
- Council for Educational Change (2009). About PASS. Retrieved from <http://www.changeeducation.org/pass>
- Creswell, J.W., & Plano Clark, V.L. (2011). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage Publications.

- Darling-Hammond, L., Wei, R. C., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the United States and abroad*. Dallas, Texas: National Staff Development Council.
- Desimone, L. M., & Smith, T. M. (2013). Linking student achievement growth to professional development participation and changes in instruction: A longitudinal study of elementary students and teachers in title I schools. *Teachers College Record, 115*, 1-46.
- File, T. & Ryan, C. (2014). Computer and Internet Use in the United States: 2013, American Community Survey Reports, ACS-28, U.S. Census Bureau, Washington, D.C.
- Firestone, W. A. (1993). Alternative arguments for generalizing from data as applied to qualitative research. *Educational Researcher, 22*(4), 16-23.
- Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation Research: A Synthesis of Literature*. Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network (FMHI Publication #231).
- Fletcher, D. (2006). Technology integration: Do they or don't they? A self-report survey from Pre-K through 5th grade professional educators. *Association for the Advancement of Computing in Educational Journal, 14*(3), 207-219.
- Florida Center for Instructional Technology (2014). The technology integration matrix. Retrieved from <http://fcit.usf.edu/matrix/index.php>
- Florida Department of Education (2014a). Annual measurable objectives for schools, districts, and the state. Retrieved from <http://schoolgrades.fldoe.org/>

- Florida Department of Education (2014b). Digital classroom plan and allocation. Retrieved from <http://www.fldoe.org/about-us/division-of-technology-info-services/bureau-of-edu-tech.shtml>
- 'Florida Department of Education' (2014c). Florida school grades: 2013 - 2014 for elementary, middle and Elementary/Middle combination schools. Retrieved from <http://schoolgrades.fldoe.org/pdf/1314/SchoolGradesPressPacket.pdf>
- Florida Department of Education (2015). Florida Standards Assessment. Retrieved from <http://www.fldoe.org/accountability/assessments/k-12-student-assessment/fsa.shtml>
- Forzani, E., & Leu, D. J. (2012). New literacies for new learners: The need for digital technologies in primary classrooms. *The Educational Forum*, 76, 421-424.
- Fritschi, J., & Wolf, M. A. (2012). Turning on mobile learning in North America: Illustrative initiatives and policy implications. <http://unesdoc.unesco.org/images/0021/002160/216083E.pdf> Paris, UNESCO. (Accessed 19 August 2015).
- George, A. A., Hall, G. E., & Stiegelbauer, S. M. (2006). *Measuring implementation in schools: The stages of concern questionnaire*. Austin, TX: SEDL.
- Gill, B. P., Hamilton, L. S., Lockwood, J. R., Marsh, J. A., Zimmer, R.W., & Hill, D., & Pribesh, S. (2005). *Inspiration, perspiration, and time: Operations and achievement in Edison schools*. Santa Monica, CA: Rand Corporation.
- Gray, L., Thomas, N., Lewis, L., & Tice, P. (2010). *Teachers' use of educational technology in U.S. public schools: 2009*. Washington, DC: Institute of Education Sciences.
- Greenhow, C., & Gleason, B. (2012). Twitteracy: Tweeting as a new literacy practice. *The Educational Forum*, 76, 464-478.

- Guskey, T. (2002). Professional development and teacher change, teachers and teaching: Theory and practice. *Teachers and Teaching: Theory and Practice*, 8(3), 381-391.
- Hague, C., & Williamson, B. (2009). *Digital participation, digital literacy, and school subjects: A review of the policies, literature and evidence*. Bristol, United Kingdom: Futurelab.
- Hall, G. E., George, A. Al, & Rutherford, W. L. (1977). *Measuring stages of concern about innovation: A manual for use of the SoC questionnaire*. Austin, TX: Research and Development Center for Teacher Education, The University of Texas.
- Hall, G., Newlove, B., George, A., Rutherford, W., & Hord, S. (1991). *Measuring change facilitator stages of concern: A manual for use of the CFSoc questionnaire*. Greeley, CO: University of Northern Colorado.
- Hew, K.F., & Brush, T. (2007). Integrating technology into K-12 teaching and learning: Current knowledge gaps and recommendations for future research. *Educational Technology Research and Development*, 55, 223-252.
- Hirsch, S. (2012). Common-core work must include teacher development: Standards movement must embrace teacher professional learning. *Education Week*, 31(19), 22-24.
- Hobbs, R. (2010). *Digital and media literacy: A plan of action*. Washington, D.C.: The Aspen Institute.
- Honan, E. (2008). Barriers to teachers using digital texts in literacy classrooms. *Literacy*, 42(1), 36-43.
- Hughes, J. (2005). The role of teacher knowledge and learning experiences in forming technology-integrated pedagogy. *Journal of Technology and Teacher Education*, 13(2), 277-302.

- Hutchison, A. (2012). Literacy teachers' perceptions of professional development that increases integration of technology into literacy instruction. *Technology, Pedagogy, and Education*, 21(1), 37 – 56.
- Hutchison, A., & Reinking, D. (2010). A national survey of barriers to integrating information and communication technologies into literacy instruction. In R. Jimenez, V. Risko, M. Hundley, & D. Rowe (Eds.), *Fifty-Ninth Yearbook of the National Reading Conference* (pp. 230-243). Milwaukee, WI: National Reading Conference.
- Hutchison, A., & Reinking, D. (2011). Teachers' perceptions of integrating information and communication technologies into literacy instruction: A national survey in the United States. *Reading Research Quarterly*, 46(4), 312-333.
- International Association for the Evaluation of Educational Achievement (2011). *Progress in International Reading Literacy Study 2016*. Retrieved from http://www.iea.nl/pirls_2016.html
- International Literacy Association (2015). Why Literacy? Retrieve from <http://www.literacyworldwide.org/why-literacy>
- International Reading Association (2009). *New literacies and 21st century technologies: A position statement of the International Reading Association*. Newark, DE: Author.
- International Telecommunication Union (2014). Half the world will be online by 2017. [Press release]. Retrieved from http://www.itu.int/net/pressoffice/press_releases/2014/46.aspx#.Vd975ZdEFh4
- Kaplan, L.S., & Owings, W.A. (2013). *Culture re-boot*. Thousand Oaks, CA: Corwin.

- Karchmer-Klein, R., & Shinas, V. H. (2012). Guiding principles for supporting new literacies in your classroom. *The Reading Teacher*, 65(5), 288-293.
- Kiili, C., Makinen, M., & Coiro, J. (2013). Rethinking academic literacies: Designing multifaceted academic literacy experiences for preservice teachers. *Journal of Adolescent & Adult Literacy*, 57(3), 223-235.
- Killion, J. (2013). *Professional learning plans: A workbook for states, districts, and schools*. Oxford, OH: Learning Forward.
- Koehler, M. J., & Mishra, P. (2008). Introducing TPCK. In AACTE Committee on Innovation and Technology (Ed.), *Handbook of technological pedagogical content knowledge (TPCK) for educators* (pp. 3-30). New York, NY: Routledge.
- Koehler, M. J., Mishra, P., & Cain, W. (2013). What is technological pedagogical content knowledge (TPACK)? *Journal of Education*, 193(3), 13-19.
- Lankshear, C., & Knobel, M. (2003). *New literacies: Changing knowledge in the classroom*. Buckingham, UK: Open University Press.
- Lawless, K. A., & Pellegrino, J. W. (2007). Professional development in integrating technology into teaching and learning: Knowns, unknowns, and ways to pursue better questions and answers. *Review of Educational Research*, 77(4), 575-614.
- Leu, D. J. (2006). New literacies, reading research, and the challenges of change: A deictic perspective. In Hoffman, J.V., Schallert, D. L., Fairbanks, C. M., Worthy, J., & Maloch, B. (Eds.), 55th yearbook of the National Reading Conference (pp. 1-20). Oak Creek, WI: National Reading Conference, Inc.

- Leu, D. J., Forzani, E., Rhoads, C., Maykel, C., Kennedy, C., & Timbrell, N. (2014). The new literacies of online research and comprehension: Rethinking the reading achievement gap. *Reading Research Quarterly, 50*(1), 37-59.
- Leu, D. J., Kinzer, C. K., Coiro, J., & Cammack, D. (2004). Toward a theory of new literacies emerging from the Internet and other information and communication technologies. In R.B. Ruddell & N. Unrau (Eds.), *Theoretical models and Processes of Reading* (5th ed.) (pp. 1568-1611). International Reading Association: Newark, DE.
- Leu, D. J., Kinzer, C. K., Coiro, J., Castek, J., & Henry, L.A. (2013). New literacies: A dual-level theory of changing nature of literacy, instruction, and assessment. In R.B. Ruddell & N.J. Unrau (Eds.), *Theoretical models and processes of reading* (6th ed.) (pp. 1241-1267). Newark, DE: International Reading Association.
- Leu, D. J., Zawilinski, L, Castek, J., Banerjee, M., Housand, B.C., Liu, Y., & O'Neil, M. (2007). What is new about the new literacies of online reading comprehension? In L. Rush, J. Eakle, & A. Berger (Eds.), *Secondary school literacy: What research reveals for classroom practice* (pp. 37-68). Urbana, Illinois: National Council of Teachers of English.
- MacDonald, L. (2015). What is a self-managed team? Retrieved from:
<http://smallbusiness.chron.com/selfmanaged-team-18236.html>
- Manguel, A. (1996). *A history of reading*. New York: Viking.
- Mathews, M. (1966). *Teaching to read: Historically considered*. Chicago, University of Chicago Press.
- Morse, J. M. (1991). Approaches to qualitative-quantitative methodological triangulation. *Nursing Research, 40*(2), 120-123.

- Mouza, C. (2009). Does research-based professional development make a difference? A longitudinal investigation of teacher learning in technology integration. *Teachers College Record, 111*(5), 1195-1241.
- Mullis, I. V. S., Martin, M. O., & Sainsbury, M. (2015). PIRLS 2016 reading framework. In I.V.S. Mullis & M.O. Martin (Eds.), *PIRLS 2016 assessment framework* (2nd ed) (pp. 11-29). Chestnut Hill, MA: TIMSS & PIRLS International Student Center, Boston College.
- National Council for Teachers of English (February 2013). NCTE framework for 21st century curriculum and assessment. Retrieved from <http://www.ncte.org/positions/statements/21stcentframework>
- National Education Association (n.d.). Preparing 21st century students for a global society: An educator's guide to the four c's. Retrieved from <http://www.nea.org/assets/docs/A-Guide-to-Four-Cs.pdf>
- Nicholas, J. M., & Steyn, H. (2012). *Project management for engineering, business, and technology*. New York, NY: Routledge.
- O'Connor, J. (January 31, 2014). How Florida lawmakers want to help schools get ready for digital lessons. Retrieved from <http://stateimpact.npr.org/florida/2014/01/31/21319/>
- Owens, R. G., & Valesky, T. C. (2011). *Organizational behavior in education. Leadership and school reform*. Upper Saddle River, NJ: Pearson.
- Partnership for 21st Century Skills (2009). P21 framework definitions. Retrieved from http://www.p21.org/storage/documents/P21_Framework_Definitions.pdf
- Partnership for 21st Century Skills (2014, June 1). Framework for 21st century learning. Retrieved from <http://www.p21.org/our-work/p21-framework>

- Patton, M. Q. (2002). *Qualitative research & evaluation methods*. Thousand Oaks, CA: Sage Publications.
- Pew Research Center (December 2014). Technology's impact on workers. Retrieved from http://www.pewinternet.org/files/2014/12/PI_Web25WorkTech_12.30.141.pdf
- Puentedura, R. (2008). TPACK and SAMR: Models for enhancing technology integration. [Transcription]. Retrieved from <http://deimos3.apple.com/WebObjects/Core.woa/FeedEnclosure/education-maine.gov-dz.4185841413.04185841415.4185841494/>
- Rideout, V. J., Foehr, U. G., & Roberts, D. F. (2010). Generation M²: Media in the lives of 8- to 18-year-olds. Retrieved from <http://files.eric.ed.gov/fulltext/ED527859.pdf>
- Rogers, E. M. (2003). *Diffusion of innovations*. New York, NY: Free Press.
- Sackey, S. C. (2012). The 3R's of learning time: Rethink, reshape, and reclaim. *Journal of Staff Development*, 33(1), 46-48.
- Sagor, R. (2000). Guiding school improvement with action research. Alexandria, VA: Association for Supervision and Curriculum Development.
- Sagor, R. (2011). *The action research guidebook: A four-stage process for educators and school teams*. Thousand Oaks, CA: Corwin Press.
- Schmidt, D. A., & Gurbo, M. (2008). TPACK in K-6 literacy education: It's not that elementary! In AACTE Committee on Innovation and Technology (Ed.), *Handbook of technological pedagogical content knowledge (TPCK) for educators* (pp. 61-86). New York, NY: Routledge.

- Shuler, C., Winters, N., & West, M. (2013). The future of mobile learning: Implications for policy makers and planners. <http://unesdoc.unesco.org/images/0021/002196/219637e.pdf> Paris, UNESCO. (Accessed 19 August 2015).
- Stolle, E.P. (2008). Teachers, literacy, and technology: Tensions, complexities, conceptualizations, and practice. In Y. Kim, V. Risko, D. Compton, D. Dickinson, M. Hundley, R. Jimenez, K. Leander, & D. Wells-Rowe (Eds.), *Fifty-seventh Yearbook of the National Reading Conference* (pp. 56-69). Oak Creek: National Reading Conference.
- United Nations Educational, Scientific and Cultural Organization (2012). *Turning on mobile learning in North America: Illustrative initiatives and policy implications*. Paris, France: United Nations Educational, Scientific and Cultural Organizations.
- Unsworth, L. (2008). Multiliteracies and metalanguage: Describing image/text relations as a resources for negotiating multimodal texts. In J. Coiro, M. Knobel, C. Lankshear, & D. J. Lue (Eds.), *Handbook of research on new literacies* (pp. 377-405). New Jersey: Erlbaum.
- West, M. (2012). Turning on mobile learning: Global trends. <http://unesdoc.unesco.org/images/0021/002164/216451E.pdf> Paris, UNESCO. (Accessed 19 August 2015).
- White House (n.d.) ConnectED Initiative. Retrieved from <https://www.whitehouse.gov/issues/education/k-12/connected>
- Zygouris-Coe, V. (2013, March 15). TILE-SIG feature: Learning with e-readers in the classroom. [Web blog]. Retrieved from <http://literacyworldwide.org/blog/literacy-daily/2013/03/15/tile-sig-feature-learning-with-e-readers-in-the-classroom>