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Enhancing Teaching and Learning through iPad Integration in a Clinic~based Literacy Course

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ENHANCING TEACHING AND LEARNING THROUGH IPAD INTEGRATION IN
A CLINIC-BASED LITERACY COURSE

by

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A dissertation submitted in partial fulfillment
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ABSTRACT

Enhancing Teaching and Learning through iPad Integration in a Clinic-based Literacy Course

by

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Dr. Marilyn McKinney, Examination Committee Chair
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A re-conceptualized clinic-based literacy methods course offered the opportunity to engage participants with digital media, i.e., iPads, as a part of reading and writing instruction. This multiple case study highlights the experiences of those involved with the course: two instructors, 18 teacher candidates, and the 18 elementary tutees who received literacy tutoring. Framed through a new literacies perspective and TPACK framework, the study focused on teacher candidates' use of iPads with their literacy instruction of elementary tutees, tutees' learning experiences, and the ways in which course instructors' TPACK was influenced.

Data collection involved multiple case study methodology (Merriam, 1998; Yin, 2003, 2009) and consisted of interviews, collaborative discussions, observation and field notes, artifacts, and surveys. Data analysis involved open coding and axial coding, utilizing additional analytic tools, and drawing from a TPACK content analysis. Categories were constructed and grouped together to form constructs.

Four themes formed; honoring course instructors and teacher candidates as learners, tutee motivation and engagement, challenges with using technology creates tension, and broadening literacy perspectives. The findings indicate course instructors and teacher candidates integrating technological, pedagogical, and content knowledge as

they learned about and with iPads in a supportive environment that encouraged their learning. Teacher candidates utilized digital media with their literacy instruction as they provided tutees opportunities to engage with a variety of literacies. A key implication for this study involves issues of domestication, where technology is placed into existing structures rather than being recognized for the new possibilities it creates.

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To my grandma,
a life-long teacher and learner.

TABLE OF CONTENTS

ABSTRACT	iii
ACKNOWLEDGEMENTS	v
LIST OF TABLES	xiii
LIST OF FIGURES	xiv
CHAPTER 1: INTRODUCTION	1
Purpose of the Study	1
Vignette	1
The Clinic-Based Experience: Situating New Literacies and Digital Media	2
Background	6
Digital Natives	6
A Historical Context and the Response of Public Education	7
An Expanding Definition of Literacy	10
Statement of the Problem	12
Significance of the Study	14
Theoretical Framework	15
Terminology	22
Summary	23
CHAPTER 2: LITERATURE REVIEW	24
Literacy Experiences within a Clinic-Based Setting	25
Studies Involving Literacy Experiences within a Clinic-Based Setting	27
Summary	30
Rethinking the Elementary Learning Experience	31
Studies that Involve Rethinking the Elementary Literacy Learning Experience	32
Summary	36
Changing Literacies in a Digital Era for Elementary Instruction	37
Studies Focused on Changing Literacies in a Digital Era for Elementary Instruction	38
Summary	43
Teachers' Perceptions and Attitudes	44
Studies Relating to Teachers' Perceptions and Attitudes	45
Summary	49
Students Engagement with Digital Media at the Secondary Level	49
Studies Involving Students Engagement with Digital Media at the Secondary Level	51
Summary	54
Discussion	54

CHAPTER 3: METHODOLOGY	58
Purpose.....	58
Significance.....	59
Methods.....	60
Research Design.....	60
Participants and context	62
Setting.....	65
Access to the school site	66
Consent and assent	66
My role: Observer as participant.....	67
Data Sources and Collection	68
Observations and field notes	70
Artifacts	71
Surveys	72
Informal discussion sessions with instructors	73
Course instructor and teacher candidate interviews.....	74
Data Analysis	75
Developing codes	77
Developing a code book.....	78
An example: the construct of “challenges”	80
Tools for further analysis	81
Further theme development through a TPACK perspective	83
Trustworthiness	86
Assumptions.....	88
Limitations	89
Summary	90
CHAPTER 4: FINDINGS: THE LEARNING PROCESS AND CASE PROFILES	91
The Context of Learning Experiences	92
Case Profiles of Teacher Candidates and Tutees.....	99
Andrea Facilitates Blanca’s Learning	99
Kayla Integrates an iPad as a Regular Part of her Instruction with James.....	102
Keva and Raul: Listening to Himself Reading Brought Learning to Life	104
Patty Incorporates an iPad and Increases Ben’s Engagement.....	107
Ziona Blends Literacies in Ronnie’s Quest to Learn	109
CHAPTER 5: FINDINGS: ESSENTIAL THEMES	114
Honoring Course Instructors and Teacher Candidates as Learners	116
Opportunities to Learn	117
Collaboration.....	118
Tutee Motivation and Engagement.....	120
Differentiated Instruction	121
Immediacy	125
Confidence	126

Challenges with using Technology Creates Tensions	127
Access.....	128
Resistance.....	131
Barriers.....	133
Broadening Literacy Perspective	134
Teacher Candidates Integration of Technology, Pedagogy, and Content	135
A Continual Learner Seeks Rigorous Instruction	141
Facilitator of Learning.....	144
 CHAPTER 6: SUMMARY, DISCUSSION, AND IMPLICATIONS	148
Discussion of Findings.....	149
Developing a Supportive Environment: The Necessity of Dialogue	150
Teacher Candidates' Implementation of Multimodal Sources Engaged Eager Tutees with Learning.....	152
A Space for Rethinking Instruction and Literacy as Technology, Pedagogy, and Content Knowledge Intertwine	154
Implications.....	156
Domestication of Technology for Formal Schooling Purposes	157
Capitalizing on the Affordances of Technology through Enhancing Pedagogy and Connecting Literacies.....	158
Implications for Practice	161
Considerations Involving Clinic-Based Literacy Courses	161
Transferring Experiences into the Classroom Setting.....	164
The Transformational Power of Literacies.....	165
Future Research	167
Final Thoughts	168
 APPENDIX A IRB APPROVAL	170
APPENDIX B IRB MODIFICATION APPROVAL	172
APPENDIX C FACILITY AUTHORIZATION LETTER	174
APPENDIX D LETTER TO FAMILIES FROM SCHOOL SITE	175
APPENDIX E PARENTAL PERMISSION.....	176
APPENDIX F TUTEE ASSENT.....	179
APPENDIX G TEACHER CANDIDATE CONSENT.....	181
APPENDIX H COURSE INSTRUCTOR CONSENT	184
APPENDIX I COURSE FIELD NOTES SAMPLE.....	187
APPENDIX J TUTORING FIELD NOTES SAMPLE.....	188

APPENDIX K TEACHER CANDIDATE LESSON PLAN SAMPLE.....	189
APPENDIX L TPACK SURVEY COURSE INSTRUCTORS	194
APPENDIX M TPACK SURVEY TEACHER CANDIDATES	200
APPENDIX N COURSE INSTRUCTOR INTERVIEW QUESTIONS.....	208
APPENDIX O TEACHER CANDIDATE INTERVIEW QUESTIONS.....	209
APPENDIX P CODEBOOK SAMPLE.....	210
APPENDIX Q CONCEPTUAL MODEL	211
APPENDIX R TEACHER CANDIDATES USE AND PERCEPTIONS OF IPADS FOR TUTORING	212
APPENDIX S COURSE INSTRUCTORS USE AND PERCEPTIONS OF IPADS FOR LITERACY EDUCATION.....	214
APPENDIX T PROCESS MODEL SAMPLE	215
APPENDIX U TEACHER CANDIDATE TPACK SURVEY RESULTS SAMPLE....	216
APPENDIX V TPACK SURVEY INSTRUCTORS RESULTS	217
APPENDIX W APPS AND WEBSITE FOR TUTORING	221
APPENDIX X TUTEE WORK SAMPLE	223
REFERENCES	224
VITA.....	235

LIST OF TABLES

Table 1	Data Sources and Collection in Relation to Research Questions and Participants	69
Table 2	Construct Formation with Data Analysis.....	76
Table 3	The Learning Process.....	93
Table 4	Teacher Candidates' Writing and Word Study Instruction with Digital Media.....	122
Table 5	Teacher Candidates' Reading Instruction with Digital Media	122
Table 6	Skills across Content Areas	123
Table 7	Tutee Identification of Learning during Tutoring.....	124
Table 8	Descriptive Statistics for Subscales of Class and Focal Teacher Candidates...	136

LIST OF FIGURES

Figure 1	Technological Pedagogical Content Knowledge.....	20
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CHAPTER 1

INTRODUCTION

Purpose of the Study

Vignette

My first semester at the University of Nevada, Las Vegas (UNLV) allowed me the opportunity to work with a professor in a literacy assessment and instruction course during which our college students tutored local elementary children in reading and writing. While the assessment methods were different than those assessment methods I had used previously as a classroom teacher, I had the opportunity to develop a deeper understanding of assessment and literacy instruction: the clinical (tutoring) experience offered in conjunction with the literacy assessment and instruction course at UNLV involved opportunities for teacher candidates to authentically connect assessment and instruction through utilizing appropriate assessment methods and instructional strategies based on individual tutee needs.

During subsequent semesters, I taught a section of the literacy assessment and instruction course during a weekly session in the evenings. Instructing the clinic-based course was a very positive experience. I enjoyed the challenge of helping to develop teacher candidates' understanding of literacy, and I sought to increase my understanding as well.

I remember one day in particular that has impacted me and my literacy conception. Earlier in the day when I had my oil changed, I noticed that the mechanic typed all of my information into his computer. At lunch, the server placed our order on a touch screen ordering system. Afterward, I walked to my office to prepare for class. I was checking my blackberry for emails and responding, and I did an Internet search to find

some information. Once inside my office, I used my laptop to organize information, conduct further searches, post information to an electronic blackboard, prepare essential information on a power point, and record grades. I then spent time searching for articles on the Internet through the library's online database system.

During class that evening, I observed my college students as they provided instruction for their tutees. I saw books and paper and people engaging in conversations. I saw these teacher candidates developing connections with their tutees. Yet I thought about my day and the array of literacies I had engaged with and observed prior to class and began to wonder if I was really preparing teacher candidates and their elementary students for the world we live in today. I thought about what literacy means and the many varied forms it takes. I had to ask myself, "Was I really working to prepare teacher candidates and their tutees for the future?"

I was drawn to concepts that went beyond a print-based definition of literacy. I reviewed literature involving new literacies, multiliteracies, and 21st century literacies and began to introduce those concepts to students through courses I instructed, observing and analyzing what these students were doing with literacy instruction when new literacies practices were involved.

The Clinic-Based Experience: Situating New Literacies and Digital Media

As I learned about the concept of new literacies, I felt the nature of books and writing was being threatened, and I was fearful that books and foundational literacies could be devalued as technologies became more prevalent and powerful. Yet, I was intrigued and grew increasingly more excited as I began to connect my reading to thinking about the clinic-based course.

I was validated in my understanding that tutees need to develop conventional literacies, and I increased my understanding of how print-based media and digital media work together to help all students succeed. Research indicated various manners in which conventional literacies can be strengthened and built upon through authentic learning that strengths their areas of need as students engaged with digital media to construct meaning.

I began to rethink literacy, in particular, the ways in which we define literacy and how this relates to instruction and what we expect students to be able to do (Lankshear & Knobel, 2006). Existing research on clinic-based experiences with literacy, teachers' perspectives, and an expanding definition of literacy to include technologies and multimodal sources informed my thinking to help me consider the ways in which technologies would impact literacy teaching and learning.

Rethinking the clinical experience involved the various manners in which digital media could be implemented. Through my learning, I felt more confident with literacy instruction that utilized technologies as I understood that using digital media does not replace literacy learning; rather, it expands on what we consider literacy learning. I realized technologies did not have to compete with literacies; rather, these worked together to improve teaching and learning. Broadening the clinic-based experience through implementing digital media presented new possibilities for instruction as well as the ways in learners learn. In addition, incorporating technologies helps prepare teacher candidates and their tutees with the skills and dispositions they would draw from as members of society.

I initially focused on laptops but felt these were not developmentally appropriate for young learners (National Association for the Education of Young Children, Fred

Rogers Center for Early Learning, and Children's Media at Saint Vincent College, 2012).

I also realized a barrier with time as tutoring lasted a total of 10 hours throughout the semester, and I was concerned about implementing technology for authentic learning purposes.

As I continued to think about broadening the tutoring experience for teacher candidates and their elementary tutees, iPads were invented. Portable, lightweight, Internet ready, and equipped with touch screens operable with a finger – the possibilities seemed endless. It seemed that these could impact what we do with literacy, as long as teacher candidates were provided with opportunities to use such technologies for their instruction and student learning. It seemed that the opportunity I had been looking for had finally arrived.

I began to envision experiences with literacies and tablets working together to enhance teaching and learning. I realized the potential of the clinic-based experience as a space to enhance teaching practices, and I began to learn about iPads as a form of digital media and realized potentials of this device through its many affordances. Through a clinical experience that involved tablets, there were potentials for connecting tutees' in-school and out-of-school literacies. In-school literacies are those taught and emphasized in classroom settings, such as learning strategies for decoding and comprehending. Out-of-school literacies mobilize the literacies that students use independently but may not be utilized in the school setting, such as blogging, music, and video production. Rethinking literacy in the context of the literacy tutoring created opportunities to engage tutees with iPads for learning as well as provide new opportunities for teacher candidates involving literacy instruction and technologies. In addition, I knew incorporating iPads would also

influence me as the instructor. Drawing from my own experiences where I was immersed with technologies, I realized the transactional nature of literacies and technologies.

As transactional, literacy influenced technology and technology influenced literacy. Both worked together rather than as separate entities as I created new forms of products, I became more collaborative and flexible, and I relied on others to help me with processes involving technologies that I did not know. For example, I created a video demonstrating the impact of a volunteer program for a class project because I felt a video would be more engaging for my audience than me speaking about the importance of the program. I thought I knew what I wanted, but as I explored options for creating the video, I learned that I had to change some of my ideas as I consulted with others who had created videos. I was hesitant to explore areas where I lacked knowledge. My fellow video creators shared their knowledge which increased my understanding, and ultimately allowed me to create a product that was beyond the typical lecture-type presentation. Varying fonts, sizes and colors allowed me to communicate meaning to my audience, as did the addition of music and images. My experiences with video production allowed me to draw on literacies as I utilized technology; in addition, technology influenced my literacy practice. Recalling this experience brought to mind that using some technologies caused me to step outside of my comfort zone. As a result, I recognized that utilizing technology within the clinic-based course would require support for participants.

I moved beyond rethinking literacy and looked to the clinic-based course as a space to where literacy was re-visioned. This space provided the opportunity to study the experiences of participants as they engaged with literacy and technology. Drawing on my experiences and knowledge, I set out to conduct an empirical study that investigated how

course instructors, teacher candidates, and elementary tutees included digital media as part of a clinic-based literacy methods course that encouraged and supported the use of digital tools. With the clinical experience occurring within the context of the literacy course, there were opportunities to learn about the technology, pedagogy, and content knowledge (TPACK) (Mishra & Koehler, 2006; Thompson & Mishra, 2007-2008) of course instructors.

Background

Digital natives (Prensky, 2001) have increased access to a variety of literacies, and there are social and economic implications tied to literacies with calls to change. This section discusses digital natives and their increased access, and evidences the responses of public education as inadequate through an overview of historical contexts. The New London Group studied literacies as a call to change, evidencing the variety of literacy practices students engage with in out-of-school settings, demonstrating a disconnect with what scholars and professional organization are advocating and what students use their literacy practices for in the world.

Digital Natives

Today's students, termed "digital natives" (Prensky, 2001), live in a world that contains a plethora of literacies. They engage in new forms of literacy by using laptops, tablets, smart phones, instant messages, emails, and online texts. These 21st century learners are abundant users of technologies that emerge and become available at unprecedented rates.

The use of technological devices not only allows new possibilities, but requires new ways of constructing meaning. With such availability, students need environments that support their learning and thinking in technological terms (Prensky, 2001). The National Center for Education Statistics (2008) reported that 97% of schools have access to instructional computers. With increased access and the large number of digital natives, traditional approaches are not adequate for students (Coiro, 2003) in order to develop citizens who can live and work in a globalized society (Leu, Coiro, Castek, Hartman, Henry, & Reinking, 2008).

A Historical Context and the Response of Public Education

The literacy experiences of youth today are quite different from those of their parents and previous generations. As the world and society evolve, literacy changes in form and function. Nila Banton Smith (1934/2002) and Deborah Brandt (2001) have explored ways that literacy in the United States has been impacted by social and economic forces. Even though their research is separated by a span of 70 years, they both identified schools as sponsors of literacy - spaces that have both maintained and expanded responses to changing definitions of literacies.

Historically, social and economic forces have influenced notions of literacy. Ideas about what constitutes “being literate” have varied although the focus has generally pointed to reading and writing. Smith (2002) identified different periods of reading instruction in the United States that were shaped by social forces: religion (1607-1776), nation building and morality (1776-1880), the view of reading as a cultural asset (1880-1910), the scientific investigation of reading (1910-1935), international conflict (1935-1950), and expanding knowledge and technological revolution (1950 to the present). She

contended that as the nation grew and became more industrialized and developed, literacy's role changed with the changing country; literacy became more prevalent and necessary in the workforce and more available to the public, changing how literacy was used and viewed.

Using the context of economic conditions to discuss reading and writing in the lives of 80 Americans born between 1895 and 1985, Brandt (2001) echoed notions of literacy's changing roles in the workforce and tied economic forces to the power of literacy. Her analysis documented ways that individual earning potential has played a vital role within the economic system. Those who can use literacy in a beneficial manner for themselves can gain economic advantages. Brandt (2001) suggested that as a result of a shift towards an information economy, "reading and writing serve as input, output, and conduit for producing profit and winning an economic advantage" (p. 25). Therefore, those individuals with stronger literacy skills have the advantage. They will be the most viable candidates for new positions that demand changing literacies, such as those associated with an information economy. For example, Brandt tells the story of Raymond Branch, a child of an Ivy League university graduate, and Dora Lopez, a child of a university shipping clerk. Both individuals were exposed to different technologies: Branch first experienced these in the context of play while visiting his father's office which had the latest hardware and software; meanwhile Lopez first worked with computers through her employment as a teacher's aide. Branch had access and exposure throughout his life, but Lopez only had access to a second-hand word processor that did not have a user's manual, which she struggled to understand and use to her advantage. Liberated with his experiences regarding technology, Branch ended up writing computer

software and software documentation which increased his individual earning power.

While Lopez attempted to engage with some computer literacies, she was not able to use them to her advantage and did not recognize the same economic gains.

Despite changing views regarding literacy, Brandt (2001) claimed that the response of public education to literacy was inadequate. “Now, schools strain to assimilate into their traditional practices elements of a new ideology of literacy that attacks them at their foundations” (p. 205). Her statement 13 years ago remains relevant as today’s individual literacy demands are even more diverse and demand an aggressive response, which presents challenges for public education to adequately teach literacy to an increasingly diverse population. Change is a process, and making transformations is a “challenge for many literacy learners in the nation now” (Brandt, 2001, p.71).

Recognizing how schools are sponsors of literacy and the influence of social and economic forces, we must be aware of present day issues in which a sector of the population sustains economic advantages while others are denied such advantages. Given the power of literacy coupled with the social and economic forces that are tied to it, scholars advocate for technology-engaging classroom practices to provide all students opportunities for their futures. In the present age of the technological revolution, new skills, strategies, and dispositions are necessary to use rapidly changing information and communication technologies (ICTs) in various contexts, personally and professionally (Leu, Kinzer, Coiro, & Cammack, 2004). These rapidly changing and advancing ICTs impact literacy and literacy instruction.

An Expanding Definition of Literacy

The New London Group (an academic team of ten literacy scholars from around the world) came together in 1996 to share ideas regarding literacy pedagogy during a time when there was increased recognition of the rapid changes resulting from increased globalization, technological influences, and increasing cultural and social diversity. This scholarly group called for a broadened view of literacy. Shifting away from written text as dominant, they recognized varied practices with literacy through the term “multiliteracies.” Their definition of multiliteracies involved the ability to allow students access to the evolving language of work, power, and community, as well as allowing students to design their futures socially and experience work success as they developed the tools of critical engagement (New London Group, 1996).

The New London Group’s conception of multiliteracies involves literacies that are multimodal in nature, vary within social and cultural contexts, and extend beyond a unitary view that is common in schools. They suggest that literacy is used by individuals for their own means within society, and it is an integral part of an exchange process. As noted, those who can use literacy to their benefit sustain an economic advantage (Brandt, 2001).

Literacy is not a single nor unitary entity (New London Group, 1996; Street, 1994), and it is important to consider the autonomous viewpoint in a historical context in order to understand the importance of a broadened definition. Street’s (1994) ethnographic study of literacy in a school setting revealed specific way that literacy was conceptualized and stood in stark contrast to literacy in the world. Literacy was viewed as a formal learning process in which language was treated as a highly syntactic and formal

experience that teachers and students worked to gain control over. Furthermore, he found insufficient opportunities in classrooms for teachers and students to explore richness with meanings and alternative interpretations. Text mastery was important and home literacy was dominated by the school pedagogy, where literacy was “objective content to be taught through authority structures whereby pupils learned the proper roles and identities they were to carry into the wider world” (Street, 1994, p. 118). Street identified literacies children may have at home (e.g., toys, games, and video games) that were not valued as part of a literacy pedagogy and thought to be leisure activities for recreation and did not support the development of a variety of literacies.

Moving beyond an autonomous view of literacy and considering cultural diversity and multiple forms of communication, today’s view of literacy should be more encompassing. The notion of literacy extends beyond traditional print-based media and includes complex practices (Lankshear & Knobel, 2007b) and various semiotic systems (Kress & VanLeeuwen, 2001). Scholars (Bruce, 2002; International Reading Association, 2009; Leu et al., 2004; New London Group, 1996) have called for a broadened definition of literacy that includes movement away from skill-based literacy and the solitary use of print-based texts and the inclusion of sociocultural influences and the advances of technology.

With a broadened definition, it is necessary to prepare students to be successful with utilizing new technologies. New technologies and literacies work together in a manner where they are complementary and interact in a dynamic way to extend traditional elements of reading, writing, and print-based skills. In reference to the more technological aspects regarding literacy, the term new literacies is often used. While

similar to multiliteracies, new literacies includes more focus towards technologies (Lankshear & Knobel, 2003).

Considering the new possibilities for communication and information changing rapidly and regularly, Leu, Kinzer, Coiro, and Cammack (2004) argued that reading and reading instruction will need profound change as new literacies are utilized with new technologies. Conventional literacies remain essential, but they will not be sufficient to fully utilize ICTs and the Internet (Leu et al., 2004). A new literacies perspective acknowledges literacies that involve technologies, as well as recognizing what students need to be able to do as members of our present day society in the 21st century.

Statement of the Problem

My college level teaching has involved a variety of literacy and teacher education courses. I have worked with different UNLV literacy courses that are clinic-based, as well as established a clinic-based literacy experience at an elementary school through adjuncting at a state college. I hold to the power of literacy instruction in these settings as transformational for both teacher candidates and tutees' learning, and it has been transformative for me as well.

I envisioned a clinic-based literacy experience that fostered positive dispositions towards digital media and developed knowledge with print-based and digital media working together. This space would provide opportunities to increase elementary students' learning and engagement, as well as help transform the practices of teacher candidates. Implementing iPads with the clinic-based literacy course creates opportunities to investigate course instructors' experiences as well. Research identifies the need in a

rapidly changing world to expand beyond conventional literacies in order to develop varying forms of literacies so that students are prepared to meet the demands of the future (Kellner, 2000; Lankshear & Knobel, 2006; Leu, 2000, Leu et al., 2004; Wilder and Dressman, 2006).

Several courses I have taught, in particular the clinic-based experiences, have been framed through a new literacies perspective or included new literacies as a special topic. This provided opportunities to help broaden my students' knowledge regarding a variety of practices. We learned about new literacies and what it potentially means for teaching and learning. Teacher candidates and teachers in the field have often been hesitant when we approached the topic of new literacies; they seem to revert to a mode of "this is what I know school is supposed to be like" as they focused their discussions on traditional text forms. However, further opportunities to learn about new literacies resulted in discussions where these teacher candidates and teachers began to realize new possibilities for implementing digital media in their own classroom, to blend new and conventional literacies, thus providing different opportunities with instructional processes and student learning. Most often their learning occurred through discussion with few opportunities to document their actual implementation of new literacies practices.

Drawing on my knowledge and experiences, I sought to re-vision the literacy clinic as a place that drew on a variety of literacies as digital media was utilized for teaching and learning at the elementary level. I developed a study to report the experiences of course instructors, teacher candidates, and elementary tutees through the literacy clinic-based course that incorporated digital media. Specifically, this study investigated three overarching questions:

- How do teacher candidates teach in a clinical setting that utilizes digital media?
- How do elementary students represent their learning with digital media?
- As technology is utilized throughout a literacy methods course, how is the content knowledge, pedagogical knowledge, and technological knowledge (TPACK) of both faculty members (e.g., course instructors) impacted?

Significance of the Study

This study explores the teaching and learning experiences of course instructors, teacher candidates, and tutees as they engaged with iPads and other forms of digital media for literacy teaching and learning. Given the disconnect between formal schooling and tradition view of literacy, the clinic-based experience can facilitate change by drawing on a variety of literacy practices to increase participants' understanding of conventional and new literacies working together. A new literacies perspective involves course instructors and teacher candidates adopting a broadened perspective of literacy, a concept that moves beyond notions of paper-pencil tasks and engages learners as constructors of their own story. Experiences where participants engage in new ways of learning can affect conceptions of literacy and requires the integration of technology, pedagogy, and content knowledge (TPACK).

The potentials for literacy teaching and learning through the use of digital media at the elementary level brings further insight to the field. This study contributes to the fields of literacy and teacher education through the experiences involving the use of iPads in an elementary school setting, an area where little research currently exists. In addition,

it adds to research on new literacies and TPACK. With the expansion of digital media forms available today, it is important to examine what this means for literacy education.

Theoretical Framework

A theoretical framework helps provides the reader with a perspective of the author's point of view and helps the reader understand why questions were asked and why other questions were not asked. In addition, the theoretical framework informs data analysis. Taking into account a broadened definition of literacy, this study is situated within a new literacies framework, and also draws from TPACK. New literacies is an appropriate framework for this study as new literacies is associated with ICTs and expands the notion of literacy in the world (Berg, 2011). New literacies is a broad concept that can be difficult to define (Leu, 2002), especially considering the constant change within the field of technology.

As an educator, I believe that the purpose of education is to prepare students to be informed, active, responsible, and productive citizens in the 21st century; this involves the notion that literacy occurs in many different contexts. Leu (2000) argues that the continuous advances in ICTs change the definitions of literacy, and that literacy is deictic – in a state where the meaning is constantly changing in reference to time and place. He identified the rapid changes in technology as defining the time in which we live. Leu cautioned that traditional notions of literacy do not equate with the affordances offered by new technologies, and that classrooms need to be responsive to the deictic nature of literacy in order to prepare students to *become* literate rather than *being* literate. As change is constant in the world, we, as teacher educators, must adapt in order to prepare

students for tomorrow's demands (Leu et al., 2004). Schools must consider what is expected that students will be able to do, especially with new possibilities in communication and information processing. In fact, Wilder and Dressman (2006) argue:

The use of e-mail, instant messaging, and the Internet still requires a high degree of proficiency in the conventions of print literacy, including the ability to spell and type with accuracy, the ability to identify keywords, the ability to make sense of and distinguish between abbreviated descriptions of sites, and the ability to skim, recognize, and extract information from extended passages of text. (p. 210)

Many literacies, multiple modalities, and an increased awareness of how culture affects interpretation and meaning are components of new literacies. Many literacies extend beyond notion of print-based text and includes Internet, digital media, and software. Multiple modalities refer to multiple modes of representation, such as graphics, fonts, audio, and visual representations. There is a relationship between texts and the contexts in which they are created and used. Stone (2007) stated, "literacy practices are deeply interrelated with broader social relationships, cultural traditions, economic changes, material conditions, and ideological values" (p. 50).

There are a variety of definitions for new literacies. Lankshear and Knobel (2006) identify new literacies as allowing "new ways of doing things" (p. 34). Kellner (2000) defines new literacies as "the many different kinds of literacies needed to access, interpret, criticize, and participate in the emergent new forms of culture and society" (p. 255). Leu (2002) states that new literacies include "the skills, strategies, and insights necessary to successfully exploit the rapidly changing information and communication

technologies that continuously emerge in our world” (p. 313), and has further identified the following facets of new literacies:

- are ever changing
- require the ability to critically evaluate information
- include new forms of knowledge necessary to negotiate and understand complex networks such as the Internet
- are highly social
- provide opportunities to learn specifics about varying cultures are provided with new literacies
- build upon foundational literacies

New literacies are often associated with ICTs and involve several elements.

Lankshear and Knobel (2007b) state that new literacies “mobilize very different kinds of values and priorities and sensibilities than literacies we are familiar with” (p. 7). In their book *New Literacies: Everyday Practices and Classroom Learning* (2006), “new” literacies are discussed as involving changes paradigmatically and ontologically. The paradigm shift involves a more sociocultural approach to literacy, in both research and understanding, rather than one based on psycholinguistics. Sociocultural elements play a role in literacy (Lankshear & Knobel, 2006) as social relationships, cultural traditions, economics, and ideological values are tied to literacy uses and practices (Stone, 2007). Letters, signs, and symbols have different meanings based on the way they are used, the culture in which they are used, and within the context of time (Kress, 2003). Through understanding these relationships and values, the use of literacy changes over time and encapsulates different meanings, evidencing the deictic nature of literacy (Leu, 2000).

Ontologically, new literacies entail different literacies than those available in the past, based on technology, institutions (i.e., organizations, establishments), and globalization. Lankshear and Knobel (2006) have identified two categories that encapsulate the ontological changes: “technical stuff” and “ethos stuff” (p. 25). “Technical stuff” refers to changes with information and communication technologies, such as movement from conventional literacies towards multimodal texts. “Ethos stuff” involves the collaborative and participatory nature of new literacies, characterized by flexible rules and norms, which contrasts with traditional literacies which are seen as being author-centered, more controlled, and distributed (Lankshear & Knobel, 2006). Furthermore, they describe two mindsets related to how people approach literacy.

These mindsets involve the world as technologized and the world as evolving. The major difference is that the world as technologized mindset involves doing the same things as in the past, only with the addition of technologies; on the other hand, the world as evolving mindset involves people being creative and exploring ways to do things with the use of technologies. From the technologized mindset, people view the world as “essentially the way it has been through the modern-industrial period, only now it has been technologized” (Lankshear & Knobel, 2007b, p. 10). In contrast, the world as evolving mindset involves “new ways of doing things and new ways of being that are enabled by these technologies” (Lankshear & Knobel, 2007b, p. 10). With the evolution of texts over time, conventional literacies remain necessary, and changing forms bring elements from the past into being with new forms.

In sum, the field of new literacies is broad and has a variety of definitions (Coiro, Knobel, Lankshear, & Leu, 2008). New literacies build on conventional literacies and

involve preparing students to participate with existing and emergent forms of literacy through a process that is flexible, collaborative, and considers the changing nature of ICTs (Kellner, 2000, Lankshear & Knobel, 2006; Leu et al., 2004). In order to provide the reader with a sense of clarity when referring to new literacies, the following definition (Leu et al., 2004) is provided:

The new literacies of the Internet and other ICTs 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. These new literacies allow us to use the Internet and other ICTs to identify important questions, locate information, critically evaluate the usefulness of that information, synthesize information to answer those questions, and then communicate the answers to others. (p.1572)

In addition to a new literacies perspective, I drew from the perspective of Technological Pedagogical Content Knowledge (TPACK) (Mishra & Koehler, 2006; Thompson & Mishra, 2007-2008). TPACK is the integration of teachers' technology, pedagogical and content knowledge and involves their understanding of how to use technology effectively to teach specific subject matter (Mishra & Koehler, 2006). Shulman's (1986) theory of pedagogical content knowledge argued that teachers need various forms of specialized knowledge to teach in different ways in different content areas. Mishra and Koehler (2006) built upon this theory by including technology as a third component and introduced Technological Pedagogical Content Knowledge (TPCK).

This new theoretical framework examined technology integration into instruction and was later renamed TPACK (Thompson & Mishra, 2007-2008).

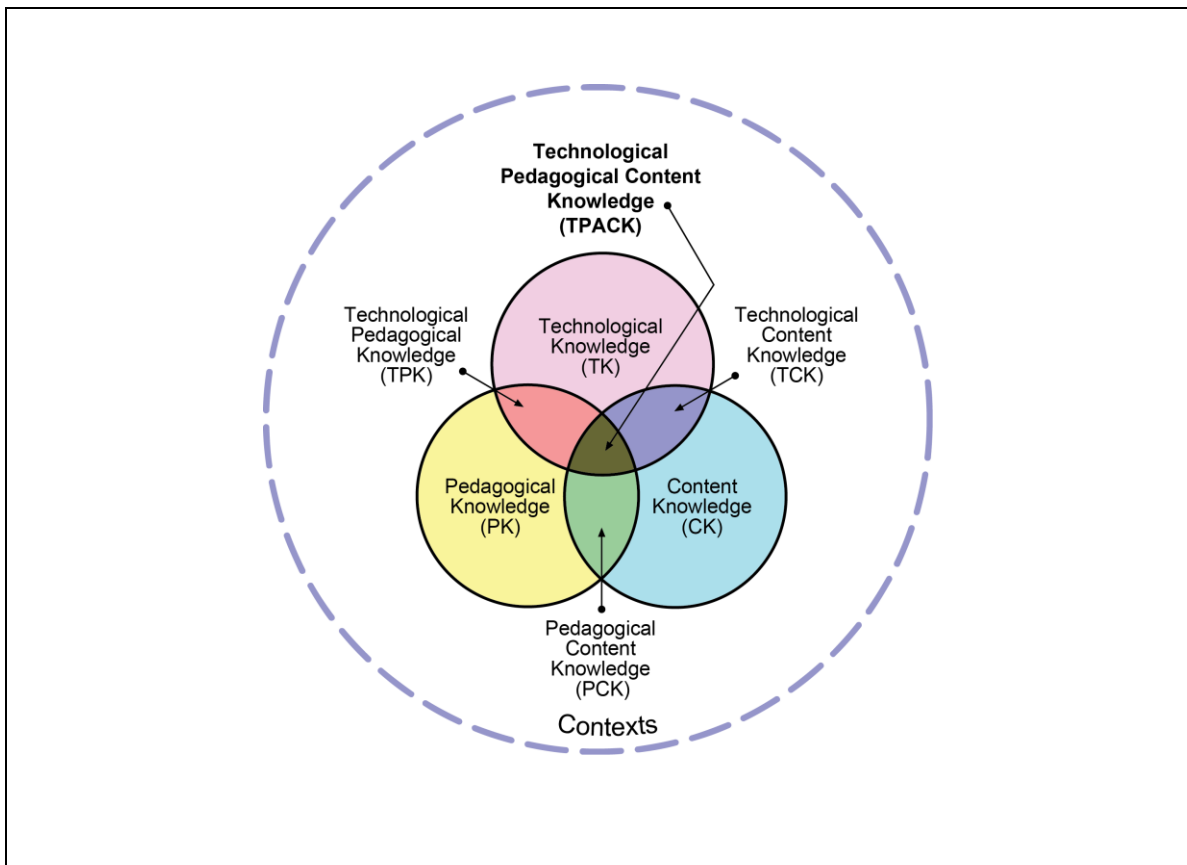


Figure 1. Technological Pedagogical Content Knowledge (TPACK)

The three primary knowledge forms intersect and create new forms of knowledge; these complex interactions are the essence of TPACK:

- pedagogical content knowledge (PCK) involves using effective teaching strategies to help students learn content;
- technological content knowledge (TCK) is defined by Koehler and Mishra as “an understanding of the manner in which technology and content influence and constrain one another” (2009, p. 65);

- technological pedagogical knowledge (TPK) is the integration of technologies while teaching; and
- technological pedagogical content knowledge (TPACK) is situating technology knowledge with content knowledge and pedagogical knowledge so that teachers can integrate technology with specific content to enhance student learning.

Teachers who are knowledgeable regarding how technologies are best used related to content and pedagogy enable student learning.

Teachers need three primary forms of knowledge in order for technology integration to occur: 1) content knowledge involving the content to be taught and conceptual structures; 2) pedagogical knowledge involving general pedagogy, pedagogical practices for specific content, and pedagogical content knowledge (Shulman, 1986); and 3) technology knowledge that involves a variety of technology hardware and software as teachers think about and work with technology. TPACK involves far more complex interactions than the three primary knowledge components of content, pedagogy, and technology; it is the interrelatedness of these knowledge areas that is most important. Pedagogically sound applications of technology require teachers to integrate their knowledge of content, pedagogy, and technology rather than think of each one as a separate area (see Figure 1). Knowing how to use technology is not the same as using technology effectively and enabling teachers to do so (Lei, 2009), and TPACK can help with understanding relationships between technology, pedagogy, and content. TPACK is useful as a theoretical framework by providing a common framework, vocabulary, and measures when examining teaching with technology. This framework is useful when seeking to evaluate individuals' knowledge of technology, pedagogy, and content. "TPACK is a

valuable theoretical framework for thinking about what knowledge teachers need to have in order to integrate technology and how they can develop this knowledge” (Wang, Schmidt-Crawford, & Niederhauser, 2013).

Terminology

In order to provide the reader with an understanding of what is meant in relation to key terms used through this research study, the following definitions are provided. A reference to **clinic-based** identifies a university course that involves working with elementary children to conduct literacy education in a school setting. In such a setting, there are course instructors, tutors and tutees. **Course instructors** references the university personnel who are responsible for instructing the course. The tutor is the university student who will be referred to as a **teacher candidate**. The elementary child being tutored will be referred to as a **tutee**. References to **educators** go beyond course instructors and teacher candidates in this study and refer to individuals who provide educational experiences in a broad sense. Additionally, the term **student** goes beyond considering the university and elementary students of this study and refers to anyone who learns.

This study was theoretically situated in a new literacies perspective and TPACK framework as the digital media aspect of this study requires frameworks related to technological implication components. New literacies involve **multimodality**, or the construction of meaning through using multiple systems of representation, including print and non-print material (Kress & Van Leeuwen, 2001). A multimodal world allows various texts to be used, particularly in relation to one another. **Intertextuality** occurs

when the meaning of one text is constructed in relation to other texts; however, it is not limited to simply traditional text-based sources such as print but includes icons and images. Often associated with new literacies are **ICTs**, technologies that include information technologies, such as hardware and software used to organize information, as well as communication technologies, such as broadcast media and telecommunication. The term **digital media** refers to any variety of media that is digital in nature, and the primary form of digital media in this study involved iPads. Literacy practices of the past, often involving print-based materials and paper-pencil tasks will be referred to as **conventional literacies**, with instructional processes of the past termed **traditional instruction**.

Summary

A broadened definition of literacy (Bruce, 2002; International Reading Association, 2009; Leu et al., 2004) extends beyond traditional print-based media (Wade & Moje, 2000) and includes complex practices (Lankshear & Knobel, 2007b) and various semiotic systems (Kress & Van Leeuwen, 2001). New literacies encompasses the skills and dispositions necessary to engage with ICTs through literacy uses and practices, and those providing instruction draw from content and pedagogical knowledge as they integrate technologies. This study, framed within a new literacies and TPACK theoretical perspectives, sought to gain insight from teacher candidates, tutees, and course instructors who engaged with iPads and other forms of digital media for literacy teaching and learning as part of a clinic-based literacy course experience.

CHAPTER 2

LITERATURE REVIEW

This chapter contains a review of literature related to literacy and technologies. I began my research review by learning about literacy clinic-based experiences. As I thought about changing literacies, I realized the need to rethink elementary literacy learning and located studies involving iPad and digital media implementation at the district and school level, and I furthered my knowledge through researching specific scenarios in which elementary teachers and students engaged with technologies. Considering that course instructors and teacher candidates would be influenced by technologies in the clinic-based course, I reviewed research relating to teachers' perceptions. Finally, with the limited amount of empirical research available on elementary students using iPads or other digital media for literacy learning, I reviewed studies that involved secondary students and their use of various literacies with digital media.

This chapter is organized in five sections. The first five sections are entitled literacy experiences within a clinic-based setting; changing literacies in a digital era for elementary instruction; rethinking elementary literacy learning; teachers' perceptions and attitudes; and students' engagement with digital media at the secondary level provide an introductory overview. Each of these sections provides an overview of research in relation to my study, provides detailed information for the individual studies reviewed, and concludes with a brief summary. The final section contains a discussion of the research.

Literacy Experiences within a Clinic-Based Setting

Many studies about clinical experiences involving literacy instruction focused on deficit models in which students' literacy skills were "diagnosed" and teachers attempted to "fix" these students. I specifically focused on studies where the clinic-based experience was framed much like that of a coaching clinic, a place where tutees' strengths were built upon to develop new skills and abilities.

The clinic-based experience can be envisioned as an environment that is framed as a third space. Within this third space, tutees have opportunities to use various literacies as these combine in meaningful ways, building upon tutees' interests and experiences. Moje, Ciechanowski, Kramer, Ellis, Carrillo, and Collazo (2004) identified third space as a theoretical place where students build upon both their formal school learning and their informal out-of-school learning. Third space is a concept that describes a productive place where there are conditions associated with new possibilities. Typically, homes, peers, and communities characterize first space, while second space connects to formal institutions such as work and school. Thus, third space bridges first and second spaces. Moje et al. (2004) identified three ways that education conceptualizes the third space concept: a way to bridge home and school knowledge and discourses, as a navigational space where students bring home knowledge to influence school learning, and a place to produce new forms of learning as knowledge and discourses come together in which tutees use their funds of knowledge by drawing on their language and social practices. The advantage of third space is that it draws on both funds of knowledge and discourses. Situated between home and school, negotiation can occur and this area enables other positions to emerge (Rutherford, 1990).

The literature reviewed regarding clinic-based experiences recognizes experiences where literacy is rethought as instructional approaches move beyond deficit models, identify what tutees can do, and explore how to build upon these abilities to further the child's learning and desire to engage with literacy. In addition to improving tutee learning, the clinic is a place that can enhance teachers' practices to improve practice as teaching and learning are transformed. Transforming practice involves moving away from paper-pencil-based tasks to include multimodal elements, linking assessment and instruction, encouraging risk-taking and collaboration among and between peers, reflecting, and the influence of technology.

Tuten and Jensen (2008) found that redesigning the clinic-based experience to avoid deficit models and build on tutees' abilities can strengthen the connection between assessment and instruction, a practice that mimics the demands of the classroom and provides an authentic and practical experience. Graduate students used a variety of data sources from assessment to guide their instruction over time as assessment and instruction became a recursive practice. Connecting assessment and instruction allowed graduate students to design a series of experiences focused on their tutee's individual needs as instructional practices extended beyond traditional approaches.

Clinical experiences have the potential to be a model of the ways in which teachers engage with and analyze how to best use technologies. As Cervetti, Damico, and Pearson (2010) and Tuten and Jensen (2008) evidence, providing opportunities for teachers to learn within a new literacies perspective and immersing learners with practices that are digital in nature allows authentic, first-hand learning. Through

providing opportunities for teacher candidates to experience technologies, these technologies were more likely to become an integral part of school literacy.

The learning environment presented opportunities for tutees to learn and practitioners to improve their practice. Through a setting where risks were encouraged, individuals looked to possibilities that may not have been considered before, with a collaborative process that allowed others to benefit (Dunston, 2007; Tuten & Jensen, 2008). Reflection allowed teacher candidates to identify their own practices and evaluate themselves, which spurred their own growth (Dunston, 2007). The following provides more complete descriptions of these studies.

Studies Involving Literacy Experiences within a Clinic-Based Setting

When examining courses required for master's students, Tuten and Jensen (2008) re-visioned the reading clinic experience to move away from a deficit model. While looking at 15 graduate students in an urban college who had 3 – 5 years teaching experience, two consecutive graduate courses were studied in which students focused on assessment and reasons why their tutee was not at grade level during the first semester; tutees represented all grade levels. Using the same tutee during the second semester, graduate students designed instructional activities to meet the individual needs of the tutee. The two semesters allowed up to 24 tutoring sessions of 75 minutes each, with a Developmental Reading Assessment (DRA) administered at the end of each session. DRA is a standardized assessment for measuring children's accuracy, fluency, and reading comprehension. The constant-comparative method was used to examine DRA data, which contained activities, materials, books, strategies implemented, and teacher comments. Results indicated tutee growth over time, though specific scores were not

identified, and researchers uncovered three themes: instructional tools, risk-taking, and collaboration.

While instructional strategies were narrow at first, they evolved over the two semesters. At first, graduate students were overwhelmed as they provided instruction for struggling readers, and as a result began the tutoring process by bringing in worksheets and specific texts to target a skill. Assessment and instruction began as separate activities, but moved to a more recursive process throughout the courses as graduate students continually went between assessment and instruction. Referring to DRA data, notes, and formative observations during lessons, graduate students analyzed student results to determine progress and next steps with lesson planning to meet the needs of their tutees.

Course supervisors created an environment where graduate students began to take risks, and they were present to offer on-the-spot suggestions, model, and interact during regular class time and tutoring sessions. With time, graduate students began to select authentic texts and hands-on materials, engaging tutees in pre-reading activities and decoding activities in conjunction with the text. Graduate students became more responsive to tutees' needs and interests, building lessons that met individual needs through their tutee's interests, grounding their abilities as teachers with their own knowledge base and drawing on advice from peers and colleagues in a collaborative setting as they furthered their own approaches and practices.

Over the two semesters, graduate students addressed the needs of their tutees in new ways to allow them to target the desired skills, but moved beyond such traditional approaches as using worksheets. The clinical experience helped teachers to transform

their practices as they engaged with new strategies, linked assessment and instruction, and took risks.

Drawing from her experiences as a remedial reading teacher, Dunston (2007) shared the insights she gained from working with struggling readers, and described approaches used to improve instructional practices for inservice teachers. As a remedial teacher for high school students, she provided instruction in a reading lab. With a view that struggling readers were missing skills, she sought to “fix” these deficiencies so that students could become successful readers. Two years later she was transferred and ended up working with many of the same students, but in a different setting. At this point, she was beginning to understand that tutees’ view of themselves as readers was a significant hurdle: the student-deficit approach (“fixing” students’ reading problems by teaching missing skills necessary for successful reading) involved overcoming students’ negative perceptions of themselves as readers, which was unsuccessful through skills-based worksheets and activities that she had used earlier.

Moving beyond such traditional practices, she implemented a teacher-support approach within a reading clinic course. This approach required students to use a variety of texts, including Internet websites, graphic novels, and other non-traditional texts; instructional practices were self-evaluated through video review and reflections; and focused on what the tutee could do rather than what they could not do so that the students’ individual concepts of themselves as a reader and writer improved.

Findings indicated the clinical experience was two-fold: not only was the tutee instructed, but the clinic provided an environment in which the teachers’ practices were transformed through improved instruction. Teachers and students engaged with

multimodal sources to learn in different ways, as well as allowing time to focus and reflect on instructional practices in a collaborative setting that involved experimentation.

Cervetti et al., (2010) discussed literacy models as they analyzed the role of technology in teacher education programs, not just in terms of what teachers use, but what students use and can do. Through their work, literacy was “revised” to include a multiple literacies viewpoint and involved challenging the deficit view of development and learning, which is not congruent with a multiple literacies viewpoint.

Summary

The literature related to clinical experiences revealed opportunities to transform the practices of teachers and improve student learning. As literacy was “revised” to take on a multiple literacies perspective, consideration of new technologies involved teachers becoming skillful with various ICTs, analyze ICTs, and developing ways to put information technologies to use with literacy instruction. The clinical experience supported risk taking, reflection, and being responsive to students’ needs. Technologies drove the learning experiences as participants were immersed in a broad range of literacy experiences, with meaning making extending beyond verbal and print-based texts. By avoiding allegiance to deficit models and building upon tutees’ strengths so that these students develop positive images of themselves as readers and writers, tutee learning improved as teachers improved their instructional practices. Assessment and instruction were recursive as instructional decisions were made based on tutee assessment. The researchers suggested possibilities with teacher education programs being transformative so that teachers adopt different stances, philosophical dispositions, and or/instructional practices, rather than conserve past practices.

Rethinking the Elementary Learning Experience

The integration of literacy and technologies impacts elementary learning experiences and involves rethinking what literacy instruction entails. The previous section discussed re-visioned clinic-based experiences involving teachers and students engaging with technologies for authentic learning experiences. This section highlights implementation of digital media and the effect on elementary classroom settings.

The implementation of digital media creates new opportunities to think about how teaching and learning occur. Digital media allows conventional literacies and new literacies to work together in a complementary fashion and creates new opportunities for instructors and learners. Digital media increases student engagement and can be used to support student learning; however utilizing new technologies is time intensive for teachers. It involves careful consideration of content and curriculum in order to support learning. As elementary learning experiences are influenced by the addition of iPads to the curriculum, the following research studies demonstrate how iPads were utilized with learning practices in order to help inform my study.

Studies reviewed spoke to teachers enhancing their instruction and engaging students with learning (An & Alon, 2012; Cullen & Gasparini, 2012; Phirangee, 2012). Teachers supported student-learning through their utilization of technologies as students engaged with iPads to learn content. Learning environments with iPads promoted flexibility (Cullen & Gasparini, 2012) with opportunities for small groups to work collaboratively, allowing students opportunities to experiment as they learned and created with iPads while learning from one another. Students became self-learners; their

independence increased as they sought information and relied less on teachers to answer their questions.

The use of iPads supported student learning and engaged students as teachers capitalized on the affordances offered. Affordances involved students' increased motivation, apps to support learning, and learning 21st century classroom skills. Apps were an affordance that increased student motivation, and having apps that supplemented and supported curricular goals was essential for learning (Culen & Gasparini, 2012). Recognizing affordances involved teachers drawing from their content knowledge as they made instructional decisions that supported student learning.

Creating technology-infused lessons caused uncertainty, particularly when faced with new and emerging technologies and the time it takes teachers to successfully implement these technologies. Unfamiliarity created feelings of uncertainty as teachers were overwhelmed with lesson planning and the time involved (An & Alon, 2012; Phirangee, 2012). Despite positive feedback from students regarding iPads for learning, An and Alon (2012) indicated that teachers did not perceive themselves to be better educators when using iPads. Even with support that encouraged technological innovation in classrooms (Culen & Gasparini, 2012), educators feared they were losing a part of their instruction. For example, Phirangee (2012) stated, "Although these technologies offer new opportunities to meet students learning needs, many educators fear students will lose the learning experiences of print culture" (p. 3020).

Studies that Involve Rethinking the Elementary Literacy Learning Experience

Framed through a Web 2.0 technologies perspective, Phirangee (2012) sought to understand "How are Web 2.0 technologies reshaping teaching and learning in the

elementary classroom?” (p. 3018). This study involved four full-time elementary teachers; two were extensive technology users and two used technology much less. Semi-structured interviews were conducted with each teacher and lasted 30 – 40 minutes. Data were analyzed for conceptual categories and themes through coding data and comparing to generate theory.

Results indicated the following themes:

1. A new space for teaching and learning: new possibilities are afforded through technologies to captivate and engage students;
2. The desire for more support and guidance: teachers may shy away from technologies and desire to know more in order to feel more comfortable with implementation;
3. New ways to meet student learning needs: individualize learning experiences were provided based on the needs of students (i.e., participate via blog allows some students to feel more comfortable);
4. Cyber-Supervision: teachers recognized that students need some form of supervision, even though they know out-of-school literacy practices are often unsupervised; and
5. A preference for a blended learning program: teachers value blending traditional learning formats with technologies, and emphasize that technologies should not replace everything.

Teachers utilized technologies to support student-learning, and technologies were found to enhance teaching and learning as these technologies engaged students with content, regardless of the amount of technology teachers used. Teachers who were

extensive users of technologies used technologies more and in varying ways, while the less extensive users of technologies included more technologies with their practice. Creating technology-infused lessons was overwhelming for teachers, particularly when they were unfamiliar with certain technologies.

An and Alon (2012) used exploratory case study methodology as they sought to determine how public school educators use iPads with students, how they facilitate instruction with iPads and other apps, and how students and teachers perceive iPads. This study was situated in a framework involving Digital Natives (Prensky, 2001) and teachers' attitudes. Participants included six public schools (three elementary, one middle, and two high schools) from urban and suburban districts that incorporated iPads for special needs students and the general population for one semester. Data sources involved likert-scale surveys, observations, and open-ended interviews in person and via email. Analysis involved calculating statistical scores, with mean scores provided for quantitative data, but there was no description of analysis for qualitative data. Four models were derived from school site usage:

1. "Everyday, everywhere" (p. 3008): Every student had continual access (home and school) and used teacher-selected apps for various learning purposes.
2. "Student-centered" (p. 3008): iPads resided in the classroom and teachers found apps for students on a daily basis.
3. "Teacher-centered" (p. 3008): Teachers demonstrated concepts with digital devices as students observed or were called to assist the teacher in front of the class.

4. “Technology-centered: (p. 3008): The technology department brought iPads to the classroom for specific activities as requested by the teacher.

Challenges with iPads involved finding and selecting apps to match content; funding to purchase apps and additional iPads; time to research and review apps that worked with instruction; and the distracting nature of iPads.

Teachers used iPads and apps in a variety of ways for instructional purposes from allowing continual access to more restricted access with these devices. Engaging with iPads and apps required time as teachers drew on their content knowledge in order to select apps beneficial to learning. Teachers and students perceived iPads as valuable for learning and increasing motivation, although teachers did not perceive themselves to be better educators when using iPads.

Learning practices were the focus on Culen and Gasparini’s (2012) study that involved two pilot studies: one college and one elementary. Results pertaining to the elementary setting are discussed. Participants involved one elementary fourth grade class of 26 students with one teacher who had access to 6 iPads as part of a study that examined how portable devices, such as iPads, can transform learning practices. Data consisted of in-class observations, workshops, questionnaires, group and individual interviews. Analysis involved interview data being consolidated and mapped out into an affinity diagram.

Elementary students engaged with a digitized curriculum for Religious Studies, Mathematics, and Science. Dropbox and iAnnotate were used, and English was supplemented with apps. Results demonstrated students engaging with iPads for creative learning, social patterns emerging that were new, and changes in learning attitudes.

Organizationally, the iPad was easy to use, intuitive, and playful. Students shared the iPad among one another as the design of the room changed to five different areas so that each area had one iPad. Social interactions increased and there was more collaboration. Selecting appropriate apps was difficult for the teacher, but the elementary teacher used the iPad for instructional purposes each day. Technical challenges involved only being able to run one app at a time; reloading pages or slides in PDF taking a large amount of time, difficulty with downloading files, and the iPad did not have support for flash. The teacher and students found the iPads useful and enjoyable, with most kids preferring an iPad to a book. Students found the iPad most useful for working in smaller groups in order to share information. The second most cited use involved portability as it held a large amount of information and possessed several capabilities.

These students worked in an environment where there were small groups, allowing them the flexibility to experiment with iPads. Selecting apps that supplemented the curriculum was essential for learning, and the children may have been more apt to use the iPad as their teacher used it daily. Overall, teachers and students found that iPads enhanced teaching and learning.

Summary

These studies highlighted shared successes and challenges in the ways technologies were used and their influence on elementary practices. These studies shed light on practices as iPads were used as a tool to support learning beyond the traditional classroom approach. Teachers overcame challenges as they planned instruction that recognized affordances of iPads to meet students' learning goals.

Changing Literacies in a Digital Era for Elementary Instruction

The previous section provided insights on clinic-based experiences and a broad view of successes and challenges with technology implementation. To understand how digital devices were used for instructional purposes, I reviewed literature describing the experiences of teachers and learners with digital media in elementary classrooms. I focused on emerging research that spoke to iPad use. In addition, I explored empirical studies involving digital media. These studies shed light on existing practices of how the iPad is used as a tool for teaching that supports learning beyond the traditional classroom approach, speaking to the changing nature of literacies.

Our world has literacy embedded in many forms, and students engage in literacy practices in various ways. Conceptions about what we expect from students have to be examined in order to determine what is important for students to be able to do (Kellner, 2000; Kist, 2005; Lankshear & Knobel, 2006; Leu, 2000; Leu et al., 2004; Sheridan & Roswell, 2010). Teachers' practices broaden as students experience success when engaging with a variety of literacies, which emphasizes the importance of creating opportunities for elementary classroom environments to include technologies.

Research reviewed focused on creating learning experiences with digital media as something that involved more than adding in technologies; it was necessary for technologies to be integrated and utilized in a manner that contributed to an authentic learning experience so that students benefited (Barone & Wright, 2008; Hutchison, Beschorner, & Schmidt-Crawford, 2012; Ranker, 2008; Reid & Ostashewski, 2011). Teaching experiences involved connecting assessment and instruction and were supported through the integration of technologies as conventional literacies were

developed through new literacies practices. As technologies were introduced to classrooms, teachers rethought how they went about instruction. Technologies provided multimodal affordances for students as they engaged with a variety of fonts, sounds, colors, images, and sounds to demonstrate the meaning. Teachers recognized the affordances of technology and how to use these to support student learning, such as finding apps to support curriculum. Utilizing digital media required teachers to draw from their content and pedagogical knowledge as they sought to implement technologies.

Studies Focused on Changing Literacies in a Digital Era for Elementary Instruction

Framed through a TPACK framework (Mishra & Koehler, 2006; Thompson & Mishra, 2007-2008) “as a lens for understanding the viability of integrating iPads into literacy instruction” (p. 16), Hutchison, Beschorner, and Schmidt-Crawford (2012) explored literacy instruction in a fourth grade classroom consisting of 23 students as Mrs. Dill taught print-based literacy skills and used iPads to provide digital learning opportunities. Utilizing Harris and Hofer’s (2009) curriculum-based technology recommendations, learning goals and pedagogical decisions were made according to the parameters of the learning activities. Appropriate learning activities and assessments were selected, followed by the determination of the technology tool that would be most useful in helping students meet their instructional goals. Data sources consisting of observation and field notes and interviews were collected and analyzed.

The use of iPads supported student learning and engaged students as they capitalized on the affordances offered. The iPads were used in three ways: 1. using the app *Popplet*, 2. a way to facilitate book selection for reading, and 3. using the app *Doodle Buddy*. Students engaged with the app *Popplet* to identify main ideas. They utilized the

affordances this app offered; they were not confined by layouts and could utilize as many boxes as needed as they determined main ideas and placed these in order. A virtual bookshelf app allowed students to select books for reading. To help students focus, the authors recommended individualizing book selections on each device. Students improved with visualization as they reread their text and revised their work which involved drawing multiple images through the use of *Doodle Buddy*.

Mrs. Dill used her print-based literacy goals and introduced new literacy practices to her classroom as she successfully achieved curricular integration, rather than technological integration. Her goal attainment was congruent with a new literacies perspective as she developed conventional literacies through new literacies practices that involved incorporating iPads. She applied her TPACK as she drew from her content and pedagogical knowledge to select technologies to meet learning goals.

Barone and Wright (2008) conducted a case study to describe the experience of Todd, a fourth grade teacher who used laptops with his students through a school-based effort to embrace new literacies approaches. Overall, the school scaffolded new literacies practices, starting by providing opportunities for kindergarteners to visit, explore, and learn from websites and multimedia projects. By third grade, students used the Internet to investigate ideas and report results, with fourth and fifth grades being times for one-on-one laptop use. Todd received preparation and ongoing professional support through the Apple Corporation's Training Program.

Todd had to rethink his classroom and instruction, and assessment played a role in learning. Todd evaluated his own learning and assessed what he learned. He utilized students' formative data to make instructionally sound decisions based that would result

in meaningful learning. Through circle time which is discussed later, Todd was able to work with small groups to informally assess their progress and help scaffold their learning. He used formative assessment to monitor student progress as they used thought questions from the *KidBiz* website, similar to the constructed response items found on the state assessment. While traditional assessment methods involved paper/pencil form and do not take into account a new literacies perspective employed by the school, results indicated that students did not regress on their end of year state assessments.

Todd facilitated learning for his students by complementing traditional literacies through use of new literacies as his students utilized laptops in their classroom. Reading time involved a mini-lesson on timelines and sequences of events, where students created a digital timeline and used instant messaging to partner share. Seat-center-circle time followed. Seat and center time were independent and highlighted a student who used electronic writing prompts and responses and digital practice sheets. This student also engaged in book study, related to the theme, where he used an electronic Venn diagram and blogged with others about the book. During circle time, Todd provided instruction on conventional literacies that were print-based. Writing involved a discussion focused on the trait of ideas and content, approached through the concept of an imaginary friend. A children's book was read aloud to the class to exemplify the trait. After reading, students used a website to describe traits of an imaginary friend and then performed a quick-write using word processing; meanwhile, the teacher conferred with a small group of students to individually improve their writing. The writing process for students in this class involved brainstorming and organizing using Inspiration software; revising, using the thesaurus and dictionary on the computer, as well as grammar and spell check; peer

review to expand and clarify ideas; further revisions; and printing out writing for display. Every few weeks, students published their writing. Todd found students to be motivated and engaged:

The number one thing laptops have done is motivation. Kids are sitting up and leaning into their learning. As a teacher, this is the one thing I want from my students. If I have them engaged and motivated, the sky's the limit (p. 301).

The classroom environment and the role of the teacher changed as students took on more responsibility with their learning through collaborating and independent activities that involved utilizing laptops. He built on students' conventional literacies as he engaged them with new literacies practices as he connected assessment and instruction to meet the learning needs of his students.

Two sixth grade classes, one small rural aboriginal community and one small urban community, engaged with iPads for one semester as Reid and Ostashewski (2011) focused on the impact these devices had on teaching and learning experiences related to digital storytelling. Data sources and analysis were not specified. There were several hours dedicated by the research team to introducing teachers and students to iPads and the basic structures of digital storytelling. Apps were preloaded, and the research team provided in-class support.

Students engaged with the apps *Storykit* and *Storyrobe* to create stories, with each app utilizing sound, graphics, and video. Results indicated both challenges and successes. The urban classroom teacher felt confident with technology and designed non-traditional materials, such as a microblog. This class actively engaged with iPads and was challenged by issues relating to scheduling and managing iPads, which resulted in the

teacher setting time each week for digital storytelling. In addition, students needed more time on their own to seek out information related to learning digressions. To help students with technology usage, the teacher developed student partnerships for support, located apps that were relevant to the curriculum, and encouraged discussions about iPads and student learning. A particular benefit involved a special needs non-verbal autistic student who engaged with apps for modifications rather than needing expensive equipment. The rural classroom teacher felt challenged with iPads, but through time, she made a bigger event out of digital storytelling as her comfort increased, her pedagogy evolved, and her understanding of her role changed. She came to realize she didn't have to be a master of technology information; rather, she learned to rely on students for technology as she facilitated learning.

Both classes found the iPads were easy to use and allowed speedy Internet access. Students and teachers viewed iPads as more convenient, easier, and faster than laptops. Students became more independent as they could seek information with fewer restrictions and the teachers were asked fewer questions, allowing more time for students to explore and create. In addition, students found cross-curricular uses such as art and science fair projects. With these successes, there were also challenges which involved time for teachers to charge and track which students had iPads in their possession, and teachers maintaining the same apps on each iPad.

This study demonstrates successes and challenges of iPads with elementary students. Authentic learning was promoted through digital storytelling, and while students learned about digital storytelling, they also learned about skills necessary in 21st century classrooms.

Ranker (2008) used qualitative case study methods to explore developing new literacies practices in a classroom setting. Inquiry-based projects were completed by the students, and Ranker explored literacy processes of two twelve-year-old boys, identified by the school as struggling with literacy. These two boys worked together to create a documentary through video production.

Their self-selected inquiry project was based on the topic of the Dominican Republic and allowed opportunities to experience broadened literacy practices as they moved beyond print-based text. These two boys engaged with literacy practices and worked collaboratively while reading, writing, and producing video at the computer. The inquiry processes involved developing research questions, note taking, strategic reading of text, discussions, web searches, evaluating quality of information, and paper-based writing, utilizing conventional practices as well as new literacies practices. Multimodality was evidenced as both boys engaged with web searches, print-based text, and digital text, engaging in intertextuality and transforming their understanding as they made meaning. Digital video-production software was used to create a documentary as a final project. As the video was arranged, images and text were sought out and included to demonstrate meaning.

Summary

These studies evidenced conventional and new literacies coming together. Various elements of the traditional classroom were apparent in the classrooms that engaged with new literacies practices. Instructional processes and the ways in which students learned looked different; however, the end result was significant learning. Teachers rethought their classrooms so that digital media and literacy worked together in

a complementary fashion as they analyzed student progress to make instructional decisions. Instructional processes involved notions of collaboration and flexibility as teachers scaffolded instruction and functioned as facilitators of learning. This entailed creating instructional environments in which literacy and technologies worked together rather than serving as discrete entities. Teachers broadened their practices and facilitated learning environments that enhanced their students' learning with the skills and dispositions necessary to be active participants in an ever-changing society.

Teachers' Perceptions and Attitudes

Studies reviewed thus far have indicated a variety of ways in which technologies and literacies or other content areas come together. Understanding teachers' perceptions and attitudes towards technologies provided insight with creating an experience to broaden experiences, as well as prevented these perceptions and attitudes from becoming barriers to implementation for teaching and learning within my study. Research examined evidences successes and barriers to utilizing technology with instruction.

My review of research involved teachers' perceptions and attitudes. Educators worked to broaden learners' mindsets, whether these teachers were lacking technological expertise or were far advanced. Studies involved the blending of literacy and technologies in order to support student learning (Bailey, 2007; Kist, 2005; McVee, 2008). These studies found that teachers who engaged with using technologies experienced successes and challenges, and that their perceptions and attitudes towards technologies were enhanced. With time, their conceptions of technologies went beyond digital media as a separate element to on that integrated content and technologies.

Study participants' conceptions expanded as they realized literacy takes many forms. They engaged themselves or their students with multimodal affordances available through digital media. As teachers implemented technologies, they rethought the ways in which they provided instruction in order to benefit from the affordances of technology. Learning to implement digital media required time as teachers considered their content and ways in which digital devices supported instruction. The following section provides detailed information regarding perceptions and attitudes as content and technologies come together.

Studies Relating to Teachers' Perceptions and Attitudes

McVee's (2008) case study examined graduate student teachers' changes in attitudes regarding the integration of technologies and literacies during a course that immersed them in technologies and literacy. Participants were in their early to mid-twenties and included K-12 teachers focused on early childhood, adolescent, and literacy specialist programs: they indicated proficiency with basic technologies such as email, web surfing, word processing, and Power Point. Data sources involved teachers' responses to reading through online discussions, teacher reflections, three digital projects (poetry interpretation via PowerPoint, an inquiry WebQuest, and a digital story with iMovie), and pre- and post-surveys. Data analysis revealed three themes pointing to change over time as a result of the course experiences.

- From “fear and loathing” to “shared problem-solving and distributed learning” (p. 202) - Teachers expressed feelings of incompetence with technology, but realizing there wasn't a formulaic approach, they began to take risks and began collaborating to share expertise.

- From print-based to multimodal sources - Learning was scaffolded as teachers worked with instructor guidance, creating hybrid, multimodal texts that involved multiple sign systems (visual, linguistic, and auditory).
- From “literacy and technology as dichotomous” to “literacy and technology as transactional processes” (p. 202) - Literacy went beyond traditional elements of reading, writing, and print-based skills and included literacy and technology interacting with one another in a dynamic manner.

These teachers realized literacy takes many forms, including those that involve digital technologies and are of a multimodal nature. McVee (2008) identified the need for instructor support when learning with technologies, and suggested the instructor facilitate learning. Teachers experienced more success, as evidenced by significant growth and progress, when they thought of literacy and technology as transactional, rather than as discrete entities.

As a participant-observer in an interpretive case study, Bailey (2007) focused on how an English 9 teacher, Carol, changed her teaching when adopting a new literacies stance and the kind of literacy learning that resulted for her 26 students at a largely middle-class high school. Descriptive field notes from classroom observation, interviews with Carol, interviews with students, notes from informal conversations, teacher artifacts including lesson plans and written reflections, and student artifacts including written works and multimodal projects were analyzed using open codes. Grouping by conceptual properties, categories were formed.

While Carol initially employed multimodal sources (analyzing a popular TV show for elements of a short story) to interest students, she reverted to more traditional

teaching methods (round-robin reading, teacher-centered discussions, and traditional worksheets) as she considered digital technologies separate from literacy. As students were disengaged with such practices, Carol collaborated with the participant-observer to rethink her classroom. Carol continued to learn, discuss, and think deeply about new literacies in order to develop integrated learning experiences. Her instructional processes returned to an approach that utilized multimodal affordances for meaning construction.

Formative assessment was important to Carol's process; disappointed with results from traditional teaching methods and activities, Carol analyzed information as she rethought her classroom in order to inform her decision making process for future lessons. She used authentic assessment and employed rubrics and other assessment tools to determine student mastery. Despite the differences in format between Carol's multimodal projects and the year-end standardized assessment that focused upon traditional English skills in paper/pencil format, students seemed to better learn the curriculum through integration of traditional and new literacies, as end of the year assessment results indicated that this group of students performed at higher levels than past years.

From Carol's classroom, results indicated that students learned poetic devices, rhetorical elements, literary elements, and reading and writing strategies while they engaged with new literacies practices. Students thought about and engaged with visual, auditory, and gestural grammars as they interpreted a poem using power point. They used popular music to teach their classmates poetic devices; and they demonstrated character analysis through placing a character on trial from a class novel, with character motivation demonstrated through news interviews. Connecting a popular music video to a novel

allowed students to analyze the video by relating it to their own lives to further understand the novel's theme.

Carol adopting a new literacies perspective and collaboration with the participant-observer aided her with viewing literacy and technology as transactional as she moved using new literacies as a hook and allowed students the opportunity to do the required work of the literacy curriculum. Her continual learning and enhanced perception of new literacies facilitated a learning environment that allowed students to be collaborative as they worked together to build conventional literacies through utilizing new literacies practices.

Kist's (2005) qualitative study indicated that middle school and high teachers changed their preconceived notions regarding instruction and learning as they rethought their classrooms to engage students with new literacies practice. Teachers worked to integrate technology with instructional processes and learning opportunities for their students that accomplished their curricular needs. Classroom spaces were designed to promote flexibility and interaction as students shared knowledge and worked on developing projects, with daily work encompassing multiple forms of representation. Activities were individual and collaborative. Teachers came to hold strong attitudes in which achievement involved authentic projects rather than paper/pencil-based work. Assignments were often constructed around an essential question, in which students engaged with problem solving as they used multiple forms of text to work towards answering this question. Students took ownership of their work as teachers functioned as facilitators of learning, focused on meeting students' individual learning needs.

Summary

These studies provide insight to teachers' perceptions and attitudes when utilizing digital media and focused on secondary and post-secondary education levels; there is need for these types of studies focused on elementary level teachers. Throughout these studies, teachers' perceptions and attitudes broadened as their experiences provided new opportunities to engage with digital practices. A supportive environment helped teachers' stance towards digital media evolve, resulting in learning that blended conventional and new literacies. Teacher educators can help broaden teachers' perspectives through understanding such fears as they seek to engage students with practices that are congruent with the 21st century.

Students Engagement with Digital Media at the Secondary Level

Given that studies on elementary literacy practices involving technologies are limited in number, I found that I needed to extrapolate from the findings of technologies at the secondary level. I reviewed the following studies to further inform my study by understanding possibilities with digital media, and I was able to learn what students do with their literacy practices as I considered implications for elementary settings.

Digital media offered students with a wide range of abilities new possibilities with literacy practices as they used and moved beyond conventional literacies (Black, 2007; Roswell & Burke, 2009; Tan & Guo, 2007). Student learning involved broadened conceptions about the ways in which students used varying literacies to learn. Engaging with various types of literacies may not match the literacy expectations at school, particularly when school learning is focused on the technical aspects of reading and

writing. Sheridan and Roswell (2010) cautioned “schooling continues to be based on paper-based literacy instead of practices that allow students to explore and utilize the multimodal, nonlinear literacies available in digital environments” (p. 69). Engagement with literacies that are multimodal in nature creates potential for something new to happen. Multimodality is the construction and representation of meaning through various forms beyond print-based text and offers many affordances to the digital natives (Prensky, 2001) in today’s classrooms. Not only is the written word considered important, but so are other modes of communication as noted by Gunther Kress (2003):

These are the skills of the multimodal world of communication. They entail differentiated attention to information....It is not the form of reading which I was taught – sustained, concentrated attention over an extended period, reading the only attention went to the text which was being read. By contrast, this is reading for specific purposes, for the information that I need now at this moment (p. 174).

In these studies, multimodal websites engaged students as they worked with audio, linguistic, and visual forms of communication (Black, 2007; Roswell & Burke, 2009). Internet sites included hyperlinks which required students to engage in intertextual practices as they used multiple sources (Tan & Guo 2007). The addition of images, sounds, colors, and fonts enhanced the meaning-making process and went beyond the written word (Black, 2007). Technologies were used with students to demonstrate literacy strengths, even when students were limited with English proficiency (Black, 2007; Tan & Guo, 2007) or labeled by the school as lacking proficiency (Roswell & Burke, 2009), suggesting that the merging of digital media with conventional literacies can empower all students. The selected studies demonstrate “struggling” students’

successes, which required and built upon conventional literacy skills (e.g., decoding, reading, comprehension) as they engaged with new literacies practices (e.g., multimodality, intertextuality, and digital product use and composition), resulting in blending both forms to construct meaning. The research settings show a blend of home, school, and after-school settings, with each student demonstrating learning in ways beyond paper-based products.

Studies Involving Students Engagement with Digital Media at the Secondary Level

Black (2007) used a case study to investigate the use of online fan fiction sites as a vehicle for Tanaka, an adolescent English Language Learner, to communicate with readers and construct meaning through contributing expert knowledge as she wrote fan fiction. Tanaka had been speaking English for two and a half years, and she functioned as an author while she created fan fiction and responded to comments from her readers, with 50 publically posted fan fiction texts and 6,000 reader reviews. Tanaka's work involving digital (referred to as textual) artifacts from the website, observational field notes, and interviews were used to perform data analysis in two stages, beginning with discourse analysis and followed by textual analysis for recurring thematic patterns.

Tanaka engaged with multimodality through graphic arts, spoken and embodied language, video, audio, and other forms of online and post-typographic communication as she crafted her response to readers. Artifacts indicated digital composition skills and abilities through implementing written words, images, sounds, and hyperlinks in a variety of ways to construct meaning and contribute in a meaningful way to the fan fiction site. Tanaka responded to reader reviews of her creation, allowing her to clarify, explain, and communicate ideas. Tanaka demonstrated a broadened literacy perspective as she moved

beyond traditional approaches; she created her own product while furthering her own development with meaning-making and conventional literacies through authentic learning using multimodal sources. Conventional literacy skills such as decoding, making meaning, central ideas of text, written language, and evaluating comments and opinions were important. These skills enabled her to understand ideas related to fan fiction and to respond to her readers.

Tan and Guo (2007) investigated the implementation of new literacies practices in a context where print-based literacy was dominant. They identified two high school English classrooms that sought to adopt a new literacies perspective and conducted a case study that included 14-year-old Singaporean students who were Chinese, recognized for high academic achievement, and competent in English and Chinese languages. Data sources consisted of field notes, video transcripts, and students' multimodal productions, with themes emerging through coding and data triangulation.

During the first phase which involved print-based travel brochures, the teachers worked to develop critical literacy skills through identifying the link between text and context and meaning and purpose, directing attention to purposes beyond the printed word. For the second phase, students conducted Internet research related to the travel destinations from the brochures they had previously analyzed, and students created their own multimedia brochures using authoring software, developing multimedia literacy skills that built upon conventional skills. The final stage involved developing a multimedia production about Shakespeare's *MacBeth* using *MediaStage*, a 3D animated learning environment.

Students engaged with a broad range of literacy practices throughout this collaborative project. By blending traditional literacies with new literacies through the three phases, students read and analyzed multimodal texts (e.g., print-based travel brochures and Internet sites) in order to develop literacy skills that enabled their creation of a multimedia product. Conventional literacies were built upon as students engaged in new literacies practices and multimodality was evidenced through scripting, language, voice overs for characters, lighting, camerawork, gestures, and scene changes.

Roswell and Burke (2009) conducted a case study that documented literacy interests, motivations, and practices of two middle school students using websites of their own interest. Each student used various modes with these sites to construct meaning with digital literacies at home. Structured interviews were conducted with both participants, and stimulated recall was used so that participants could talk through their actions as they navigated through websites with researchers sitting alongside each, and follow-up interviews allowed further questions to be answered. Data analysis (Kress and Van Leeuwen's framework of discourse, design, production, and distribution, 2001) involved interpretation of the learners' online reading, considering the actions they engaged in as they explored their site of choice

Of the two students, the 14-year-old male received special services due to being identified as having skills that did not fall within the desired range of reading and writing within a school setting. However, he possessed an advanced vocabulary and knowledge about specific topics, such as Naruto, an anime website that held high interest for him. The Naruto website involved multiple layers of ideas and contained a televisual online text and videogame. While using this multimodal site of choice, he engaged with new

literacies practices as he engaged with literacy for his own purposes. Results indicated that he demonstrated many literacy skills and abilities with digital texts. He was able to decode, understand plot, setting, and characters, had a strong vocabulary, and used multimodality and intertextuality as he built upon prior knowledge to understand related texts presented through the website. The Naruto site held his interest as he engaged in online reading that went beyond simply decoding to include visual clues, subtext, and ideas buried in various layers of text, allowing him to construct meaning in virtual worlds.

Summary

Digital media offered students with a wide range of abilities opportunities to engage with various literacy practices as they built upon and expanded their conventional literacies skills. These studies touched on collaboration and engagement as they demonstrated student success with constructing meaning through expanded notion of instruction and learning. Students engaged with technologies as they learned literacies suited to their own desires. These studies demonstrate that expanding conceptions for student learning develops students' potential and prepares them with the abilities needed in a world with evolving technologies.

Discussion

The research reviewed has involved clinic-based literacy, iPads and digital media in relation to teaching and learning at both elementary and secondary levels, rethinking literacy, and teachers' perceptions and attitudes in order to explore how a clinic-based course that implements digital media can transform teaching and learning through

providing new opportunities for participants. Leu's (2000) concept of the deictic nature of literacy that recognizes the world is in a state of constant change and influences our conceptions of literacy helps to provide a lens through which educators can better understand the importance of preparing students for a digital world as they themselves engage with literacies and technologies. While tensions have always existed between traditional practices and changing practices for the future, research reinforces the benefits of expanding conception to encompass a broadened view of literacy where conventional and digital literacies work together.

The structure of schooling lends itself to organization and clarity of purpose, but when considering the impact of digital media, there needs to be a shift in what we expect students to be able to do. What is required by formal schooling is not what some students are doing outside of school; these students are developing skills and abilities that let them evolve as the world evolves. New literacies practices recognize the changing nature of literacy and how such a perspective is beneficial for all students. Conceiving of the literacy clinic-based experience as a third space, tutees can draw on both their in-school and out-of-school literacies.

With the possibilities that digital media presents when utilized within a clinic-based experienced, it is important to understand teacher's conceptions so that possibilities can be explored. As discussed, all students can benefit from expanding literacy practices as they construct meaning and learn through new mediums. This requires teacher candidates to further their own understanding regarding digital media as they rethink literacy instruction.

Existing research has provided accounts of potentials for literacy clinics to function beyond a deficit model; a coaching clinic can take into consideration the changing nature of literacy as it supports and engages teacher candidates and tutees with multimodal concepts. Through developing an understanding that involves rethinking literacy and understanding teachers' perceptions and attitudes involving technologies, barriers can be overcome as the clinic-based experience is a space that transforms teaching practices to enhance teaching and learning. Course instructors and teacher candidates rethink literacy instruction as they analyze and incorporate digital media, using both summative and formative assessment to make instructional decisions that involves the integration of technology, pedagogy, and content. Participants experience flexible and collaborative learning environments to increase their understanding of the technologies and the integration of these technologies.

A clinic-based experience that incorporates digital media can broaden course instructors' and teacher candidates' perceptions and attitudes and their instructional practices as they learn about and engage with digital media. Tutees' engagement with digital media provides a variety of learning opportunities. The tutoring component of the clinic-based literacy course can be framed as a third space where a coaching model is used to enhance teaching practices and tutees' abilities as skills are developed. Conventional literacies are built upon through new literacies practices, supporting all students as they engage with multimodal sources and a wide variety of literacy practices.

The research reviewed informed my study by increasing my understanding of teaching and learning practices that involve technologies. Studies reviewed indicate the disconnect between what occurs in formal school settings and what students do with

literacy practices outside of school. Through these studies a broadened conception of literacy encouraged different ways for teachers to instruct and students to engage in learning. While these studies did provide further information, gaps were evident in various pieces. Studies involving students at the secondary level were not tied to curriculum standards, even though they provided rich details about individual experiences. Studies on perceptions and attitudes vaguely touched on the support teachers received as they enhanced teaching and learning experiences. Changing literacies in a digital era for elementary instruction did not provide information about teacher support and how this tied in to successes and challenges within the classroom. Rethinking elementary literacy learning was very broad, but did not provide information about what students actually did with iPads and digital media.

The clinic-based experience in my study provides an opportunity to facilitate change as participants draw on a variety of literacy practices. Participants' understanding of conventional and new literacies increases as they experience opportunities to blend literacy forms. Through utilizing digital media, course instructors transform their teaching practice as they relate content, pedagogical, and content knowledge to make instructional decisions for tutee learning. Studies reviewed indicate possibilities for teaching and learning, but there is a limited amount of research pertaining to elementary levels and the use of iPads, as well as teachers' perceptions and attitudes towards such technologies. My study draws from the literature reviewed and provides insight into specific possibilities with iPads, as well as other digital media, at the elementary level and discusses perceptions and attitudes of all participants.

CHAPTER 3

METHODOLOGY

This chapter focuses on the methodological components of this research study involving digital media, namely iPads, within a university-based clinical setting. It is organized by three main sections: purpose, methods, and summary. The chapter begins with the study purpose and significance. The methods section includes a discussion of research design, participants and context, setting, course context, data sources and collection, data analysis, trustworthiness, assumptions, and limitations. The chapter concludes with a summary.

Purpose

This study reports from the field how teacher candidates and tutees employed digital media through a new literacies perspective in a clinical setting. It also reports how technological, pedagogical, and content knowledge intersected for course instructors, as well as insights gained regarding teacher candidates' TPACK. Specifically, this study investigated the following overarching questions:

- How do teacher candidates teach in a clinical setting that utilizes digital media?
- How do elementary students represent their learning with digital media?
- As technology is utilized throughout a literacy methods course, how is the content knowledge, pedagogical knowledge, and technological knowledge (TPACK) of both faculty members (e.g., course instructors) impacted?

Researchers who have investigated classrooms where instructors went about rethinking literacy (Bailey, 2007; Barone & Wright, 2008; Kist, 2005) have shown that multimodal aspects of digital media can help students construct meaning as they engage,

collaborate, and make choices regarding their learning (Ranker, 2008; Roswell & Burke, 2009; Stone, 2007). The environment is different with digital media as the role of the teacher changes when providing instruction and learning opportunities (Barone & Wright, 2008; Kist, 2005; McVee, 2008). Research suggests that the most successful teachers function as facilitators of learning, rather than disseminators of knowledge in class environments that are flexible and where students collaborate to construct knowledge (Barone & Wright, 2008; Kist, 2005). Student assessment looks different than traditional standards-based assessment practices, which are largely paper/pencil-based; new literacies classrooms typically include project-based assessment and rubrics for evaluation (Bailey, 2007; Kist, 2005).

Significance

This study draws from and contributes to the fields of teacher and literacy education, and provides insight to new literacies and TPACK. Currently, a limited amount of research exists in relation to the implementation of iPads within elementary schools. New literacies approaches and practices allow new possibilities, and utilizing iPads or other forms of digital media within a clinical setting is one such possibility. With the expansion of digital media available today, it is important that educators examine how this impacts teacher candidates and tutees, as well as realizing the implications for course instructors.

This study is important for literacy educators and clinic-based models of literacy instruction. It brings to light successes and challenges of course instructors, teacher candidates, and tutees through their teaching and learning experiences. The course structure provided literacy opportunities for participants that went beyond conventional

print-based forms as participants engaged with iPads and other digital media, following a new literacies perspective and providing insight to those who employ or seek to employ a new literacies approach within their classroom. In addition, this study provides insight into teacher education by sharing the ways in which course instructors' and teacher candidates' knowledge was impacted as technological, pedagogical, and content knowledge intersected and interacted.

Methods

Research Design

Yin (2009) defines a case study as “an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context” (p. 18). Prior theoretical propositions guide data collection and analysis, and several different sources of information enable data triangulation to allow for richer results to clarify understanding. Investigators collect data from multiple sources as the multiplicity of sources can allow researchers to address a broader range of issues (Yin, 2003). The individual case provides unique information related to the study topic and contains data collected over time.

Multiple case study is often employed when there is more than one case, with the conclusions drawn from each individual case contributing to the whole of the study. Multiple cases enable evidence to be cross-referenced to produce more robust and compelling results than individual cases (Yin, 2009). Case study relies on analytical generalization and the use of multiple case design requires replication logic, rather than sampling logic used in quantitative research, in order to select multiple cases (Shakir,

2002). According to Yin (2009), literal replication occurs when the investigator selects cases that are similar in nature and these cases corroborate each other. Purposeful sampling strategies can be used to select cases (Shakir, 2002), and through careful case selection that follows purposeful sampling, literal replication is possible (Yin, 2003).

This study utilized multiple case study methodology for design, data collection, and specific approaches to analyses of data. This research study focused on a current issue within a real-life context (Yin, 2003), digital media and elementary literacy education. Through studying a clinic-based course on literacy assessment and instruction with multiple participants (instructors, teacher candidates, and tutees) who engaged with digital media, an in-depth description was developed from the analysis. Using multiple-case design, data sources were analyzed so that conclusions could be drawn and provided for through in-depth description. This study involved 20 cases with a single case being defined as either of the following:

- an individual teacher candidate-tutee pair, known as a dyad, or
- an individual course instructor.

There were 18 individual dyad cases and two individual course instructor cases, resulting in a total of 20 cases. The senior level literacy methods course incorporated iPads or other digital media with teaching and learning experiences, and this context bound each individual case. I collected data on all 20 cases throughout the semester, and from these cases, seven were carefully selected to follow the principles of literal replication (Yin, 2009). Criterion purposeful sampling (Patton, 1990) allowed me to select individual cases that met predetermined criteria. Defined criterion allowed me to select seven specific cases that contributed unique and valuable information to the study

in order to provide me insight to the research questions. I sought cases with active participants who used digital media and focused on selecting teacher candidates who had “engaging experiences” implementing iPads, targeting of four to six dyad cases for selection. An “engaging experience” was defined as active and repeated sharing during collaborative sessions about their experiences with iPads (whether positive or negative), incorporating iPad use into their lessons and reflecting upon use, daily observation of teacher candidates engaging tutees with iPads, and working to overcome challenges. I solicited recommendations of teacher candidates from both course instructors before making the final case selection and inviting these candidates for interviews. Through my careful examination of dyads to select cases, I selected cases with information that helped me understand questions involving teacher candidates’ teaching and tutee learning.

Both instructors agreed to incorporate iPads into the literacy course and be participants. I selected these two cases in order to help provide insight to my third research question related to instructors’ technological, pedagogical, and content knowledge. In addition, the instructors’ perspective provided information into the other two research questions pertaining to teaching and learning.

Participants and context

Participants included 18 female college students enrolled in a fall 2012 section of a clinical experience course on literacy assessment and instruction, the 18 elementary students who received tutoring services, and both course instructors. There were 11 male and 7 female elementary students, and both course instructors were female. Elementary students were selected from a school site on campus where tutoring occurred. This elementary school had an enrollment of approximately 550 students, with a near even

split of male to female students. The student body was composed of 54% Latin, 18% Black, 12% Caucasian, 7% Asian, 2% Pacific Islander, and 5% Multi-Race.

Approximately 5% of students received special services for disabilities, 50% were students with Limited English Proficiency, and 91% of students received free/reduced lunch. Even with a transiency rate of 45%, average daily attendance averaged 94%. In addition, the No Child Left Behind Act classified this school as “In Need of Improvement (Year 5-Hold)” in terms of Adequate Yearly Progress (www.greatschools.org/definitions/nclb/nclb.html).

The clinic-based model occurred through a senior level literacy methods course at the southwestern metropolitan university. The course content involved literacy assessment and instruction, with this course being the second in a sequence of literacy assessment and instruction courses. This sequence allows the two courses to focus on different elementary levels: primary and upper-elementary. The first course content focuses on student learning in the primary elementary grades, while the second course focuses on literacy content for upper-elementary students and application of content in a clinical setting. Each teacher candidate enrolled in the second course worked one-on-one with an elementary student, and since the content of the second courses is focused towards upper elementary, teacher candidates tutored upper elementary students who were in a fourth-grade classroom. The semester layout for the course involved regularly-occurring meeting times. This three credit hour course met twice a week for one hour and 15 minutes during each meeting time. Teacher candidates met with course instructors for formal learning experiences during weeks one through seven. Tutoring occurred during both sessions throughout weeks eight – 13, and teacher candidates and course instructors

returned to the university classroom to wrap-up their semester learning during weeks 14 – 16. This semester design allowed teacher candidates a block of time at the beginning of the semester to focus on content, followed by experiences where they applied their learning within the clinic setting, and then returned to their college learning experience where they were able to further focus and reflect upon their learning within the classroom as a university student and their leaning as a teacher candidate from providing one-on-one instruction to tutees.

The tutoring schedule consisted of 12 sessions over a six week timeframe; however, one session fell on a holiday, which left 11 sessions. Due to field trips within the school site that conflicted with the tutoring schedule, only nine sessions actually took place. During these nine sessions, the time was devoted to tutoring. The tutoring sessions began with motivation and literacy interest surveys and additional assessments to determine instructional reading levels (Cooter, Flynt, & Cooter, 2007), writing abilities (Hill & Ruptic, 1994) and word skills for developing spellings, phonics, and vocabulary (Bear, Invernizzi, Templeton, & Johnston, 2012). After teacher candidates completed initial assessments, they developed goals with and for the tutee, based on their individual assessment results. Once goals had been developed, teacher candidates drew from their knowledge of this and other methods courses to develop lesson plans based on the specific literacy needs of their tutee, emphasizing the connection between assessment, goals, and instruction. Teacher candidates administered assessments during the first sessions. During the remaining sessions, teacher candidates utilized a literacy framework developed to support struggling readers (Tancock, 1994). This framework included the following components: familiar reading, guided reading, writing, word study, and shared

reading. Teacher candidates provided instruction in each area based on the assessed needs of the individual tutees.

Setting

Various campus locations were utilized for the literacy course and tutoring: the College of Education building, a local elementary school, and a professional development building. Each building was located on campus. The College of Education building was host for the literacy course, although the elementary school was initially planned to house the tutoring portions during weeks eight through 13 so that tutoring would occur within the school context. A few challenges necessitated moving to a new location due to a lack of space for tutoring sessions and the school district's firewall that restricted iPad Internet access; therefore, I sought a new location. Adjacent to the elementary school was a building commonly referred to as a professional development building. The building housed services provided by the education college including classes, professional development opportunities, programs that connected professional development schools with campus, meeting space, and faculty offices. This building afforded teacher candidates two large, oversized rooms where they could provide one-on-one instruction. Both rooms contained tables that provided an ideal work space for each dyad. Teacher candidates could easily move a table to create their own semi-private physical space. Additionally, the large entry foyer contained three additional tables for use, allowing ample space for the 36 teacher candidate and tutee participants. The wireless network inside this building was part of the university system and therefore was not as restrictive as the elementary school's wireless network, which complied with the policies of the governing school district.

Access to the school site

In order for this research study to be conducted, approval was required by the Institutional Review Board (IRB) for Human Subjects. An IRB application to address teacher candidates and elementary students' participation was completed and approved (see Appendix A); this was later modified to include course instructors (see Appendix B). This process ensured ethical treatment of all participants throughout the study.

The elementary school principal granted access for this research study to occur through verbal permission, and then followed by a written letter of approval for the IRB process (see Appendix C). She displayed a strong desire to have the school be a part of this research project and volunteered the school's iPad cart, containing 25 iPads, for use during tutoring sessions. The elementary school owned the iPads but allowed the study participants access. Secondly, the principal selected a fourth grade classroom with 26 students. Eighteen of these students received one-on-one tutoring through university teacher candidates, while the remaining eight received specialized small group instruction from their regular classroom teacher.

Consent and assent

Tutees were consented and assented for the purposes of this research study. First, the school sent out a letter explaining the study (see Appendix D). Then the fourth grade classroom teacher discussed the study with her students during class, in addition to their families at an open house. Parents who wanted their child to participate were given permission slips to sign (see Appendix E). Once parental consents were obtained, I assented the 18 child participants (see Appendix F).

Teacher candidates and course instructors were consented during the second class session of the fall semester (see Appendices G and H). At the first session, I explained the study and answered questions, returning during the second class session to consent both groups. All 18 teacher candidates and the two course instructors were consented.

My role: Observer as participant

The course structure provided time for collaborative sessions during the regularly occurring part of the course content. This collaborative time focused on participants' discussions of readings related to digital media and conventional literacy forms and allowed teacher candidates and course instructors to highlight literacy instruction and possible reasons and ways to incorporate iPads into their literacy tutoring. I was present and participated occasionally to help clarify ideas, assuming a role of observer as participant - which Merriam (1998) describes as "the researcher usually participates but not to the extent of becoming totally absorbed in the activity" (p. 103). The group was aware of the observation, but I focused on observing rather than participating in discussion (Merriam, 1998). The reality of the situation involved the group understanding my role collecting data. I worked to be unobtrusive as an observer by acting casual in the setting while recording notes. Consistent with Merriam (1998), my role involved recording field notes to capture:

- the physical setting, referring to environment, space, objects, resources, and technologies;
- the relevant characteristics of the participants and their roles;
- activities and interactions involving what was occurring, sequence of activities, interactions, and connections between participants and activities;

- who spoke, who listened, and a summary of dialogue to reference conversations;
- subtle factors such as informal and unplanned activities, symbolic and key words, and nonverbal communication such as space and reactions;
- and unobtrusive measures to include what was not happening.

During the first three weeks, my role involved more participation as I facilitated class topics focused on digital media. During the fourth week my role changed as I observed to collect data, with both course instructors facilitating learning experiences.

Data Sources and Collection

The data gathering process involved multiple sources to answer research questions. These data sources were produced through the involvement of study participants: course instructors, teacher candidates, and tutees. Data were collected during the first 13 weeks of the fall semester and included five data sources as shown in Table 1: observation and field notes, artifacts, informal discussion sessions, semi-structured interviews, and surveys.

The first two research questions focused on teaching and learning of teacher candidates and elementary tutees as they engaged with digital media. I observed and recorded field notes throughout the semester; downloaded lesson plans from WebCampus the day before each tutoring session; and collected hard copies of digital artifacts as the tutoring sessions came to an end. WebCampus is a web-based server software that is part of the Blackboard Learning System, a virtual learning environment and class management system that allows faculty and students to work online. I developed selection criteria and sought input from the instructors in order to select five teacher candidates for interviews. All participants completed a survey related to TPACK entitled,

Table 1

Data Sources and Collection in Relation to Research Questions and Participants

Research Question	Data Source	Time (Administered by Investigator)	Participants
How do teacher candidates teach in a clinical setting that utilizes digital media?	• observation/ field notes	• weeks 1 – 13	• candidates
	• artifacts	• weeks 8 – 13	• candidates
	• surveys	• week 13	• candidates
	• interviews	• week 13	• sampled candidates
How do students (tutees) represent their learning with digital media?	• observation/ field notes	• weeks 8 – 13	• tutees
	• artifacts	• weeks 8 – 13	• tutees and candidates
	• interviews	• week 13	• sampled candidates
As technology is used throughout a literacy methods course, how is the technological, pedagogical, and content knowledge of course instructors impacted?	• observation/ field notes	• weeks 1 – 13	• instructors
	• pre/post-surveys	• week 5 and 13	• instructors
	• informal discussion sessions	• weeks 8 – 13	• instructors
	• interviews	• week 13	• instructors

The Survey of Preservice Teachers' Knowledge of Teaching and Technology (Schmidt, Baran, Thompson, Koehler, Mishra, & Shin, 2009). This survey helped shed light on

teaching and learning with technology, and teacher candidates completed it at the end of the semester. Course instructors completed this as a pre- and post-survey.

The third research question focused on TPACK of the course instructors. I observed and recorded field notes throughout this data collection phase. Data for this question involved pre- and post-surveys, as well as informal discussion sessions focused on what had worked, challenges, possible actions in regards to successes and challenges, and the integration of technology, pedagogy, and content, with the instructors sharing supporting documentation (e.g., teacher candidate lesson plans, tutee work, their own plans) that helped explain their views. Each instructor participated in individual interviews at the conclusion of the semester.

Observations and field notes

I employed observation techniques to document behavior as it was occurring by recording field notes; these data were used to triangulate findings (Merriam, 1998). Field notes captured participants' interactions and informal conversations in a variety of contexts: primarily during class discussions with their peers, while teacher candidates tutored tutees, and while participants worked in small groups.

The course structure provided time for collaborative sessions in which participants discussed readings related to digital media and conventional literacy forms, allowed teacher candidates and course instructors opportunities to highlight literacy instruction and possible reasons and ways to incorporate iPads into their literacy tutoring, and explored using iPads in a university setting to further their own learning with digital media (see Appendix I for a sample). During these collaborative sessions, I focused on meaning constructed by course instructors and teacher candidates. Utilizing a t-chart that

included description and reflection columns, I recorded notes by hand in the description column to document what was happening. Once class concluded, I reflected on my descriptive notes and recorded my thoughts in the reflection column.

In addition, field notes documented teaching and learning during tutoring sessions. I recorded hand-written field notes during tutoring sessions and used an iPhone voice memos app to record dictated reflections immediately following class. These observations and field notes focused on how teacher candidates provided instruction and how tutees used digital media, with both descriptive and reflective notes recorded in a t-chart fashion (see appendix J for a sample). Later, I merged hand-written and audio notes into word documents as I transcribed files.

Artifacts

Study artifacts were derived from two different sources: teacher candidate lesson plans and digital artifacts (see Appendix K for a sample). For each tutoring session, teacher candidates developed a lesson plan in which they addressed individual tutee's literacy strengths and needs. Additionally, the lesson plan contained a reflection/evaluation that involved a formative assessment aimed at documenting how and if the participants accomplished their objectives related to literacy needs, connections between the current lesson to the next lesson, perceptions of the success and challenges with digital tools, teacher candidates' next steps that relate to the following lesson, and other information participants deemed relevant. The course instructors read and responded to these lesson plans as a part of the course instruction, through WebCampus. candidates took digital photographs of products and used screen shots and on-screen recording to demonstrate student learning, which teacher candidates may have included

As part

in their course portfolio. Each candidate constructed a table of content that indicated the items included and a rationale for including each item as it demonstrated tutees' processes and growth. Teacher candidates' digital collections constituted part of the data collections as mentioned above.

Surveys

Course instructors and teacher candidates completed surveys related to TPACK. The purpose of survey research is to be able to describe (Fowler, 2002), and these surveys were consistent with Yin's (2003) study recommendations as they sought to answer the questions of "what" in regards to literacy content, teaching pedagogy, technology, and the various manners in which these forms of knowledge intersected. I expected using iPads would impact technological, pedagogical, and content knowledge of course instructors and teacher candidates, and surveys were intended to provide another layer of data for analysis and corroborate findings.

The original survey I located involved items related to technology integration within individual content areas, and I obtained permission from the lead author to modify the survey in order to reflect a literacy instruction emphasis. The survey contained questions relating to technology, pedagogy, and literacy, and these knowledge areas intersecting in various manners and combinations: Technology Knowledge (TK), Technology Content Knowledge (TCK), Technology Pedagogy Knowledge (TPK), and Technology, Pedagogy, and Content Knowledge (TPACK). Respondents rated their knowledge levels through 44 statements where they checked boxes labeled "strongly disagree, disagree, neither agree nor disagree, agree, strongly agree." The final section of the survey involved TPACK models and involved open-ended responses.

I administered a modified TPACK survey (Schmidt et al., 2009) to course instructors as a pre- and post-survey: before class sessions during weeks five and 13 (see appendix L for complete survey). This survey provided insight into how course instructors viewed their own experiences involved with instructing teacher candidates and the intersections of technology, pedagogy, and content in various manners. The intent of administering the survey twice during the semester was to compare pre- and post-surveys for change throughout the semester.

In addition, I administered surveys at the end of the semester to teacher candidates in order to gain insight into their TPACK. Teacher candidates completed the modified survey (see Appendix M for complete survey) during week 13 at the end of class from the standpoint of a teacher candidate working with elementary children.

Informal discussion sessions with instructors

Informal discussion sessions were held with course instructors twice during the semester, with each session lasting 30 – 40 minutes. These sessions involved open-ended questions to prompt instructors with sharing successes and challenges of the clinic-based experiences that involved iPad implementation, with particular reference to their TPACK and their perceptions of the TPACK of teacher candidates. Instructors brought supporting documentation (e.g., teacher candidate lesson plans, tutee work, their own plans) to use as a basis of discussion and to help communicate information as I facilitated these discussions. Course instructors shared their experiences implementing iPads, and the experiences of their teacher candidates, while I asked questions of elaboration (Can you explain? Why do you feel this is significant? Can you provide examples/details?). Informal discussion sessions involved course instructors identifying the current course

focus, explaining and sharing their documents, identifying success and challenges, and the interactions of technology, pedagogy, and content.

Course instructor and teacher candidate interviews

“One of the most important sources of case study information is the interview” (Yin, 2009, p. 106). As an information source, interviews were guided conversations that followed questions pertaining to my study. Merriam (1998) states, “The main purpose of an interview is to obtain a special kind of information” (p. 71). Through interviews, I was able to draw from participants their experiences and how they viewed these in the context of the course.

Interviews were semi-structured in nature and allowed me to ask specific questions to either 1.) to follow-up and clarify statements obtained during the interview or 2.) clarify information collected throughout data collection processes. Interviews were conducted in a public office in a quiet location that offered little to no distraction in order to make the participant feel comfortable and relaxed, and to promote information sharing. Most interviews lasted 20 – 25 minutes.

Both course instructors agreed to participate in interviews when they consented to the study. At the end of the semester, I interviewed each course instructor individually regarding her experiences with the integration of digital media within the literacy methods course (see Appendix N for interview questions). These interviews were approximately 20 minutes in length.

Through purposeful sampling, I employed already established criteria to select five candidates for interviews to add to the robustness of the data. Observation and field notes helped provide a description of experiences with iPads, and interviews provided

further clarification and allowed cross-referencing of evidence for more robust and compelling results. From the 18 teacher candidate participants, five participants who had the most engaging experiences (see explanation on page 58) with incorporating digital media into their literacy tutoring experience were invited to participate in interviews. These five teacher candidate participants agreed to semi-structured interviews (see Appendix O for questions) and shared their experiences in order to provide further insight into this research study and share their own stories with utilizing digital media for instruction and learning.

Data Analysis

Bernard and Ryan (2010) state, “Analysis is the search for patterns in data and for ideas that help explain why those patterns are there in the first place” (p. 109). Data analysis helps the investigator take raw data and present it in a manner that makes sense to the reader. This study involved analysis of several cases and was completed by “analyzing data through description of the case and themes of the case as well as cross-case themes” (Creswell, 2007, p. 79). To present data in a meaningful manner, themes had to be formed. “Themes come both from data (an inductive approach) and from our prior theoretical understanding of whatever phenomenon we are studying (an a priori, or deductive approach)” (Bernard & Ryan, 2010, p. 55). Continual review of data allowed me to derive themes empirically from the data through a process of open-coding (Glaser & Strauss, 1967). In addition, survey data was analyzed through content analysis to provide another layer of data for analysis and corroborate findings. Table 2 provides an example of how constructs were formed. Briefly stated, an overview of this process involved identifying key elements from data sources and developing codes. I worked to

Table 2

Construct Formation with Data Analysis

Construct	Exemplar(s)	Description	Code	Code Name	Question
Teacher candidates as learners	<ul style="list-style-type: none"> • participant sharing how to use iPad with another participant • participant discussing class reading with others 	Class sharing time to promote learning with fellow participants and through the use of digital media	CO	Collaboration	1 - Teaching

describe codes through creating a codebook, and through the application of codes, continually revised this codebook through a recursive process and developed exemplars, or typical examples, to help clarify code meaning. Codes were placed into categories, and these various categories were grouped together in a manner that made sense. Grouped categories contained ideas relating to conceptual elements, or constructs. Through grouping categories, constructs were formed.

Further scrutiny and comparison for relevance and consistency, along with utilizing data analysis tools, resulted in constructs becoming more clear as tentative themes began to form. Analysis through a TPACK framework provided another lens and resulted in a deeper examination of data. Some data enhanced and strengthened existing constructs while other data provided information that resulted in new categories and constructs. Ultimately, constructs helped form themes.

Developing codes

I analyzed and interpreted data using pattern analysis (Yin, 1994). I began by transcribing the primary data sources, interviews and field notes. Reading and rereading of these interview and field note transcripts allowed me to become more familiar with the data. Data reduction allowed me to focus on data that specifically addressed the research questions through reading and rereading primary data sources to carefully select data that pertained to the research at hand.

I color coded transcripts with highlighters and wrote notes in the margins to indicate patterns, including concepts, key words, repetitions, and similarities and differences. This involved looking sentence by sentence to notice commonalities and differences. Additionally, data sources were compared as a whole to one another (i.e., one interview to another) to help identify similarities and differences. Throughout this process I developed exemplars, typical examples, by noting highlighted data and accompanying hand-written margin notes that somehow seemed important. An initial code list began to form, with observations during data collection and existing work of scholars in the field helping to inform this starting point for codes and coding. For example, as shown in Table 2, teacher candidates as learners seemed to be an idea that would form a construct with the exemplars sharing, discussion, and collaborating providing support. These exemplars were described as class sharing time to promote learning with and about digital media, and these were given the code collaboration, which provided insight into the first research question involving teacher candidates' teaching.

My continual review of data helped form the initial code list based on recurring ideas. Application of identified codes to a chunk of data from a few interviews and

related field notes resulted in further code development. This was a recursive process that continued to help make codes more concrete. For example, when asked during an interview about the advantages of using iPads, one teacher candidate replied, “finding appropriate materials” (interview, December 5, 2012) which provided information related to research question one regarding how teachers teach. Application of the code “materials” resulted in this code surfacing many times and indicated the importance of materials within the data. Some codes were refined and others eliminated through application of codes to data. As codes were refined, the process continued and involved application of the codes with more data and further modification.

Developing a code book

The purpose of a codebook is to allow raw data to be understood more clearly and become more manageable (Bernard & Ryan, 2010). Compiling the various codes started the formation of a code book, which was built up from the data. Developing definitions prevented duplicate codes under different names, provided a sense of exactness and uniformity, and prevented the coding process from becoming overly exhaustive.

Bernard and Ryan (2010) suggest using more than one coder because “having multiple coders increases the likelihood of finding all the examples in a text that pertain to a given theme” (p. 96); therefore, I sought the assistance of a fellow doctoral student. Initial code development had resulted in constructs involving teacher candidates as learners, teacher candidates’ teaching, tutee learning, benefits and challenges, and TPACK. However, at this stage of the process, these elements were more subjective in nature resulting from noting these ideas through my observations. I needed supportive, empirical evidence. As these constructs, ideas relating to conceptual elements, were not

entirely clear when coding began, they became more concrete over time as empirical evidence provided support. An additional coder allowed opportunities to clarify constructs through further code development, discuss ideas, and helped produce more trustworthy results. Initial meetings focused on codes and definitions which resulted in further revisions to the developing code book.

For example, a code “teacher as learner” contained a definition that stated, “Includes the way teachers viewed their learning process with iPads in terms of the expectation of using these devices in class, their comfort levels with iPads, and their feelings about iPads.” After discussion amongst ourselves, the definition was found to be lacking. Often participants would cite the value of support throughout their learning. For example, during her interview Keva was talking about how she could continue to be actively engaged with digital media in her future classroom and stated:

I would just like to have some time to talk to other people who are doing the same thing because that's what we did in class and that's when I could learn the most. I think having the exposure to someone who can say this is what I did and how it works would be awesome. (interview, December 5, 2012)

We found the definition needed to include elements of support and learning opportunities, which resulted in an expanded definition that stated, “Includes the way teachers viewed their own learning process with iPads in terms of the expectation of using them for tutoring a child, having support to implement iPads, their feelings about iPads and comfort levels with iPads, and opportunities to learn.” Further discussion ensued to clarify codes and definitions, which helped identify exemplars and aided the process of developing constructs. We continued this process in a recursive fashion to

continue refining the codebook. We both then coded interviews and field notes independently and compared results for reliability, finding only minute differences. I engaged with some additional tweaking in order to make the code book more concrete.

I continued forward independently by applying the developed codes and cross referencing transcripts with other artifacts for data that provided insight to the research questions. Bernard and Ryan (2010) refer to this process as axial coding. While many of the codes were constructed and applied, some required further thought. The recursive process of applying and refining codes continued until the codebook was fully developed (see Appendix P for a sample). The primary data sources were coded, and codes were arranged into categories, or groups that seemed to belong together. Grouping categories allowed constructs to become more evident in the process of themes forming.

An example: the construct of “challenges”

The following example is intended to help the reader understand the process of constructs forming. One teacher candidate expressed the idea of ownership through the candidate’s talk of wanting to take the iPad home to use as she stated, “I didn’t have it in my hands...and that made it very difficult” (interview, December 5, 2012). I applied the code ownership. Another candidate discussed managing the device in the classroom as she said, “You have to have a charging station” (interview, December 3, 2012), which was coded ownership. A third interviewee indicated, “You can’t expect us to teach and do stuff with the iPad like we did in tutoring if we don’t have them to use” (interview, December 3, 2012) indicating an issue related to access. These two codes of ownership and access were grouped together and even though access was an individual code, it seemed that both codes spoke to issues with opportunities to approach and use devices;

thus, I named this category access. This category was placed with other categories that evidenced issues and challenges, which included the state of technology and resistance. Together, these three categories formed the construct of challenges. However, while the data spoke to challenges, continual review of this category indicated something beyond identifying challenges, which revealed to me the need for further analysis.

Tools for further analysis

Forming themes required many steps and a recursive process of continually revisiting the data. I had used initial category groupings as I formed constructs to provide insight towards possible themes; however, cases needed to be strengthened and required further analysis. Utilizing analytic tools aided in developing and supporting constructs. These tools were a piece of the process that helped to flesh out big ideas, and I engaged in the following: 1.) construction of a conceptual model, 2.) construction of case profiles, and 3.) utilized a framework for studying processes. As I engaged with each tool, I found myself in a recursive process where a later tool influenced a previous one as sometimes data supported existing categories; other times, these tools provided new insight and required the adjustment of current categories.

“A major part of data analysis involves building, testing, displaying and validating models. Models are simplifications of complicated, real things” (Bernard & Ryan, 2010, p. 121). Creation of a conceptual model (see example Appendix Q) functioned much like a graphic organizer. Through a process that involved refinement of the initial model, each model included three main sections of categories, constructs, and themes. Categories were identified on the bottom of the page and grouped together in a way that made sense. For example, learning process, collaboration, and reflection were

categories that formed a construct related to learning. Through careful examination of this category and relating this category to empirical research from researchers in the field, the construct involved respecting teacher candidates and their learning through the course structure and experience. Deeper examination of the various parts evidenced course instructors and teacher candidates sharing during interviews and discussions their appreciation for the opportunities to learn, and I felt that learning was respected, but that the re-envisioned environment not only respected learning but gave learners a place to learn, share and value what each member contributed, resulting in the development of the theme honoring teacher candidates as learners. This conceptual model helped articulate big ideas to aid in the process of understanding data at deeper levels.

While developing the theme related to honor, I found a need to be able to systematically look at data across cases. I developed case profiles by utilizing evidence from each case in a narrative fashion in order to articulate data in a meaningful manner (see Appendices R and S). There were two reasons for case profile construction: 1.) to use as a tool for data analysis and 2.) to provide context for each case. Context allowed me to understand what had occurred throughout the course, and in sharing results, this context was useful when describing the participants' experiences with the clinic-based course. I drew upon interviews, observation and field notes, and artifacts as I composed these profiles. From these profiles, I constructed tables to analyze data and explain processes. I drew upon information from individual cases as I examined instruction and learning, benefits, and challenges. I sought out data that ran across cases, which as part of my process, helped with reinforcing and forming constructs. The case profiles helped clarify information while providing context.

As the participants' experiences lasted several weeks, I sought to look at events over time. A framework for studying processes was utilized (Bernard & Ryan, 2010) as this process model helped with identifying events unfolding over time. Organization of the process model involved behaviors and environmental information related to events, reactions, and the long-term consequences (see example appendix T). The framework helped provide me with an understanding of participants' experiences. For example, the course context provided learning opportunities for teacher candidates with new and conventional literacies as implementing iPads created new opportunities as teacher candidates utilized this form of digital media. Individual results spoke to broadened literacy practices. A specific example involves Ziona who constructed her tutoring so that she utilized an informational picture book on weather with her tutee, supplementing their discussions and the tutee's questions by conducting research on the iPad, all while engaging with a laptop that provided a power point with additional insight into the topic. The consequence is shown through her reaction as she models an expanded conception of literacy and literacy instruction.

Further theme development through a TPACK perspective

Up to this point, I had studied data (primarily text) closely in order to create understanding. In the previous example, the code of teachers as learners resulted in categories related to learning, with a construct forming that involved respecting the learning of teacher candidates throughout their experience within the literacy course. This construct helped with forming the theme honoring teacher candidates as learners. At this point, some themes were beginning to form related to the constructs created through data analysis, but analysis through a TPACK perspective allowed the opportunity to view the

data through another lens and as a tool for data analysis. Content analysis was completed with survey data, and I chose to utilize a TPCK content analysis framework (Mishra & Koehler, 2006) to analyze participants' surveys, interviews, and informal discussion sessions.

While much of the coding was inductive by nature, the surveys administered to teacher candidates and course instructors involved the deductive approach of content analysis. A content analysis allows the investigator to code and analyze data systematically (Bernard & Ryan, 2010). Tallying responses allowed patterns to be identified and helped support existing and emerging constructs. The surveys contained subscales, which functioned as categories and involved knowledge related to technology, content, and pedagogy, as well as various intersections of pedagogy and content, technology and content, technology and pedagogy, and technology, pedagogy, and content knowledge. Utilizing these subscales as categories allowed the distribution of results to reflect existing survey categorizations.

I tallied teacher candidates' surveys according to responses. A tally sheet (see Appendix U for sample of results) that totaled how teacher candidates rated their own knowledge levels was prepared. Upon completion of a content analysis, mean scores were computed for each TPACK subscale. This involved two groups: the class consisting of 18 teacher candidates, and the focal teacher candidates consisting of five individuals. Using a five-point likert scale, respondents indicated to what extent they agreed or disagreed with items.

Results from the course instructors' survey involved comparing their pre-survey results with their post-survey results to identify changes in their TPACK (see Appendix

V for results). As course instructors' survey results involved change over time, it brought new light to the existing data analysis as it opened the door to another layer of analysis through analyzing data sources through a TPACK perspective.

To corroborate survey results, data analysis involved another lens, one that looked at the data through a TPACK perspective. Participants' surveys, interviews, and informal discussion sessions were analyzed through Mishra and Koehler's (2006) TPACK content analysis framework. One or more of the following areas were the basis of the classification system: technological content knowledge (TCK), technological pedagogical knowledge (TPK), pedagogical content knowledge (PCK), and technological pedagogical content knowledge (TPACK).

The primary data sources were processed using the cut and sort method (Bernard & Ryan, 2010). I numbered each line of the transcribed data so that I could trace the data back to its original source, and then cut the data into pieces. Cutting the data meant locating ideas that carried meaning within the text. Data sources were continually reread for evidence relating to the four knowledge areas and then placed into groups that best represented the knowledge area addressed. I carefully examined each group in order to ensure data were representative of the knowledge area. Two examples of data pieces are provided below. The first example involves my placement of this data in the category of technology knowledge as it addressed how the participant thought about and worked with technology, tools, and resources.

Ziona stated, "One of them (challenges) I found was how technology is. It's not working one day because the Internet is down or it is slow" (Interview, December 3, 2013).

A second example involves knowledge from all three areas, TPACK, which involves the integration of technology, pedagogy, and content and requires understanding the representation of concepts using technology, using technologies to teach content based in pedagogy, and knowledge of how existing knowledge is built upon to construct new knowledge (Koehler & Mishra, 2009). An example of this classification involved Ziona as she indicated the ways she used technology with instruction, her beliefs about student learning, and different ways to engage with literacy practices. The three areas of technology, pedagogy, and content interacted and I placed the data in the TPACK category.

I have used technology in everything that I do and one of the things that I've been incorporating in my fifth grade classroom is a blog. Besides the fact that it completely supports the writing initiative from Common Core, it is providing a platform for those kids that I've never heard one word from in the classroom.

They have the opportunity to completely shine (interview, December 3, 2012). Ziona's statement speaks to her conception of literacy. Further analysis of data sources resulted in fleshing out evidence that clarified and supported existing constructs; however, other evidence related to literacy conceptions and various knowledge forms, resulting in a new construct.

Trustworthiness

In order to have an effect on practice or educational theory, studies must be "rigorously conducted; they need to present insights and conclusions that ring true to readers, educators, and other researchers" (Merriam, 1998, p. 199). The nature of this qualitative research focused on people and situations. The study presents the perspectives

of teacher candidates, tutees, and course instructors who utilized digital media in a clinical setting focused on literacy. As human behavior is not static, this research sought to “describe and explain the world as those in the world experience it” (Merriam, 1998, p. 205). Procedures have been well documented and study results provide significant detail. Multiple data sources provide data that contributed to the rich descriptions and provided a more complete view of the study. Merriam (1998) indicates the need for descriptions to provide enough detail to validate conclusions drawn and descriptions support conclusions. Yin (2003) identifies that a strong case supports validity in qualitative studies.

Additionally, different tactics were used and different actions were taken to strengthen validity and reliability. Construct validity was strengthened through the use of multiple sources of evidence (interviews, surveys, field notes, and artifacts) during data collection, as well as establishing a chain of evidence during data collection in order to determine conclusions (Yin, 2003). I transcribed interviews and field notes and organized all data sources into a filing system.

Using multiple data sources to perform pattern-matching during data analysis strengthened internal validity (Yin, 2003). I identified patterns across cases and built explanations to these patterns, and I checked tentative interpretations to see that results were plausible. Triangulation of data resulted in confirming emergent findings through peer examination in order to strengthen validity (Merriam, 1998). Additionally, this study spanned over several months, which increases the validity of the findings.

The research design of this multiple case study strengthened external validity. Replication logic involved my use of the defined criteria to select multiple cases (Shakir,

2002; Yin, 2009). Yin (2003) identifies reliability as the stability of procedures, so that they can be repeated with the same results. Prior to this study, I had engaged in other qualitative studies that involved multiple data sources and, which further increases reliability. Using multiple coders helped increase reliability as the multiple data sources were triangulated to strengthen this case study.

Case study protocol was followed during data collection as the data collection procedures were consistent. Course instructor interviewees responded to the same set of interview questions, as did teacher candidate interviewees. A consistent set of survey questions was used throughout the study, but modified to encompass differences between the participant groups, course instructors and teacher candidates. Developing a case study organizational system further increased reliability as interview transcripts, field note transcripts, artifacts, and surveys were organized into a filing system.

Assumptions

Merriam (1998) stated that “every researcher wants to contribute results that are believable and trustworthy” (p. 218) and researchers must address limitations and assumptions within their own research. Rooted in the literature reviewed in Chapter 2 and my own experiences, I will address the following assumptions related to this study. First, digital media can work with existing literacy practices to enhance learning. This assumption speaks to a broadened definition of literacy that goes beyond print-based texts, with participants building background related to how technologies and literacy work together as traditional literacy practices blend with new literacies approaches. The second assumption involves perceptions and attitudes: assuming that attitudes towards

digital media would change over time, I worked to develop a deeper understanding of teachers' perceptions and attitudes related to digital media. Opportunities to interact with digital media were promoted throughout the course to help broaden perspectives. The course structure was developed so that digital literacies and conventional literacies could blend together in a complementary manner.

Limitations

First, investigator bias with data collection and analysis must be acknowledged as a limitation. Every attempt was made to avoid biases and to conduct research in an ethical manner. The study followed the process specified in the approved IRB.

I utilized purposeful sampling methods for participant selection to select teacher candidates with the most positive experiences. Teacher candidates enrolled in the clinical-based literacy course resulted in the course itself being a convenience sample. This made the participant selection pool limited in their representation of teacher candidates as a whole since it involved convenience sampling. This is accounted for by identifying how the sample is different from the general population. The sample involved 18 self-identified middle-class white females as compared to the general population of teachers which, while predominately white female, does include ethnic minorities, males, and a range of socio-economic status. A final limitation involves self-reported TPACK data from participants; however, this is not a significant limitation due to the multiple data sources.

Summary

This chapter explained the methodology for a multiple case study that shares the experiences of course instructors, teacher candidates, and tutees as they engage with literacy instruction and learning while implementing iPads. Context and procedures were specified for data collection and analysis. Initial analysis through coding resulted in engaging with various tools to further analysis, as well as examination of data through a TPACK framework to provide a deeper layer of analysis. Issues relating to limitations and trustworthiness were addressed at the end of the chapter.

CHAPTER 4

FINDINGS: THE LEARNING PROCESS AND CASE PROFILES

Case profiles for each of the five dyads were originally constructed as a tool for data analysis, as previously discussed. These profiles allow me to look at individual cases, and through construction of a table, I was able to look across cases. The development of these profiles allowed me to understand individual and groups' experiences as I deepened my analysis, and I became more aware of the process of implementing digital media with literacy tutoring.

In organizing my findings I realized that the profiles offered a valuable way to tell the story of each day and the process provided a context for reporting the results. Thus, I expanded and reorganized these profiles. The original case profiles were expanded upon in order to tell the story of each dyad, highlighting the use of new and conventional literacies and help the reader understand the results presented in the next chapter. To avoid repetitions with the narratives, I constructed these case profiles to provide examples, and if a similar example occurred with another participant, I only mention their use of digital media. For example, iCard Sort was commonly used with Word Study. I provide two detailed examples for the reader to understand what occurred, and with the other participants I mention iCard Sort to avoid redundancy, while still reinforcing that this app was being used.

This chapter is organized by two sections. The first section describes the learning process and context of the course, with the second section of case profiles highlighting the focal five teacher candidates and their respective tutees.

The Context of Learning Experiences

This study provided a collaborative classroom learning environment where course instructor and teacher candidate participants engaged in opportunities to utilize technology early in the semester and continually throughout the semester. Research highlights the importance of collaborative learning environments when considering a new literacies approach (Bailey, 2007; Dunston, 2007; Kist, 2005; Ranker, 2008; Tan & Guo, 2007). These studies have found that participants who engaged with opportunities to learn about digital media and possible instructional techniques developed a deeper understanding of new literacies and using technology with their own instructional processes. Lankshear and Knobel (2003, 2006) discuss the importance of collaboration, flexibility, and distributed knowledge when following a new literacies approach. I used past research as I rethought literacy, and I reconceptualized the clinic-based literacy course.

Sally, the primary instructor, and I carefully constructed the syllabus to allow learning opportunities that involved conventional and new literacies. These learning experiences involved building knowledge about digital media, sharing information between and amongst one another, and teacher candidates using iPads as they learned about new and conventional literacies within the university course prior to conducting tutoring sessions.

Our collaborative efforts began prior to the semester. We worked together to redesign the course so that it focused on a broadened definition of literacy where conventional and new literacies were blended. We both had taught the course several times in the past and were familiar with it meeting two times each week. In the past,

tutoring had occurred during weeks three – 12 with one of the weekly class meetings devoted to course content and the other class meeting devoted to tutoring and elementary student. This presented challenges as teacher candidates were often trying to instruct tutees while they themselves were still learning content. In my process of reconceptualizing the literacy clinic-based course, I came up with a revised schedule, as summarized in Table 3.

Table 3

The Learning Process

Utilizing Digital Media with Instruction (weeks 1 – 3)
<ul style="list-style-type: none"> • New literacies and digital media research articles • Learning with iPads • App inquiry project
Teaching Developing Readers and Writers (weeks 4 – 7)
<ul style="list-style-type: none"> • Lesson framework, Common Core, and literacy development • Word study • Writing • Comprehension • Instructional strategies • Content area literacies
Tutoring (weeks 8 – 13)
<ul style="list-style-type: none"> • Assessment of individual tutee levels • Matching assessment to instruction through tutoring
Synthesizing Learning Experiences (weeks 14 – 16)
<ul style="list-style-type: none"> • Professionalism: letters and portfolios

The revised schedule allowed both weekly sessions to focus on teacher candidate learning the first seven weeks, with both sessions focused on tutoring the following six weeks, and Sally eagerly agreed. This restructured schedule devoted the first several

weeks of the course to content learning regarding new and conventional literacies, with the second part of the semester focused on tutoring, with synthesis of learning experiences occurring during the final part of the semester.

Through the changed structure, the course was designed so that teacher candidates would have as much time as possible up front for their own learning, and then spend the remainder of the course applying their learning with the tutoring experience and completing summative course projects. The revised course structure also allowed opportunities to reorganize topics in order to create time for topics pertaining to digital media.

Through reconceptualization, the course began with providing foundational knowledge related to digital media for participants. These first sessions focused on reading research and constructing understandings of new literacies and digital media and relating these concepts to the literacy tutoring framework. Collaborative sessions engaged participants in discussions as they constructed knowledge related to digital media for instruction.

Throughout these first sessions, course instructors and teacher candidates worked alongside one another and were flexible with their learning as they explored digital media (iPads, laptops, and a Nook); participants disseminated knowledge among one another through collaborative sharing times and engaged in critical discussions. Participants had access to the iPads provided by the elementary school during these first class sessions; in addition, participants could check out one of the five iPads that belonged to the university to further their understanding on their own. Both course instructors and all teacher candidates engaged with using iPads as they investigated, explored, and applied their

newly constructed knowledge. They learned how to utilize the app store to search for and locate apps, as well as how to find detailed information (i.e., manufacturer, rating, cost, product purpose, use) about these apps in order to analyze their usefulness. This gave participants the opportunity to build upon their knowledge as they learned how to use the iPad for instructional purposes. These early discussion and explorations with continued support were designed to encourage participants to implement digital media within their tutoring sessions.

My role as observer as participant involved me being more involved during these first sessions. Often times I led the process of learning about digital media, and both course instructors were learners with the teacher candidates. Our learning process involved me facilitating learning during these sessions. I did not tell participants what research stated and how to use the media; rather, we worked to construct knowledge together through reading research, meaningful discussion, guiding questions, reflection, and application.

The course instructors and teacher candidates read various research articles, which they discussed in small peer-groups and then in a whole class format. Participants began by reading common readings, articles that everyone read, in order to provide a foundation. Then, the investigator divided multiple articles between small groups in order to allow the individual groups opportunities to become experts on the content. For example, one class session involved iPads in the classroom. Students were placed in four groups with four to five students per group. One group read an article involving literacy instruction with technologies, and the other three groups read articles specifically related to iPads with literacy. The small groups discussed collaboratively and constructed

meaning as they created posters to highlight their knowledge acquisition. These posters involved key ideas related to possible benefits and drawbacks, and included images to communicate meaning (Kress, 2003). The posters were then shared with the class through break-out sessions, allowing participants the greatest amount of exposure to different research for the given time frame. Sharing involved starting with the research on literacy instruction with digital media to provide a general background, and then involved sharing the other three articles which specifically related to iPads. This process allowed teacher candidates a general frame of reference for digital media before they looked specifically at iPads, which related directly to what they would be working with during their own tutoring sessions.

As participants learned about the importance and application of digital media during the first two sessions, they then began to explore iPads as they applied their learning. The teacher candidates convened at the elementary school during the third session in order to receive training related to using iPads for educational purposes. I provided training with basic iPad operation, and participants explored apps I had downloaded. Participants also had time to freely explore on their own with the iPads. Teacher candidates and course instructors worked collaboratively as they explored and coached one another in order to learn ‘the hows’ of using iPads for literacy instruction. They brought varying levels of exposure with utilizing technology, and functioned as learners in an environment where they had to be flexible with their own learning as they sought to implement iPads and apps in conjunction with literacy instruction. Candidates and instructors looked to each other as local experts through sharing what they could do, and turning to one another as they sought assistance, asking probing questions of their

classmates regarding processes and functions. At the conclusion of the session, they had the option to further explore using digital media in relation to literacy tutoring through checking out an iPad from me. Although iPads were the form of digital media used as it was available through the school site and from me, participants were encouraged to use various forms of digital media, and those who had their own tablet or other digital devices were encouraged to use those as well. It was during this third sessions when teacher candidates gathered in the elementary school's proposed tutoring room to explore iPads that the challenges regarding space and the wireless network arose. Given these problems, I sought out an alternate location inside the professional development building.

The fourth session was held inside the professional development building and involved further opportunities to learn by enhancing teacher candidates' knowledge related to digital media through discussions of research literature related to iPads, literacy and technology, and digital media, and then all participants engaged with iPads as they completed an investigation where they sought out apps designed to promote literacy learning based on the tutoring framework. Utilizing their skills involving the app store, details related to apps, and cross-referencing with other sources of information (i.e., researching the app through a blog), they worked in small groups to locate five apps they deemed appropriate for teaching and learning.

During the fifth session, teacher candidates analyzed the apps they had located and explored during the previous session to determine if they promoted learning or if they were not as useful for the instructional process. They shared their learning through explaining the purpose of each app, the phase(s) of tutoring where it would be beneficial, and provided an explanation of how the app helped promote tutee learning, whether

through enhancing instructional processes or through tutee learning. I composed a list (see Appendix W for complete list) of their recommendations which was made available on WebCampus for teacher candidates to access throughout their tutoring. One teacher candidate was searching for apps and discovered iCardsort. After analyzing the potentials, she downloaded this app to her personal iPad. She eagerly shared and demonstrated the apps capabilities while numerous participants marveled at the possibilities. Participants examined the app and felt it would be beneficial for student learning. The elementary school librarian purchased the app through the school site license and downloaded it onto all iPads, enabling not only teacher candidates to use the app, but teachers from the school site as well. When tutoring began, iCardsort became one of the most commonly used apps.

During the third week, course instructors focused their instruction on conventional literacy forms and worked to connect the iPad to content. These sessions over the next several weeks were held in the education building and focused on conventional literacy instruction methods, with the continual revisiting of how teacher candidates could utilize iPads throughout the upcoming tutoring sessions as they began connecting conventional instruction and learning with new forms of instruction and learning afforded through iPads. During this time, the five university iPads were available, but not the set of iPads belonging to the elementary school. Learning experiences involved quick writes to summarize knowledge, small group discussions, modeling, some lecture, and small group presentations. The instructors engaged with power point and document camera as they engaged with technologies to support learning. During this time, topics for instruction focused on teaching developing readers and

writers. First, the literacy framework was reviewed as teacher candidates furthered their knowledge related to Common Core State Standards and literacy development of children. The class then learned further about learned about word study, writing, comprehension, strategies for instruction, differentiated instruction, and content area literacies. At week eight, teacher candidates began tutoring elementary students.

Case Profiles of Teacher Candidates and Tutees

Andrea Facilitates Blanca's Learning

“It makes teaching different because you don't stand there and tell her what to do, you help guide her and find what to use and she does it” (interview, December 5, 2012).

Andrea tutored Blanca, a fourth grade female student who struggled profusely with reading and writing. Andrea had many concerns with helping Blanca because her assessment results indicated that Blanca's levels were far below that of a typical fourth grader. Andrea displayed a strong desire to engage students with technology as she actively contributed to classroom discussions prior to tutoring, sharing unique and realistic perspectives.

As required by the course, Andrea wrote lesson plans electronically; however, rather than print these off to follow during her lesson, she chose to view these electronically. She also recorded anecdotal records on the iPad's notes app from each session so she knew her thoughts and how to plan the next lessons. Andrea searched out information for her lessons, such as books to use, how they were leveled, and different apps that might work. She searched for books based on the results of Blanca's assessment results that included difficulty level and interest, and worked to correlate assessment

results with levels indicated on materials. She sought out blogs to aid her with selecting apps.

During word study, Andrea engaged Blanca with a phonics app to help her with identification and writing of uppercase and lowercase letters. Another app involved Blanca using her finger to write words representing various patterns and sounds on a digital whiteboard. For example, in one lesson she wrote words that ended with the digraph “ch.” Blanca had to determine what three letters to use to fill the preceding blanks. She used “lun” to make the word “lunch.” Blanca engaged in word sort electronically, and Andrea used screen captures to compare the different sorts. Andrea and Blanca compared her first sort, which involved putting words into alphabetical order, to later sorts completed by sounds and spelling patterns. This allowed both Andrea and Blanca to see growth that had occurred throughout the tutoring session. While both types of sorts are valuable to learning, sorting by sounds and spelling patterns is more cognitively and developmentally complex than sorting by alphabetical order, showing Blanca’s growth.

When writing, Blanca created graphic organizers and provided dictation verbally, which Andrea recorded electronically and typed into story format. Blanca brainstormed and used the iPad throughout this process: she typed her ideas on the screen and then highlighting the words, she could physically move it to another location on the screen. This allowed her to place and connect ideas where she felt they best belonged. Additionally, Blanca color coded the individual pieces to visually aid her organization. She used the zoom feature to go in and out to make sure she liked the connections she had constructed. Blanca dictated her story from the organizer as Andrea recorded it on

voice memos, and together they listened to it. On her own time, Andrea typed the dictation and brought it back to the tutoring session so Blanca could hear and follow along with the story. Together they made revisions with the iPad by using the app *Docs To Go*. Andrea helped Blanca search for images in order to complete her story.

To aid in reading comprehension, Andrea conducted Internet searches for supplemental materials, usually graphics to increase Blanca's understanding. For example, when reading a story that involved horses, Andrea used a variety of graphics she had found through an Internet search that focused on key ideas and vocabulary to help Blanca with comprehension. Andrea also located recorded books to use during shared reading to allow Blanca the opportunity to hear fluent reading by another individual.

Andrea identified the iPad as a beneficial tool for locating materials that were suited for Blanca's assessed level, enabling Andrea to provide instruction geared towards Blanca's specific needs. Andrea discussed the importance of these leveled materials for increasing Blanca's engagement. As she reflected on her experience throughout the semester, Andrea found herself to be a facilitator of learning, identifying her role as one of finding what her tutee needed and then guided her tutee's learning. Inadvertent deletion of apps, slow network service, and keeping up with changing technologies were challenges for her. Overall, Andrea found through her tutoring experience that she could use the iPad to help her tutee during any phase of the literacy framework. She stated, "Basically, I can use the iPad in any phase of the framework we used to help struggling students," indicating that she viewed the iPad as holding potential for future students she worked with in learning environments.

Kayla Integrates an iPad as a Regular Part of her Instruction with James

I believe that you have to use technology with your lessons. I mean, reading is reading, whether on a screen or from a book. It's not like technology is something else to do, it is just a part of what we do. (interview, December 3, 2012)

Kayla tutored James, a struggling fourth grade student. James appeared disengaged at the onset, and his assessment results indicated he was below level as compared to results of typical fourth grade student. Kayla demonstrated her eagerness to provide quality instruction through her interaction in class as she was active in classroom discussions and ready to implement an iPad with teaching and learning. She expressed her desire to utilize the iPad in a way that significantly contributed to James' learning.

For planning purposes, Kayla would seek out information through Internet searches, including lesson plan ideas, strategies for teaching, and some blogs with app and instruction ideas. She created and filed her lesson plans electronically. She found having an electronic version was most useful as she had continual access through the iPad or her iPhone. Even though she did not use digital media for record keeping, she did have GoodReader and Docs to Go to allow her to access and edit documents. In addition, she indicated that she would use a spreadsheet to track scores if she was instructing a full class, and that she would be able to develop a system to record notes from writing conferences in the future.

Even though Kayla was unsure about how to use the iPad with instruction at the onset of the course, her instruction involved using the iPad on a continual basis throughout tutoring. She marveled at how easily James took to the iPad as he quickly moved his fingers on the screen to operate the device. Based on James' assessment

results, Kayla sought out reading materials that were at his level. Some stories were dictated, so she used them for shared reading so that he could hear another person model fluent reading. Having access to an iPad made it easier for Kayla to find a variety of materials as she stated, “it’s kind of like my instruction is figuring out his level and finding apps or sites that will help him learn at those levels and I monitor his progress” (interview, December 3, 2012). Kayla engaged James with drawing on the iPad in response to literature, and then he would narrate his work as she typed his dictation. He would then read what she had composed to see if it made sense. She would talk him through the process in the same way teachers engage students during a writing conference.

Writing involved Kayla modeling how to make a graphic organizer, and James was very eager to create various types of graphic organizers (see Appendix X). After her first modeling, she had to make sure she let him create the organizer on the iPad as she felt she had a tendency to let him dictate so she could create it for him. She realized the importance of allowing tutees the opportunity to fully use digital media.

Word study involved James completing a word sort. Kayla used information gained from James’ assessment in order to input a custom word list to meet his individual needs. Additionally, Kayla would engage James in web searches when he asked questions. Although she typically typed in his questions and often selected the website for him to view, James was learning how to find answers to his questions. Time presented challenges for Kayla. She had planned to have James animate a story. She did have a small opportunity to allow him to create an alternate ending to a story they had read using Comic Creator, but this dyad was not able to complete it as intended. She had also

intended to introduce him to Skitch so that he could learn how to annotate information. She felt this skill would be valuable to him in the future. Kayla discussed some concerns with her initial experiences when she could not connect to the Internet, as well as her frustration when the iPads were reset. She also stated that when she thought of a full class and a set of iPads, she was nervous with managing downloads. Despite these issues, Kayla felt her knowledge of these apps would be useful to her in the future as she instructs students.

Keva and Raul: Listening to Himself Reading Brought Learning to Life

Keva was paired with Raul, a fourth grade male student. His assessment results indicated he was behind in comparison to the standards set forth for the typical fourth grade student, and he displayed low levels of motivation for reading and writing. When tutoring began, Raul had no interest in meeting with Keva, as displayed by his posturing and demeanor during the first two sessions. Keva was energetic, though dismayed when she discovered how disengaged Raul appeared to be during their initial meetings.

However, Keva worked to develop instruction based on his needs, and once she introduced him to the iPad, his attitude changed drastically. Keva engaging Raul with instruction at his level that involved using an iPad, as well as her caring nature, worked together to bring about a changed attitude.

He gets so enthusiastic when we use the iPad and wanted to show his mom and brag about his learning. I think that it's his excitement for learning and sharing that with the family. I think technology takes something mundane yet necessary and brings new life to it - for example the graphic organizer, it's the same thing,

but the new way he constructs it makes it exciting and engaging. It's the same thing but just looks differently. (interview, December 5, 2012)

Keva used the Internet as she found apps and other uses of the iPad for literacy instruction. She continually spoke with her classmates outside of class to learn about their experiences and find what worked for them. As with most students, she engaged Raul with electronic word sorts.

Timed readings involved Kayla's iPhone timer and recording using voice memos on the iPad as Raul read a selection for a set amount of time. Throughout the semester, Keva and Raul would listen to his recorded readings which enabled him to hear how he had progressed. Raul was especially excited as he realized he was reading more and more sentences during the same amount of time. This helped Raul understand his progression during the tutoring experience. Raul's ability to listen to himself reading brought his learning to life as conventional and digital literacies were blended together to help transform learning.

Keva found writing time to be a great opportunity to implement the iPad. She knew the web was a valuable source as they sought ideas. Raul wanted to write a story about a dragon, so Keva engaged him with a search for images of dragons. Once he found an image, Keva engaged him with descriptive writing of the image. To help Raul with his developing ideas, Keva taught him how to make a word cloud on the iPad. Raul was very interested, even though he knew what a word cloud was from his classroom learning, suggesting that the use of digital media increased his engagement and motivation to learn. Raul liked being able to manipulate his ideas on the screen and moved ideas around as he made sense of what he wanted to write. To further develop his ideas and add more

details, Raul and Keva then searched for further information regarding Dragons to include in his word cloud. Once completed, Keva printed it for Raul; he beamed with pride and joy over his creation.

Keva engaged Raul with using the iPad to summarize reading material. Keva located the readwritethink.org cube creator to help identify character, setting, and plot. The cube creator looked much like a diagram, in which each square was filled in with information. Raul was very excited to complete this digital version; the final product was printed and cut out in order to assemble it into a cube. Once completed, he told Keva he was going to go home and show his mom what he did. While Raul worked to develop the necessary skills to aid him as a reader, he had the opportunity to create something a little different from conventional paper-pencil format. Keva stated, “The cube, the graphic organizer webs, doing word sorts on the iPad. It's the same stuff as paper, it just looks different because it's on the screen” (interview, December 5, 2012).

When reading from a conventional text, Raul would bring up information he had learned during previous tutoring session. He talked about word endings, setting, and made various connections between learning that occurred with the iPad and learning through more conventional forms. Keva noted, “It was such a powerful way to see learning when he would make those connections because he would be reading something completely different and say, ‘oh that's just like our word sort with the word ending’” (interview, December 5, 2012).

Keva admitted during her interview to her trepidation with implementing the iPad when tutoring began, but she found this digital media was beneficial for increasing engagement through motivating her tutee as it brought conventional tasks to life.

Challenges involved the temperamental nature of technology (will it work, will apps be available?), not having access to her own iPad, and keeping up with the changing state of technology. Even though she felt she could have accomplished more, she found using the iPad with literacy instruction an experience that influenced her in a very positive way.

Patty Incorporates an iPad and Increases Ben's Engagement

Patty was assigned Ben, a fourth grade male struggling reader. Ben was an active student who was larger in appearance than the other fourth grade students. His assessment results indicated he struggled somewhat with reading and writing at the fourth grade level.

Patty used the Common Core application from her iPhone to look up the fourth grade standards as she created Word document lesson plans. She found a fluency template online and created her own version to keep fluency records, which involved her timing his reading by using her iPhone timer.

Patty engaged Ben with the app Painless Reading Comprehension Challenge. Ben would read a short paragraph on the iPad, and then answer a multiple choice question. He found the instant feedback to be gratifying. While Patty felt it served a purpose in helping with his comprehension, she used this app sparingly as she desired to provide more focused guided reading instruction based on his needs. She believe this app was useful to prepare him for state testing, but she desired to use his tutoring assessment results to tailor instruction to suit his needs. Ben constructed graphic organizers electronically, but he was not as interested in taking his ideas and writing on paper, which Patty attributed to the conventional nature and the limited amount of time to tutor.

He also would construct graphic organizers. He liked doing this, but then when we went to write the story, he wasn't quite as interested. I think if we could have written it on the iPad, he would have been more motivated. Or we could have done like you suggested where we did some other product besides a formal written piece, like maybe KeyNote. But we just didn't have time; otherwise, I would have tried it. (interview, December 3, 2012)

She found the app SimpleMind+ useful. This mind mapping tool allowed Ben to use the iPad to collect ideas, brainstorm, and organize his thoughts. While this app worked well for organizing writing, she found it most useful to help Ben categorize information.

Word study often involved using iCardSort to conduct word sorts and a sight words app to identify, spell, and write high-frequency words. He worked with word sounds through an app as he built words. Upon making his selection, Ben would immediately find out if he had chosen correctly. Ben sorted words based on vowel sounds, patterns, and by matching words according to word parts and meanings. During one word match, he was unsure of a word he was trying to match. Patty introduced him to Dictionary.com to find the meaning. After discussion, he was able to correctly pair the word.

During shared reading, Patty selected books based on his assessment results. She chose recorded books so that Ben could hear pronunciation and how words were used in sentences.

Patty found the iPad valuable for increasing engagement, motivation, and providing immediate feedback. She expressed concerns over the iPad being distracting as her tutee desired to engage with the iPad when instruction involved other types of

learning. She also indicated her frustrations with technology being temperamental, creating a need for a constant back up plan. She believes introducing students to technology is necessary to prepare them for the world today, and she would like to do more with technology in her classroom in the future.

Ziona Blends Literacies in Ronnie's Quest to Learn

Ziona tutored Ronnie, a fourth grade male student who had literacy skills that were above those of what is expected for a fourth grade student. She was eager and enthusiastic, demonstrating her love for teaching and students, and she eagerly embraced the implementation of iPads.

Ziona discussed how the iPad was easy to transport and worked well with small fingers of elementary children, making it user friendly. The size and weight of the iPad made it easy to manage and eliminated the need to physically carry around several books. Ziona was an active class participant throughout the semester and she stated, "I feel if I show enthusiasm for technology it will encourage and motivate my tutee" (interview, December 3, 2012).

When tutoring sessions began and Ziona started to use the iPad, she provided a mini-lesson for James on the iPad. She carefully explained its fragile nature and appropriate care. She modeled how to gently touch the screen, and identified major buttons for use, such as the home button and volume. She then allowed James the opportunity to follow her guidance and use the iPad. Additionally, she explained the operating system and how the iPad would be a regular part of instruction as a learning tool. James listened intently and seriously as he absorbed the information. Ziona also

mentioned her laptop and made a few comparisons between the laptop and iPad and explained that they would both help him learn as much as possible during tutoring.

Ziona blended conventional and new literacies throughout her sessions with hard copy books, paper, an iPad, an iPhone, and a laptop. To plan, she created her lesson plan electronically and engaged in Internet searches as she sought ideas and strategies to implement with Ronnie. She also did research on contemporary issues that she felt a fourth grade boy might like. She typed lesson plans on Word and filed electronically. She created power points to build Ronnie's background knowledge, and she displayed these through the use of a laptop.

Ziona felt power points increased motivation as they were easier for Ronnie to follow. She searched the Internet for different graphic organizers to increase Ronnie's reading comprehension and writing abilities. She felt she needed to lay out strategies and ways for him to organize his thoughts. Ziona supplemented her lessons with the online dictionary and thesaurus and United States maps. Ziona incorporated her laptop during sessions as she documented Ronnie's statements; this helped her keep track of his progress and thoughts. "I had my laptop during the session and I would document his words verbatim as far as the questions he had for me and his flow of thought" (interview, December 3, 2012).

Within the tutoring sessions, Ziona focused her instruction around the topic of hurricanes. She used *Extreme Weather*, an informational text in picture book format, as a base for learning. Coincidentally, hurricane Sandy, one of the most destructive hurricanes of the 2012 season, struck once tutoring began.

Ziona began each session with “what's going on now with hurricane Sandy” as this dyad tracked the storm. As her tutee began reading and asking questions, she validated his questions and directed him to the Internet, explaining how to conduct a search. She would ask him what he wanted to find and he would tell her. Once he had typed the information into the search bar, results would be displayed. They talked through this exploratory process together.

From the search results, she guided him through a process to analyze the results to determine which sites to use. Rather than just going with the first search result returned, they would talk together about the different results and where they came from in order to decide which source would be best. They viewed different sites, all of which had varying levels of complexity.

Ronnie looked at everything from NASA satellites to weather.com to the Farmers' Almanac, which resulted in him searching other sites. One time he said, “Wouldn't it be cool if there was a telescope that looked at the planets closely and it had a camera on the end of it to take pictures?” (observation, November 7, 2012). Ziona replied, “As a matter of fact there is a thing called the Hubble telescope” (observation, November 7, 2012). Together they went to the Hubble telescope site where they learned the fact that Mars has severe weather, which tied into their lesson.

In addition to reading from the screen, his search process improved throughout the tutoring sessions. Ronnie would state out loud to Ziona his reasoning when he chose which site to search. Additionally, Ronnie would use the Internet to locate information. For example, he did not understand the difference between the East Coast or the West Coast, so he looked at videos and maps to help him understand.

Throughout the semester, they recorded his reading so that he could listen to himself improve over time. Ziona used the iPad app voice memos to record Ronnie's reading. He really enjoyed listening to himself, and he would note his improvement over the semester. Time prevented Ziona from having Ronnie create graphs for his fluency times, but she saw possibilities for this in the future.

Ziona utilized the word sort application. She entered a custom list of words on the iPad, based on his assessment results, for use during word study. Ronnie would complete sorts, and then he would capture these with a screen shot so that this dyad could compare the different ways he sorted words.

Ronnie created graphic organizers for his writing by using an iPad; however, this was tricky because once the organizer was made, he was not able to view it if he chose to type the story on the iPad. This meant the story would have to be sent to print, to another computer for viewing, or Ronnie would have to go back and forth between the graphic organizer and writing. Ziona had him write drafts using the laptop to avoid this complication. While she had intended to use the app Toontastic to create a cartoon that demonstrated his comprehension, Ziona did not have enough time.

Ziona found the iPad was beneficial due to ease of use, the ability to engage her tutee in learning and research, and the immediacy with locating information. External factors such as slow Internet and Internet outages were challenges. She was also concerned about the potential of Ronnie damaging the iPad. Despite these challenges and fear, Ziona felt the iPad enhanced the learning experience in many ways.

These profiles share the story of each dyad and help the reader understand the results presented in the next chapter. In sum, the profiles provide evidence that the iPads

increased engagement and motivation. They could easily and quickly locate information, and tutees received immediate feedback and could easily use the iPad. However, they did experience several challenges, mostly related to technology, which are further discussed in the next chapter.

CHAPTER 5

FINDINGS: ESSENTIAL THEMES

Access to iPads allowed course instructors and teacher candidates opportunities to work with digital media. They grappled with learning how to use these devices to support instruction and learning. This community of learners collaborated as they discussed their learning. Teacher candidates developed lessons that engaged tutees with learning, utilizing a framework to support reading and writing as they blended new and conventional literacies. The structure of the tutoring sessions allowed one-on-one tutoring and teacher candidates differentiated instruction based on the needs of their individual tutees. Differentiating instruction was not a new process for this class; however, iPads afforded new opportunities for teacher candidates as they utilized their content and pedagogical knowledge to incorporate technology.

This multiple case study involved two university course instructors, 18 teacher candidates, and 18 elementary tutees. My research questions focused on teacher candidates' use of iPads with their literacy instruction of elementary tutees; tutees' representations of learning; and the ways in which course instructors' TPACK was influenced, with seven cases selected to provide insight and greater understanding of their experiences. I drew from a new literacies perspective which involved educators providing students with opportunities to learn skills necessary to successfully use ICTs (Leu et al., 2004) and understanding the potential of new possibilities through technological advances (Lankshear & Knobel, 2003, 2006). Additionally, I relied upon TPCK to inform my theoretical framework. TPCK is based on Shulman's (1986) theory of pedagogical content knowledge, but includes technology in order to create a framework to examine

technological, pedagogical, and content integration (Mishra & Koehler, 2006). It should be noted that TPACK was later renamed TPACK by Thompson and Mishra (2007-2008).

Data collection involved multiple case study methodology (Merriam, 1998; Yin, 2003, 2009) and consisted of interviews, collaborative discussions, observation and field notes, artifacts, and surveys. My data analysis drew from Bernard and Ryan (2010), Creswell (2007), and Yin (2003, 2009). I read data multiple times, engaged with open coding and axial coding, created a code book, and employed additional analytic tools as I constructed categories. I drew from the TPACK content analysis (Mishra & Koehler, 2006) to provide another layer of analysis and more robust results. With both layers of analysis, categories became more evident as constructs formed that spoke to the importance of the participants' learning experiences, tutee motivation and teacher candidates' instruction, challenges with technology, and TPACK.

This chapter is organized by four themes: honoring course instructors and teacher candidates as learners, tutee motivation and engagement, challenges with using digital media creates tensions, and broadening literacy perspectives. Each theme is presented in sections and includes subsections that support the overall theme. The first theme of honoring course instructors and teacher candidates as learners provides insight into the collaborative learning experiences of these individuals as they collaborated to learn. This is followed by the second theme of tutee motivation and engagement, which captures tutees' experiences with differentiated instruction, the immediate nature afforded by the iPad that helped guide their learning, and increased confidence, all which help explain tutees' motivation and engagement. The third theme of challenges with using technology creates tensions addresses demands associated with digital media. These challenges

caused tensions as participants encountered problems with access, demonstrated resistance, and faced barriers. The final theme is broadening literacy perspectives. Utilizing iPads with the literacy course impacted course instructors and teacher candidates as they expanded their conceptions of literacy. They integrated technological, pedagogical, and content knowledge to provide relevant instruction that utilized iPads.

Honoring Course Instructors and Teacher Candidates as Learners

Digital media provided new opportunities for study participants. Course instructors and teacher candidates engaged with digital media as they learned how to use iPads for instructional purposes, with candidates drawing on their previous knowledge of digital media. The course design provided opportunities for instructors and candidates to learn about and with technology in a literacy setting, enhancing their view of literacy education to include technologies. I carefully considered research findings from my literature review as I reconceptualized the clinic-based experience to foster a supportive and exploratory environment through immersing learners with technology to increase their awareness of the ways in which literacies and technologies work together.

Analysis of field notes, surveys, and interviews revealed the importance of learning within a context that provided opportunities to learn through collaboration as learners furthered their understanding of literacy instruction and technologies working together. The learning context respected these individuals as learners, but the re-envisioned environment went beyond respecting learners as it provided a safe place to learn, collaborate, and value what each member contributed in order to transform teaching practices, resulting in the development of the theme honoring teacher candidates as learners.

Opportunities to Learn

A supportive environment encouraged a collaborative space where candidates did not fear failure and began to take risks as they incorporated their new understanding. Learners began to see what they did made a difference with tutees and made connections to literacy content and knowledge about how to work with tutees with both literacy and technology. The same idea has also been highlighted by Teo (2009) who looked at the levels of technology acceptance by pre-service teachers. He found that the creation of a supportive and collaborative environment was necessary to make sure that learners are provided with proper encouragement, and at the same time, their confusions and concerns are being resolved.

Opportunities to explore and learn with iPads during university class time resulted in participants discussing this gently forced use as a positive experience. Teacher candidates worked to apply their learning to literacy instruction. They shared during discussions and interviews that they would not have completed such exploration and implementation of using an iPad with their instructional practices, and that the course design pushed them to think of how digital media fits with their instruction: “But it was definitely a very good experience. This really started me moving forward...without having been pushed, forced, I don’t think I would’ve even thought of using an iPad” (Keva, interview, December 5, 2012). By having the opportunity to learn about technology, Kayla came to realize the purpose it serves. “It made it more clear that we had to help kids with using technology. Otherwise, I think we get so worried about our classes that we just do things like the teacher says” (interview, December 3, 2012). Field notes and interviews demonstrated that teacher candidates felt their experience with the

course throughout the semester encouraged their own growth, and they felt supported by colleagues who shared in the same experience. Kayla stated,

I am really grateful that we could do this. I think all of our classes should have something like this because you can't expect us to teach and do stuff with the iPad like we did in tutoring if we don't have them to use. (interview, December 3, 2012)

Most teacher candidates indicated that being required to use iPads was beneficial for their own learning, and when prompted about some of the benefits during class discussion, they cited being better prepared to incorporate digital media into their instructional processes. During the end of the semester interviews, teacher candidates expressed feelings of being better prepared to teach as a result of their experience: they felt utilizing iPads gave them additional preparation with using digital media, resulting in enhancing their abilities to provide literacy instruction.

Analysis of survey data provided further information about teacher candidates' knowledge and preparation. Although 14 teacher candidates agreed or strongly agreed that their teacher education program caused them to think deeply about technology influencing their classroom teaching, two disagreed and two were neutral.

Collaboration

Studying digital media and literacy instruction allowed foundational knowledge to be constructed, and instructors and candidates then engaged with iPads and tutoring experiences to apply their learning. In order to foster such knowledge construction, collaboration time was essential for study participants, and the course design involved

time for teacher candidates' and instructors to collaborate with one another during class throughout the semester.

Sally and I began collaborating prior to the semester with a reconceptualization of the course that included a broadened definition of literacy, with conventional and new literacies blending together. We created opportunities to facilitate discussions that focused on helping learners construct meaning as they engaged in meaningful discussions involving research they had read. We wanted this collaborative time to present opportunities for teacher candidates to reflect upon the importance of utilizing digital media as they sought to integrate literacy instruction and iPads.

Teacher candidates shared during discussions and interviews that they found reading about digital media somewhat helpful, but found they only partially understood these dense research readings; they emphasized the importance of discussions to generate meaning and further enhance their learning. Andrea shared,

I think it [research readings] gave me reasons why we need to do it, so I guess it was helpful, but it was kind of hard to read. I think it was good for some people who don't want to use technology because it did make it pretty clear, well after we talked about it, as to why we need to use it. (interview, December 5, 2012)

Field notes documented teacher candidates and course instructors working collaboratively throughout the semester, exploring and coaching one another in order to learn the hows of using iPads for literacy instruction. They brought varying levels of exposure with utilizing technology, and functioned as learners in an environment where they had to be flexible with their own learning as they sought to implement iPads and apps in conjunction with literacy instruction. Candidates and instructors looked to each

other as local experts through sharing what they could do, and turning to one another as they sought assistance, asking probing questions of their classmates regarding processes, functions, apps, and websites.

Teacher candidates cited the interactive nature, when they actually explored iPads, apps, and discussed collaboratively, as most beneficial. Keva commented, “I think having the exposure to someone who can say this is what I did and how it works is awesome” (interview, December 5, 2012). Once participants engaged with iPads, they began to understand the vast array of possibilities as they applied what they were learning and relied on support from one another.

Course instructors and teacher candidates indicated through discussions and interviews that time to discuss among classmates propelled their learning as they could hear and see what was working for others, which allowed them to take risks by trying something new. “I explored more options and I really, really like having time to discuss what we were doing with the iPads among our classmates” (Andrea, interview, December 5, 2012). Keva said, “...time to talk to other people who are doing the same thing because that’s what we did in class and that when I learn the most” (interview, December 5, 2012). One instructor, Sally, commented, “...to talk about what they found is working has been very beneficial for most of them. One person will do something, share, and then the next time five students will do the same thing” (interview, November 8, 2012).

Tutee Motivation and Engagement

Teacher candidates articulated during interviews that their tutees’ were motivated and engaged when using iPads for learning. Field notes from observations revealed that tutees inquired when they would get to use iPads.

Analysis of field notes and interviews indicated tutees' needs were met through relevant instruction provided, which helped tutees feel successful. The instant feedback tutees received encouraged their learning and increased motivation. In addition, tutees' confidence with using iPads allowed them to quickly take to the device. Through identifying the significant roles of differentiated instruction, immediacy, and tutees' confidence, I identified learning occurring. I recognized the importance of motivation and engagement to tutee learning and the theme of tutee motivation and engagement formed. Each of these three parts for the theme tutee motivation and engagement is discussed in the following sections.

Differentiated Instruction

One-on-one tutoring allows instruction to match the assessed needs of tutees and is at the heart of differentiated instruction (Tomlinson, 2001). As the course involved matching instruction to assessment results, differentiation occurred and helped provide motivation for tutees as they worked at levels based on their individual needs. Incorporating iPads helped make this process more manageable than conventional methods as these devices enabled teacher candidates to integrate technology for instructional support.

Field notes, interviews, and lesson plans evidenced that utilizing iPads provided opportunities for teacher candidates to access a wide range of materials, to employ different forms of presentation (i.e., PowerPoints for tutees to view, utilizing Comic Creator), and to engage tutees in skills from across all content areas. Tutees moved beyond static writing representations on paper as they engaged with iPads to create graphic organizers for writing (see Table 4); located voice memos to record

Table 4

Teacher Candidates' Writing and Word Study Instruction with Digital Media

Stage	Instruction
Writing	<ul style="list-style-type: none"> • Modeling and engaging tutees in construction of graphic organizers • Creating non-conventional writing through apps (Comics Creator) • Locating graphics to supplement writing • Constructing graphic organizers • Drafting writing pieces
Word Study	<ul style="list-style-type: none"> • Facilitating word sorts on the iPad • Using screen shots to compare word sorts over time • Using word match apps and phonics apps • Sorting words and spelling words • Working with word patterns • Identifying and writing sight words • Using phonic skills to participate in games • Finding word meanings

Table 5

Teacher Candidates' Reading Instruction with Digital Media

Stage	Instruction
Guided Reading	<ul style="list-style-type: none"> • Creating opportunities for students to blog regarding literature • Creating opportunities for students to animate responses to literature • Creating a comic to show comprehension • Listening to stories • Drawing in response to literature • Answering comprehension questions from a story passage • Finding a wide variety of books at different levels • Summarizing with cube creator • Viewing Power Points
Fluency	<ul style="list-style-type: none"> • Using a timer • Recording tutee dictation (voice memos) • Tracking fluency • Recording and listening to self-reading
Shared Reading	<ul style="list-style-type: none"> • Locating books and stories that are dictated

electronically; utilized the timer; and created different products, such as Comic Creator, to demonstrate learning (see Table 5). Utilizing iPads not only related to content, but allowed opportunities for teacher candidates to engage tutees with skills they would use across content areas (see Table 6).

Table 6

Skills across Content Areas

Activity
<ul style="list-style-type: none"> • Engaging tutees in Internet research • Engaging tutees in analyzing reliability of sources • Teaching Internet search strategies • Categorizing information (<i>SimpleMind+</i>) • Utilizing sources such as maps, dictionary, and thesaurus • Comparing work through screen shots • Dictating/narrating work • Utilizing the Internet to seek out information

As the semester ended, teacher candidates individually asked their tutees what they learned from using an iPad, and these conversations helped broaden the perspective of teacher candidates as they saw the digital media through the eyes of their tutees.

Tutees responses indicated a variety of activities that ranged from rote procedure activities to more sophisticated activities as they identified their abilities to generate word sorts, read online, and create graphic organizers.

Table 6 summarizes tutee responses to their tutors at the end of the semester when asked, “What did you learn during tutoring” and “What did you learn with using an iPad?” During these conversations, observations indicated that tutees visibly showed enthusiasm with their facial expressions and with their tone of voice. Several tutees stated

that using iPads was fun; however, they went beyond the idea of having fun by recognizing how they were learning to be better readers and writers. Tutees triumphantly shared their enthusiasm for learning as they identified their own learning through using an iPad, indicating their motivation and engagement.

Table 7

Tutee Identification of Learning during Tutoring

Framework Component	Learning
Guided Reading/Shared Reading	<ul style="list-style-type: none"> • Reading from the iPad
Writing	<ul style="list-style-type: none"> • Creating bubble maps • Typing stories on the iPad • Organizing writing by moving around bubble map pieces
Word Study	<ul style="list-style-type: none"> • Words sorts – using the right blend & diagraph • Spelling words • Identifying long vowel sounds • Identifying and writing sight words • Identifying adjectives • Completing word sorts based on vowels and patterns • Making words with word parts • Looking up word meanings
Fluency	<ul style="list-style-type: none"> • Recording and listening to self-reading • Reading words at a faster pace

Tutees typically identified “doing” as learning, such as spelling, identifying, creating, organizing, sorting, and reading. However, a few tutees made connections to learning content, such as using blends and digraphs and why this ability was important to

learning. For example, Krista indicated that word sorts helped her by putting the right blend and digraph into the correct place, and she had to say the word. Selma's response involved making bubble maps that were more fun; however, she recognized this helped her to organize and come up with more details for her writing. Gaby reported learning how to put word parts together to make words.

Immediacy

Teacher candidates used many apps that provided immediate feedback and they discussed this as a positive factor during interviews. These candidates identified the availability of immediate feedback as being motivating for tutees and increasing their enthusiasm. Observations also revealed tutees' positive reactions. For example, one tutee was working intently to select the correct sound as he built words. Suddenly he displayed an immense smile and emitted a small shriek of joy when the results indicated he had constructed the word correctly (field notes, November 19, 2012). Teacher candidates utilized a variety of apps, including *Phonics Tic-Tac-Toe Interactive Game*, *Painless Reading Comprehension Challenge*, and *Skill Builder Spelling*, to name a few. These apps engaged tutees as they supplied answers with results displaying instantly, indicating whether or not the tutee had provided a correct answer.

Immediate feedback involved tutees being able to instantly see results, but immediacy was also important as the iPad could help tutees as they developed fluency through recording themselves reading. Timed readings were recorded using voice memos as tutees read a text for a set amount of time. Throughout the semester, tutees and teacher candidates would listen to their recorded readings and be able to hear how they had improved with pitch, juncture, stress, and overall fluency with reading. Ziona stated,

“One thing we did was record his reading. We could listen to him improve over the semester with the familiar reading and he really liked listening to himself” (interview, December 3, 2012).

Tutees were especially aware of the length of text they could read during a timed reading. A timed reading at the beginning of the semester may have been five sentences, but throughout the semester, each attempt included more sentences during the same length of time. This helped tutees understand their progression during the tutoring experience. While a conventional method would involve teacher candidates comparing the lengths of time through their written records, tutees hearing themselves brought their learning to life as conventional and new literacies were blended together to motivate tutees and provide different learning experiences.

Teacher candidates felt immediacy was a benefit of using iPads, and that they could use iPads as they differentiated instruction in their future classrooms. Field notes documented discussions where teacher candidates envisioned facilitating independent learning by choosing apps that supported learning and provided immediate feedback to help guide learning, with teacher candidates monitoring progress based on tutees’ results.

Confidence

Teacher candidates found that tutees quickly took to iPads and did not demonstrate fear while using them, which contributed to their motivation and engagement. Tutees were eager to use iPads and could easily manipulate what they were doing. Teacher candidates felt the iPad was easy to transport and worked well with small fingers of elementary children, making it user friendly. The size and weight of the iPad made it easy to manage and eliminated the need to physically carry around several books.

As Kayla stated, “I couldn’t believe how fast he can operate it – it is just like he was born to run it” (interview, December 3, 2012). Teacher candidates noticed that tutees were quick with their fingers when using the iPad and that they had an intuitive nature with the device. Patty stated:

He was able to pick it up right away versus me, still having to look things over and try to figure it out. He didn’t have that fear that I feel a lot of adults have when it comes to technology. He was very, very fluent with the technology.
(interview, December 3, 2012)

In addition, tutees’ lack of fear helped teacher candidates gain confidence with incorporating iPads into their tutoring sessions. Patty stated, “I was surprised at how confident my tutee was with using technology...I’m now a lot more comfortable integrating technology as I saw his enthusiasm with using technology and in seeing his results from using technology” (interview, December 3, 2012).

Challenges with using Technology Creates Tensions

Teacher candidates faced several challenges as they worked to utilize digital media, resulting in a variety of tensions. Even though iPads have been a part of mainstream society for the past few years, there were several teacher candidates who had not used one before, and those who were familiar with iPads had limited exposure with using them for teaching and learning purposes. Literature reviewed had indicated potential challenges, thus, those challenges that arose were not unexpected. The tension teacher candidates experienced is reasonable and can be linked to their lack of their exposure and increased consciousness, which is consistent with other research. Bates and

Poole (2003) addressed the consequences of new social and technological developments inside and outside the academic world, as well as the impact on the practice of learning and teaching in higher education, with exposure and increase in consciousness being consequences. Furthermore, it should be noted that the use of technology involves a number of risks and threats that might arise due to the lack of participants' knowledge or their inability to cope with these problems. On one hand, those providing instruction are required to make sure that their students are aware of the importance and significance of technology, and on the other hand, those providing instruction are also required to make sure that the devices provided to the students are both updated and fit for use (Kennedy et al., 2009). Data analysis of interviews, field notes, and surveys revealed several concerns. These concerns related to access, resistance, and barriers. Taken together, these pieces form the theme of challenges with using technology creates tensions.

Access

Access involved the amount of time teacher candidates had iPads available to use and abilities to engage with the affordances of these devices, ensuring the proper functioning of the device, and abilities to problem solve issues as they arise. During the clinical experience, iPads were stored inside a portable cart at the elementary school library. The school librarian managed the devices throughout the day, and each person who used an iPad placed it back into the individual slot within the storage cart. I transported the cart from the school to the clinical site for each tutoring session. Challenges arose from sharing the devices with the school site as teacher candidates were limited by the amount of time they could use these devices, as well as multiple-user risks.

In addition, teacher candidates evidenced tensions involving potential damage to iPads, connectivity, and their ability to troubleshoot problems.

Self-assessment results from the teacher candidate survey demonstrated that while teacher candidates claim they easily learn and keep up with technologies, few frequently explore different ways to use new technologies. “It would have been helpful if I had my own [iPad] to hold onto during the whole semester with access to it all the time because then I would do a lot more with it” (Keva, interview, December 5, 2012).

Teacher candidates shared concerns with leaving iPads at the tutoring site as they felt limited with opportunities to further explore using an iPad for educational purposes. Each candidate interviewed stated that having the iPad continuously available would have allowed them many more opportunities to search for apps, to learn on their own, and to expand use beyond learning and instruction as they sought out ways to use it for record keeping and lesson planning. Teacher candidates cited the lack of time available for tutoring sessions, i.e., two sessions cancelled, as another challenge. Interviews indicated that teacher candidates felt they could have gone further with allowing the authentic creation of products as they discussed how they would have liked to have allowed choices for tutees to demonstrate their learning, such as through creating comics, developing animation, and using video and audio recordings. Kayla did not have as much time as she would have liked and stated,

I wanted to animate a story, but we didn’t have enough time, and I wanted to use Skitch to annotate information because I think that would have really helped him, and I think when he gets to middle school it is something he could use. (interview, December 3, 2012)

With multiple people having access to iPads, there were risks of other users altering settings or erasing apps. Unfortunately, teacher candidates met the sixth session with dismay as they turned on their iPads and found many apps deleted, as well as screen shots and recordings. When the librarian went to download a new app, she had inadvertently reset the iPads back to their original factory preset, and stored data was lost. During discussions, teacher candidates expressed frustration with the technology, but also came to realize the importance of having a backup plan. Although a hindrance, the experience of deleted apps helped teacher candidates to be flexible with their instruction. During discussions, teacher candidates deemed continual access for classroom students was necessary. They felt assigning iPads would help avoid problems with storing work and apps being erased, as well as provide students the opportunity be responsible for their own iPad.

Teacher candidates discussed slow Internet, Internet outages, and devices being charged. They related potential concerns as they drew from personal experiences to relate negative experiences with Internet outages and uncharged devices as they discussed how such situations rendered the iPad useless. Teacher candidates' first experience with using the iPad with this course involved connectivity issues and slow Internet within the school site, and while this caused some initial frustrations, this challenge was addressed through changing the tutoring site from the elementary school to the professional development building.

Teacher candidates discussed during individual interviews their desire for a technology person who was proficient with using iPads to problem solve technological issues on the spot as they were working with literacy instruction. Self-assessment results

from the teacher candidate survey revealed that most claim to have the technical skills they need to use technologies; yet during interviews they identified their want for a resident expert to troubleshoot problems. Concerns involved not only the iPad itself, but wireless networks, downloads, updates, and connectivity. They envisioned an individual who could handle technical aspects, such as network, downloads, and trouble-shooting when problems arose.

Andrea stated during her interview, “like a computer person to help us when the iPads don’t work or when the network is down, or when one is dead” (December 5, 2012). Kayla commented, “I think you have to have someone who knows what is going on. Like you had the iPads and could help us connect and stuff like that, so there has to be a technology person” (interview, December 3, 2012). They indicated that a classroom teacher who was also assigned to work with technology would not suffice; rather, a technology person with a deep understanding who would work with teachers to provide support so that their future students could continually be engaged with learning through using devices such as iPads. “I think that it’s ridiculous to think downsizing technical support is ok. To ask the librarian or the special ed teacher to also figure out why the Internet is not working is ridiculous” (Ziona, interview, December 3, 2012).

Resistance

Resistance involves teacher candidates who were unwilling to engage with iPads during tutoring sessions, as well as a more hidden form of resistance where they felt limited with their abilities or did not connect their iPad learning experience to other experiences. In the second instance, Pignatelli (2005) identifies resistance as a “a recognized lack, and absence of what is not yet, of what could be” (p. 55). Field notes,

discussions, and interviews substantiate the majority of teacher candidates utilizing iPads during tutoring sessions, but a few teacher candidates were resistant and chose not to engage with iPads.

One teacher candidate stated, “This doesn’t affect my grade and I don’t have time, so I’m not going to use it” (field notes, November 19, 2011). Her words and actions demonstrate that as a learner she felt pressured to complete the course, and iPads were an additional component that she did not find value with incorporating. This may have been due to the fact that iPad implementation did not affect her grade or a myriad of other tasks associated with her teacher preparation program and her personal life.

Teacher candidates who did engage with iPads for literacy development evidenced tutee engagement and motivation. However, for others, a challenge remained as some struggled to incorporate iPads during tutoring. In one instance, a teacher candidate relied on instructional methods where she remained the authority figure and provided information to her tutee, serving more as a “master of information” rather than a facilitator of learning, as she stated, “First we will do our work, and then if there is time, you can play on the iPad” (field notes, November 7, 2012). Observation revealed that she engaged her tutee with reading a conventional picture book, which she followed with direct questions from the story. This process occurred orally, and it was much like a workbook exercise. Her words and actions demonstrated that she felt literacy learning should take a more conventional form, and that she thought of the iPad as a toy rather than a device to support learning in different ways. A second student was attempting to engage with an iPad for learning purposes, but she struggled with implementing the iPad in a meaningful manner and struggled with various aspects of the device. She would

continually have an iPad available, but most often she was working to figure out how to use this device. One time she used the note app to type her tutee's responses to her oral questions. Another time she attempted to input a custom word list for a word sort, but was unable to do so. Additionally, she tried to do an Internet search but did not know how to connect to the Internet.

Field notes documented discussions in which teacher candidates thought of how they could design multimodal products for students in order to assess tutee comprehension (i.e., video production, comics with narration); however, on a day to day basis they were struggling with finding ways to check comprehension that went beyond multiple-choice reading passages or drawing in response to literature. During one discussion Jenni stated, "I find it a challenge to incorporate the iPad for the actual guided reading lesson. To me, it is easier to use the actual book for the lesson" (field notes, October 31, 2012). Several teacher candidates indicated agreement as they nodded their heads. Teacher candidates interviewed indicated that the limited time frame was a factor that prevented them from doing more with iPads to aid in developing tutees' comprehension.

Barriers

Collaboration time throughout the semester resulted in discussions focused on using digital media; however, most talk revolved around tutoring and tutees, with few distinctions made regarding concurrent practicum experiences, and challenges were identified as teacher candidates made connections. Andrea shared potential ways to use iPads with her practicum students as she discussed how an iPad would be a great device for a child who had a broken arm; however, these were her thoughts and actual

implementation was dependent on the iPads the school had just purchased and when they were available for use.

Others described their schools as lacking technology so they did not see the importance of technology and did not connect tutoring to practicum experiences. Keva was assigned a cooperating school where she did not have access to iPads and the computers available were dated and shared among the school, which made her feel limited with her ability to incorporate digital media into her teaching. Despite this potential challenge, Keva displayed her determination to utilize her learning from the clinical literacy course to enhance her instructional processes outside of class. Keva stated, “I’m limited because of my school. I think where I am now is trying to figure out what I can do with the limitations imposed” (interview, December 3, 2012).

Broadening Literacy Perspectives

The experiences of course instructors and teacher candidates demonstrated broadening literacy perspectives that are well-suited for the 21st century. With the different ways teacher candidates provided instruction, they were able to identify the affordances that iPads offered.

Through analysis of field notes, interviews, lesson plans, and surveys, the integration of technology, pedagogy, and content knowledge, in various combinations, became more evident. While I had initially planned to focus on course instructors’ TPACK, analysis also revealed implications for teacher candidates who engaged with teaching and learning experiences that integrated iPads. Insights were gained related to course instructors’ TPACK. As each completed a pre- and post-survey, their results

demonstrated change over time. Instructors' statements from field notes, surveys, interviews, and informal discussion sessions revealed their experiences with integrating technology with literacy content and their pedagogy. Sally was seeking to continually learn about rigorous instructional practices with technologies, and Cassaundra's data spoke to her role as a facilitator of learning. Instructors and candidates drew on their content and pedagogy as they made decisions involving technology, blending conventional and new literacies to enhance learning experiences, demonstrating their broadened literacy perspectives. Broadening literacy perspectives is discussed within each of the following three sections: teacher candidates integration of technology, pedagogy, and content; a continual learner seeks rigorous instruction, and facilitator of learning.

Teacher Candidates Integration of Technology, Pedagogy, and Content

TPACK is the integration of teachers' technology, pedagogical and content knowledge and involves their understanding of how to use technology effectively to teach specific subject matter (Mishra & Koehler, 2006). Mean scores were obtained from survey data for each subscale. Results were calculated for the whole class ($n = 18$) and for the five focal teacher candidates. Table 8 provides a summary of mean scores. Mean scores in the areas involving technology knowledge were 4.00 or lower, whereas scores in content and pedagogical knowledge were above a 4.00, indicating that teacher candidates viewed themselves as having some challenges with technology integration. Pedagogical content knowledge mean scores were above a 4.00 for both groups. Technology content knowledge for the class was below a 4.00, but the focal teacher candidates were 4.00 or higher. Technological pedagogical knowledge mean

scores were above a 4.00 for the focal teacher candidates, but the class was a 4.00. The class TPACK was less than 4.00, while the focal teacher candidates was above a 4.00. Each domain involving technology resulted with mean scores for the class averaging 4.00 or less, whereas the scores for the class in domains without technology were 4.00 or higher. Mean scores indicated challenges for teacher candidates as they implemented technology, but there were fewer challenges for the five focal teacher candidates.

Table 8

Descriptive Statistics for Subscales of Class and Focal Teacher Candidates

Subscales	Class (n=18)		Focal (n=5)	
	Mean	SD	Mean	SD
Technology Knowledge	3.73	.28	3.93	.24
Content Knowledge	4.33	.05	4.40	.16
Pedagogical Knowledge	4.24	.06	4.60	.20
Pedagogical Content Knowledge	4.24	.03	4.52	.11
Technological Content Knowledge	3.67	.06	4.08	.11
Technological Pedagogical Knowledge	4.00	.16	4.60	.20
Technology, Pedagogy, and Content Knowledge	3.71	.06	4.20	.17

Survey results indicated most teacher candidates agreeing they have strong to very strong content knowledge about literacy including reading, writing, and word study (4.33). Most teacher candidates identified having strong to very strong pedagogical knowledge (4.24) in order to assess students, adapt teaching approaches to meet student needs, and manage students. This was consistent with their ratings of strong to very strong agreement (4.24) for pedagogical content knowledge (PCK) related to selecting effective teaching approaches for working with struggling readers throughout guided

reading, writing, word study, fluency, and shared reading. These results are positive in conjunction with the aims of the course, regardless of technology. However, providing iPad access created opportunities to affect their technology knowledge, as well as the integration of pedagogy and content knowledge areas.

Technological content knowledge (TCK) survey results (3.67) indicated slightly more than one-half of teacher candidates agreeing or strongly agreeing that they were aware of technologies to support reading, word study, shared reading, and writing. The majority of teacher candidates agreed to having strong technological pedagogical knowledge (TPK) (4.0) related to choosing technologies to enhance their teaching as they combined content and technologies with their instructional approaches.

Survey results regarding TPACK (3.71) indicated approximately one-half of teacher candidates agreeing they can teach lessons that appropriately combine content, technologies and teaching approaches, with approximately one-fourth of teacher candidates strongly agreeing, one-fourth selecting neutral and one student disagreeing. The following examples illustrate how teacher candidates used their content and pedagogical knowledge as they went about incorporating technology with their instruction.

While teacher candidates engaged with iPads to locate texts that were appropriate for their tutees, field notes documented that they often found many comprehension apps were skill and drill type activities. As the beginning of the course engaged teacher candidates with exploring and evaluating apps for usefulness, candidates' reactions to such apps demonstrated their ability to take a critical stance with app selection. For example, one app provided a passage for a child to read followed with multiple choice

questions, but teacher candidates felt the app was disengaging for students because it replicated the state assessment. While many teacher candidates frowned upon utilizing such an app for an instructional practice, some did see the benefit of having opportunities for tutees to practice test preparation skills, coupled with immediate feedback.

As teacher candidates differentiated content, the most relied upon method involved teacher candidates locating level-appropriate materials that they matched to their tutees' assessment results. Kayla articulated, "He did a word match that was leveled according to his level from the Word Inventory...my instruction is figuring out his level and finding apps or sites that will help him learn at those levels" (interview, December 3, 2012). Field notes and lesson plans documented tutees reading at their individual tutee levels, as determined by teacher candidates' assessment results, with teacher candidates utilizing websites and apps where such materials were available.

Field notes revealed teacher candidates utilizing some apps that were based on leveling associated with ability levels determined by the publisher. This aspect of leveling systems was not a focus of this study. Although levels on apps did not have a direct correlation with levels that resulted from the assessments administered by teacher candidates at the beginning of the tutoring experience, teacher candidates did not indicate difficulties with choosing levels, which may indicate their ability to use assessment data and make professional judgments across different sources. Candidates would have tutees work within a level deemed appropriate through their own judgment, drawing on tutees' assessment results, and then engage tutees with the app. The use of apps with leveling seemed to be connected to tutees' motivation as tutees worked to surpass their initial level. Throughout the process of tutees engaging with leveled apps, teacher candidates

observed and, as needed, helped verbally guide their tutee's process. Field notes also evidenced a few teacher candidates who would allow students to select their own starting levels within apps, monitoring closely to make sure tutees made appropriate choices. Teacher candidates found their role was one where they tracked progress in order to continue facilitate learning.

Ziona used the iPad to access materials with differing content complexity for her tutee. An Internet search was conducted to help answer a question her tutee posed while reading an informational text. After analyzing the search results, this dyad determined which sites to visit. Field notes documented their visits to three different sites containing varying levels of complexity. In addition to differing content complexity, the tutee was motivated as he sought an answer to his question and engaged throughout the search process and through exploring each site.

Teacher candidates engaged tutees both auditorially and visually. For example, observation revealed tutees recording themselves reading and then playing the recording back so they could hear themselves read. In addition, lesson plans and interviews demonstrated teacher candidates utilizing iPads to locate images in order to help tutees understand vocabulary and concepts. A specific example comes from field notes collected during observation, and involves a non-focal dyad. The tutee did not understand what a somersault was. Although the reading explained the process to complete the forward roll, the tutee was perplexed. As this concept was essential to the reading, her assigned teacher candidate did a quick Google search and played a video that displayed the forward roll. The tutee glowed and replied, "Oh, of course I know what that is" (field

notes, October 31, 2012). This visual element clearly enhanced the tutee's understanding and set the stage for her success with the rest of the task at hand.

After viewing the video, the teacher candidate guided the tutee back to the reading and had her reread the sentences that explained the process of a forward roll. She segmented pieces of information and related those chunks to the visual in order to help the tutee construct meaning from the words. This process took some extra time; however, the process helped the tutee understand the concept and provides an example of process differentiation. In this example, the use of iPads facilitated a blending of conventional and new literacies which allowed a student to develop a solid understanding and more easily master the content than if iPads had not been available.

The capabilities of iPads were accessed by teacher candidates as they sought to engage tutees during writing, such as having tutees create organizers to brainstorm and organize their thoughts for writing. Field notes documented tutees taking advantage of colors and fonts as they worked to categorize their ideas. As opposed to writing on paper which is static, tutees easily moved portions of their bubble maps or graphic organizers as their thoughts developed, recognizing the affordance of the non-static nature of electronics.

In sum, teacher candidates were doing as all quality teachers do, providing instructional opportunities to learn. While learning was taking place, it just "looked different" from what one might expect in a traditional classroom. Conventional and new literacies came together to promote learning, and the experiences of teacher candidates indicated their broadening view of literacy as they worked to understand how to use

digital media with instruction. Teacher candidates drew from their technological, pedagogical, and content knowledge as they integrated iPads into their instruction.

A Continual Learner Seeks Rigorous Instruction

As an experienced literacy instructor, Sally continually relied on her content and pedagogical knowledge as she considered the ways in which technology was integrated. She realized her technology knowledge was increasing as she sought to learn what teacher candidates were doing to provide rigorous learning opportunities for tutees, and her technology knowledge increased as she learned about apps. In addition, her view of iPads went from a game-like device to an instructional tool.

When the semester began, Sally found teacher candidates had minimal exposure to iPads and she stated, “I just don’t think they understand what to do with it and how to use it” (interview, November 8, 2012), which she identified as a challenge for teacher candidates implementing technology. She discussed her perceived notion involving their lack of understanding, but also revealed her feelings of being on a learning curve. Even though she did not view technology, pedagogy, and content as three separate areas, she felt they could come together; however, she felt she did not have enough knowledge regarding various technologies.

I think I'm on a learning curve so I don't know if I can even answer that yet. It's a learning process for me. I don't see them [TPACK] as three things and I think they can come together and I think we need to work with them [teacher candidates] or, to know more about the programs they're using, and I know that's

something I need to do. I need to know more so that I can intelligently say when you're teaching this, go here. (interview, November 8, 2012)

By mid-semester, Sally felt her content and pedagogy knowledge came together, but technology was an outlier. “Technology has been, and I think it will be, a continual learning curve. I keep looking to see what applications are available in terms of rigor for the kids” (discussion, December 3, 2012).

Comparison of survey results indicated a change with Sally’s TK involving her keeping up with important new technologies related to the teaching profession: pre-survey results indicated Sally selecting neutral, but post-survey results indicated Sally disagreeing. Discussions and interviews documented her finding the large amount of technologies available, the number of teacher candidates in class, and the time she had available to assist teacher candidates as creating difficulties with staying up-to-date. She stated her frustration with keeping up with teacher candidates and technologies they were employing. “I really haven’t stepped in but that’s a challenge because I don’t really know where they all are because there are so many. We sort of stand behind them and look to see what they’re doing” (interview, November 8, 2012). She further stated, “Knowing what they’re all doing. There’s so much that it’s hard to keep up” (interview, November 8, 2012). She displayed feelings related to being challenged in keeping up with new technologies throughout the semester. “Any technology, if you’re not aware of what’s out there, is challenging and if you don’t know what’s out there for kids or how to use it yourself, it takes time to figure it out” (discussion, December 3, 2012).

One of Sally’s concerns with implementing iPads involved perceived notions that iPads provided games rather than rigorous learning opportunities. Not only was she

concerned about teacher candidates' viewing iPads in such a manner, but she admitted to her own belief that iPads were more games than education. However, throughout the semester, her view expanded. "I think they [teacher candidates] are getting an appreciation of technology and how engaging it is for kids as well as how useful it can be. It can be rigorous; it doesn't always have to be a game" (interview, November 8, 2012). She valued rigorous learning activities, and she found the iPad allowed rigorous learning to occur.

I think as far as the iPads go, it is learning that there are apps out there that have rigor to them and they're motivating for kids. I knew there were games out there, but I didn't know about the game-like educational things on an iPad. (Sally, discussion, December 3, 2012)

When asked about her experiences with digital media and the impact on her teaching the literacy course, Sally's reply indicated her evaluation of technology as she related it to content and pedagogy,

The use of apps for working with kids and thinking about apps for students that would be rigorous and not game like – I guess I just keep thinking about how the iPad was used and if it was effective or not. (interview, December 12, 2012)

Sally felt that implementing digital media into the literacy course benefited teacher candidates as they were

beginning to understand how important it is to 21st century education. By forcing them to use iPads, or 'encouraging' them to use them, they are one step further in understanding what they can do to provide rigorous types of digital work for students. (interview, December 12, 2012)

As the semester drew to a close, Sally was still seeking to understand what teacher candidates were doing as they implemented iPads with their instruction.

For me, really knowing what they were doing – what apps they were using and how they were using them. I really had to peek over their shoulders and I'm not sure I got a full perspective of what they were doing. I had to rely on their lesson plans and looking over their shoulders. (Sally, interview, December 12, 2012)

Throughout the semester experience, Sally demonstrated the importance of being a continuous learner through her willingness to implement iPads into her literacy course and her seeking to keep up with teacher candidates' experiences. Sally wanted to be informed as she learned what technologies were available to promote student learning. Her continual learning involved combining her developing technological knowledge with her content and pedagogical knowledge. While comparison of survey results indicated Sally remaining neutral in response to statements regarding her TPACK, data from her interviews demonstrated her quest to continually learn and her desire for teacher candidates to provide rigorous learning opportunities for tutees.

Facilitator of Learning

Cassandra was new to teaching the clinical experience, and she worked to learn multiple aspects of the course. Her discussions indicated that she had some personal experience with an iPad, but integrating an iPad into her instructional practices was a new endeavor. Throughout her experience, Cassandra continually identified her role as one of guiding and assisting teacher candidates as she learned alongside them. Cassandra functioning as a facilitator is consistent with current research findings related to the

increase of ICTs changing the teacher's role from dispenser of knowledge to facilitator (Hartnell-Young, 2003; Ravitz, Becker & Wong, 2000).

While Cassaundra felt she did not have a lot of knowledge regarding different apps available, she found that she was able to help guide teacher candidates to appropriate apps. "I did have a little bit of knowledge of the iPad, so I could use that with the preservice teachers, but I wasn't an expert with the different apps available. I could help them locate and find apps" (interview, December 10, 2012).

Survey results indicated a change in Cassaundra's technology knowledge (TK). Pre-survey results indicated her agreeing that she frequently explored new ways to use technologies related to instruction, but by semester end results indicated she neither agreed nor disagreed. During an interview she stated,

The challenge is that they're [teacher candidates] afraid, not afraid but intimidated to use the technology because they don't know where to go. They don't know the apps to use, they don't know if it's for their grade level, and I can say the same thing because when I looked I didn't know. Some are appropriate and some are not. (interview, November 9, 2012)

Cassaundra admitted to realizing that there was far more to know about digital technologies and literacy than she had imagined as she stated, "There is just so much out there about technology and literacy that I didn't realize" (interview, December 10, 2012), which is a plausible explanation for her survey rating change.

Cassaundra felt that content could be addressed not only through instruction, but through technology. She discussed her belief that pedagogy was based on the individual instructor, and that her pedagogy was expanding through her experience with the course.

During an interview, she discussed feeling confident as she taught the class for the first time because she had learned about digital media and technologies at the onset. She worked to connect technologies with pedagogy and content. Surveys revealed several changes related to TPK; results indicated movement from agreeing to strongly agreeing with her response to statements involving her thinking critically about how to use technology with instruction, adapting technologies to different teaching activities, selecting technologies to use in that classroom, providing leadership, and choosing technologies that enhance lesson content.

An interview helped explain Cassandra strongly agreeing to these areas within TPK as she related using iPads to other courses she instructs. “I think with the other course I teach, I can use my iPad to access WebCampus right away. I think the apps you recommended, Docs to Go and Good Reader, will be important to use in the future” (interview, December 10, 2012). Cassandra drew from her technology knowledge as she thought of her teaching practices. She displayed an eagerness to learn throughout the semester, and this continued as she envisioned future classes. She explored the notion of mimicking silent sustained reading, but through a technology perspective:

If there is a way you can tie them [iPads] into your daily lesson plan even if it is only for 15 minutes, kind of like when you say just read for 15 minutes a day anything you want, if they just had that time to explore the iPad. (discussion, November 27, 2012)

She discussed the importance of this opportunity to allow students time to think of how to use an iPad for learning, rather than just doing.

Cassandra was open to experiences with technology as she worked to learn alongside the teacher candidates. “I’m learning with them and would I consider myself an expert? No, but I try to keep up” (interview, November 9, 2012). Cassandra felt that more technology should be infused into naturally occurring coursework in order to broaden students’ learning and to help students feel comfortable with technology. She discussed that a sense of security was important and needs to be provided for teacher candidates throughout all coursework, much as it was during her experience in co-teaching the clinic-based course.

The impact on Cassandra’s TPACK was not only evident through informal discussion sessions and interviews as previously discussed, but through her survey responses related to TPACK. At the onset, results indicated Cassandra neither agreeing nor disagreeing with statements involving her teaching lessons that combined pedagogy and technology with guided reading, writing, and shared reading. On her post-survey, results indicated Cassandra agreeing to those same statements. The course experience demonstrated Cassandra drawing upon her technological, pedagogical, and content knowledge as she sought to guide teacher candidates with their learning. Her TPACK and facilitation of learning speaks to her broadening literacy perspective.

CHAPTER 6

SUMMARY, DISCUSSION, AND IMPLICATIONS

In this study, I sought to report from the field how teacher candidates and elementary students used digital media in a literacy clinic setting through candidates' instruction and tutees' learning. In addition, I looked at the impact on course instructors' TPACK throughout the semester. My research highlighted 18 teacher candidate participants and two course instructors as they learned about and with digital media, with most of these teacher candidates incorporating iPads while tutoring fourth grade students in literacy. Framed through a new literacies perspective and drawing from TPACK, my research involved three questions that focused on: teacher candidates' teaching in a clinical setting that utilizes digital media, tutees' representation of their learning with digital media, and the impact of course instructors' TPACK. I relied on multiple case study methodology (Merriam, 1998; Yin, 2003, 2009) to design the study, and data collection involved transcripts from interviews with five teacher candidates and two course instructors, informal discussion sessions, observation and field notes, artifacts, and surveys. My data analysis was guided by the work of Bernard and Ryan (2010), Creswell (2007), and Yin (2003, 2009). Findings were shared through the context of the learning experiences and case profiles of focal dyads, and four themes formed: honoring teacher candidates as learners, tutee motivation and engagement, challenges with using technology creates tensions, and broadening literacy perspectives.

Discussion of Findings

This study involved reconceptualizing the literacy clinic-based course to provide an environment where participants experienced opportunities: to develop their understanding of digital media and literacy instruction; to explore utilizing iPads with their literacy instruction; and to develop deeper knowledge about working with children in a setting that involved literacies, technologies, and elementary students. My vision for this study and the course involved creating a space where teacher candidates would utilize digital media to enhance their teaching as they developed skills and dispositions in themselves and their tutees essential for society. The literacy clinic environment allowed the opportunity for a community of learners to grow together professionally. I sought to take the familiar content, literacy instruction, and make it unfamiliar by introducing iPads, but in a manner that promoted a collaborative community of learners to build teacher candidates' instructional practices while allowing each member to feel supported and actively involving the course instructors as learners. A supportive environment to enhance instruction was based on research by Inan, Lowther, Ross, and Strahl (2010) who identified instructional strategies used by teachers to support the integration of technology. One of their conclusions stated, "Therefore, introducing technology gradually and promoting teachers' current practices with continuous support will more effectively enhance teacher use of technology as a learning tool overtime" (p. 544).

The discussion section includes three sections: developing a supportive environment: the necessity of dialogue; teacher candidates' implementation of multimodal sources engaged eager tutees with learning; and the intertwining of technology, pedagogy, and content knowledge in the space of the literacy clinic.

Developing a Supportive Environment: The Necessity of Dialogue

The clinic-based course allowed an opportunity to enhance literacy practices in an environment that was multimodal, linked assessment and instruction, and encouraged dialogic collaboration. In addition, this experience enhanced course instructors' and teacher candidates' teaching practices as their literacy conceptions broadened.

Throughout the study, course instructors and teacher candidates learned about literacies, technologies, and pedagogy through a supportive environment that encouraged growth. Learners were treated with respect and provided opportunities to grow professionally as a community of learners. These participants engaged in dialogue with one another about what they learned, successes experienced, and challenges faced. Participants developed an understanding of the experiences of their colleagues, which helped foster further growth, as they gained insight into specific experiences, particularly as literacies and technologies worked together. Participants engaged in problem solving as they relied on one another for information and support as they learned with the iPad.

Throughout the semester, dialogue within the environment enhanced teacher candidates' instruction as they utilized digital media in a variety of ways to help tutees develop their knowledge and skills related to reading and writing. Without having had these opportunities to work through issues that arose, there would have likely been more resistance due to the lack of collaborative opportunities to learn. Previous research has shown that examining teachers' attitudes reveals possible successes and barriers to utilizing technology with literacy, but mindsets can be expanded through understanding potential barriers in order to address potential challenges.

This section discussing a supportive environment relates to the first research question involving teacher candidates' instruction. Their learning experiences influenced their instruction.

Teacher candidates' experiences relate to a new literacies perspective in various ways: they experience a new way of doing things (Lankshear & Knobel, 2006); they are preparing to participate with existing and emergent forms of literacy through a flexible, collaborative process that involves the changing natures of ICTs (Kellner, 2000; Lankshear & Knobel, 2006; Leu et al., 2004), and they began to see that literacy changes over time (Leu, 2000). The theoretical framework helped inform the design of the course as course instructors and teacher candidates engaged with opportunities to construct knowledge relating to new literacies and digital media, literacy instruction involving new and conventional forms, and specific possibilities with iPads for instructional purposes. Teacher candidates prepared for literacy tutoring that would involve iPads. The opportunity to dialogue allowed course instructors and teacher candidates to connect their understanding of conventional literacies with digital media, and instructors continually engaged teacher candidates in reflective practices.

The findings of this study are consistent with those of previous research: learners who were supported with their technology learning were more likely to integrate technology into their instruction (Bailey, 2007; McVee, 2008); the repeated use of technology increases confidence with using technology (Bingimlas, 2009); collaborative learning processes in conducive environments allowed learners to move towards varying approaches with digital literacies (Bailey, 2007; Barone & Wright, 2008; Culen & Gasparini, 2012); and the literacy clinic can transform teaching practices as teacher

candidates move away from paper-pencil-based tasks to include multimodal elements, link assessment and instruction, task risks as they worked to implement technology, and collaborate (Cervetti et al., 2010; Dunston, 2007; Tuten & Jensen, 2008).

Teacher Candidates' Implementation of Multimodal Sources Engaged Eager Tutees with Learning

This study exposed participants to possibilities involving literacy and technology and some of the affordances offered through technology: this experience helped prepare teacher candidates for the classroom in order to allow them an understanding of the ways in which technology becomes a part of their regular instruction, and by providing opportunities for tutees to engage with learning in different ways.

Motivated tutees experienced a broad range of learning experiences as they engaged with multimodal sources that met their instructional needs. Their experiences involved building conventional literacies and developing skills to employ with reading and writing. This was expected as Parry (2012) identifies formal literacy involving some decontextualized skills to be applied in various situations. For example, teacher candidates helped tutees develop lexico-syntactic and graphophonic knowledge as tutees learned about vocabulary, syntax, and decoding print. Teacher candidates developed tutees' written genre knowledge through study of textual features, uses, purposes for use, and organization of genres. Teacher candidates provided instruction to help tutees learn these skills, often using iPads. However, literacy learning involves more than decontextualized skills and requires understanding literacy practice. Purcell-Gates, Perry, and Briseno (2011) developed a model of literacy practice, and this model provides benefits with helping teacher candidates develop a deeper understanding of literacy

practices. This model identifies observable literacy events as function (communicative intent) and text (genre purpose, textual features), and literacy practice as inferred spaces that contextualize and shape the event. From my study, results indicated teacher candidates engaging tutees with literacy events; however, results did not demonstrate literacy practices that consider social purpose, social activity, and contexts of literacy.

While the five teacher candidates profiled regularly implemented technology in a variety of ways despite some challenges they faced, teacher candidates indicated through their interviews that they could do more with technology. This idea is important when viewing technology implementation as a continuum: participants did engage with digital media and now can see there are far more possibilities to explore. Through deepening their understanding, teacher candidates expand beyond an autonomous model of literacy as they conceptualize literacy as “something one does, as opposed to a skill or ability one has” (Perry, 2012). This would help tutees to view literacy not as something required for formal schooling, but something they do in the real world. This discussion section provides insight for the first and second research questions involving teacher candidates’ instruction and tutees’ learning experiences.

In sum, the course experiences of teacher candidates are consistent with those of Cervetti et al. (2010) and Tuten and Jensen (2008) who found that providing opportunities for teachers to learn by immersion with digital media created opportunities for technologies to become an integral part of school literacy. Teacher candidates’ blending of literacies connects with past research which cites digital media as offering a wide range of possibilities associated with literacy practices that blend new and conventional literacies (Barone & Wright, 2008; Black, 2007; Hutchison et al., 2010;

Ranker, 2008; Reid & Ostashewski, 2011; Roswell & Burke, 2009; Tan & Guo, 2007).

Implementing iPads increased motivation, which is also consistent with past research (An & Alon, 2013; Phirangee, 2012). In addition, teacher candidates' instruction and tutees' learning are consistent with past research involving teaching and learning that go beyond print domination to include instances where students engaged with multimodal literacy practices through their use of technologies (Bailey, 2007; Barone & Wright, 2008; Black, 2007; Hutchison et. al, 2010; Ranker, 2008; Reid & Ostashewski, 2011; Tan & Guo, 2007).

A Space for Rethinking Instruction and Literacy as Technology, Pedagogy, and Content Knowledge Intertwine

The fact that most teacher candidates in this study were digital natives (Presnky, 2001) was beneficial when implementing technologies as they brought technological knowledge with them. The third space environment (Moje et al., 2004) where tutoring occurred created opportunities to engage with practices that speak to a wider perspective of literacy and offered opportunities to not only enhance teaching, but to transform practices.

The semester long approach was not meant as an opportunity to master technology; rather, it provided the opportunity to develop a deeper understanding of how literacy and technologies connect, so that teacher candidates develop an understanding of how they can enhance their instructional practices while preparing students for a world that involves a vast and wide array of ICTs. Technologies are not something that individuals should consider as mastered; rather, they are viewed in a manner that involves continual change and progression (Stefanick & Beach, 2011). Implementing iPads into

this tutoring space helped to broaden the literacy perceptions of instructors and candidates.

Teacher candidates, who as students in the university course were concerned about doing what is expected and/or appropriate, were able to draw on tutees' in-school literacies. However, this third space also provided additional opportunities for teacher candidates to deepen their understanding of how they could draw on tutees' out-of-school literacies thus helping to bridge the gap between in-school and out-of-school literacies and allow tutees to move beyond notions of literacy for schooling purposes as they engage with literacy practices to understand literacy for real world purposes.

What teacher candidates learned within the context of the literacy course and through their tutoring experiences impacted their literacy instruction; however, this research does shed light on issues of compartmentalization. While there were several positive experiences cited with teacher candidates and their use of iPads with tutees, they did not seem to transfer their learning from the literacy course to their practicum setting, indicating that there is potential for future growth, tying back to the idea of the continuum.

This section informs the third research question involving TPACK, as the integration of technological, content, and pedagogical knowledge expanded course instructors' and teacher candidates' literacy conceptions. Insight is also provided for the first question related to teacher candidates' instruction.

As part of my theoretical framework, the third space environment of the literacy clinic created a space to broaden mindsets. The clinical space involved enhancing practices, knowledge, and beliefs through learning how digital media and literacies work

together. My research findings are consistent with Lankshear and Knobel (2007b) who identify the need for mindsets to evolve as the world evolves with technologies allowing new ways of doing things. The clinical experience is a unique space for rethinking instruction and including a wider perspective of what literacy entails (Cervetti et al., 2010; Dunston, 2007; Tuten & Jensen, 2008). My research is consistent with these findings in that there were opportunities to rethink instruction; however, this third space environment went beyond rethinking. There was a reconceptualization to enhance teaching practices and knowledge. Research findings have indicated teachers creating authentic learning experiences to meet learning goals through technology integration (Barone & Wright, 2008; Hutchison et al., 2012; Reid and Ostashewski, 2011). My findings are similar in that teacher candidates engaged tutees in authentic learning based on assessment results; however, I did not measure goal attainment.

Implications

Utilizing iPads with literacy education has advantages in terms of the technology itself. These devices are portable, have a simple navigation system, a touch interface, are lightweight, and create opportunities for increasingly independent use and learning. The clinical experience provided a space to help transform practices, particularly with viewing learners along a continuum and helping learners develop a deeper understanding of new literacies and draw on TPACK.

Implementing technology into the existing literacy space allowed technologies to work within the established space, but it does not mean individuals will recognize and utilize the affordances of digital media. Rather, there is a possibility of such devices

becoming domesticated (Lynch & Redpath, 2012) in order to “fit” within the school setting, where iPads are used with instructional practices to support already-established dominant classroom literacy practices. Domestication brings attention to the importance of understanding digital theories and drawing on students in-school and out-of-school literacies.

Domestication of Technology for Formal Schooling Purposes

There is a commonly told story found within the broader educational technology research literature: a new gadget presents and supports a vision of transformation; then there is trouble on the road, leading to small pockets of resistance and innovation led by hero teachers. However, in the main, the new gadget is assimilated into the old, inscribed with institutionalized practices and used to perpetuate institutionalized roles, relations and identifies. (Lynch & Redpath, 2012, p. 24)

While the iPad is a potentially innovative force, transforming teaching and learning involves the roles of institutions, processes of schooling, and school structures (Lynch & Redpath, 2012). A risk of implementing iPads with instructional practices is that they will be used with already-established dominant classroom literacy practices. Teacher candidates are faced with a dominant structure which involves issues of compliance as they work to meet the demands of state testing, Common Core State Standards, district mandates, and school mandates. It is not easy for teacher candidates to continue forward with their technology integration as they face so many demands, attempting to fit digital media in with established school practices. These external forces can result in the

domestication of technology; while technology is incorporated, it serves the means and purposes of traditional elements.

Domestication theory is an approach in media studies that describes the process of technology adoption into everyday life (Haddon, 2006). The framework for domestication theory goes beyond the adoption and use to look at what ICTs mean to people, their experiences with these technologies, and the role such technologies play in their lives.

Early domestication studies focused on ICTs in the home (Haddon, 2006). Domestication studies typically involve qualitative methodology and seek to provide meaning and significance of ICTs to people, which also includes confusion and challenges associated with ICTs (Haddon, 2006). Domestication theory looks at significance of change with ICTs and time. It does not validate the existence of ICTs; rather, it provides analysis regarding “the extent to which people’s time use is altering, changes in their ability to range over space, the way they maintain social relationships, etc.” (Haddon, 2006, p. 199). Such a theory is useful in explaining the experiences of course instructors, teacher candidates, and tutees as they engaged with iPads for purposes related to literacy instruction. Ideas related to domestication go beyond adoption and provide implications in relation to what iPads mean to participants, their experiences with iPads, and the role of iPads with teaching and learning.

Capitalizing on the Affordances of Technology through Enhancing Pedagogy and Connecting Literacies

The innovative nature of technologies offers affordances to support teaching and learning. As evidenced in this study, apps were utilized for instructional purposes. Within

apps, there is an openness and closedness (Lynch & Redpath, 2012). Commercially developed apps focusing on print-based skills are relatively closed, much as the gamified literacy apps observed being utilized in this study. Apps that are relatively open provide support in “any number of learning activities that involve students’ production and communication of knowledge, positioning the learner as a producer” (Lynch & Redpath, 2012, pp. 22-23).

Closed apps position the learner as a consumer as they are directed through the content. This follows the “drill and skill” activities that students have become familiar with during their educational process, and there is an inherent risk that using technology in this same manner will result in students finding such activities boring. In contrast, openness allows the learner to be self-directed, tying to skills and abilities developed outside of the classroom and encouraging the sophisticated use of technology. When used in a classroom setting, this openness can create a sense of unfamiliarity for educators due to increased student independence. The openness can cause concern for educators, particularly in light of the demands imposed upon them by dominant forces, and result in educators restricting what can and cannot be done, which is a closed approach.

O’Mara and Laidlaw (2011) documented observations of their young children’s technology use at home to provide an understanding of the transformative possibilities home technology practices may have on teaching and learning. They found apps used at home to be more open, while school-based apps were closed, indicating technologies becoming domesticated for classroom practices.

Understanding the concept of open and closed approaches can help educators with understanding the importance of developing teacher candidates’ pedagogy. Introducing a

new technology does not mean educators are aware of the affordances or that their pedagogy changes to capitalize on the affordances offered. The introduction of digital media requires a pedagogical shift so that teaching practice can “fully exploit learning opportunities and the potentials offered through new cognitive tools” (O’Mara & Laidlaw, 2011, p. 157). There should be learning opportunities to focus on pedagogy regarding technology integration so that they educators can determine how such technology might be beneficial to student learning.

Recognizing the benefits of technologies involves recognizing affordances. Educators who understand digital theories related to teaching and learning come to understand and believe these theories are important to their instructional processes, resulting with educators putting their beliefs into practice. Through understanding digital theories, pedagogy is influenced as they determine how to utilize the affordances of digital media. Recognizing these affordances can present opportunities to engage with a wider array of literacy practices, which allows educators to further understand what students do with their out-of-school literacy practices. Connecting out-of-school literacies with in-school literacies creates opportunities to draw on different skills and abilities of learners and allows opportunities to design instruction based on learners’ individual social practices.

Past research indicates that students experience a larger array of freedoms when using digital media outside of school: uninterrupted time for exploration, discovery, and creation; following their own interests; feedback gained from digital media sources; lack of adult mediation; and sharing digital texts and activities (O’Mara & Laidlaw, 2011). What students do outside of school environments demonstrates potential and expanding

possibilities for in-school instruction, and educators need to offer environments where students use digital tools in order to help bridge the divide between in-school and out-of-school literacies. Drawing on what students do creates student-centered educational opportunities: opportunities to understand how digital media can be used in new ways, rather than trying to use digital media to corroborate existing practices. Educators come to view literacies as practices that go beyond the classroom and connect students' literacies with larger types of knowledge needed to use literacy practices effectively.

Bridging the divide between in-school and out-of-school literacies enables educators to go from viewing iPads as interactive multi-media appealing devices for enhancing current instruction to an opportunity to rethink and re-envision literacy. Educators can re-envision what is now possible through digital media forms as teaching and learning opportunities continue to expand beyond an autonomous view of literacy and allow students opportunities to develop stronger literacies, giving them an edge in an information economy as they seek positions that demand changing literacies.

Implications for Practice

Considerations Involving Clinic-Based Literacy Courses

The clinical experience course was reconceptualized to include new and conventional literacies; however, these literacies were presented in discrete segments. The first five classes focused broadly on new literacies and looked specifically at digital media, iPads, and literacy education with technology. The next several weeks focused on conventional literacies with discussion time at the end of each class providing time to allow instructors and candidates to bridge the two forms of literacy. If we want teacher

candidates to seamlessly blend new and conventional literacies, it seems logical that the format of the course should do the same and provide a more natural integration and intertwining of these forms of literacy.

Most teacher candidates are members of the Web 2.0 generation (Lankshear & Knobel, 2007a) and technology is a part of their daily lives; however, they did not make an immediate and obvious connection with using iPads for educational purposes. Field notes demonstrated teacher candidates identifying their regular use of technology as: Internet, Facebook, Instagram, BIM software, Photoshop, Adobe Illustrator, Adobe Acrobat, email, iPhone apps, Microsoft Office, Netflix, online banking, Pandora Internet radio, Wikis, blogs, Twitter, Pinterest, Picasa, ATMs, and WebCampus. While some of these tie to education (Microsoft Office, Adobe, and WebCampus), they identified more strongly with using technology for personal purposes outside of their university classes.

Implications of my research indicated three key elements for consideration as educators work to enhance the clinical-based literacy course:

1. Incorporating a technology component within the lesson plan.
2. Modeling literacy practices that utilize technology.
3. Expanding teacher candidates' conceptions of what tutees can do.

First, the lesson stages meet tutees' literacy instruction needs, but the lesson plan lacks a technology component. The stages of fluency, guided reading, writing, word study, and shared reading serve a purpose, especially as teacher candidates design lessons for tutees' individual levels. However, modification of this lesson plan to include a technology component is necessary. The Technology Integration Rubric (Harris, Grandgenett, & Hofer, 2010) would provide insight for the technology component and

enhance the existing lesson grading structure. If a technology component is included in the revised lesson plan and teacher candidates have access to iPads, then the lesson plan grade would reflect thoughtful literacy instruction with technology integration. In this instance, technology is a regular part of literacy instruction.

Course instructors engaged in collaborative discussions focused on TPACK, but this theory was not introduced to teacher candidates. While the influence on course instructors' TPACK was more evident than with teacher candidates, there are opportunities to introduce TPACK to teacher candidates. Making this theory transparent increases their understanding of how technology, pedagogy, and instruction come together in various manners so that teacher candidates readily and customarily include technology as a component of their lessons. Introducing TPACK would also provide opportunities for assessing their TPACK (Schmidt et al., 2009).

Second, modeling of technologies within the literacy stages benefits students. Requiring technology helps promote teaching and learning and helps participants broaden their literacy perspective. Past research conducted by Hutchinson et al. (2012) identifies a similar notion. Stefanick and Beach (2011) found that through continuous learning opportunities involving modeling and hands-on exploration creates a collaborative community of learners that boosts the confidence of teacher candidates. Teacher candidates need the opportunity to view literacy lessons that embrace iPads throughout the various stages of the tutoring framework to allow opportunities for teacher candidates to decide how to incorporate technology. Posting videos of actual instruction to YouTube (or something similar) would not only allow teacher candidates a model of what they can

do, but would follow a new literacies perspective as we engage with multimodal sources to enhance learning.

Third, there are opportunities to encourage teacher candidates with thinking beyond their conceptions of what tutees can do. This study evidenced multimodality as teacher candidates did use multimodal forms, such as websites with hyperlinks and various audio and visual characteristics. Teacher candidates engaged tutees with intertextuality as they used multiple sources, and this intertextuality often involved conventional books with the screen. However, this study evidenced several conventional forms in an electronic format (i.e., graphic organizers, drawing in response to literature, electronic word sorts). While these tasks may not be new, they do engage and motivate tutees, as well as serve as a way to increase teacher candidates' confidence with using iPads. Teacher candidates discussed in interviews how they would have liked to try new forms and products that demonstrate learning, but they were not able to reach this end point, most notably due to time. This study helps demonstrate that educators can continue to expand teacher candidates' conceptions of what students can do. It provides a deeper understanding of what teacher candidates and tutees can do, and we can build from this information by addressing possibilities to meet the demands that learners face in the world today and beyond.

Transferring Experiences into the Classroom Setting

This study brought to light issues of compartmentalization. Teacher candidates were capable of utilizing technology with their literacy instruction, but their lack of connections to other content areas brings to light the possibility that teacher candidates may very well experience these same transfer issues when they take their first teaching

positions and have a classroom of their own. There are opportunities for teacher preparation programs to offer experiences where teacher candidates incorporate technologies to enhance their teaching. This results in new skills and increased knowledge that teacher candidates can bring to their school setting and creates new opportunities for the students they will instruct.

Results speak to candidates integrating technology; however, this issue needs to be studied further in relation to using technology for literacy instruction so that technologies are utilized in a manner that contributes to an authentic learning experience to benefit students. While my study found tutees to be motivated and engaged, there must be careful consideration as to the context in which a device such as an iPad is used. Teacher candidates researched and learned about possible uses of iPads for instruction as they examined apps. Their research helped teacher candidates understand the possibilities associated with new technologies and exhibit strong decision making abilities that will result in significant learning.

The Transformational Power of Literacies

“You need to prepare students for the world today they are living in and not the world that you grew up in” (Patty, interview, December 3, 2012). The instructors and candidates’ literacy perspectives broadened as they incorporated iPads and blended literacy forms through the differentiated instruction they provided tutees. The clinical literacy experience also affected their TPACK as they chose technologies to enhance their teaching. As Kayla stated, “It’s not like technology is something else to do, it is just a part of what we do” (interview, December 3, 2012).

Teacher candidates learned about and with digital media in a supportive, collaborative space and then engaged tutees with learning experiences that involved iPads. Technology served the purpose of the literacy clinic: teacher candidates enhanced their learning related to literacy instruction, and they planned lessons accordingly for the individual needs of their tutees as they provided rationales for their practices, evidencing their content and pedagogical knowledge. They engaged with technologies to help support their instruction, drawing from their technological knowledge. Taking the technology and deciding when and where it was useful based on existing practices speaks to domestication.

Through expanding upon this environment that reconceptualizes literacy instruction and increases teacher candidates' TPACK, studying digital theories can help teacher candidates to recognize the affordances technologies offer as they draw from theory and go beyond adopting technologies to fit within existing structures. This includes understanding openness and closedness of apps and technologies as well as the transactional nature of literacy: technologies go beyond supporting literacy to a space where literacy influences technology and technology influences literacy. There is recognition of the new possibilities presented with digital media, which informs instructional practices.

Through instruction, teacher candidates blend new and conventional literacies as they engage tutees with digital media, recognizing the diverse ways in which literacies are practiced in various contexts, with literacy as a practice. Through understanding the various ways individuals access and use literacy practices in everyday life, teacher

candidates can build upon these insights with their formal literacy instruction that they provide in the classroom.

Within the teacher education program teacher candidates are expected to transfer their learning experience into the classroom setting. With this transfer, they avoid the autonomous model of literacy as they inform their practice through theory. The purpose for instruction goes beyond formal schooling for school purposes to instruction for real-world purposes as students internalize the skills acquired as they become informed, active, responsible, and productive participants in society.

Future Research

Based on the findings from this research, there are several possibilities for future research. There are abundant opportunities for research involving iPads at the elementary level. These involve not only TPACK, but studies that may involve the impact of iPads on literacy education, particularly with teachers using iPads to meeting learning goals. In addition, apps with levels is a topic that could be explored. Such studies would be valuable to elementary literacy education, new literacies, and TPACK.

There are possibilities for future research to focus on enhancing teacher candidates' preparation in their content areas through using technology. Candidates can engage with technology, and should experience opportunities to engage learners with such technologies. Such research would be valuable for the TPACK field.

There are potentials for future research involving teacher education faculty modeling and integrating appropriate technology practices within their courses. This research might look at teacher candidates' confidence with their abilities regarding

technology as they are better prepared to use technology in the classroom setting and examine how technology can integrate itself more naturally with teacher candidates' coursework. This research has implications for TPACK research as well.

Teacher candidates' perceptions regarding technology is an area for further research. My study did allow such an environment in order to increase course instructor and teacher candidates' comfort levels; however, comfort levels were not the focus of the study and present opportunities for further research, particularly at the elementary level.

Final Thoughts

A major challenge with a study involving iPads framed through a new literacies perspective is the dietetic nature of technology. Technologies change at an unprecedented rate, and my research provided a perspective on what teacher candidates can do when given opportunities to learn about and with technologies.

I consider the course instructors to exemplify the best of educators through their willingness to embrace a redesigned course and place themselves in the position of a learner alongside their students. While they felt comfortable with content and pedagogy, the technology element did provide a way to increase their understanding of literacy and technology, though I know there were times when there were certain levels of discomfort. However, each continued to learn and move forward despite obstacles faced. This study, which did use iPads, was not about mastering the iPad; rather, it was about understanding how to use a technological tool to enhance instruction and learning. I felt this is essential as technologies permeate our lives in a large variety of ways, and that educators need to draw upon such devices for their students' learning.

I am extremely appreciative that course instructors and teacher candidates were willing learners in relation to digital media and new literacies, and I am especially happy to see that nearly all teacher candidates did engage with iPads as they provided tutoring. But we must move forward. Educators can help broaden teacher candidates' perspectives to embrace a new literacies perspective that enables students with the skills and dispositions that they need as members of the 21st century. My role as observer as participant allowed me to be involved with the course, and there were times when course instructors and teacher candidates looked to me for insight. I am appreciative of the opportunities I had to provide mentorship to both instructors and teacher candidates involved with the course. Even though Sally has now retired, I am excited to learn about Cassaundra's continual implementation of iPads with literacy tutoring, as well as another instructor's implementation as well. I believe the old adage "The more you learn the less you know" to be very true, particularly when dealing with technology. I strove to positively impact instructors and candidates. My hope is that we, as teacher educators, will continually work to learn what teachers are doing and how we can continually study their practice to improve learning as we prepare students for the 21st century. Integrating technology is a process that evolves over time; however, if we as teacher educators do not create opportunities nor have departments that allow us to utilize such devices, how can we expect the field of education to evolve so that our teacher candidates truly prepare students for the world of today and tomorrow?

APPENDIX A

IRB APPROVAL



**Social/Behavioral IRB – Expedited Review
Approval Notice**

NOTICE TO ALL RESEARCHERS:

Please be aware that a protocol violation (e.g., failure to submit a modification for any change) of an IRB approved protocol may result in mandatory remedial education, additional audits, re-consenting subjects, researcher probation, suspension of any research protocol at issue, suspension of additional existing research protocols, invalidation of all research conducted under the research protocol at issue, and further appropriate consequences as determined by the IRB and the Institutional Officer.

DATE: July 27, 2012

TO: Dr. Marilyn McKinney, Teaching & Learning

FROM: Office of Research Integrity - Human Subjects

RE: Notification of IRB Action
Protocol Title: **Implementing Digital Media in a Literacy Clinic: A Case Study Examining Teacher Candidates' Instruction and Student Learning**
Protocol #: 1206-4178
Expiration Date: July 26, 2013

This memorandum is notification that the project referenced above has been reviewed and approved by the UNLV Social/Behavioral Institutional Review Board (IRB) as indicated in Federal regulatory statutes 45 CFR 46 and UNLV Human Research Policies and Procedures.

The protocol is approved for a period of one year and expires July 26, 2013. If the above-referenced project has not been completed by this date you must request renewal by submitting a Continuing Review Request form 30 days before the expiration date.

PLEASE NOTE:

Upon approval, the research team is responsible for conducting the research as stated in the protocol most recently reviewed and approved by the IRB, which shall include using the most recently submitted Informed Consent/Assent forms and recruitment materials. The official versions of these forms are indicated by footer which contains approval and expiration dates.

Should there be *any* change to the protocol, it will be necessary to submit a **Modification Form** through ORI - Human Subjects. No changes may be made to the existing protocol until modifications have been approved by the IRB. Modified versions of protocol materials must be used upon review and approval. Unanticipated problems, deviations to protocols, and adverse events must be reported to the ORI – HS within 10 days of occurrence.

If you have questions or require any assistance, please contact the Office of Research Integrity - Human Subjects at IRB@unlv.edu or call 895-2794.

APPENDIX B

IRB MODIFICATION APPROVAL



**Social/Behavioral IRB – Expedited Review
Modification Approved**

NOTICE TO ALL RESEARCHERS:

Please be aware that a protocol violation (e.g., failure to submit a modification for any change) of an IRB approved protocol may result in mandatory remedial education, additional audits, re-consenting subjects, researcher probation, suspension of any research protocol at issue, suspension of additional existing research protocols, invalidation of all research conducted under the research protocol at issue, and further appropriate consequences as determined by the IRB and the Institutional Officer.

DATE: October 30, 2012

TO: **Dr. Marilyn Mckinney**, Teaching & Learning

FROM: Office of Research Integrity – Human Subjects

RE: Notification of IRB Action

Protocol Title: **Implementing Digital Media in a Literacy Clinic: A Case Study
Examining Teacher Candidates' Instruction and Student Learning**

Protocol #: 1206-4178

Expiration Date: July 26, 2013

The modification of the protocol named above has been reviewed and approved.

Modifications reviewed for this action include:

- Ability to consent Instructor and Teaching Assistant as participants.
- Additional research question added to study.
- Addition of supporting documents (Instructor Consent, Weekly Discussion, TPACK Survey Instructors).
- Removal of "Replaced - Attitudes and Practices Survey" to be replaced by "TPACK Survey Teacher Candidates".

PLEASE NOTE:

Upon approval, the research team is responsible for conducting the research as stated in the protocol most recently reviewed and approved by the IRB, which shall include using the most recently submitted Informed Consent/Assent forms and recruitment materials. The official versions of these forms are indicated by footer which contains approval and expiration dates.

This IRB action will not reset your expiration date for this protocol. The current expiration date for this protocol is July 26, 2013.

Should there be *any* change to the protocol, it will be necessary to submit a **Modification Form** through ORI - Human Subjects. No changes may be made to the existing protocol until modifications have been approved by the IRB. Modified versions of protocol materials must be used upon review and approval. Unanticipated problems, deviations to protocols, and adverse events must be reported to the ORI – HS within 10 days of occurrence.

Should the use of human subjects described in this protocol continue beyond July 26, 2013, it would be necessary to submit a **Continuing Review Request Form** *30 days* before the expiration date.

If you have questions or require any assistance, please contact the Office of Research Integrity - Human Subjects at IRB@unlv.edu or call 895-2794.

APPENDIX C

FACILITY AUTHORIZATION LETTER

Office of Research Integrity – Human Subjects
University of Nevada Las Vegas
4505 Maryland Parkway Box 451047
Las Vegas, NV 89154-1047

Subject: Letter of Authorization to Conduct Research at Paradise Professional Development Elementary School.

Dear Office of Research Integrity – Human Subjects:

This letter will serve as authorization for the University of Nevada, Las Vegas (“UNLV”) researcher/research team, Dr. Marilyn McKinney and Kyle F. Kaalberg to conduct the research project entitled “Implementing Digital Media in a Literacy Clinic: A Case Study Examining Teacher Candidates’ Instruction and Student Learning” at Paradise Professional Development School on the UNLV campus in Las Vegas, Nevada.

On behalf of Paradise PDS, I acknowledge that I have reviewed the protocol presented by the researchers, as well as the associated risks to Paradise PDS. Paradise accepts the protocol and the associated risks, and authorizes the research project to proceed. The research project may be implemented at our school site upon approval from the UNLV Institutional Review Board.

If I have any concerns or require additional information, I will contact the researcher and/or the UNLV Office of Research Integrity – Human Subjects.

Sincerely,

Michelle Adams, Principal
Paradise Professional Development School

Date

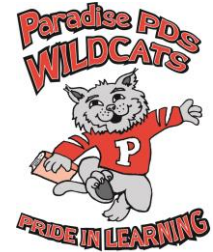
APPENDIX D

LETTER TO FAMILIES FROM SCHOOL SITE

Paradise Professional Development School

900 Cottage Grove

Las Vegas, Nevada 89119



Michelle Adams, Principal
(702)799-5660



Juleen Angelo, Assistant Principal
(702) 895-2038 (FAX)

Dear Families,

We are pleased to share some exciting news with you. As in the past, this semester Paradise Professional Development School will have UNLV students who are learning to be teachers! They will be providing one-on-one tutoring for children during the school day. This tutoring will involve using technology with reading and writing. There is no cost to you and it doesn't require any extra time. This is a great chance for your child to have extra help with their reading and writing, while helping UNLV students learn to teach. Researchers will be present during tutoring to learn how children use technology as they read and write. I encourage you to talk with your child and have them participate in this study. Please read the Informed Consent Form for further information, and if you agree to have your child participate, sign the form. This is a great opportunity for our students at Paradise.

Sincerely,

Michelle Adams, Principal
Paradise Professional Development School

APPENDIX E

PARENTAL PERMISSION



PARENT PERMISSION FORM **Department of Teaching & Learning**

TITLE OF STUDY: Implementing Digital Media in a Literacy Clinic: A Case Study
Examining Teacher Candidates' Instruction and Student Learning
INVESTIGATOR(S): Dr. Marilyn McKinney and Kyle F. Kaalberg
CONTACT/PHONE NUMBER: Dr. McKinney, 702-895-3337

Purpose of the Study

Your child is invited to participate in a research study. This study seeks to report ways that UNLV students who are learning to be teachers work with elementary students to improve their reading and writing. Specifically, this study will investigate how UNLV students and your child use and demonstrate learning with technologies (iPads and other digital tools) during tutoring time. This tutoring is offered during the school day at Paradise Professional Development School as part of a class taken by UNLV students learning to be teachers.

Participants

We are asking your child to participate in this study because your child will have important and unique information to contribute to this study because s/he will have the opportunity to use technology while also developing reading and writing skills.

Procedures

As a regular part of this tutoring program, the UNLV students learning to be teachers are supervised by an experienced UNLV instructor who observes and provides feedback throughout the tutoring sessions. If you allow your child to volunteer to participate in this study, other researchers will also observe parts of your child's learning. There is no additional time required outside of the regularly scheduled tutoring time. Participation in this study will not have an impact on your child's grades, and you do not have to allow the researchers to observe your child. Your child's participation in the research project means that you are consenting to the researchers observing your child's learning during tutoring time, which may involve the researcher taking notes or asking questions about the use of technology. Questions will involve procedures and explanations such as, "Can

you tell me what you are doing? How did you decide to do this? What are you working on today? and How did you do that?”

Benefits of Participation

While you may not see direct benefits as your child participates in this study, the results may help shape tutoring programs and classroom instruction that use technologies such as iPads. The study design allows researchers to learn from your child’s experience in order to develop a deeper understanding of digital media used in tutoring sessions.

Risks of Participation

There are risks involved in all research studies. This study may involve only minimal risks, such as your child feeling slightly uncomfortable while the researchers observe.

Cost /Compensation

This study will not require any financial cost to you in order for your child to participate. No additional time will be required outside of the regular tutoring time. Your child will not be compensated for participating.

Contact Information

If you have any questions or concerns about the study, you may contact Dr. Marilyn McKinney at **702895-3337**. For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact **the UNLV Office of Research Integrity – Human Subjects at 702-895-2794**.

Voluntary Participation

Your child’s participation in this study is voluntary. You may refuse to allow your child to participate in this study or in any part of this study. You may withdraw your child from this study at any time without prejudice to your relations with the university, tutoring program, or Paradise PDS, and withdrawal will not impact your child’s grade or further tutoring sessions. Your child’s participation in this study means that you are allowing researchers to observe your child’s learning during tutoring time, which may involve the researcher taking notes or asking questions about the use of technology. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Confidentiality

All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link your child to this study. All records will be stored in a locked facility at UNLV for at least 3 years after completion of the study, and at this time information gathered will be destroyed. Results from the study will be shared with the College of Education, as well as through national conferences, presentations, and publication.

Participant Consent:

I have read the above information and agree to my child's participation in this study. I am at least 18 years of age. A copy of this form has been given to me.

Signature of Parent

Date

Parent Name (Please Print)

Your Child's Name (Please Print)

APPENDIX F

TUTEE ASSENT



ASSENT TO PARTICIPATE IN RESEARCH

Implementing Digital Media in a Literacy Clinic: A Case Study Examining Teacher Candidates' Instruction and Student Learning

1. Our names are Kyle Kaalberg and Dr. Marilyn McKinney.
2. We are asking you to take part in a research study because we want to learn more about how children use technology to learn, and how teachers teach children with technology. You and your tutor will be using an iPad during your tutoring time as you learn about reading and writing.
3. If you agree to be in this study, Kyle will be observing you and your tutor during tutoring sessions. As you work, he will be writing down notes, and he may ask you some questions.
4. Sometimes children may feel a little bit nervous at first with Kyle observing. However, he will be observing several children and their tutors, not just you.
5. If you agree, you will help tutors and teachers learn about using technology with children when reading and writing.
6. Please talk this over with your parents before you decide whether or not to participate. We will also ask your parents to give their permission for you to take part in this study. But even if your parents say “yes” you can still decide not to do this.
7. If you don’t want to be in this study, you don’t have to participate. Remember, being in this study is up to you and no one will be upset if you don’t want to participate or even if you change your mind later and want to stop.
8. You can ask any questions that you have about the study. If you have a question later that you didn’t think of now, you can call Dr. McKinney at 895-3337 or ask me next time. If I have not answered your questions or you do not feel comfortable talking to

me about your question, you or your parent can call the UNLV Office of Research Integrity – Human Subjects at 702-895-2794 or toll free at 877-895-2794.

9. Signing your name at the bottom means that you agree to be in this study. You and your parents will be given a copy of this form after you have signed it.

Print your name

Date

Sign your name

APPENDIX G

TEACHER CANDIDATE CONSENT



INFORMED CONSENT **Department of Teaching & Learning**

TITLE OF STUDY: Implementing Digital Media in a Literacy Clinic: A Case Study Examining Teacher Candidates' Instruction and Student Learning
INVESTIGATOR(S): Dr. Marilyn McKinney and Kyle F. Kaalberg
CONTACT/PHONE NUMBER: Dr. McKinney, 702-895-3337

Purpose of the Study

This study seeks to report from the field how teacher candidates (UNLV students) and elementary students (tutees) use digital media in a clinical setting. Specifically, this study will investigate how UNLV students working as literacy tutors instruct in a clinical setting that utilizes digital media and how tutees use and represent learning with digital media.

Participants

You are being asked to participate in this study because you have important and unique information to contribute as a teacher candidate enrolled in EDRL 443, a clinic-based course on literacy assessment and instruction.

Procedures

If you volunteer to participate in this study, you may be a part of an interview that will be audio recorded and transcribed for research purposes. The only additional time required outside of the normal class meetings will be approximately 30 minutes for the interview. You will be asked to allow the researchers to use your course assignments as data sources for the study. Participation in this study will not have an impact on your course grade, and you do not have to allow the researchers access to your data. Participation in the research study means that you are consenting to the use of the data that is generated during this project.

Benefits of Participation

While you may not see direct benefits as a participant in this study, your voice and experience may help shape literacy clinics and classroom instruction involving digital media. The study design allows researchers to learn from your experience in order to

develop a deeper understanding of ways that digital media can be used in clinical settings and how it may impact teacher education programs in literacy and classroom instruction.

Risks of Participation

There are risks involved in all research studies. This study may involve only minimal risks, such as feeling slightly uncomfortable when answering interview questions.

Cost /Compensation

This study will not require any financial cost to you in order to participate. Upon signing a user's agreement, you will have access to iPads that can be checked out, and there will be iPads available throughout the semester for literacy instruction purposes. The only additional time outside of the regular course and assignments would involve individual interviews, which would last for approximately 30 minutes. You will not be compensated for your time.

Contact Information

If you have any questions or concerns about the study, you may contact Dr. Marilyn McKinney at **702895-3337**. For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact **the UNLV Office of Research Integrity – Human Subjects at 702-895-2794**.

Voluntary Participation

Participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without prejudice to your relations with the university or the course, and withdrawal will not impact your grade. Your participation in this study means that you are allowing your completed coursework and audio-recordings from your interview to be used. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Confidentiality

All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a locked facility at UNLV for at least 3 years after completion of the study, and at this time information gathered will be destroyed. Results from the study will be shared with the College of Education, as well as through national conferences, presentations, and publication.

Participant Consent:

I have read the above information and agree to participate in this study. I am at least 18 years of age. A copy of this form has been given to me.

Signature of Participant

Date

Participant Name (Please Print)

I consent to be audio-taped for the purpose of this research study.

Signature of Participant

Date

Participant Name (Please Print)

APPENDIX H

COURSE INSTRUCTOR CONSENT



INFORMED CONSENT **Department of Teaching & Learning**

TITLE OF STUDY: Implementing Digital Media in a Literacy Clinic: A Case Study
Examining Teacher Candidates' Instruction and Student Learning
INVESTIGATOR(S): Dr. Marilyn McKinney and Kyle F. Kaalberg
CONTACT/PHONE NUMBER: Dr. McKinney, 702-895-3337

Purpose of the Study

This study seeks to report from the field how teacher candidates (UNLV students) and elementary students (tutees) use digital media in a clinical setting. Specifically, this study will investigate how UNLV students working as literacy tutors instruct in a clinical setting that utilizes digital media and how tutees use and represent learning with digital media. Additionally, this study will explore how the UNLV course instructors' various forms of knowledge (related to content, pedagogy, and technology) are impacted over the semester.

Participants

You are being asked to participate in this study because you have important and unique information to contribute as a course instructor of EDRL 443, a clinic-based course on literacy assessment and instruction.

Procedures

If you volunteer to participate in this study, your class will be observed during your instructional time as the researcher conducts observations and records field notes. You will be asked to participate in a weekly discussion related to technology, pedagogy, and content, complete a pre- and post-survey, and at the end of the semester you will be asked to be a part of an interview. Weekly discussions and the interview will be audio recorded and transcribed for research purposes. The only additional time required outside of the normal class preparations and class meetings will be approximately 60 minutes for the discussion each week, 20 minutes for the pre- and postsurvey, and an additional 60 minutes for the interview at the end of the semester. The researcher will also look at written comments you provide as feedback on teacher candidates' lesson plans and assignments. Participation in this study will not have an impact on your role as a course

instructor related to the university, and you do not have to allow the researchers access to your data. Participation in the research study means that you are consenting to the use of the data that is generated during this project.

Benefits of Participation

While you may not see direct benefits as a participant in this study, your voice and experience may help shape literacy clinics and teacher education courses that work to incorporate digital media. The study design allows researchers to learn from your experience in order to develop a deeper understanding of ways that digital media can be used in clinical settings and how it may impact teacher education programs in literacy and classroom instruction.

Risks of Participation

There are risks involved in all research studies. This study may involve only minimal risks, such as feeling slightly uncomfortable when answering interview questions.

Cost /Compensation

This study will not require any financial cost to you in order to participate. Upon signing a user's agreement, you will have access to iPads that can be checked out, and there will be iPads available throughout the semester for literacy instruction purposes. The only additional time outside of the regular course would be weekly discussion and a final survey and interview, as specified above. You will not be compensated for your time.

Contact Information

If you have any questions or concerns about the study, you may contact Dr. Marilyn McKinney at **702-8953337**. For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact **the UNLV Office of Research Integrity – Human Subjects at 702-895-2794**.

Voluntary Participation

Participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without prejudice to your relations with the university or your department. Your participation in this study means that you are allowing data collected to be used, including recordings from the weekly discussions, your interview, your surveys, and the written comments you make on teacher candidates' lesson plans and assignments. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Confidentiality

All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a locked facility at UNLV for at least 3 years after completion of the study, and at this time information gathered will be destroyed. Results from the study will

be shared with the College of Education, as well as through national conferences, presentations, and publication.

Participant Consent:

I have read the above information and agree to participate in this study. I am at least 18 years of age. A copy of this form has been given to me.

Signature of Participant

Date

Participant Name (Please Print)

I consent to be audio-taped for the purpose of this research study.

Signature of Participant

Date

Participant Name (Please Print)

APPENDIX I

COURSE FIELD NOTES SAMPLE

Date: 9.5.12 (class session)

<i>Description</i>	<i>Reflection</i>
Training: Introduction to iPads and navigating	Most teacher candidates were eager and easily took to the iPads; a couple were hesitant
Met at Paradise in room 43B	The room is too small for tutoring and the firewall is a problem
used 20 iPads from Paradise and 5 from UNLV	The Paradise iPads were synched through a common system making them easier to manage when trying to explain; however, the UNLV iPads had additional apps that I used
Explored using – just getting familiar with touching, apps available	TC worked independently – those with questions would ask a neighbor
Turn on, power save, app store, organization, settings	TC were familiar with power source and the app store; several did not know how to open an app from the store to see information provided related to the app. This is important to know so they can help inform their decisions.
TC very familiar and quick to explore the apps available	Eager, but would ask each other questions, with “how” being asked a lot
Exploratory time to use apps collaboratively	They liked to show their neighbors “new” things or things they thought were cool.
reading rockets.org; pbphonics; futaba were apps that students found interesting and would like to analyze	Student generated – shows they are looking beyond just the possible ‘gimmicks’ of apps and desire apps that truly promote learning
Internet sites-blocked with CCSD firewall so we couldn’t access some sites students desired	Reality of the situation is that firewalls will be in schools; however, due to the room size and lack of space at Paradise, we may have to move to another location, which would be great as it could help

APPENDIX J

TUTORING FIELD NOTES SAMPLE

Date: Monday, October 29, 2012 (tutoring #5)

<i>Tutor</i>	<i>Description</i>	<i>Reflection</i>
RA	Nook – reads story aloud to tutee; tutee follows along TC tells student how to operate, but she keeps jumping in before he can advance the page Characters animated Records tutee reading “How does that sound?”	Tutee may not focus on words due to animation OR Animation may help with meaning construction Some issues of control (TC keeps jumping in to operate)
OF	Reading text from iPad	iPad is basically an electronic book Easier to transport as holds multiple books Can blow up screen for easier reading
EJ	Reading text from screen Desperate mode – doesn’t know how to connect to WiFi	Technology Hardware
CD	Brainstorming Modeled by TC Student is engaged and beaming TC attempts to type for student, but catches herself and lets him type	Engaged and motivated Easy manipulation – move ideas around the screen
TB	Internet search on hurricane info to supplement text	Current Events Learning in “real life”
BT	Needed instruction on how to connect to WiFi	
TL	Word sort Screen capture to see different ways sorted Tutee very motivated	Very low level student – comparison of sort allows deeper conversation to understand how words work and opportunity to explain her varying thinking
OF	Painless reading comprehension Tutee likes the manual dexterity of iPad	Same “task” as with paper, but the screen changes; More motivated with changing screen than by static paper
CD	Tic Tac Toe Phonics - answer question Tutee glows when correct	immediate feedback positive experience for tutee

APPENDIX K

TEACHER CANDIDATE LESSON PLAN SAMPLE

LESSON PLAN TEMPLATE Tutor: TL Tutee: R Grade Level: 4

WTW: Syllables and Affixes - Late

Reading Level: Instructional 6th grade **Lesson #5**

EVALUATION/REFLECTION FROM LAST

[What did you learn from last week's session? Provide details and examples. How is what you learned informing planning for this week? What did you learn about yourself as a teacher?]

Shared Reading: Utilizing the iPad, we logged onto Weather.com and searched for the most up-to-date and interesting articles on Hurricane Sandy. R was a bit overwhelmed by all the information; there were so many articles on the biggest storm in American history! I suggested he scan the images next to each link in order to decide which article to read. He jumped right in and started clicking away. Teachable moments: concepts of word (COW), Grand Conversation, authentic learning. I believe this activity is a great “hook” and allows R to settle into our session. I will make this a habit each time we sit down.

Guided Reading (*Extreme Weather* by M. Mogil):

Before - I asked R to look through the TOC and choose the next topic of weather he wanted to learn about. He chose “tornadoes”...a topic that completely lent itself to a **comparison conversation** with our last topic, hurricanes. I asked R to tell me what he knew about hurricanes. He was generic in his answer, until I opened his learning journal and **modeled** how to refer to last session's notes (open flood gates!) After locating the Tornadoes page, I asked R to take me through a quick **Picture Walk** and tell me what he sees. He did great, pointing to all kinds of small details.

During - R jumped into Tornadoes, pointing out that the word “tornadoes” has 3 words in it...”torn”, “a”, “does”...brilliant. He rested his head on his folded arms and began to read silently and smiling when he was done.

After (**Anticipation Guide** – Tweaked Strategy) – I wrote down 3 statements in R's journal, 2 correct/1 incorrect. This was a GREAT strategy, reinforcing to R how important it is to really understand what he's reading by proving or disproving his answer to whether my statements were T/F. I then asked him to tell me what the *difference* between hurricane and tornadoes? I literally heard an “Ah Haa...” Awesome experience for me as a tutor as this strategy provided me with a real-time assessment tool. Next time, I will give R 3-4 statements prior to reading, asking him to make predictions (Tompkins, 2010, p. 428-429).

Writing: Along with R's journaling, I taped a penny in his journal explaining what the saying, “A penny for your thoughts” meant. I told him this was a **free-writing** activity and that spelling/grammar was something he did not have to concern himself with. I found this to be of great value as R as writing seems to a much bigger challenge than reading. The more he writes, the easy

it will become. I definitely will continue providing him with free-writing activities each session.

- Book Sharing: He was burnt out towards the end, he worked really hard giving me 100 and therefore I decided to forego the Word Study Activities for today and moved to reading "Attack of the Shark-Headed Zombie," asking R to simply listen and watch me read. Even though this book is at a 3 reading level according to Scholastic.com, I believe it's great read for both of us as the book is considered to be at an interest level 3-5 (Fantasy, Humor Magie Theme) when we only had 5 minutes left. I will find a higher-level book for the future however.
- Word Study - Next session I will introduce Open Word Sort
- Extended Study - if we have time, a Word Study Activity called *Apple and Bushel Game* found in WTW (p. 267-268)

<u>TUTOR/TUTEE GOALS</u>	<u>Rationale & Common Core Standards</u>
<p>Reading Fluency: It's not enough for R to be able to read an article from beginning to end; he also has to be able to comprehend what he is reading.</p> <p>Strategy - Guided Reading (Anticipation Guides, Picture Walk, Grand Conversation)</p>	<p>-Students will be expected to read textbooks and other informational text as classroom instruction shifts to a greater emphasis on content-area subjects (Bear, Templeton, et. al., 2011, pg. 242).</p> <p>-At the intermediate level, background knowledge and vocabulary become critical elements in comprehension as students explore new genres and topics (Bear, Templeton, et al., 2011, pg. 243).</p> <p>CCSD_ 4.RL.3: Language</p>
<p>Writing Fluency:</p> <p>R needs to build both confidence and fluency in regards to writing.</p> <p>Strategy: Quickwrite</p>	<p>-In quickwriting, students write rapidly and without stopping as they explore an idea (Tompkins, 2010, pg.214).</p> <p>-Students become fluent writers as they practice writing, and they need opportunities for both assisted and</p>

	<p>unassisted practice (Tompkins, 2010, pg.214).</p> <p>CCSD_ 4.W.4: Production and Distribution of Writing.</p>
<p>Orthography</p> <p>R will complete an open sort unprompted in order to master the Syllable/Affixes Stage.</p> <p>Strategy: Word Study</p>	<p>We hope you have to understand from this chapter that systematic word study targeted to meet students' needs can advance students' spelling knowledge, their vocabularies, and their strategies for figuring out unknown words in reading (Bear, Templeton, et. al., 2011, pg. 255)</p> <p>The ability to spell the vast majority of words they need for writing allows them to focus more attention on the meaning they are trying to convey (Bear, Templeton, et.al., 2011, pg. 243)</p> <p>CCSS 4. 4.RFS.3 Foundation Skills</p>
<p>FLUENCY/FAMILIAR READING (5 min)</p> <p><i>Hatchet</i>, by Gary Paulsen (Newberry Honor)</p> <p>We've had several Grand Conversations now about survival, what it means, how to prepare, etc.</p> <p>Strategy: Read-Aloud</p>	<p>Rationale/Purpose(s):</p> <p>Reading Aloud to Students:</p> <p>Teacher reads aloud and provides opportunities for students to be actively involved in the experience. Strengths include: students have access to books they can't read themselves; teacher models fluent reading and reading strategies; students build background knowledge and vocabulary (Tompkins, 2010, p. 46).</p> <p>CCSS 4.RL.7 Reading Literature</p>
<p>Session #5 Lesson Plan</p> <p>Selection: <i>Extreme Weather</i> (Series) by M. Mogil</p> <p>R will chose topic to read about by reviewing TOC. This is a continuation (see sessions #3 & #4 notes).</p>	
<p><i>Before Reading Activity</i></p> <p>We will preview the section book via Picture Walk.</p> <p>We will set up our topic's Anticipation Guide</p>	<p>Rationale/Purpose:</p> <p>As readers get ready to read, they activate background knowledge, set purposes, and make plans for reading (Tompkins, 2010, pg. 42).</p>

(See Reading Strategy) questions.	
<p><i>During Reading Activity:</i> As Romella reads, I will actively listen, providing guidance with pronunciation/vocabulary strategies. I will offer prompts such as, "What do you think that word means? Does it look like any other word you've seen before?"</p>	<p>Rationale/Purpose:</p> <p>They (teachers) watch for evidence of strategy use and confirm the student's attempts to identify words and solve reading problems (Tompkins, 2010, pg. 45).</p>
<p><i>Post-Reading Activity:</i> We will review/record/discuss what we learned via the Anticipation Guide we created in his learning journal.</p>	<p>Rationale/Purpose:</p> <p>As students write (learning journal) about what they have read, they unravel their thinking and, at the same time, elaborate on and clarify their responses (Tompkins, 2010, pg. 47).</p>
<p>WRITING (15 min.): Quickwrite Entry: <i>Bada Bing</i> - A sensory description exercise. This is a great way for R to build onto a thought (cumulative-voice, expression, description).</p> <ol style="list-style-type: none"> 1. Write down something inconsequential that happened today. 2. What 3. Where 4. What I saw 5. What was I thinking 	<p>Rationale/Purpose:</p> <p>Teachers use guided reading and writing for the purposes ... such as: teach literacy strategies and skills; involve students in collaborative writing projects; teach students to use the writing process (Tompkins, 2010, pg. 23).</p>

<p>WORD STUDY (10 min.): According to WTW (2010) <i>Spelling Inventory Feature Guide</i>, R was assessed at the Late-Syllables and Affixes Level (Score 71/87)</p> <p>R will complete a open sort containing unaccented syllable sorts (<i>see Word Study Strategy</i>). R will glue the words into his notebook.</p>	<p>Rationale/Purpose: The purpose of word sorts is to help students focus on conceptual and phonological features or words and identifying recurring patterns" (Tompkins, 2010, pg. 476).</p>
<p>BOOK SHARING (5 min.): I will conduct a Read-Aloud</p>	<p>Selection: <i>Hatchet</i>, by Gary Paulsen (Newberry Honor)</p>

APPENDIX L

TPACK SURVEY COURSE INSTRUCTORS

TPACK Survey Instructors Fall 2012 Modified Version for Course Instructors**

Original Source:

Survey of Preservice Teachers' Knowledge of Teaching and Technology

Denise A. Schmidt, Evrim Baran, and Ann D. Thompson
Center for Technology in Learning and Teaching
Iowa State University

Matthew J. Koehler, Punya Mishra, and Tae Shin
Michigan State University

Note:

***the original survey has been modified by Kyle F. Kaalberg to include appropriate questions that are related to literacy and the literacy model used for tutee instruction (reading, writing, word study, fluency, shared reading); the original survey was written towards a college student audience and some questions have been edited to reflect the view of university instructors as instructors rather than as students. Dr. Schmidt approved the use of the modified survey on 9/13/2012.*

Usage Terms: Researchers are free to use the TPACK survey, provided they contact Dr. Denise Schmidt (dschmidt@iastate.edu) with a description of their intended usage (research questions, population, etc.), and the site locations for their research. The goal is to maintain a database of how the survey is being used, and keep track of any translations of the survey that exist.

Version 1.1: (updated September 1, 2009). This survey was revised to reflect research results obtained from its administration during the 2008-2009 and 2009-2010 academic years. This document provides the latest version of the survey and reports the reliability scores for each TPACK domain. (This document will be updated as the survey is further developed).

The following papers and presentations highlight the development process of this survey:

Schmidt, D. A., Baran, E., Thompson A. D., Koehler, M. J., Mishra, P. & Shin, T. (2009-10). Technological Pedagogical Content Knowledge (TPACK): The Development and Validation of an Assessment Instrument for Preservice Teachers. *Journal of Research on Technology in Education*, 42(2), 123-149.

Schmidt, D. A., Baran, E., Thompson A. D., Koehler, M. J., Mishra, P. & Shin, T. (2009). The Continuing Development, Validation and Implementation of a TPACK Assessment Instrument for Preservice Teachers. Paper submitted to the 2010 Annual Meeting of the American Educational Research Association. April 30-May 4, Denver, CO.

Schmidt, D., Baran, E., Thompson, A., Koehler, M.J., Shin, T., & Mishra, P. (2009, April). *Technological Pedagogical Content Knowledge (TPACK): The Development and Validation of an Assessment Instrument for Preservice*

Teachers. Paper presented at the 2009 Annual Meeting of the American Educational Research Association. April 13-17, San Diego, CA.

Schmidt, D., Baran, E., Thompson, A., Koehler, M.J., Mishra, P., & Shin, T. (2009, March). *Examining preservice teachers' development of technological pedagogical content knowledge in an introductory instructional technology course.* Paper presented at the 2009 International Conference of the Society for the Information and Technology & Teacher Education. March 2-6, Charleston, SC.

Shin, T., Koehler, M.J., Mishra, P. Schmidt, D., Baran, E., & Thompson, A., (2009, March). Changing technological pedagogical content knowledge (TPACK) through course experiences. Paper presented at the 2009 International Conference of the Society for the Information and Technology & Teacher Education. March 2-6, Charleston, SC.

Technology is a broad concept that can mean a lot of different things. For the purpose of this questionnaire, technology is referring to digital technology/technologies. That is, the digital tools we use such as computers, laptops, iPods, handhelds, interactive whiteboards, software programs, etc. Please answer all of the questions and if you are uncertain of or neutral about your response you may always select "Neither Agree or Disagree."

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
CK (Content Knowledge)					
1. I have sufficient knowledge about literacy.					
2. I have various ways and strategies of developing my students' understanding of reading.					
3. I have various ways and strategies of developing my students' understanding of writing.					
4. I have various ways and strategies of developing my students' understanding of word study.					

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
PK (Pedagogical Knowledge)					
5. I know how to assess student performance in a classroom.					
6. I can adapt my teaching based-upon what students currently understand or do not understand.					
7. I can adapt my teaching style to different learners.					
8. I can assess student learning in multiple ways.					
9. I can use a wide range of teaching approaches in a classroom setting.					
10. I am familiar with common student understandings and misconceptions.					
11. I know how to organize and maintain classroom management.					

TK (Technology Knowledge) <i>Rate according to your use of technology in your PERSONAL LIFE</i>					
12. I know how to solve my own technical problems.					
13. I can learn technology easily.					
14. I keep up with important new technologies.					
15. I frequently explore different ways to use new technologies.					
16. I know about a lot of different technologies.					
17. I have the technical skills I need to use technology.					
TK (Technology Knowledge) <i>Rate according to your use as a course instructor in the classroom</i>					
18. I know how to solve my own technical problems in the classroom.					
19. I can learn technology easily for instructional purposes.					
20. I keep up with important new technologies related to the teaching profession.					
21. I frequently explore new ways to use new technologies related to instruction.					
22. I know about a lot of different technologies that are applicable for instruction.					
23. I have the technical skills I need to use technology with instruction.					

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
TCK (Technological Content Knowledge) <i>Rate according to your use as an instructor working with teacher candidates</i>					
24. I know about technologies that I can use to help students comprehend text.					
25. I know about technologies that I can use to help students with their writing.					
26. I know about technologies that I can use to help students increase their word study skills.					
27. I know about technologies that I can use to help students increase fluency.					
28. I know about technologies that I can use during shared reading.					

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
TPK (Technological Pedagogical Knowledge) <i>Rate according to your use as an instructor working with teacher candidates</i>					
29. I can choose technologies that enhance the teaching approaches for a lesson.					
30. I can choose technologies that enhance students' learning for a lesson.					
31. Using digital media within the context of this course has caused me to think more deeply about how technology could influence the teaching approaches I use in my classroom.					
32. I am thinking critically about how to use technology with my instruction.					
33. I can adapt the use of the technologies that I am learning about to different teaching activities.					
34. I can select technologies to use in my classroom that enhance what I teach, how I teach and what students learn.					
35. I can use strategies that combine content, technologies and teaching approaches that I learned throughout the semester.					
36. I can provide leadership in helping others to coordinate the use of content, technologies and teaching approaches.					
37. I can choose technologies that enhance the content for a lesson.					

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
TPACK (Technology, Pedagogy and Content Knowledge)					
38. I can teach lessons that appropriately combine reading, technologies and teaching approaches.					
39. I can teach lessons that appropriately combine writing, technologies and teaching approaches.					
40. I can teach lessons that appropriately combine word study, technologies and teaching approaches.					
41. I can teach lessons that appropriately combine fluency, technologies and teaching approaches.					
42. I can teach lessons that appropriately combine shared reading, technologies and teaching approaches.					

Models of TPACK <i>Rate according to your use as an instructor working with teacher candidates.</i>					
43. I appropriately model combining content, technologies and teaching approaches in my teaching.					
44. My PreK-6 teacher candidates appropriately model combining content, technologies and teaching approaches in my teaching.					

	25% or less	26% - 50%	51% - 75%	76%-100%
Models of TPACK				
45. In general, approximately what percentage of the PreK-6 teacher candidates have provided an effective model of combining content, technologies and teaching approaches in their teaching?				

APPENDIX M

TPACK SURVEY TEACHER CANDIDATES

TPACK Survey Students Fall 2012 Modified Version for Teacher Candidates*

Survey of Preservice Teachers' Knowledge of Teaching and Technology

Denise A. Schmidt, Evrim Baran, and Ann D. Thompson
Center for Technology in Learning and Teaching
Iowa State University

Matthew J. Koehler, Punya Mishra, and Tae Shin
Michigan State University

Note:

**the original survey has been modified by Kyle F. Kaalberg to include only content knowledge questions that are related to literacy and the literacy model used for tutee instruction (reading, writing, word study, fluency, shared reading). Dr. Schmidt approved the use of the modified survey on 9/13/12.*

Usage Terms: Researchers are free to use the TPACK survey, provided they contact Dr. Denise Schmidt (dschmidt@iastate.edu) with a description of their intended usage (research questions, population, etc.), and the site locations for their research. The goal is to maintain a database of how the survey is being used, and keep track of any translations of the survey that exist.

Version 1.1: (updated September 1, 2009). This survey was revised to reflect research results obtained from its administration during the 2008-2009 and 2009-2010 academic years. This document provides the latest version of the survey and reports the reliability scores for each TPACK domain. (This document will be updated as the survey is further developed).

The following papers and presentations highlight the development process of this survey:

Schmidt, D. A., Baran, E., Thompson A. D., Koehler, M. J., Mishra, P. & Shin, T. (2009-10). Technological Pedagogical Content Knowledge (TPACK): The Development and Validation of an Assessment Instrument for Preservice Teachers. *Journal of Research on Technology in Education*, 42(2), 123-149.

Schmidt, D. A., Baran, E., Thompson A. D., Koehler, M. J., Mishra, P. & Shin, T. (2009). The Continuing Development, Validation and Implementation of a TPACK Assessment Instrument for Preservice Teachers. Paper submitted to the 2010 Annual Meeting of the American Educational Research Association. April 30-May 4, Denver, CO.

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Shin, T., Koehler, M.J., Mishra, P. Schmidt, D., Baran, E., & Thompson, A.,(2009, March). Changing technological pedagogical content knowledge (TPACK) through course experiences. Paper presented at the 2009 International Conference of the Society for the Information and Technology & Teacher Education. March 2-6, Charleston, SC.

How do I use the survey? The questions you want are most likely questions 1-46 starting under the header “TK (Technology Knowledge)”. In the papers cited above, these categories were removed so that participants were not oriented to the constructs when answering the survey questions. The items were presented in order from 1 through 46, however. The other items are more particular to individual study and teacher education context to better understand results found on questions 1-46. You are free to use them, or modify them. However, they are not the core items used to measure the components of TPACK.

How to score the survey. Each item response is scored with a value of 1 assigned to strongly disagree, all the way to 5 for strongly agree. For each construct the participant’s responses are averaged. For example, the 6 questions under TK (Technology Knowledge) are averaged to produce one TK (Technology Knowledge) Score.

Reliability of the Scores (from Schmidt et al, 2009).

TPACK Doman	Internal Consistency (alpha)
Technology Knowledge (TK)	.86
Content Knowledge (CK)	
Social Studies	.82
Mathematics	.83
Science	.78
Literacy	.83
Pedagogy Knowledge (PK)	.87
Pedagogical Content Knowledge (PCK)	.87
Technological Pedagogical Knowledge (TPK)	.93
Technological Content Knowledge (TCK)	.86
Technological Pedagogical Content Knowledge (TPACK)	.89

Thank you for taking time to complete this questionnaire. Please answer each question to the best of your knowledge. Your thoughtfulness and candid responses will be greatly appreciated. Your individual name or identification number will not at any time be associated with your responses. Your responses will be kept completely confidential and will not influence your course grade.

DEMOGRAPHIC INFORMATION

1. Gender
 - a. Female
 - b. Male
2. Age range
 - a. 18-22
 - b. 23-26
 - c. 27-32
 - d. 32+
3. Major
 - a. Early Childhood Education (ECE)
 - b. Elementary Education (ELED)
 - c. Other
4. Area of Specialization
 - a. Art
 - b. Early Childhood Education Unified with Special Education
 - c. English and Language Arts
 - d. Foreign Language
 - e. Health
 - f. History
 - g. Instructional Strategist: Mild/Moderate (K8) Endorsement
 - h. Mathematics
 - i. Music
 - j. Science-Basic
 - k. Social Studies
 - l. Speech/Theater
 - m. Other
5. Year in College
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior
6. Are you completing an educational computing minor?
 - a. Yes
 - b. No
7. Are you currently enrolled or have you completed a practicum experience?
 - a. Yes
 - b. No
8. Identify the semester and year (e.g. Spring 2008) that you plan to complete student teaching in the box below:

Semester and Year	Experience: Student Teaching
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Technology is a broad concept that can mean a lot of different things. For the purpose of this questionnaire, technology is referring to digital technology/technologies. That is, the digital tools we use such as computers, laptops, iPods, handhelds, interactive whiteboards, software programs, etc. Please answer all of the questions and if you are uncertain of or neutral about your response you may always select "Neither Agree or Disagree." Please answer questions in relation to your experience as a preservice teacher.

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
TK (Technology Knowledge)					
1. I know how to solve my own technical problems.					
2. I can learn technology easily.					
3. I keep up with important new technologies.					
4. I frequently explore different ways to use new technologies.					
5. I know about a lot of different technologies.					
6. I have the technical skills I need to use technology.					
CK (Content Knowledge)					
Literacy					
7. I have sufficient knowledge about literacy.					
8. I have various ways and strategies of developing my students' understanding of reading.					
9. I have various ways and strategies of developing my students' understanding of writing.					
10. I have various ways and strategies of developing my students' understanding of word study.					

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
PK (Pedagogical Knowledge)					
11. I know how to assess student performance in a classroom.					
12. I can adapt my teaching based-upon what students currently understand or do not understand.					
13. I can adapt my teaching style to different learners.					
14. I can assess student learning in multiple ways.					
15. I can use a wide range of teaching approaches in a classroom setting.					
16. I am familiar with common student understandings and misconceptions.					
17. I know how to organize and maintain classroom management.					
PCK (Pedagogical Content Knowledge)					
18. I can select effective teaching approaches to guide student thinking and learning with reading.					
19. I can select effective teaching approaches to guide student thinking and learning with writing.					
20. I can select effective teaching approaches to guide student thinking and learning with word study.					
21. I can select effective teaching approaches to guide student thinking and learning with fluency.					
22. I can select effective teaching approaches to guide student thinking and learning with shared reading.					

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
TCK (Technological Content Knowledge)					
23. I know about technologies that I can use to help students comprehend text.					
24. I know about technologies that I can use to help students with their writing.					
25. I know about technologies that I can use to help students increase their word study skills.					
26. I know about technologies that I can use to help students increase fluency.					
27. I know about technologies that I can use during shared reading.					

TPK (Technological Pedagogical Knowledge)					
28. I can choose technologies that enhance the teaching approaches for a lesson.					
29. I can choose technologies that enhance students' learning for a lesson.					
30. My teacher education program has caused me to think more deeply about how technology could influence the teaching approaches I use in my classroom.					
31. I am thinking critically about how to use technology in my classroom.					
32. I can adapt the use of the technologies that I am learning about to different teaching activities.					
33. I can select technologies to use in my classroom that enhance what I teach, how I teach and what students learn.					
34. I can use strategies that combine content, technologies and teaching approaches that I learned about in my coursework in my classroom.					
35. I can provide leadership in helping others to coordinate the use of content, technologies and teaching approaches at my school and/or district.					
36. I can choose technologies that enhance the content for a lesson.					

TPACK (Technology, Pedagogy and Content Knowledge)					
37. I can teach lessons that appropriately combine reading, technologies and teaching approaches.					
38. I can teach lessons that appropriately combine writing, technologies and teaching approaches.					
39. I can teach lessons that appropriately combine word study, technologies and teaching approaches.					
40. I can teach lessons that appropriately combine fluency, technologies and teaching approaches.					
41. I can teach lessons that appropriately combine shared reading, technologies and teaching approaches.					

	<i>25% or less</i>	<i>26% - 50%</i>	<i>51% - 75%</i>	<i>76%-100%</i>
Models of TPCK				
42. In general, approximately what percentage of your teacher education professors have provided an effective model of combining content, technologies and teaching approaches in their teaching?				
43. In general, approximately what percentage of your literacy professors have provided an effective model of combining content, technologies and teaching approaches in their teaching?				
44. In general, approximately what percentage of the PreK-6 cooperating teachers have provided an effective model of combining content, technologies and teaching approaches in their teaching?				

Please complete this section by writing your responses in the boxes.

45. Describe a specific episode where you effectively demonstrated or modeled combining content, technologies and teaching approaches in a classroom lesson. Please include in your description what content was being taught, what technology was used, and what teaching approach(es) was implemented.

46. Describe a specific episode where one of your cooperating teachers effectively demonstrated or modeled combining content, technologies and teaching approaches in a classroom lesson. Please include in your description what content was being taught, what technology was used, and what teaching approach(es) was implemented. If you have not observed a teacher modeling this, please indicate that you have not.

47. Describe a specific episode where you effectively demonstrated or modeled combining content, technologies and teaching approaches in a classroom lesson. Please include in your description what content you taught, what technology you used, and what teaching approach(es) you implemented. If you have not had the opportunity to teach a lesson, please indicate that you have not.

APPENDIX N

COURSE INSTRUCTOR INTERVIEW QUESTIONS

1. New technologies allow new and different ways for teachers to plan and provide instruction. As an instructor, in what ways did you use digital media for planning purposes? For instructional purposes? For record keeping?
2. Identify three benefits of implementing digital media into this literacy course.
3. Identify three challenges of implementing digital media into this literacy course.
4. Explain how you used digital media to support your curricular needs, or why you did not.
5. How did your experience with digital media impact your teaching of this course?
6. How did your experience with digital media impact other courses you will teach?
7. What do you think you would need, as a university instructor, to successfully implement digital media as a regular part of your teaching in all courses you instruct?
8. What else from your experience this semester is relevant that you would like to share?

APPENDIX O

TEACHER CANDIDATE INTERVIEW QUESTIONS

1. New technologies allow new and different ways for teachers to plan and provide instruction. In what ways did you use digital media for planning and instructional purposes? (Also, can you identify how you used digital media for record keeping?)
2. What did your tutee do to demonstrate their learning using digital media?
3. Identify three benefits of incorporating digital media with your lessons.
4. Identify three challenges of using digital media.
5. Using digital media in conjunction with school mandates and curriculum may present challenges. Knowing that classroom teachers face many demands, explain how your experience with digital media allows you to meet these demands, or why you feel digital media isn't a viable option.
6. Now we will focus on your professional growth with digital media. How did your use of digital media change over the semester?
7. What do you think you would need, as a classroom teacher, to successfully use digital media in the classroom setting?
8. What else from your experience this semester seems relevant or is something that you would like to share?

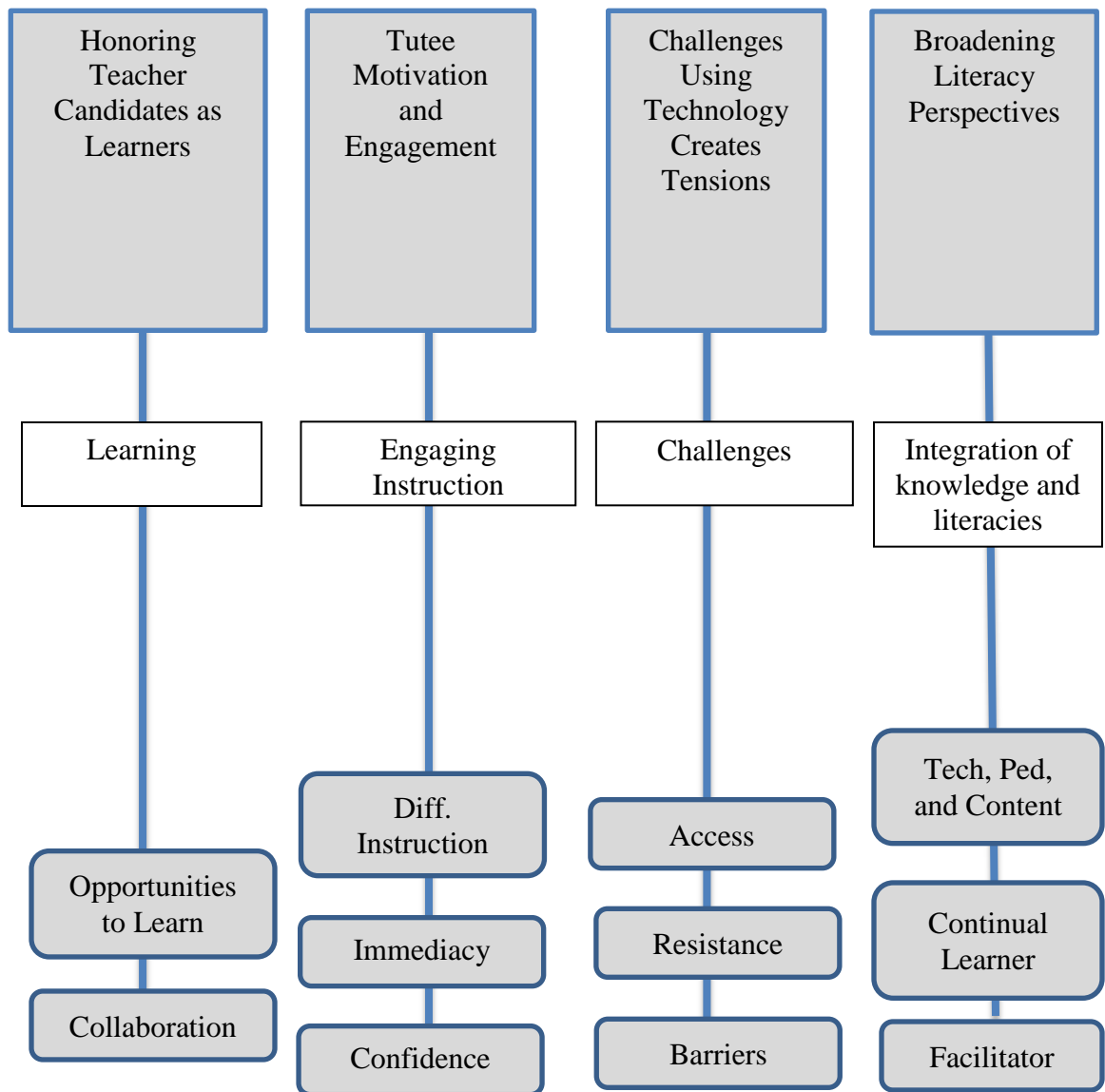
APPENDIX P

CODEBOOK SAMPLE

Research Question	Code Name	Code	Description
Teaching	How Teachers Teach	HT	Describes the actual materials used for teaching including apps, programs, and Internet. Includes preparation and record keeping. It does not include pedagogy, delivery, or thought processes.
Teaching	Teacher as a facilitator	TF	Includes the process of delivering instruction where teacher candidates view themselves as facilitating learning and learning processes rather than providing direct instruction.
Teaching	Teacher as a learner	TL	Includes the way teachers viewed their own learning process with iPads in terms of the expectation of using them for tutoring a child, having support to implement iPads, their feelings about iPads and comfort levels with iPads, and opportunities to learn.
Teaching	Content Knowledge for TC	TC	Includes evidence of literacy content instruction and beliefs about teaching literacy, including Common Core.
Teaching	Pedagogy Knowledge for TC	TP	Includes beliefs about teaching in general.
Teaching	Technology Knowledge for TC	TT	Includes beliefs about teaching through the use of technology.
Teaching	Ownership (take home iPad)	MD	Includes managing iPads in the classroom and access to iPads.
Teaching	Management of Devices	MD	Includes managing iPads in the classroom, access to iPads, connection issues, apps, and updating iPads.
Teaching	Professional Growth	PG	Indicates what they feel they would need to successfully add iPads to their own classrooms.
Teaching	Collaboration	CO	Evidence of class sharing time and other sharing situations to increase learning.
Teaching	Forced Use as a Positive	FU	Evidence of how teacher candidates grew professionally with iPads as part of their instructional process and evidence that being required to use the iPad was a positive experience

APPENDIX Q

CONCEPTUAL MODEL



APPENDIX R

TEACHER CANDIDATES USE AND PERCEPTIONS OF IPADS FOR TUTORING

Participant(s)	Instruction and Learning	Benefits	Challenges
Kayla and James	<ul style="list-style-type: none"> • Draw in response to literature • Typed dictation • Stories: leveled and dictated • Graphic organizers • Internet searches to locate answers 	<ul style="list-style-type: none"> • Tutee engagement • Locating materials at different levels • Ease of use 	<ul style="list-style-type: none"> • Internet connections • Charging • Downloads
Patty and Ben	<ul style="list-style-type: none"> • Stories: leveled and dictated • Word sort app • Word match • Sight words app • Graphic organizers • Online dictionary 	<ul style="list-style-type: none"> • Tutee engagement • Tutee motivation • Immediate feedback 	<ul style="list-style-type: none"> • Distracting when not being used • Temperamental nature of technology
Keva and Raul	<ul style="list-style-type: none"> • Graphic organizers • Internet searches • Summarize reading • Word sort app • Audio recording and timing 	<ul style="list-style-type: none"> • Tutee engagement • Tutee motivation • Conventional tasks were given new life 	<ul style="list-style-type: none"> • Temperamental nature of technology • Access to iPads • Changing state of technology

Andrea and Blanca	<ul style="list-style-type: none"> • Stories: leveled and dictated • Phonics app • Whiteboard app (patterns) • Word sort app • Screen capture • Graphic organizers • Audio recording • Typed dictation • Internet searches 	<ul style="list-style-type: none"> • Locating materials at different levels • Tutee engagement • Instructor as facilitator 	<ul style="list-style-type: none"> • Erased apps • Slow network services • Changing state of technology
Ziona and Ronnie	<ul style="list-style-type: none"> • Power Point • Internet searches • Word sort app • Graphic organizers • Dictionary, thesaurus, map • Websites • Audio recording and timing • Writing 	<ul style="list-style-type: none"> • Ease of use • Tutee engagement • Immediacy of locating information 	<ul style="list-style-type: none"> • Slow Internet • Internet outages • Fear of damaging device

APPENDIX S

COURSE INSTRUCTORS USE AND PERCEPTIONS OF IPADS FOR LITERACY EDUCATION

Participant	Instruction and Learning	Benefits	Challenges
Sally	<ul style="list-style-type: none"> • Class discussion on iPads for literacy instruction • Common Core App to relate standards to instruction 	<ul style="list-style-type: none"> • Emphasizes the importance of 21st century education • one step further with understanding iPads and rigorous apps • Personal growth and desire to continue use in other courses 	<ul style="list-style-type: none"> • Teacher candidates making excuses to avoid use • Lack of familiarity with so many apps available • Lacking a full perspective of what candidates were doing
Cassandra	<ul style="list-style-type: none"> • Power Point 	<ul style="list-style-type: none"> • New and challenging • Staying up-to-date • Motivation 	<ul style="list-style-type: none"> • Access • Teacher candidates lacking technological knowledge • Lack of time to explore

APPENDIX T

PROCESS MODEL SAMPLE

	Historical Context	Triggers	Main Event	Immediate Reaction	Long-Term Consequences
Behaviors Candidates	Mostly rooted in more conventional type literacy	Research study with iPads	Access to iPads and implementation into Literacy 2 course	TC utilize digital media with conventional literacies during their tutoring sessions	Broadened concept of literacy and literacy instruction
Thoughts & Feelings Candidates	My experience revealed that TC would articulate the importance of digital media, but this was only in word and not in action as they didn't use digital media with tutoring.	Gain access to iPads	Forced use during class and tutoring	TC could not make excuses about time or not knowing; interviews evidenced TC stating being forced to use was beneficial for their own learning and that literacy involved more than traditional books.	Broadened concept of literacy and literacy instruction
Environment Candidates	Adding iPads to the course	Access to iPads	Required use during class time	Explored, learned, and collaborated with classmates	Broadened concept of literacy and literacy instruction

APPENDIX U

TEACHER CANDIDATE TPACK SURVEY RESULTS SAMPLE

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
TK (Technology Knowledge)					
1. I know how to solve my own technical problems.		2	8	5	3
2. I can learn technology easily.			4	9	5
3. I keep up with important new technologies.		1	4	9	4
4. I frequently explore different ways to use new technologies.		2	9	4	3
5. I know about a lot of different technologies.		3	6	6	3
6. I have the technical skills I need to use technology.			3	12	3
CK (Content Knowledge)					
Literacy					
7. I have sufficient knowledge about literacy.			1	10	7
8. I have various ways and strategies of developing my students' understanding of reading.				12	6
9. I have various ways and strategies of developing my students' understanding of writing.				11	7
10. I have various ways and strategies of developing my students' understanding of word study.				13	5
PK (Pedagogical Knowledge)					
11. I know how to assess student performance in a classroom.			2	10	6
12. I can adapt my teaching based-upon what students currently understand or do not understand.			1	11	6
13. I can adapt my teaching style to different learners.				12	6
14. I can assess student learning in multiple ways.			2	11	5
15. I can use a wide range of teaching approaches in a classroom setting.			1	11	6
16. I am familiar with common student understandings and misconceptions.			2	11	5
17. I know how to organize and maintain classroom management.			2	10	6

APPENDIX V

TPACK SURVEY INSTRUCTORS RESULTS

*TPACK Survey Instructors Fall 2012 Modified Version for Course Instructors***

Original Source:

**Survey of Preservice Teachers' Knowledge of Teaching and Technology
(**modified)**

Method used to indicate survey results:

-2 Strongly Disagree

-1 Disagree

0 Neutral

1 Agree

2 Strongly Agree

	Sally		Cassandra	
	Pre	Post	Pre	Post
CK (Content Knowledge)				
1. I have sufficient knowledge about literacy.	2	2	1	1
2. I have various ways and strategies of developing my students' understanding of reading.	2	2	1	1
3. I have various ways and strategies of developing my students' understanding of writing.	2	2	1	1
4. I have various ways and strategies of developing my students' understanding of word study.	2	2	1	1
PK (Pedagogical Knowledge)				
5. I know how to assess student performance in a classroom.	1	1	2	2
6. I can adapt my teaching based-upon what students currently understand or do not understand.	1	1	1	1
7. I can adapt my teaching style to different learners.	1	1	2	2
8. I can assess student learning in multiple ways.	1	1	2	2
9. I can use a wide range of teaching approaches in a classroom setting.	1	1	2	2
10. I am familiar with common student understandings and misconceptions.	1	1	2	2
11. I know how to organize and maintain classroom management.	1	1	2	2

		Sally		Cassandra	
		Pre	Post	Pre	Post
TK (Technology Knowledge) <i>Rate according to your use of technology in your PERSONAL LIFE</i>					
12. I know how to solve my own technical problems.		0	0	1	1
13. I can learn technology easily.		0	0	1	1
14. I keep up with important new technologies.		1	0	1	1
15. I frequently explore different ways to use new technologies.		-1	1	-1	0
16. I know about a lot of different technologies.		-1	0	0	-1
17. I have the technical skills I need to use technology.		0	1	0	0
TK (Technology Knowledge) <i>Rate according to your use as a course instruction in the classroom</i>					
18. I know how to solve my own technical problems in the classroom.		1	1	1	1
19. I can learn technology easily for instructional purposes.		1	1	1	1
20. I keep up with important new technologies related to the teaching profession.		1	0	-1	-1
21. I frequently explore new ways to use new technologies related to instruction.		0	0	1	0
22. I know about a lot of different technologies that are applicable for instruction.		0	0	-1	-1
23. I have the technical skills I need to use technology with instruction.		1	1	-1	1
TCK (Technological Content Knowledge) <i>Rate according to your use as an instructor working with teacher candidates</i>					
24. I know about technologies that I can use to help students comprehend text.		0	1	-1	-1
25. I know about technologies that I can use to help students with their writing.		0	0	-1	-1
26. I know about technologies that I can use to help students increase their word study skills.		0	0	-1	-1
27. I know about technologies that I can use to help students increase fluency.		0	0	-1	1
28. I know about technologies that I can use during shared reading.		0	1	-1	1

	Sally		Cassandra	
TPK (Technological Pedagogical Knowledge) <i>Rate according to your use as an instructor working with teacher candidates</i>				
29. I can choose technologies that enhance the teaching approaches for a lesson.	0	1	1	1
30. I can choose technologies that enhance students' learning for a lesson.	0	1	1	1
31. Using digital media within the context of this course has caused me to think more deeply about how technology could influence the teaching approaches I use in my classroom.	1	1	2	2
32. I am thinking critically about how to use technology with my instruction.	1	1	1	2
33. I can adapt the use of the technologies that I am learning about to different teaching activities.	1	1	1	2
34. I can select technologies to use in my classroom that enhance what I teach, how I teach and what students learn.	1	1	1	2
35. I can use strategies that combine content, technologies and teaching approaches that I learned throughout the semester.	0	0	2	2
36. I can provide leadership in helping others to coordinate the use of content, technologies and teaching approaches.	-1	1	1	2
37. I can choose technologies that enhance the content for a lesson.	0	1	1	2

	Sally		Cassandra	
	Pre	Post	Pre	Post
TPACK (Technology Pedagogy and Content Knowledge) <i>Rate according to your use as an instructor working with teacher candidates</i>				
38. I teach lessons that appropriately combine reading, technologies and teaching approaches.	0	0	0	1
39. I teach lessons that appropriately combine writing, technologies and teaching approaches.	0	0	0	1
40. I teach lessons that appropriately combine word study, technologies and teaching approaches.	0	0	1	1
41. I teach lessons that appropriately combine fluency, technologies and teaching approaches.	0	0	1	1
42. I teach lessons that appropriately combine shared reading, technologies and teaching approaches.	0	0	0	1

	Sally			
Models of TPACK (Faculty, PreK-6 teachers) <i>Rate according to your use as an instructor working with teacher candidates</i>	Pre	Post		
43. I appropriately model combining content, technologies and teaching approaches in my teaching.	0	1		
44. My PreK-6 teacher candidates appropriately model combining content, technologies and teaching approaches in their teaching.	1	1		
	25% or less	26% - 50%	51% - 75%	76%-100%
Models of TPCK				
45. In general, approximately what percentage of the PreK-6 teacher candidates have provided an effective model of combining content, technologies and teaching approaches in their teaching?		<i>Pre-Survey</i> <i>Post Survey</i>		

	Cassandra			
Models of TPACK (Faculty, PreK-6 teachers) <i>Rate according to your use as an instructor working with teacher candidates</i>			Pre	Post
43. I appropriately model combining content, technologies and teaching approaches in my teaching.			1	0
44. My PreK-6 teacher candidates appropriately model combining content, technologies and teaching approaches in their teaching.			0	1
	25% or less	26% - 50%	51% - 75%	76%-100%
Models of TPCK				
45. In general, approximately what percentage of the PreK-6 teacher candidates have provided an effective model of combining content, technologies and teaching approaches in their teaching?	<i>Post Survey</i>	<i>Pre Survey</i>		

APPENDIX W

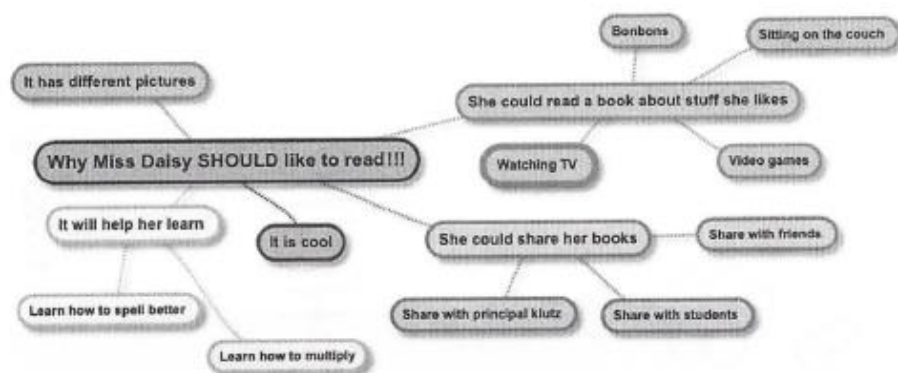
APPS AND WEBSITES FOR TUTORING

App / Site	Uses
Familiar Reading	
Blio (free)	eReader
Bluster (free)	Vocabulary building
Dragon (free)	ESL; record voice, playback
Grammar Fun (iPhone) (free)	ESL
Read Me Stories (free)	Fluency
Read on Sign (free)	Sight words
Reading Remedies; Readingrockets.org	Fluency beyond segmenting
Story Builder (\$7.99)	Students create story and practice reading
Story Wheel (free)	Reading
Word Wagon; Readingrockets.org	Letters, phonics, short and long vowels
Guided Reading	
Bikster; imaginelearning.com	Read along stories, reread, voices
Book Creator (\$4.99)	Comprehension/write your own book
Blio (free)	eReader
Brainpop	Read to students in movie with captions
Charastic Story (free)	Stories and quizzes
iBooks (free)	Read aloud
Painless Reading Comprehension	Read passage and answer questions
Sock Puppets (free)	Voice over, writing prompts
Raz-Kids	Interactive, leveled books
Writing	
ABC Circus	Write letters
ABC cursive writer; Readingrockets.org	Practice cursive
ABC Lite	Tracing letters
Book Creator (\$4.99)	Comprehension/write your own book
iDiary for Kids Lite (free)	Journaling
Story Builder (\$7.99)	Create story and practice reading
Super-Duper Story Maker	Create and tell stories
Story Kit	Electronic storybook
Puppet Pals	Create story with animation and audio
Story Wheel (\$2.99)	Story composition, imagination, oral language
Comic Touch (\$2.99)	Use photos to develop story

Word Study	
Alpha Writer; Readingrockets.org	Letter sounds and how to form words
Eggy100 (free)	Sight words
Futaba	ELL - match words and pic
Grammar Fun (iPhone) (free)	ESL
Grammar Jammers (free)	Animated songs and rhymes
K12 timed reading (\$1.99)	Word family and patterns
Phonics Genius	Beginning/end sounds, record self reading
The Opposites; Readingrockets.org	Learn vocabulary and match antonyms
Vocabulary Builder grade 4 (0.99)	Vocabulary building
Word Sort Wizard (\$2.99)	Works with different levels and sounds in words
Sight Words for Reading	Identify sight words
iCard Sort (\$5.99)	Word sorts with custom lists
Cimo Spelling (\$2.99)	Practice spelling
Shared Reading	
Bikster; imaginelearning.com	Read along stories, reread, voices
Can't Let the Pigeon Run This App	Write your own story; reads it back to you
Dragon (free)	ESL; record voice, playback
Grammar Jammers (free)	Animated songs and rhymes
iBooks (free)	Read aloud
Read Me Stories (free)	Fluency
Story Wheel (free)	Grammar parts

APPENDIX X

TUTEE WORK SAMPLE



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- Thompson, A. & Mishra, P. (2007-2008). Breaking news: TPACK becomes TPACK! *Journal of Computing in Teacher Education*, 24(2), 38-64.
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- Wang, W., Schmidt-Crawford, D. & Niederhauser, D. (2013). An investigation of how preservice teachers develop TPACK after content methodology courses. In R. McBride & M. Searson (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2013* (pp. 5104-5111). Chesapeake, VA: AACE.
- Wilder, P., & Dressman, M. (2006). New literacies, enduring challenges? The influence of capital on adolescent readers' internet practices. In D. E. Alvermann, K. A. Hinchman, D. W. Moore, S. F. Phelps & D. R. Waff (Eds.), *Reconceptualizing*

the literacies in adolescents' lives (2nd ed., pp. 205-229). Mahwah, NJ: Lawrence Erlbaum Associates.

Yin, R. (1994). *Case study research: Design and methods*. Thousand Oaks, CA: Sage.

Yin, R. K. (2003). *Case study research: Design and methods* (3rd edition). Thousand Oaks, CA: Sage.

Yin, R. K. (2009). *Case study research: Design and methods* (4th edition). Thousand Oaks, CA: Sage.

Kyle F. Kaalberg

Curriculum Vitae

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EDUCATION

Bachelor of Arts in Elementary Education, University of Iowa, 1999.

Master of Science in Elementary Education, Southwest Baptist University, 2003.

Early/Middle Childhood Literacy: Reading/Language Arts, National Board for Professional Teaching Standards, 2004

PROFESSIONAL AND RESEARCH INTERESTS

My professional interests involve higher education administration and/or literacy instruction with research interests in the field of new literacies and teachers' conceptualizations and practices utilizing these perspectives and practices in their own classrooms.

PROFESSIONAL WORK EXPERIENCE

Special Assistant to the Chief of Staff, Office of the President, University of Nevada, Las Vegas, July 9, 2012 – present.

Adjunct Faculty, School of Education, Nevada State College, Spring 2010; Spring 2011; Spring 2012; Spring 2013.

Adjunct Instructor, Department of Teaching and Learning, University of Nevada, Las Vegas, Summer 2010; Summer 2011; Summer 2012.

Graduate Assistant, University of Nevada, Las Vegas, January 2010 to June 2012.
Department Liaison, Department of Teaching and Learning, University of Nevada, Las Vegas, August 2010 to May 2012.

Instructor, Department of Teaching and Learning, University of Nevada, Las Vegas, January 2010 to May 2012.

Site Facilitator, practicum and student teachers in Clark County School District, Department of Curriculum and Instruction, University of Nevada, Las Vegas, August 2010 to May 2011.

External Interviewer, Department of Educational Psychology, University of Nevada, Las Vegas, Summer 2011.

Fifth Grade Teacher, Colegio Americano de Torreón, Torreón, Coahuila, México, August 2008 to June 2009.

Adjunct Instructor, Department of Curriculum and Instruction, University of Nevada, Las Vegas, Summer 2008.

External Interviewer, Department of Curriculum and Instruction, University of Nevada, Las Vegas, Spring 2008.

Graduate Assistant, Department of Curriculum and Instruction, University of Nevada, Las Vegas, August 2007 to May 2008.

Site Facilitator, practicum and student teachers in Clark County School District, Department of Curriculum and Instruction, University of Nevada, Las Vegas, August 2007 to May 2008.

Adjunct Faculty, Pre-Service Teacher Education, Mineral Area College, January 2005 to August 2007.

Instructional and Curriculum Coordinator 5-8, Farmington R-VII Schools, August 2005 to June 2007.

Instructor, Department of Continuing Education, Southeast Missouri State University and Farmington School District Partnership, August 2005 to May 2007.

Fifth Grade Teacher, Lincoln Intermediate Center, Farmington R-VII Schools, Farmington, MO, August 2000 to May 2005.

Lead Five-Year Old Teacher and On-Site Supervisor, Handicare, Inc., Coralville, IA, September 1999 to May 2000.

PUBLICATIONS

Bubb, D., Schraw, G., James, D., Brents, B., Kaalberg, K., Marchand, G., & Cammett, A. Making the Case for Formative Assessment: How it Improves Student Engagement and Faculty Summative Course Evaluations. *Assessment Update*, (25)3, 8-12.

PRESENTATIONS

PEER-REVIEWED INTERNATIONAL & NATIONAL CONFERENCE PRESENTATIONS

Kaalberg, K.F. (April, 2013). *Using Digital Media in the Literacy Clinic: The Experience of Teacher Candidates*. International Reading Association Annual Conference, Technology in Literacy Education Special Interest Group Roundtable.

Kaalberg, K.F., Villanueva, N. & VandeHei, A. (November, 2012). *Preservice Elementary Teachers' Perception of Practicum Experience in a Diagnostic Literacy Course: A Case Study*. National Council of Teachers of English Annual Convention.

Kaalberg, K.F., Villanueva, N. & VandeHei, A. (August, 2012). *Making Learning Meaningful and Relevant: Exploring Field Experience Models and the Impact on Preservice Teacher Literacy Education*. Association of Teacher Educators Summer Conference.

Kaalberg, K.F., & Wimmer, J.J. (August, 2012). *Implementing Critical Literacy and New Literacies: Student Process and Product in a Graduate Content Area Literacy Course*. Association of Teacher Educators Summer Conference.

Kaalberg, K.F., & Wimmer, J.J. (December, 2011). *Exploring the Impact of Critical Literacy Theory and Practice in a Graduate Content Area Literacy Course*. Literacy Research Association Annual Meeting.

Kaalberg, K.F., & Wimmer, J.J. (July, 2011). *Exploring the Impact of Critical Literacy Theory and Practice in a Graduate Content Area Literacy Course*. Whole Language Umbrella/National Council of Teachers of English Summer Conference.

PROFESSIONAL DEVELOPMENT PRESENTATIONS

Guiley, B., Kaalberg, K.F., Hatch, R.L. (2007). *Developing Aligned Social Studies Curriculum and Activities*. Farmington, MO: Presented to PK-12 grade Social Studies teachers in the Farmington R-VII School District.

Kaalberg, K.F. (2007). *Utilizing Guided Reading in the Middle Grades*. Farmington, MO: Presented to 5-8 grade reading teachers and media specialists in the Farmington R-VII School District.

Kaalberg, K.F. and Hatch, R.L. (2007). *Improving Math at the Secondary Level*. Farmington, MO: Presented to 7-12 grade teachers in the Farmington R-VII School District.

Kaalberg, K.F. (2007). *Preparing for the MAP*. Farmington, MO: Presented to 5-6 grade teachers in the Farmington R-VII School District.

Kaalberg, K.F. (2006). *Looking at our At-Risk Students: Poverty*. Farmington, MO: Presented to 7-8 grade teachers in the Farmington R-VII School District.

- Kaalberg, K.F. (2006). *Revising Formative Assessments*. Farmington, MO: Presented to 5-6 grade teachers in the Farmington R-VII School District.
- Kaalberg, K.F. (2006). *Creating and Using Assessment-like Items*. Farmington, MO: Presented to 5-6 grade teachers in the Farmington R-VII School District.
- Hatch, R.L., Guiley, B., Kaalberg, K.F., (2006). *Let's Look at Science*. Farmington, MO: Presented to PK-8 grade Science teachers in the Farmington R-VII School District.
- Kaalberg, K.F. (2006). *Getting Where We Want to Go: Meeting AYP*. Farmington, MO: Presented to 5-8 grade teachers in the Farmington R-VII School District.
- DeLany, J., Guiley, B., Hatch, R.L., & Kaalberg, K.F. (2006). *Student Achievement: The Missouri Assessment Program and AYP*. DeSoto, MO: Presented at the Regional Curriculum Association Meeting.
- Kaalberg, K.F. (2006). *Understanding Depths-of-Knowledge*. Farmington, MO: Presented to 5 - 8 teachers in the Farmington R-VII School District.
- Kaalberg, K.F. (2006). *Data Analysis: the Missouri Assessment Program*. Farmington, MO: Presented to Communication Arts and Mathematics teachers in grades 5-8 in the Farmington R-VII School District.
- Kaalberg, K.F. (2006). *The Four Block Literacy Structure*. Festus, MO: Presented to 3 - 8 grade teachers in the Jefferson R-VII School District.
- Kaalberg, K.F. (2006). *Preparing Students for Assessment*. Farmington, MO: Presented to all teachers in grades 5-8 in the Farmington R-VII School District.
- Kaalberg, K.F. (2006). *Preparing Struggling Students for the Missouri Assessment Program*. Farmington, MO: Presented to teachers in grades 5-6 in the Farmington R-VII School District.
- Kaalberg, K.F. (2006). *Missouri Assessment Program Analysis*. Farmington, MO: Presented to teachers in grades 7-8 in the Farmington R-VII School District.
- Kaalberg, K.F. (2006). *Revising Common Assessments*. Farmington, MO: Presented to Communication Arts and Mathematics teachers in grades 7-8 in the Farmington R-VII School District.

- Kaalberg, K.F. (2006). *Analyzing Results: Missouri Assessment Program*. Farmington, MO: Presented to teachers in grades 5-8 in the Farmington R-VII School District.
- Kaalberg, K.F. (2006). *The Missouri Assessment Program*. Farmington, MO: Presented to teachers in grades 5-8 in the Farmington R-VII School District.
- Kaalberg, K.F. (2005). *Writing Common Assessments*. Farmington, MO: Presented to Science teachers in grades 5-6 in the Farmington R-VII School District.
- Kaalberg, K.F. (2005). *Understanding Common Assessments*. Imperial, MO: Presented to teachers in grades PK-12 in the Windsor School District.
- Kaalberg, K.F. (2005). *Writing Common Assessments*. Farmington, MO: Presented to Science teachers in grades 7-8 in the Farmington R-VII School District.
- Kaalberg, K.F. (2005). *Missouri Assessment Program Analysis*. Farmington, MO: Presented to teachers in grades 5-8 in the Farmington R-VII School District.
- Kaalberg, K.F. (2005). *Communication Arts Review*. Farmington, MO: Presented to teachers in grades 7-12 in the Farmington R-VII School District.
- Kaalberg, K.F. (2005). *Benchmark Analysis*. Farmington, MO: Presented to teachers in grades 5-8 in the Farmington R-VII School District.
- Kaalberg, K.F. (2005). *Preparing for the Missouri Assessment Program*. Farmington, MO: Presented to teachers in grades 5-8 in the Farmington R-VII School District.
- Guiley, B., Hatch, R.L., & Kaalberg, K.F. (2005). *Revising Science Curriculum*. Farmington, MO: Presented to PK-12 grade Science teachers in the Farmington R-VII School District.
- Kaalberg, K.F. (2004). *More on the Four Blocks*. Farmington, MO: Presented to teachers in grades 5-6 in the Farmington R-VII School District.
- Kaalberg, K.F. (2003). *Four Blocks: Self-Selected Reading*. Farmington, MO: Presented to teachers in grades 7-8 in the Farmington R-VII School District.
- Kaalberg, K.F. (2003). *Four Blocks: An Overview*. Farmington, MO: Presented to teachers in grades 5-6 in the Farmington R-VII School District.

Kaalberg, K.F. (2002). *Tips for the Four Blocks*. Farmington, MO: Presented to teachers in grades 3-6 in the Farmington R-VII School District.

INVITED PANELS AND SPECIAL PRESENTATIONS

Kaalberg, K.F. (January, 2012). *A Teacher's Perspective on Classroom Design for the Digital Age*. School of Architecture, University of Nevada, Las Vegas. Guest speaker for senior students designing school sites.

Kaalberg, K.F. (January, 2012). *Surviving the Graduate Experience: Being a Graduate Student at UNLV*. Graduate and Professional Student Association, University of Nevada, Las Vegas. Guest panel member for life as a graduate student special session.

Kaalberg, K.F. (December, 2011). *Educational Components and Design*. School of Architecture, University of Nevada, Las Vegas. Guest panel member for senior project presentations involving school design.

Kaalberg, K.F. (April, 2006). *Becoming a National Board Certified Teacher*. Department of Continuing Education, Southeast Missouri State University and Farmington School District Partnership, Guest Speaker for School Improvement: Adolescent Literacy.

Kaalberg, K.F. (October, 2006). *Education: The Adventure of a Lifetime*. Southeast Missouri State University Teacher Education Program, Guest Speaker for Methods Courses.

Kaalberg, K.F. (October, 2005). *Becoming a National Board Certified Teacher*. Cape Girardeau, MO, Guest Speaker for Southeast Missouri State Teacher's Association.

GUEST LECTURES

Kaalberg, K.F. (October, 2011). *The Literacy Rich Classroom: A Broad Definition of Literacy and Classroom Organization*. Department of Teaching and Learning, University of Nevada, Las Vegas, Guest lecture for Elementary Education Social Studies Methods.

Kaalberg, K.F. (April, 2011). *Using Cooperative Learning and Effective Classroom Management*. School of Education, Nevada State College, Guest lecture for Elementary Education Methods.

- Kaalberg, K.F. (March, 2011). *Classroom Management and Cooperative Learning*. Department of Curriculum and Instruction, University of Nevada, Las Vegas, Guest lecture for Elementary Education Methods.
- Kaalberg, K.F. (November, 2010). *Evolving as an Educational Professional*. Department of Curriculum and Instruction, University of Nevada, Las Vegas, Guest lecture for Elementary Education Methods.
- Kaalberg, K.F. (April, 2010). *Dragon Voice Activated Software*. Department of Curriculum and Instruction, University of Nevada, Las Vegas, Guest lecture for Doctoral Research Seminar.
- Kaalberg, K.F. (April, 2010). *Classroom Management and the Educated Professional*. Department of Curriculum and Instruction, University of Nevada, Las Vegas, Guest lecture for Secondary Education Methods.
- Kaalberg, K.F. (March, 2010). *Dragon Voice Activated Software*. Department of Educational Psychology, University of Nevada, Las Vegas, Guest lecture for Qualitative Interviewing Techniques.
- Kaalberg, K.F. (February, 2010). *Writing Workshop*. Department of Curriculum and Instruction, University of Nevada, Las Vegas, Guest lecture for Literacy Instruction I.
- Kaalberg, K.F. (October, 2008). *Reading and Writing Workshop*. Department of Curriculum and Instruction, University of Nevada, Las Vegas, Guest lecture for Literacy Instruction I.
- Kaalberg, K.F. (October, 2008). *Literacy Instruction*. Department of Curriculum and Instruction, University of Nevada, Las Vegas, Guest lecture for Literacy Instruction II.
- Kaalberg, K.F. (October, 2006). *Writing Conventions*. Department of Continuing Education, Southeast Missouri State University and Farmington School District Partnership, Guest Lecture for Improving Elementary Writing Instruction.
- Kaalberg, K.F. (October, 2006). *Four Block Literacy*. Southeast Missouri State University Teacher Education Program, Guest lecture for Literacy Block Methods Courses.
- Kaalberg, K.F. (October, 2005). *An Introduction to the Four Block Frameworks*. Southeast Missouri State University Teacher Education Program, Guest lecture for Literacy Block Methods Courses.

Kaalberg, K.F. (October, 2004). *An Introduction to the Four Block Frameworks*. Southeast Missouri State University Teacher Education Program, Guest lecture for Literacy Block Methods Courses.

Kaalberg, K.F. (May, 2002). *Successful Classrooms*. Mineral Area College, Guest lecture for the Pre-service Teacher Education Program.

Kaalberg, K.F. (February, 2001). *Utilizing the Four Blocks*. Mineral Area College, Guest lecture for the Pre-service Teacher Education Program.

Kaalberg, K.F. (May, 2001). *The First Year*. Mineral Area College, Guest lecture for Pre-service Teacher Education Program.

OTHER CONFERENCES ATTENDED

The Council for Education Facilities Planners SW Region (CEFPI) – April 2013
UNLV Children's Literature Conference – March 2012, April 2013
National Professional Development Conference – March 2012
National Reading Conference – December 2007

HONORS

Best of UNLV 2012, Graduate Student Representative – May 2012
Service Commendation, Graduate and Professional Student Association – May 2011
Southeast Missouri Regional Professional Development Center Distinction in Performance Honoree - March 2005
Reception and Recognition by Governor Blunt for National Board Standing – February 2005
Missouri State Senate Resolution, presented by Senator Kevin Engler – February 2005
Missouri House of Representatives Resolution presented by Representative Steven Tilley – February 2005
Lincoln Intermediate Center Featured Teacher – December 2004
University of Iowa College of Education Magazine – *Teachers Who Care* – October 2002

CONTRIBUTIONS TO THE PROFESSION

Member, UNLV Commencement Committee, University of Nevada, Las Vegas, August 2012 to present.

Member, UNLV Classified Staff Awards Committee, University of Nevada, Las Vegas, August 2012 to present.

Member, Academic Achievement and Recognition Committee, University of Nevada, Las Vegas, November 2013 to April 2014.

Member, Course Evaluation Task Force Group, University of Nevada, Las Vegas, February 2012 to May 2013.

Member, Student Health Insurance Committee, University of Nevada, Las Vegas, August 2011 to August 2012.

Vice-President, Founding Member, and Board Director, UNLV Cares Food Pantry, University of Nevada, Las Vegas, September 2011 to August 2012.

Chair, GPSA Community Service Committee, University of Nevada, Las Vegas, September 2011 to August 2012.

Core Member, Presidential Student Ambassadors, University of Nevada, Las Vegas, January 2011 to August 2012.

Chair, Doctoral Advisory Committee, Department of Teaching & Learning, University of Nevada, Las Vegas, January 2011 to August 2012.

Member, Literacy Committee, Department of Teaching & Learning, University of Nevada, Las Vegas, January 2011 to August 2012.

Appointed Member, Graduate and Professional Student Association Council Representative, Department of Teaching & Learning, University of Nevada, Las Vegas, August 2010 to August, 2012.

Member, Graduate and Professional Student Association Council Research Forum Committee, Department of Teaching & Learning, University of Nevada, Las Vegas, August 2010 to August 2012.

Founding Member and Chairperson, Doctoral Research and Education Collaboration (DREC), Department of Teaching & Learning, University of Nevada, Las Vegas, August 2010 to August 2012.

Member, Elementary Literacy Sub-Committee, Department of Teaching & Learning, University of Nevada, Las Vegas, January 2010 to May 2010.

Chair, Mentor Planning Group, Department of Teaching & Learning, University of Nevada, Las Vegas, August 2010 to June 2011.

Team Leader, Grade 5, Colegio Americano de Torreón, Torreón, Coahuila, México, August 2008 – June 2009.

Department Chairperson Grade 5, Lincoln Intermediate Center, Farmington R-VII Schools, August 2002 to June 2005.

Model Teacher and Literacy Classroom, Lincoln Intermediate Center, Farmington R-VII Schools, August 2002 to June 2005.

Mentor Teacher, Lincoln Intermediate Center, Farmington R-VII Schools, August 2001 to June 2002.

Site Coordinator, Jefferson Elementary On-BASE, Farmington R-VII Schools, Farmington, MO, October 2001 to May 2002.

COLLEGE-LEVEL COURSES INSTRUCTED

University of Nevada, Las Vegas

Graduate:

Practicum in Diagnosis and Instruction of Literacy Difficulties: CIL 622
Spring 2012

Content Area Literacy CIL 610

Co-instructor with Dr. Thomas Bean: Fall 2010, Fall 2011

Foundations of Literacy Learning CIL 601
Summer 2011

Graduate/Undergraduate:

Elementary Literacy Instruction II EDRL 443/CIL 543

Spring 2008; Summer II 2008; Summer III 2008; Summer III
2010; Spring 2011

Elementary Literacy Instruction I EDRL 442/CIL 542
Summer I, 2010

Elementary Literacy Instruction I EDRL 442/542
Co-instructor Sue Hendricks, Summer II, 2010

Undergraduate:

Reading and Writing Instruction EDRL 437
Fall 2011

Content Area Literacy Instruction EDRL 451
Summer 2011; Summer 2012

Valuing Cultural Diversity EDU 280
Spring 2010

Nevada State College

Literacy Instruction II EDRL 443
Spring 2013

Diagnostic Assessment and Instruction Literacy EDRL 461
Spring 2010; Spring 2011; Spring 2012

Southeast Missouri State University

Graduate:

Integrated Curriculum/Four Blocks Literacy EL618-921-9946
Spring 2007
Collaborative Teaching/6 Traits Writing EL618-921-9953
Spring 2007
Differentiated Learning SE680-90-9952/EL680-90-9952
Fall 2006
Dependent and Independent Readers/Four Block Literacy
EL 618-921-9926 Fall 2005

Mineral Area College

Undergraduate:

Portfolio Evaluation EDU 260
Spring 2007
Classroom Strategies EDU 145
Summer 2006, Spring 2007
Introduction to Education EDU 123
Spring 2005, Summer 2005, Fall 2005, Spring 2006, Fall 2006,
Spring 2007

COURSES SHADOWED/ASSISTED

University of Nevada, Las Vegas

Undergraduate:

Children's Literature EDRL 401/501
Spring 2012
Teaching and Learning in Elementary Schools EDEL 323
Spring 2012
Reading and Writing Instruction and Assessment EDRL 443
Fall 2007

OTHER COMMUNITY VOLUNTEER CONTRIBUTIONS

Volunteer, Giving Day, Las Vegas, December 2012; December 2013.

Volunteer, Las Vegas Marathon, City of Las Vegas, December 2010; December 2013

Volunteer, Family Leadership Initiative (FLI), Las Vegas, June 2012.

Facilitator, Hugh O'Brien Youth Leadership Program (HOBY), Cal Central, June 7-10, 2012.

Vice President and Board of Directors, University of Iowa Alumni Association, Las Vegas Chapter, September 2009 to March 2013.

Volunteer, UNLV Career Fair, University of Nevada, Las Vegas, March 2012.

Volunteer, Graduate Research In Progress Symposium (GRIPS), College of Education, University of Nevada, Las Vegas, March 2012.

Recruiter, University of Iowa Project ASIST (Alumni Seeking Iowa Students), September 2009 – December 2011.

Volunteer, Salvation Army Bell Ringing Campaign, Las Vegas, November-December 2009.

PROFESSIONAL ORGANIZATIONS

International Reading Association

Literacy Research Association

Association of Teacher Educators

National Council of Teachers of English

Phi Kappa Phi

Pi Lambda Theta

Delta Kappa Pi

Golden Key International Honour Society

OTHER ORGANIZATIONS

UNLV Student Alumni Association

University of Iowa Alumni Association