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Internet Technology as a Means of Delivering Reading Instruction in the Content Areas

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COLLEGE OF EDUCATION

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MA, The College of New Jersey, 2008

BA, The University of Connecticut, 2003

Doctoral Study Submitted in Partial Fulfillment

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Abstract

Due to students not meeting minimum proficiency levels in reading, a central Florida middle school that was rated an A school for 4 years consecutively dropped to a B rating during the 2012-2013 school year and was 10 points away from dropping to a C rating in the 2013-2014 school year. The purpose of this phenomenological study was to describe classroom implementation of Internet technology in a middle school classroom in an attempt to address the steady decline in reading scores. Guided by Piaget, Dewey, and Vygotsky's social constructivist view of education, this study explored if and how teachers used Internet technology to complement their curricular content. Research questions addressed how teachers described their experiences with Internet technology versus traditional methods to teach those reading skills necessary for students to derive meaning from the material taught. A criterion sample of 30 middle school teachers who were certified in their content areas and who had incorporated literacy into instruction participated in semistructured interviews. Data were coded and organized by themes, which included *comfort with the Internet, level of usage,* and *the need for professional development.* Findings revealed that teachers often used Internet technology to address reading skills; however, they were not aware they needed to teach students how to evaluate sources of online information. Participants requested ongoing professional development in reading and on methods to critically evaluate information in a digital world. The findings from this study can be utilized by educators to provide professional development and to design lessons that will focus on these learning gaps, thereby deepening students' literacy and critical thinking skills and thus enacting positive social change for students.

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Dedication

I would like to dedicate this work to my family, for their unwavering support and encouragement throughout this process.

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I would like to thank my parents, Rose and Ron Nowicki, for supporting me and helping to make all of my educational endeavors possible. Without your unconditional encouragement and guidance, I could not have achieved this milestone. To my husband Jason, thank you for understanding the time commitment necessary and for motivating me when I needed words of encouragement. I would also like to thank my sister Ashley and my brother Craig for believing in me.

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Table of Contents

Section 1: Introduction to the Study

Introduction

Because of the demands of No Child Left Behind (NCLB), (2002) legislation and an unprecedented legislative measure implementing merit pay in the State of Florida (2011), student reading scores carry greater implications for both students and educators than ever before. Meanwhile, research has established that competence in reading has become one of the strongest predictors of academic success and, as such, educational professionals must ensure that all children receive meaningful and effective reading instruction (Sokal & Katz, 2008).

With this in mind, the educational research community has recognized the value of integrating reading instruction into content area classes (Wilson, Grisham, & Smetana, 2009), and the current climate of increased accountability for teachers of all subjects has compelled professionals to renegotiate the traditional view of content area instruction as being specific to one particular subject exclusive of reading instruction. The State of Florida's newly established system of merit pay includes teachers of content area classes and elective classes for which students do not take standardized tests specific to course content. These teachers are evaluated based on a combination of their classroom instruction and the school's overall reading scores. This new measure of accountability truly holds not only teachers of English but all teachers responsible for student achievement in reading. Hence, content area and elective teachers' evaluations depend on how invested they are in their students' successes in reading.

Although the application of reading and critical thinking skills is necessary for success in any content area, some teachers may feel that it is not their responsibility to teach these skills or they may lack knowledge of how to integrate reading skill instruction into the curriculum (Wilson et al., 2009). In many states, teacher candidates are required to take at least one class on reading in the content areas (Greenwood, 2010; Sautter, 2009), but few actually implement reading strategies in their classroom once they enter the profession (Sautter, 2009).

While either of these issues may have impeded teachers from implementing literacy instruction into their lesson plans in the past, the intensifying climate of educator accountability combined with educational research offering innovative approaches to content area reading instruction leave no room for opposition. Educators interested in seeking out best practices for integrating reading instruction into their curricula will find a plethora of research available to guide teachers toward infusing reading instruction into their respective content areas effectively (Clarke & Besnoy, 2010; Greenwood, 2010; Ness, 2009; Sanacore & Palumbo, 2010; Sautter, 2009; Wilson et al., 2009). However, this research has not provided insight into teachers' authentic experiences struggling through or effectively embracing reading instruction in content area and elective classes. The research also did not elucidate teacher perceptions of how integrating Internet resources to deliver that reading skill instruction affects student progress.

While calls for educator accountability have continued to spawn controversial approaches to testing and accountability, one major area that students are constantly exposed to in modern society is Internet technology. Leu et al. (2011) asserted that never

before has a technology become as pervasive throughout the world in such a relatively short time span as the Internet has. Children use the Internet for everything from pursuing personal interests to school projects and online shopping (Burnett & Wilkinson, 2005). Naturally, classroom Internet implementation serves as a strategy for scaffolding learning, or breaking lessons down in smaller chunks and providing support to guide students through the learning process, for these digitally minded students (Harushimana, 2008). However, children's self-taught Internet ability is limited in scope, which may be an even more compelling reason to integrate Internet resources into classroom instruction. Though some children have demonstrated the ability to independently access information and analyze it appropriately (Burnett & Wilkinson, 2005; Labbo & Place, 2010), others do not have the skills or knowledge to effectively search for and evaluate information online (Hoctor, 2005; Leu et al., 2011). Many children's experiences with the Internet are unstructured, so while they can use the Internet, they may not be equipped to perform complex functions online. Researchers seem to agree that students are not engaged in these complex processes as much as they should be in contemporary classrooms (Coiro & Moore, 2012; Labbo & Place, 2010; Lapp, Moss, & Rowsell, 2012; Leu et al., 2011). When they graduate and enter the workforce, students are increasingly expected to be information literate, and employers require such skills to maintain a competitive edge (Breivik, 2005).

The technologically competitive global marketplace for which educators endeavor to prepare students necessitates the acknowledgement of new literacies. According to Karchmer-Klein and Shinas (2012), educational research has established that students

need explicit instruction to negotiate the complexities of web-based technology. The researchers described new literacies as the mental processes required to do so; Karchmer-Klein and Shinas declared that it is vital to prepare students to effectively use technological resources. Furthermore, the researchers believed that it is imperative that teachers understand the evolving literacy climate of modern society and adapt the curricula to meet learners' needs within the framework of this changing environment. Students need to be metacognitive and active learners engaging with content area texts (Wilson et al., 2009) on an ongoing basis. According to Lapp et al. (2012), "Fully functioning in the 21st century requires using new literacies that include the skills, strategies, and dispositions necessary to adapt to changing technologies influencing all aspects of life" (p. 367). Educators and educational researchers as well as policymakers have accepted the new literacies, specifically information literacy; the Florida legislature in particular has revised the Sunshine State Standards upon which Florida public education is based to include new literacies such as information and media literacy.

In the State of Florida, the Florida Comprehensive Assessment Test (FCAT) includes new literacy skills among the competencies represented on the assessment. According to the Collaborate, Plan, Align, Learn, Motivate, Share (CPALMS, 2013a) website—a free resource for Florida state standards, course descriptions, and lesson plans—The Next Generation Sunshine State Standards for Reading/Language Arts include the strand, Information and Media Literacy. Within this strand are the standards for informational text and research process, which make up 30% of the FCAT test in Grade 8 (Florida Department of Education [FDOE], 2013b p. F-1). Hence, there is a direct

correlation between new literacies instruction and the state-mandated FCAT, an issue explored in greater detail within the problem statement of this research study.

This brief exploration of the issues provided the impetus of this research study. The current trend toward intensified measures of accountability not only increases the pressure educators feel to ensure that their students perform on high-stakes tests, but also provides strong motivation for all educational professionals to reexamine their commitment to high quality instruction. As Stryker and Szabo (2009) explained, student achievement is impacted by a teacher's belief in his or her own ability to teach the content effectively and to positively impact student achievement. They found that teachers who were not comfortable teaching reading skills that are necessary for success in their classes were likely to yield lower amounts of student achievement. Section 2 of this paper will elaborate on how new literacies, such as information and media literacy, relate to content area literacy instruction; the importance of these new literacies; reading across the content areas; and Internet integration for teaching reading.

Educational researchers have encouraged content area teachers to integrate reading instruction into their content areas, as doing so in classes such as science and social studies can improve student understanding of material and overall learning (Ness, 2009). At the same time, the new literacies are relevant to students' lives both inside and outside of school and cannot be ignored in a 21st century classroom. Researchers have also encouraged the implementation of Internet technology into curricula as a means to teach reading skills and made recommendations for such integration (Breivik, 2005; Hebert & Pagnani, 2010; Karchmer-Klein & Layton, 2006; Karchmer-Klein & Shinas,

2012; Labbo & Place, 2010; Lapp et al., 2012; McPherson, Wang, Hsu, & Tsuei, 2007; Murray & McPherson 2006). Yet there is a gap in the literature because current research has not yet addressed teacher experiences adapting to this changing educational climate and their perceptions of what works in their own classrooms. Hence, through this study, I sought to provide a more complete picture of teacher experiences with infusing reading skill instruction into their content area and elective classes and how the Internet plays a role, if any, in their classrooms.

Problem Statement

A middle school in central Florida faced the challenge of improving student test scores on the reading portion of the state-mandated FCAT after they had steadily declined over the past several years. The school had an A grade, which is the highest attainable measure, from the state-based on FCAT reading, writing, math, and science scores from 2006-2012. However, the school dropped to a B grade in 2013. In fact, the school earned 569 points on a 900-point scale, and the criteria to qualify for a B grade is 560 to 589 points (FDOE, 2013b). This means that the school was at the low end of a B grade and was actually 10 points away from dropping to a C grade in 2014.

In the State of Florida, middle schools are graded based on a combination of student FCAT scores, learning gains based on a comparison of current year scores with prior year scores, and how much progress the lowest quartile students make on the FCAT (FDOE, 2013b). These school grades are intended to communicate school performance in state standards to the community. If a school consistently receives a D or F grade from the state, then the state will intervene and offer assistance at that site (FDOE, 2013a). If

the school where this research study was conducted continues to receive declining grades from the state, then district level personnel and ultimately state level personnel may take notice and implement interventions to raise achievement.

The FCAT reading test measures student knowledge in four categories: vocabulary, reading application, literary analysis–fiction/nonfiction, and informational text/research process. Of the four reporting categories, the informational text/research process category receives increased emphasis at each grade level because of the higher level thinking skills required to answer questions in that category (FDOE, 2012). By the eighth grade, the informational text/research process category accounts for 30% of the raw score points available on the FCAT in reading (FDOE, 2012).

Within the informational text/research process category, students are tested on their understanding and analysis of text features; their ability to synthesize, analyze, and evaluate information within or across texts; and their ability to determine the reliability and validity of information within or across texts (FDOE, 2012). As previously stated in the introduction to this research study, information and media literacy in particular are part of the state standards that are tested within the informational text and research process category of the FCAT (CPALMS, 2013b). Thus, a clear connection exists between new literacy skills and competency on the state-mandated FCAT, especially in middle school because of the increasing emphasis on skills in the informational/text category each year until eighth grade.

Of the four subjects tested by the FCAT (reading, writing, math, and science), reading achievement, in particular, was the focal point of this study because student

reading scores have consistently decreased during the past several years at this school. The school data for percentage of students who passed the FCAT reading test (broken down by grade level) revealed that fewer students passed the FCAT as they progressed from sixth grade to eighth grade each year from 2011-2013. This decline in the passing rate occurred as the FCAT's emphasis on the informational text/research process category increased. For example, in 2011 64% of sixth graders passed, 63% of seventh graders passed, and 57% of eighth graders passed. In 2012, 62% of sixth graders passed, 59% of seventh graders passed, and 59% of eighth graders passed. In 2013, 60% of sixth graders passed, 62% of seventh graders passed, and 57% of eighth graders passed. The consistent decline in student reading scores across grade levels and school years illustrated the underlying problem that students were not mastering higher level reading skills associated with the informational text/research process reporting category, which was emphasized more on the FCAT from sixth to eighth grade.

This school had a gifted program for highly intelligent students and two remedial reading programs in place for students who failed the FCAT, but the needs of students who scored between these extremes were not being met. They either did not make progress or they did not make enough progress to pass the FCAT the following school year. This progress was referred to as *student learning gains*, which was part of the state criteria for calculating school grades. Students must make gains in reading for the school to reclaim its A grade from the state and to foster literacy so educators can create empowered students capable of meeting the challenges of a global society. The need to increase student reading achievement at the school was emphasized in the school's

improvement plan for the 2013-2014 school year. The School Improvement Plan contained a section focused on how every teacher in the school would contribute to reading achievement for all students. It also highlighted a vision of literacy as encompassing various modes of communication and extending beyond language arts to all content areas.

Researchers have promoted the value of integrating literacy instruction across the content areas (Clarke & Besnoy, 2010; Greenwood, 2010; Ness, 2009; Sanacore & Palumbo, 2010; Sautter, 2009; Wilson et al., 2009). Evidence is also available on the implementation of Internet-based technologies (Boling, Castek, Zawilinski, Barton, & Nierlich, 2008; Chen, Teng, Lee, & Kinshuk, 2011; Hutchison & Henry, 2010; Karchmer-Klein & Layton, 2006; McPherson et al., 2007; Slavin, Cheung, Groff, & Lake, 2008). Exploring teacher experiences with Internet resources versus traditional methods of teaching reading skills and reading strategies in the content area and elective classroom can provide valuable insight and pedagogical implications for practitioners.

Nature of the Study

This qualitative study employed the phenomenological method for research design with the purpose of exploring the following research questions:

1. How does the content area teacher describe classroom implementation of Internet technology versus traditional methods of teaching reading related skills?
2. How does the content area teacher describe classroom implementation of Internet technology versus traditional methods of teaching reading strategies?

By employing a phenomenological research paradigm, semistructured interview data yielded a rich view of teacher experiences implementing reading instruction into their content area or elective classes using Internet technology. Knowing which strategies teachers utilized and what challenges they faced in their own classrooms will give insight to other educators so they have an idea of what to expect and how to address potential challenges they may face. Having this type of information will guide educators in implementing best practices and raising student achievement in reading.

Purpose of the Study

The purpose of this phenomenological study was to describe classroom implementation of Internet technology versus traditional methods of teaching reading-related skills and reading strategies in a middle school classroom in an attempt to address the steady decline in reading scores over the past several years. At the school where this research study was conducted, a whole school approach to literacy was one strategy being employed to increase student reading achievement, as mentioned in an earlier discussion of school reading achievement data. Teachers at the school were also required to utilize instructional technology, and the most emphasized category on the FCAT reading test for eighth graders was informational text/research process, which involved the complex new literacy skills of information and media literacy.

Researchers advocated the use of Internet technology and suggested activities to meaningfully incorporate it into the curriculum (Boling, Castek, Zawilinski, Barton, & Nierlich, 2008; Chen, Teng, Lee, & Kinshuk, 2011; Hutchison & Henry, 2010; Karchmer-Klein & Layton, 2006; McPherson et al., 2007; Slavin, Cheung, Groff, &

Lake, 2008). This study provided insight into how much teachers at the research site have been doing so and what challenges they encountered. Educational researchers also advocated content area literacy instruction as important to student literacy development, but the research did not describe classroom teachers' experiences using Internet technology to teach reading skills and reading strategies (Clarke & Besnoy, 2010; Greenwood, 2010; Ness, 2009; Sanacore & Palumbo, 2010; Sautter, 2009; Wilson et al., 2009). This research study differed from current research by focusing on how teachers delivered content area literacy in their own classes, whereas available literature outlined which teaching strategies and activities were beneficial to students (Blanton, Wood, & Taylor, 2007; Greenwood, 2009; Montelongo & Herter, 2010; Sanacore & Palumbo, 2010; Swanson, Edmonds, Hairrell, Vaughn, & Simmons (2011). By offering a view of teachers' experiences, this research study provided educators with the opportunity to learn from each other and to understand what challenges their colleagues faced with Internet implementation to teach reading skills and reading strategies. The results also provided a point of comparison with existing literature so that educational researchers have a better understanding of how much teachers actually used research-based strategies and activities to deliver content area literacy instruction. To execute this objective, data were collected from interviews with teachers until the findings were saturated and no new data emerged. Merriam (2002) suggested this approach to data collection as one form of internal validation.

Teachers have reported challenges of motivating students (Harushimana, 2008; Hebert & Pagnani, 2010), preparing them for the 21st century workplace (Harushimana,

2008), and meeting high-stakes test standards such as those tested on the FCAT that include new literacy skills in reading. Technology may play an important role in alleviating these challenges, as technological advancements have made Internet technology an integral part of people's daily lives (Harushimana, 2008; Henry, 2006). Indeed, researchers are increasingly calling for the Internet, and new literacies specifically, to be included in curriculum design and professional development (Boling et al., 2008; Coiro & Moore, 2012; Hebert & Pagnani, 2010; Henry, 2006; Karchmer-Klein & Layton, 2006; Karchmer-Klein & Shinas, 2012; Labbo & Place, 2010; Lapp et al., 2012; Leu et al., 2011; McPherson et al., 2007). The results provided in this report may advance the literature by providing educators with insight from other teachers' experiences attempting to implement reading skills and strategies into content area curricula and how they utilized Internet technology in the process. The results of this research study give the educational community a view into teachers' positive or negative experiences and their perceptions of the challenges they faced or successes they had in their classrooms so that educators can learn from other educators' experiences.

Conceptual Framework

This study was based on the social constructivist view of education. Social constructivist ideals not only apply to the theoretical foundation of this study, but they also apply to the educational environment of the school where this study occurred. Under the tenets of social constructivism, knowledge is socially negotiated through cooperative experiences rather than individual cognition (Hyslop-Margison & Strobel, 2008). As Hyslop-Margison and Strobel (2008) described, Piaget, Dewey, and Vygotsky, the

seminal theorists behind the constructivist movement, all believed that students bring their previous experiences and knowledge into new learning situations. They base their acceptance of or resistance to new information on that prior knowledge, which Piaget specifically referred to as *schemata* (Hyslop-Margison & Strobel, 2008).

Social constructivist classrooms emphasize personal responsibility and routines for engaging in class activities (Windschitl, 2002). Teachers and students actively participate in questioning, critiquing, and discussion in classrooms based on social constructivist ideals (Windschitl, 2002). Social constructivists believe the teacher's primary role is to design classroom lessons that promote content mastery and cultural assimilation (Hyslop-Margison & Strobel, 2008). Social constructivism also encourages educators to plan lessons that promote interpersonal and intrapersonal dialogue about the concepts being taught. Vygotsky believed that students acquire knowledge through interpsychological and intrapsychological activities (Hyslop-Margison & Strobel, 2008). According to Hyslop-Margison and Strobel (2008), social constructivist teachers should consider the desired effect, the students, and the situation when determining the best instructional strategy to utilize. A connection exists between teachers' constructivist views of education and their use of technology in the classroom, so research based on the motivational aspects of Internet integration has suggested that teacher preparation programs highlight strategies for implementation and demonstrate how Internet use could be structured as student-centered (Karchmer-Klein & Layton, 2006).

The Internet has widespread societal significance and is, therefore, an increasingly important aspect of Americans' daily lives (Harushimana, 2008; Lapp et al., 2012; Leu et

al., 2011). National and international organizations have acknowledged that literacy activities have changed because of new technologies, and they have advised that educators should prepare students with and for all available resources to promote and foster 21st century skills (Felvegi & Matthew, 2012). Based on the Internet's increasingly significant presence within society, an exploration of classroom use of Internet technology for reading instruction is aligned with social constructivist views of knowledge acquisition and may potentially enrich students' learning experiences in ways that traditional classroom activities could not.

Technical Definitions

Information literacy: A concept encompassing computer literacy, library literacy, media literacy, network literacy, and visual literacy. Information literacy includes but is not limited to critical thinking about when and where to find information, as well as to evaluate and/or analyze information (Breivik, 2005).

Interpersonal dialogue: Dialogue between people. In the classroom, it usually begins between the teacher and the students, then extends beyond the classroom (Hyslop-Margison & Strobel, 2008).

Interpsychological activity: Activity among multiple people (Hyslop-Margison & Strobel, 2008).

Intrapersonal dialogue: Dialogue that occurs within oneself (Hyslop-Margison & Strobel, 2008).

Intrapsychological activity: Activity within oneself (Hysop-Margison & Strobel, 2008).

Schemata: Piaget's term for organized bodies of prior knowledge that influence how students respond to new information (Hyslop-Margison & Strobel, 2008).

Scope and Delimitations

This phenomenological study focused on one middle school in central Florida because of its unique characteristics and challenges compared to other middle schools in the county. It was a magnet school, had the second highest rate of students on free and reduced lunch in the county, was ranked in terms of performance as eighth in the county, and was recently downgraded by the state from an A school to a B school. The school was facing very specific challenges that I sought to address with my research findings. The results presented in this paper shed light on the experiences of educators at a school with a diverse population, a diverse faculty, and a mandate to shift from traditional notions of teaching content area and elective classes exclusive of reading skills to content area and elective classes inclusive of reading skills, all in an increasingly technologically advanced modern culture.

It should also be noted that this study included data from teachers' individual experiences, which may vary in duration. However, these experiences spanned at least one school year and were sufficient to describe teachers' experiences with literacy instruction in their classes, to describe what role the Internet may or may not have played in that instruction, and to determine teachers' perceptions of growth over the course of that school year.

Assumptions and Limitations

For the purpose of this study, it was assumed that teacher participants were honest in their responses to interview questions and were forthright in their descriptions of their experiences and opinions. Although the criterion sampling in this study helped determine that reading skill instruction was implemented into participating teachers' classes and was appropriate for the needs of the study, the effectiveness of individual teachers and the quality of their instruction may have varied.

A potential weakness of this research study was that participant subjectivity may have hindered the participants from giving accurate portrayals of what took place in their classes. For example, teacher participants' bias toward content area literacy or toward instructional technology may have influenced how they perceived the failures or successes they experienced in their classes. Additionally, this study covered teacher experiences at one specific school, and while the participant pool covered a diverse group of educators, the conditions and policies of this particular school may have affected the transferability of results in ways that could not be anticipated.

Significance of the Study

Exploring teachers' experiences infusing reading skills into their content areas and probing how Internet technology relates to that integration will benefit practitioners. Researchers have encouraged educators to purposefully integrate the Internet into classroom instruction (Boling et al., 2008; Coiro & Moore, 2012; Felvegi & Matthew, 2012: Hebert & Pagnani, 2010; Henry, 2006; Karchmer-Klein & Layton, 2006; Karchmer-Klein & Shinas, 2012; Labbo & Place, 2010; Lapp et al., 2012; Leu et al.,

2011; McPherson et al., 2007). Teachers who endeavor to include reading strategies in their pedagogy need to be aware of what their colleagues are experiencing to help determine best practices. Additionally, teachers may benefit from knowing how their peers utilize Internet-based teaching strategies to help address higher standards of achievement at the local and national levels, what challenges they faced, and what their perceptions of student progress were based on their own experiences in the classroom.

The literature offered strategies to improve pedagogy (Clarke & Besnoy, 2010; Greenwood, 2010; Ness, 2009; Sanacore & Palumbo, 2010; Sautter, 2009; Wilson et al., 2009), but it did not offer insight into educators' personal experiences delivering that instruction. This research study will help educators who strive to meet high standards of learning by providing insight into their colleagues' experiences with Internet integration in classroom literacy instruction so the educational community can learn from each other.

Transition Statement

Internet technology implementation into the curriculum has been identified as a motivational tool for students, especially those who are disadvantaged or struggling readers (Boling et al., 2008; Harushimana, 2008; Hebert & Pagnani, 2010; Hoctor, 2005; Sokal & Katz, 2008). Researchers have also advocated its use to foster critical thinking and analytical skills (Breivik, 2005; Coiro & Moore, 2012; Harushimana, 2008; Labbo & Place, 2010; Lapp et al., 2012; Leu et al., 2011). Yet insight into teacher experiences with these phenomena in their own classrooms has been lacking. This study may advance the literature on classroom Internet implementation as a means of instruction in the areas of reading and the new literacies; educators may benefit from a deeper understanding of

their colleagues' experiences utilizing Internet resources versus other methods of teaching reading skills. The research described educator experiences teaching reading skills and reading strategies in their specializations, providing a more complete picture of educators' experiences with such implementation in middle school content area and elective classrooms for the purpose of helping educators to design lessons that will increase student reading achievement. A discussion of issues pertinent to new literacies, content area literacy, and Internet implementation will be covered in Section 2. Subsequently, the methodology of the research conducted will be explained in Section 3. The results of the research appear in Section 4, and analysis of the results as well as recommendations will be provided in Section 5 of this paper.

Section 2: Literature Review

Introduction

I compiled a review of relevant literature from current educational research that would coincide with the overarching goal of examining Internet implementation to teach reading skills in a content area classroom. To begin this research, I conducted searches through Walden Library's available educational databases for peer-reviewed journal articles on the following topics: research on reading instruction, research on reading instruction with Internet integration, research on reading instruction across the content areas, research on Internet technology as it pertains to education, and research on learning theories. Books that were part of prior coursework, recommended by members of the doctoral committee or cited in articles found through my research and had relevant information, have also been utilized as resources in this review.

This review covers the broad spectrum of the aforementioned concepts by sorting them into two overarching themes: Internet technology and reading instruction and content area literacy. Within each of these two topics, the literature review is organized into relevant subtopics of interest to this particular research study. The first major section on Internet technology and reading instruction has been divided into five subtopics: reading online, the new literacies, student Internet technology use, classroom implementation of Internet technology to teach reading, and professional development on instructional technology. The second major section of the literature review covers content area literacy in six subtopics: reading skill development, teaching reading to enhance content area instruction, instructional strategies, preservice educator training, content area

teacher attitudes toward reading instruction, and professional development on content area literacy. This section also features a justification for the conceptual framework of this study. A summary of pertinent themes as well as a review of the impetus for the current study's design conclude this literature review.

Internet Technology and Reading Instruction

Reading Online

When focusing on the issue of increasing student reading achievement, it is pertinent to review the literature on reading online because school districts now accept not only computer software and compact discs, but a wide variety of digital content (Felvegi & Matthew, 2012). Moreover, the State of Florida, where the current study occurred, is among the states that have demonstrated support for electronic textbook adoption in schools (Felvegi & Matthew, 2012). A shift in reading habits was first acknowledged back in 2005, in an article by Gambrell (2005) responding to a U.S. report of adult reading habits that viewed reading as in decline. Gambrell considered the implications on education and posited that contemporary American students do not necessarily read less than pupils of past generations, but they do read differently because of the power of choice the Internet affords them. This point signaled a shift from traditional text-based reading habits to more modern and high-tech reading habits. It also highlighted the need for reading instruction to continue to evolve as the type of student it services continues to do so.

More recently, Clarke and Besnoy (2010) advanced this viewpoint when they pointed out that readers typically encountered printed literature at the beginning of the

last decade, whereas during this current decade digital texts are becoming more pervasive. The researchers noted that contemporary students who increasingly gain access to more technological innovations than ever before will probably read digital texts more regularly than printed texts over time. Furthermore, Clarke and Besnoy highlighted the recent trend in education toward Internet-based textbooks and instructional materials, which was also validated by Felvegi and Matthew (2012). Alger (2009) expressed a similar view and went so far as to declare that "the notion of the textbook is rapidly becoming outdated" (p. 68). In contrast, Lapp et al. (2012) argued that while the concept of literacy is evolving, schools are not evolving with it; the researchers claimed that traditional texts and notions of literacy continue to dominate education.

According to Leu et al. (2011), it is important to recognize that the act of reading online is equally as complex as reading print materials, if not more so. The researchers pointed out that online reading involves:

> A process of problem-based inquiry across many different online information sources, requiring several recursive reading practices: (a) reading online to identify important questions, (b) reading online to locate information, (c) reading online to critically evaluate information, (d) reading online to synthesize information, (e) and reading online to communicate information. During these elements, new online and traditional offline reading comprehension skills are both required, often in complex and interrelated ways. (p. 7)

Coiro and Moore (2012) echoed this sentiment when Coiro pointed out that while she worked with the University of Connecticut's New Literacies Research Lab,

> our team's work in several schools enabled me to observe firsthand that while skilled readers use many of the same strategies across both online and offline reading tasks (e.g., activating prior knowledge, determining important ideas, monitoring understanding), they also employ additional reading strategies to make sense of online texts. Some of these additional, or new, reading strategies include generating digital queries, scrutinizing search engine results, and negotiating multiple representations of text. (p. 551)

It is interesting to note that the *Digest of Education Statistics: 2010* (National Center for Education Statistics, 2011) report demonstrated that the number of instructional computers with Internet access has risen in schools across the country, yet Leu et al. (2011) established that many middle school students are not equipped to efficiently read online. The juxtaposition of these two commentaries on student access versus student ability demonstrates a problem in education: many teachers assume students can engage in the complex processes associated with reading and research on the Internet just because the students have school or home access to computers. It has been established in the literature that this is not the case; students must be taught the complex skills needed for effective online interactions with text (Coiro & Moore, 2012; Karchmer-Klein & Shinas, 2012; Lapp et al., 2012; Leu et al., 2011). However, Labbo and Place (2010) felt that teachers could build upon students' home interactions with Internet technology if educators first take the time to determine how students use technology outside of school. The researchers believed that teachers could enhance those skills

effectively, but only after they determine what technological skills the students individually possess.

The New Literacies

Lapp et al. (2012) explained that new literacies encompass various concepts beyond traditional notions of reading and writing, including but not limited to literacy as a social and cultural practice, literacy as digitally mediated, literacy as multimodal, and literacy as pertaining to a diverse category of texts, devices, tablets, or artifacts. Essentially, they summarized the dynamic nature of new literacies by indicating the many forms literacy now takes in the context of modern society. According to Coiro and Moore (2012), the dynamic nature of new literacies and the intricate processes necessary to interact with information online confront students with new challenges in reading and critical thinking. Mokhtari, Kymes, and Edwards (2008) interviewed Leu, Zawilinski, McVerry, and O'Byrne of the New Literacies Research Lab at the University of Connecticut, and they described online reading comprehension as "almost always a problem-solving process with informational text" (p. 354). The New Literacies Research Lab team identified the following five skills as the new literacies of online reading comprehension:

1. reading online to formulate a question or problem from one's social context
2. reading online for information
3. reading online to evaluate information
4. reading online to synthesize information from multiple sources
5. reading to communicate and exchange information with others online

According to Lapp et al. (2012), many schools continue to utilize traditional textbooks and subscribe to traditional beliefs about teaching reading and writing in spite of the evolving nature of literacy in the modern world. Honan (2009) observed four teachers' use of digital texts in schools located in both low and middle/upper socioeconomic neighborhoods and found that all of the teachers who participated placed high value on traditional literacies. These findings demonstrated that teachers' traditional approaches have not advanced much since Cuban's (2003) prior research. At the time, Cuban had confirmed national data through his own observations made about two particular high schools: the researcher found "infrequent and limited teacher use of computers" and "the teachers who did use computers in their classrooms largely continued their customary practice" (p. 97).

Lapp et al. (2012) cited educators' uncertainty about how to implement new literacies into their classrooms as a reason why new literacies are still not taught. However, Probert (2009) found that educators have expressed a desire to develop schoolwide strategies for teaching information literacy in particular. In a study involving 148 teachers of varying experience across three schools in New Zealand, Probert found that many teachers have limited understanding of information literacy; though teachers may use an information processing model and have materials outlining it posted in the classroom, they do not necessarily understand it well themselves. As is the case with any other major educational initiative, it is important to provide professional development for teachers so they can effectively teach information literacy skills to their students. Probert suggested that beyond professional development sessions, it would be beneficial for the

faculty if one of the teachers was designated to oversee development and implementation. Coiro and Moore (2012) also discussed the importance of purposeful professional development so that teachers can not only teach new literacies, but can also facilitate student development as "adolescents gain greater control over their own literacy practices with networked information technologies" (p. 553).

Lapp et al. (2012) argued that many authors and researchers who have studied new literacies believe there is a need to revamp literacy instruction to align with 21st century culture and expectations. As previously described, Alger (2009), Clarke and Besnoy (2010), and Felvegi and Matthew (2012) felt that education is trending more towards utilizing digital texts, a view which suggests that many schools are adapting to modern views of literacy. These contrary representations of literacy in education permeate current literature on topics relating to Internet technology and reading instruction.

Leu et al. (2011) pointed out that educators may not perceive an incentive for teaching new literacies because they are not tested at the state level and are not included in reading standards. While that assertion may apply to some states, it does not apply to the State of Florida, where the current research study occurred, as was elaborated on in Section 1 of this research study. It has already been established that Florida's FCAT test does assess new literacy skills in the most emphasized category of the state test. Leu et al. asserted that teachers may not incorporate new literacies in classroom instruction because they are not assessed on state tests. Although educators who often feel pressured to teach to the test and follow traditional notions of literacy instruction may not fully grasp the

importance of incorporating new literacies into their curricula, researchers have been making the case for years that the new literacies are imperative for eventual workplace success. In fact, in an article designed to give educators innovative strategies to address the new literacies in their classrooms, Henry (2006) declared that contemporary practitioners must understand the new literacies developing within their own classrooms in order to adequately prepare students for life in modern society. Six years later, Lapp et al. (2012) expressed similar concerns that proficiency in new literacies is necessary to adapt to the innovative technologies developing constantly in modern society.

The acceptance of the new literacies into the educational realm precipitates the need for practitioners to re-examine instructional pedagogy. Flynt and Brozo (2010) recognized the challenges teachers face to develop visual literacy skills through instruction and in some cases, motivate students. In fact, the researchers claimed that transcending traditional textbook-based content instruction is a meaningful move toward engaging otherwise disengaged students. Harushimana (2008) also acknowledged that integrating Internet technology into instruction can motivate students. The researcher also espoused the belief that technology and research have become pervasive aspects of daily life and related competencies are expected in the modern global workplace as well as in the postsecondary institutions for which K-12 educators strive to prepare students.

Hutchison and Henry (2010) echoed Harushimana's (2008) assertion that proficiency in new literacies will prepare students to meet the expectations of the modern workplace. Pointing out the continuously increasing numbers of computers in schools, Hutchison and Henry argued that classrooms are "the best place for students to acquire

the new literacy skills they will need to compete in the information-driven workplaces of the twenty-first century" (p. 72). The crucial nature of new literacy skills is acknowledged at every level of educational research. As a teacher educator, Ohler (2009) declared that online literacy is an integral part of being considered educated and functional both at work and personally.

In keeping with the acknowledgement of the new literacies, Leu et al. (2011) and Coiro and Moore (2012) recognized that reading online is one of the areas in which teachers must make pedagogical considerations because traditionally unfamiliar comprehension skills and strategies may be necessary in order to apply critical thinking skills to Internet material. Labbo and Place (2010) argued that teachers must acknowledge what the researchers referred to as students' *technology funds of knowledge*, an "out-of-school cultural knowledge base that is shared by many students" and that students may transfer to educational activities if given the opportunity to do so (p. 12). Labbo and Place recommended that educators seek out these technology literacies which students have acquired outside of school by getting to know their students' technological access and interests. The researchers suggested doing so through "three activities that may serve that purpose in the classroom: (1) inviting students to write a technology autobiography, (2) journaling about the place of technologies in their out-of-school lives, and (3) gaming in the classroom" (p. 12).

Student Internet Technology Use

For a discussion of student Internet technology use, it is appropriate to consider recent data on computer access in schools. According to the Digest of Education

Statistics: 2010 (National Center for Education Statistics, 2011) report, the number of computers utilized for instructional activities in U.S. public elementary and middle schools has increased. In 2000, an average public school possessed 110 computers, while in 2008 the number of instructional computers in an average public school was 189. Moreover, 77% of these instructional computers had Internet access in 2000, but that figure rose to 98% in 2008.

Even students with access to the Internet have insufficient online reading capabilities (Hutchison & Henry, 2010) and frequency of school Internet use does not appear to impact student reading skills. Hutchison and Henry identified several discrepancies in online reading ability which they attributed to the amount and quality of instruction students received; the researchers echoed Cuban's (2003) claim that frequent school Internet use does not necessarily equate to frequent high quality instruction that includes the Internet. It is worth noting that Cuban focused on schools at the primary and secondary levels of education, while Hutchison and Henry focused more on cultural groups than on age groups. Their study revealed that African American students had significantly higher rates of school Internet use than Caucasian students, but African American students' skills were significantly less developed than their Caucasian and Asian counterparts. Hispanic students also scored lower than Caucasian students, although frequency in school Internet use did not vary.

When Mokhtari et al. (2008) interviewed a research team from the University of Connecticut's New Literacies Research Lab, researchers Leu, Zawilinski, McVerry, and O'Byrne explained that many students simply type in the topic they are looking for and

".com" to try to find relevant information instead of utilizing search engines. The team reported that even when students do use search engines, they do not scrutinize the results to select the best option and end up clicking every link to see what it brings up. These insights into students' online search patterns confirm Hutchison and Henry's (2010) conclusion that the frequency of students' Internet use does not indicate the development of appropriate reading comprehension skills. Students need to be taught how to locate and evaluate information on the Internet before they can be expected to do so effectively.

Classroom Implementation of Internet Technology to Teach Reading

Boling et al. (2008) discussed the process and success of using the Internet for reading-related activities. The researchers found that utilizing Internet-based activities such as blogs and collaborative Internet projects both motivated and engaged students to actively learn. Alderton (2010) emphasized the importance of teaching students to skim and scan while reading on the Internet because these valuable reading strategies would guide students in selective reading and would contribute to a successful reading experience. Dalton and Grisham (2011) outlined ten ways in which educators could utilize technology to enhance vocabulary instruction, citing the preponderance of such technology in modern society as part of their rationale for making their recommendations.

Chen et al. (2011) found in their quasi-experimental study of digital integration and scaffolded reading questions that access to digital resources may benefit reading comprehension equally, regardless of which type of digital resource is utilized. The researchers felt this may be attributable to the opportunities digital resources offer

students for building background knowledge. Vasinda and McLeod (2011) conducted a study that can serve as an example of successfully using digital media to benefit reading comprehension in the way that Chen et al. discussed. Vasinda and McLeod purposefully matched Readers Theatre with podcasting online in a mixed methods study of approximately 100 students, 35 of whom were identified as struggling readers prior to the study. The researchers reported that at the end of the 10 week study, the struggling readers in the sample increased their reading comprehension by 1.13 years. Vasinda and McLeod demonstrated the success of intentionally matching proven reading strategies such as Readers Theatre with appropriate technological integration through the use of podcasting. Although this study was conducted at the elementary level, it illustrates the potential of technology integration at any level to enhance instruction if the implementation is meaningful and not merely for the sake of including technology.

Based on the notion that urban students' reading comprehension benefits from differentiated instruction, Cobb (2010) explored Compass Learning Internet-based software as a tool to differentiate instruction and increase reading achievement; results showed that differentiated instruction with technology is effective. These findings contrast Cuban's (2003) prior findings that integrating technology into curricula is often ineffective: however, this difference may be the result of differing teacher approaches to technological integration. More specifically, Cuban found that educators generally use technology as an addition to traditional teaching methods rather than using it as a mode of advancing beyond traditional teacher-centered instruction, whereas in Cobb's study,

teachers purposefully used a specific technology to differentiate instruction and not simply as an add-on.

Labbo and Place (2010) acknowledged Cuban's (2003) opposing point of view and suggested that "others have argued that effective technology integration mainly occurs through interdisciplinary units that involve several content areas. Integration should occur in ways that research shows make the learning process deeper and more enhancing" (p. 9). Based on this sentiment, Labbo and Place offered the following advice: "Four key components of learning guide effective technology integration: 1) active engagement, 2) participation in groups, 3) frequent interaction and feedback, and 4) connection to real-world experts." (p. 9). The researchers specifically recommended virtual field trips and WebQuests as Internet-based activities that could offer clear connections to curriculum and could give students the opportunity to extend their knowledge. Additionally, Karchmer-Klein and Shinas (2012) suggested VoiceThread and Glogster as two of their preferred resources for online collaborative activities that teachers could utilize in their classrooms, and these resources could be utilized to teach reading skills.

Murray and McPherson (2006) recommended that educators scaffold instruction for students; in comparison, Lapp et al. (2012) suggested not only that teachers scaffold lessons involving technology, but also recommended a specific instructional strategy for scaffolding instruction with integrated technology known as the Gradual Release of Responsibility (GRR) model. When using GRR to scaffold instruction, teachers begin with modeled lessons, then transition students to guided instruction, collaborative group

work, and ultimately independent tasks. The researchers viewed GRR as a method that "mentors learners as they recursively move from being novices to capable thinkers, learning new tasks" (p. 368).

The literature provides valuable insight into how the Internet could be implemented into the curriculum to enhance reading and critical thinking skills at virtually any grade level. The broad application of reading related Internet activities has been showcased throughout the body of educational literature to guide teachers in effective Internet implementation (McPherson et al., 2007; Boling et al., 2008; Harushimana, 2008; Alderton, 2010; Labbo & Place, 2010; Dalton & Grisham, 2011; Vasinda & McLeod, 2011; Leu et al., 2011). As Boling et al. (2008) and McPherson et al. (2007) demonstrated in their respective articles, elementary through high school students could blog about their favorite books and the key difference would be the sophistication of the work. This would be true of in-class responses to literature as well; the learning objectives remain the same. Teachers would not necessarily have to remove something from the curriculum, according to Hoctor (2005), but they would have to modify it.

Professional Development on Instructional Technology

Cuban's (2003) findings aligned with national data in that teachers often cited lack of time to find, evaluate, and experiment with new technology in the classroom as one hindrance, and specific and timely training was another commonly cited concern. However, Cuban also found that other factors revealed by available data at that time did not match the findings of his own research:

> Three reasons frequently given for the low use of technology and the durability of teacher-centered instruction were not supported by the evidence we compiled, however. Neither the age, experience, nor gender of teachers was a significant factor in our data…Teachers at both schools called for more and better technology, were avid home users, and believed in the future ubiquity of computers in society. (p. 98)

More recently, Clarke and Besnoy (2010) conducted a study involving eighth grade social studies students using Personal Digital Assistants (PDAs) to read, respond to, and discuss text in class. Although the PDAs did not provide Internet access for students, issues raised in the study are applicable to a discussion of professional development pertaining to technology integration. The researchers noted that educators often want to integrate technology into their content area curricula, but they often experience uncertainty, lack technological resources, or feel overwhelmed by the challenge of effectively and meaningfully integrating technology into instruction. Additionally, the teachers who participated in Clarke and Besnoy's study expressed concerns that they would squander class time having to deal with technology and that they would not have sufficient knowledge of the technology being utilized.

This commentary reveals that teachers are intimidated by the integration of technology into the content areas; moreover, it speaks to the need for teachers to engage in meaningful professional development and to receive legitimate ongoing technical support from the school or district in order to successfully implement technology into content area instruction. Hence, it seems that educators who are apprehensive about

integrating Internet technology into curricula experience similar reluctance to what Ness (2009), Sautter (2009), and Wilson et al. (2009) described regarding content area teachers who do not actively integrate reading instruction into their lessons; in both cases, ongoing support and professional development would be beneficial. Cobb (2010) also advocated training educators to integrate technology so they understand and apply it appropriately.

Content Area Literacy

Reading Skill Development

Blanton et al. (2007) presented middle school as a potentially influential point in reading skill development when they pointed out that many students experience a decline in their progress during the fourth grade, known as the "fourth-grade slump," that sparks a pattern of continued failure throughout middle and high school. Blanton et al. attributed this decline in performance during the fourth grade to increased exposure to expository text, which further complicates reading skill development because students have really just learned to read when they are faced with the complexity of the skills required for reading expository material. Swanson, Edmonds, Hairrell, Vaughn, and Simmons (2011) maintained that although many upper elementary students can appropriately decode text, they struggle to comprehend it.

According to Sanacore and Palumbo (2009), the fourth-grade slump is when the learning gap between low-income and middle-income children becomes evident for the first time. The researchers explained that low-income children have a much more limited vocabulary than middle-income children, but this may not become evident in school until expository texts are introduced in the fourth grade. This point is particularly relevant to

the current study as it focused on a Title I school where approximately half of the population is low-income. Middle school occurs after progress has already begun to deteriorate for these struggling learners, and it becomes an opportunity for intervention. Through this lens, the method of instruction teachers choose for their content area classrooms becomes an essential piece of the middle school learning outcome puzzle.

Teaching Reading to Enhance Content Area Instruction

Sanacore and Palumbo (2010) offered a compelling explanation for why and how content area educators should expose students to meaningful, purposefully chosen literacy experiences that will enhance their independent reading ability. The researchers asserted that students should read various types of literature, including informational text, because it will build their knowledge base. As a result, the researchers stated that reading can make students smarter. Furthermore, Sanacore and Palumbo felt that students in content area classes should be given time to read, guided to different types of text, given opportunities to extend in-class reading to at-home reading, engaged in drama-based activities, and should also be exposed to vocabulary.

Greenwood (2010) asserted that due to high stakes testing pressure in the area of reading, social studies and science content are not consistently emphasized; thus, Greenwood advocated strategic content area vocabulary instruction. Ness (2009) determined that reading comprehension instruction generally does not occur in social studies and science classes because teachers either feel such instruction is not their responsibility or they do not want to spend class time on skills outside of their specific content area. Both researchers raised an issue crucial to effective contemporary

education; that of balancing reading skill instruction with content area specific instruction. Although content area teachers need to ensure the material is being comprehended, they certainly also need to address their content area standards and emphasize the information relevant to the subject area. Thus, Greenwood and Ness acknowledged that content area teachers face the challenge of striking a balance between the two, and the researchers felt it is imperative that content area teachers understand the need to teach both reading skills and content material so students are well equipped to derive meaning from content area texts.

Moving from a teacher-centered discussion to a student-centered discussion of reading instruction in the content areas, Palumbo and Sanacore (2009) reported that in terms of literacy instruction, the potential of content area material is sometimes lost on students. This is because students either consider it boring or they struggle to fluently read and digest it. Palumbo and Sanacore explained that these struggling students avoid reading and consequently fail to acquire content knowledge. To aid in addressing this issue, Palumbo and Sanacore suggested that educators use related literary genres as well as "easily available technology" in the content area classroom (p. 276). Palumbo and Sanacore offered prior research as evidence to support their claim that related genres, and children's books in particular, could be useful means of engaging students. However, the researchers did not offer empirical evidence for using technology to aid literacy instruction in the content area classroom.

Instructional Strategies

Advancing the viewpoint that content area teachers' choices whether or not to implement literacy instruction and how directly impact student learning outcomes, Flynt and Brozo (2009) declared that content area teachers who most effectively include literacy instruction in their curricula balance reading, writing, speaking, and listening with content area topics; moreover, these teachers rely on evidence-based teaching strategies to fuse subject area and literacy instruction. Blanton et al. (2007) advocated the *basic literacy activity*, "a conceptual tool for thinking about and arranging middle school reading instruction" (p. 76). According to the researchers, it is important that "the reading knowledge and skill required for performing the reading tasks are subservient to the accomplishment of the goal of the activity and are used in its accomplishment" (p. 81). Examples of instructional strategies that Blanton et al. recommended are 5th Dimension, webquests, reciprocal teaching, Question-Answer Relationships (QAR), think-aloud, literature circles, book clubs, and discussion approaches. Additionally, Swanson et al. (2011) suggested that given the limited time frame of content area instruction, teachers should choose reading strategies that build upon each other to scaffold comprehension instruction using a variety of texts. The researchers gave examples of these types of strategies: previewing, question generation, get the gist, and summarizing the text.

Sanacore and Palumbo (2010) also suggested strategies content area teachers could impart to give middle school students more opportunities to engage in reading activities. Such recommendations included the use of Curriculum-Based Readers Theater; teaching morphemes and their derivatives in math, science, and social studies to provide

content-relevant vocabulary knowledge; and having social studies teachers use strategies such as scaffolding read-aloud sessions with illustrations, graphs, charts, maps, or other relevant documents. In an article intended to guide content area teachers toward effective vocabulary instruction, Greenwood (2009) delineated commonalities amongst best practices for teaching vocabulary: infusing student choice into instruction; avoiding employing rote memorization as a teaching method; exposing students to new words repeatedly and reinforcing the use of those words; reinforcing academic vocabulary across classes; teachers as well as students must be active learners; consider students' background knowledge as well as why and how each vocabulary word will be taught.

Montelongo and Herter (2010) advocated the use of technology to enhance expository reading and writing activities in science classes, specifically. Their article promoted the modified sentence completion task as a strategy teachers can use to provide vocabulary, main idea, and text structure identification practice. The researchers discussed using the strategy with and without technology, but they viewed the technological format as more motivational and as providing increased opportunities for student interaction with text. It is important to note that this article was situated as presenting a teaching strategy for science teachers and not as a research study offering insight into teacher experiences with technological inclusion or exclusion, as is the current study.

Preservice Educator Training

Although current literature highlights the importance of incorporating reading instruction into content area classrooms and makes pedagogical recommendations, it also

elucidates issues of preparing preservice content area teachers to teach reading skills and educator hesitation towards doing so. The content area teacher plays an integral role in reading skill development, and teacher preparation programs seek to address that role, though according to Greenwood (2010), their attempts may be inadequate. Greenwood pointed out that at West Chester University in Pennsylvania, all students in the teacher preparation programs are required to take a course entitled *Reading in the Content Areas*. Although there is some coursework required of preservice teachers, Greenwood also addressed the notion that more still needs to be done to prepare content area teacher candidates for the task of incorporating reading skills into instruction.

Additionally, Chant (2009) acknowledged the prevalence of three-hour content area reading course requirements in many secondary educator preparation programs. Reflecting on reading instruction in the content areas and how teacher-educators view their responsibilities, Chant considered his own obligation as a social studies teacher-educator to "integrate worthwhile reading strategies into the general and special methods courses I teach" (p. 52). Hall (2005) viewed the one semester of content area reading coursework for preservice teachers at most institutions inadequate because they span one semester, and Hall noted that experienced teachers who changed their attitudes toward reading instruction in their subject areas altered their practices with assistance spanning a 1-2 year time frame.

Greenwood (2010) reported that vocabulary is covered in one chapter of the textbook for aspiring content area teachers; therefore, students preparing to teach at the middle and high school levels receive approximately three hours of instruction in

teaching academic vocabulary. In a content analysis of content area teacher preparatory textbooks, Wood, Vintinner, Hill-Miller, Harmon, and Hedrick (2009) discovered that there is a large degree of variation amongst the top three content area textbooks as well as amongst the research those textbooks cited as evidence of the information presented. Furthermore, Wood et al. (2009) reported that the textbooks often merely mentioned information pertinent to reading in the content areas without elaborating on how to implement it in the classroom setting. These examples underscore the still largely unanswered need for strong preparation for incoming educators to effectively implement reading skills in content area instruction. In fact, Stryker and Szabo (2009) examined alternative-certification teacher candidates' self-efficacy and outcome-expectancy toward reading instruction and they argued that when an educator teaches a class in which reading skills are necessary and the teacher does not feel prepared to teach those skills, their teaching may not be effective.

Korthagen and Kessels (1999) pointed out that novice teachers may forego some of the strategies they learned in their preservice programs to adapt the school culture of instruction. The researchers felt that traditional teacher preparation programs were ineffective and that knowledge transfer from preservice coursework to the classroom often did not occur for a variety of reasons. It also became evident through Alger's (2009) case study of four first-year middle and high school teachers that novice content area teachers may overuse or misuse teaching strategies learned during educator preparation so that they become vehicles to avoid independent student reading. In that study, Alger relied on interviews, observations, lesson plans, handouts, PowerPoint

presentations, and other instructional documentation to describe novice content area teachers' decisions and applications regarding reading instruction in their classrooms. Findings revealed that although all four participants did employ some of the strategies they had learned during their preservice coursework in content area literacy, they "missed the big point…that along with teaching their students the content, they are also teachers of reading as it pertains to their discipline" (p. 67).

Alger's (2009) resulting redesign of the content area literacy course she teaches offers a possible new direction for other teacher educators to consider; a stronger emphasis on assessing students' reading abilities and how those abilities align with the text. If novice content area teachers are better equipped to measure student reading ability as it relates to course materials, they can plan more effective and ultimately more efficient lessons. It seems, based on Alger's research, that first-year content area teachers may arrive full of strategies, but they may not necessarily be well equipped to apply teaching strategies in their classrooms because students do not comprehend the text or the concepts it grapples with. Hence, arming novice content area teachers with the knowledge to appropriately gauge reading ability will give them the tools to adjust instruction so that when different strategies are included in lessons, they will impact student learning as intended.

Content Area Teachers' Attitudes Towards Reading Instruction

Even if teacher preparation programs do appropriately prepare future educators to teach reading skills in their content area classes, there may still be a disconnect that hinders that instruction from taking place. Educational research has established that

content area teachers generally have negative attitudes toward teaching reading strategies in concert with subject matter (Hall, 2005; Sanacore & Palumbo, 2009; Sautter, 2009; Wilson et al., 2009; Wilson, 2011). Content area teachers may not understand how their roles in students' literacy development differs from that of reading or English teachers, and they also may not make the connection between literacy strategy implementation and their students' comprehension of relevant subject matter (Hall, 2005).

While many states require future educators to take at least one course on reading in the content areas, many of these aspiring educators do not actively integrate the reading strategies they learned into their content area classes once they become classroom teachers (Hall, 2005; Sautter, 2009; Wilson et al., 2009; Wilson, 2011) or they do not implement the strategies appropriately (Alger, 2009). Sautter (2009) conjectured that content area teachers fail to understand the value of reading instruction as a means to aid students in developing and organizing their ideas about what they read within the specific content area. Wilson et al. (2009) corroborated this explanation for content area teacher reluctance toward reading instruction. Wilson et al. claimed that content area teachers do not think literacy instruction is their job or they struggle to balance literacy with content area material in their lessons. Similarly, Ness (2009) determined that reading comprehension instruction generally does not occur in social studies and science classes because teachers either feel such instruction is not their responsibility or they do not want to spend class time on skills outside of their specific content area.

Interestingly, Sautter's (2009) and Wilson et al.'s (2009) explanations for this instructional deficit mirror Ness's (2009) findings that content area teachers consider it a

waste of class time to teach skills that are not exclusive to their specific subject areas. Even more compelling is the fact that Sautter's research focused on content area teacher candidates while Ness's and Wilson et al.'s research dealt with content area teachers who had varying levels of experience and education; the similarities in attitudes among the preservice and veteran teachers in all three respective studies illustrate an embedded perception among content area educators that is problematic for content area literacy instruction. The primary purpose of Ness's mixed-methods research was to investigate the frequency of teaching reading comprehension strategies in secondary content area classes. Ness found that in a total of 2,400 minutes of observed instruction, a scant 82 minutes were spent on reading instruction. These findings underscore a theme that emerged throughout the process of researching reading skill instruction across the content areas; content area teachers are disinclined to teach reading skills in their classes, a hurdle that must be overcome before reading instruction can flourish across the content areas. However, Wilson et al.'s year-long professional development initiative offered hope for the content area literacy movement; the research revealed that content area teachers may be more amenable to teaching reading strategies if it is made clear that reading is a tool to guide content area instruction and not vice versa.

Professional Development on Content Area Literacy

In an effort to review the body of literature available on content area literacy professional development and resulting implementation at the middle school level, Reed (2009) set specific criteria that whittled 87 peer-reviewed articles down to four studies. Interestingly, Reed noted that no restrictions were placed on publication dates, but the

four articles that met the rigorous eligibility criteria for inclusion in Reed's review were all published between 2002 and 2009. This demonstrates the relatively recent measures researchers are taking to thoroughly investigate professional development as it relates to content area literacy instruction.

According to Reed (2009), there are four items that should be considered in a discussion of professional development in middle school content area literacy instruction: professional development should be based on teachers' reported needs; teachers need administrative support in acquiring necessary materials and planning time; implementing schoolwide literacy instruction will help teachers apply strategies across all content areas; and it is important to note that further research is necessary as little research-based evidence exists on learning outcomes resulting from educators receiving training in content area literacy instruction at the middle school level.

Reed's (2009) synthesis of the current body of literature on professional development for middle school content area teachers in literacy instruction revealed extremely limited findings; only one of the four studies Reed analyzed included a standardized measure of student reading achievement. Moreover, Reed pointed out that particular study did not compare student performance to another group, so the findings stood alone. Reed encouraged further investigation into the effects of professional development on student reading achievement and educational pedagogy.

Meanwhile, Curwen, Miller, White-Smith, and Calfee (2010) reported the findings of a 3-year professional development initiative in the state of California. During the Read-Write Cycle Project, 18 teachers developed multi-week units over the course of

10 sessions during the first year. They implemented the lessons during the second year and attended 5 days of professional development, reflecting on the lessons and adjusting them as necessary. During the third and final year of the project, participating teachers utilized the revised lessons in class and attended 3 days of professional development, focusing in these sessions on analysis and reflection.

Findings from the study revealed that teacher participants consistently viewed the Read-Write Cycle of professional development to be beneficial in guiding teachers toward enhancing student learning by increasing their metacognition, scaffolding student understandings of content material, and aiding students in incorporating literacy skills into the content areas. Curwen et al. (2010) recommended that professional development in content area literacy provide teachers with opportunities to work collaboratively, to reflect, and to apply metacognitive strategies in their classes. The researchers also advocated providing successful models of metacognitive techniques for teachers. Curwen et al. noted that such instructional techniques are contrary to "today's standardized, scripted, and paced instructional practices" but the researchers felt that this deviation is warranted given the deeper learning and higher level of understanding teachers reported observing in their students (p. 146). Hall (2009) found that students may perceive themselves to be strong readers because they can answer basic fact-finding questions pertaining to text, and consequently those students may not recognize their own issues with comprehending content area text; Hall suggested that teachers could help such students by guiding them toward thinking metacognitively about the text and how well they understand it.

Conclusion

In an increased climate of educator accountability, educators and educational researchers continue to seek effective strategies for literacy instruction. Researchers focusing on how the Internet relates to a 21st century reading curriculum have posed innovative suggestions and presented successful classroom examples. However, it remains unclear how teachers approach Internet technology within a whole-school view of literacy encompassing all content areas and elective classes.

Hence, a phenomenological approach to this research study gave teacher participants the opportunity to voice their experiences, concerns, frustrations, and triumphs dealing with the phenomenon of required literacy instruction in every subject area. In a discussion of how to conduct phenomenological research, Creswell (2007) emphasized that data must be collected from people who have experienced the phenomenon, as that is the essence of phenomenological research. This research design lends itself to inclusion of all teachers at the school, whereas a case study design would limit the number of perspectives the research could illustrate. An ethnographic methodology would not apply to this diverse participant population, and grounded theory would not meet the goal of giving a voice to the teachers experiencing the phenomenon. Quantitative methods would not be appropriate because there are too many factors to consider, and only a descriptive qualitative method would effectively address the various concerns and experiences participants have had with literacy instruction in their classes.

It has overwhelmingly been established that the Internet functions as a motivational tool for reading instruction (Boling et al., 2008; Harushimana, 2008; Hebert

& Pagnani, 2010; Hoctor, 2005; Sokal and Katz, 2008). Further research is necessary to convey how teachers are approaching such implementation in their own classrooms and how they perceive student progress. Hence, this particular study seeks to address that issue by describing teacher experiences with reading instruction and Internet implementation in content area classrooms.

Section 3: Research Method

Introduction

The central Florida middle school that served as the setting for this research had lost its A rating from the state, and part of the School Improvement Plan focuses on increasing student reading achievement. As the researcher, I endeavored to provide a more complete portrait of teacher experiences integrating reading skills and reading strategies into their content and how they may have used Internet technology to deliver that instruction. A phenomenological research design was appropriate because, beginning with the 2012-2013 school year, all teachers were required to infuse reading skills and reading strategies into their curricula regardless of subject area specialization (although some may have voluntarily done so prior to that school year). This whole-school approach to literacy was the phenomenon that served as the central focus of the current study. This research study explored how educators at this particular school have used Internet technology to teach content area literacy and what they learned from their experiences thus far. This study answered the questions of how content area teachers described classroom implementation of Internet technology versus traditional methods of teaching reading skills and how they described classroom implementation of Internet technology versus traditional methods of teaching reading strategies.

Qualitative data presented valuable insight into teachers' experiences, as well as insight into the activities that educators believed to be successful in cultivating critical thinking skills during classroom instruction. All teachers in the school have a vested interest in their students' reading skill development, which has been detailed in a prior

discussion of the context of the study, and teachers can directly benefit from having a more in-depth understanding of their colleagues' experiences using Internet technology as a tool for teaching literacy skills. This study not only benefited educators at this school by providing data they can use to guide lesson planning and professional development on instructional strategies; it also gave them a voice to share their perceptions of the experiences they had with Internet technology implementation to teach reading skills and reading strategies in their classes. This in turn can potentially benefit educators elsewhere who infuse reading skills and reading strategies in their content area and elective classes.

Research Design

A structured, analytical approach to coding interview data as outlined by Creswell (2007, p. 159) guided the phenomenological data analysis. Interview transcripts were checked to ensure there were no major errors, and follow-up member-checking was conducted. Other validation strategies I employed were data saturation and maximum variation of the population.

Criterion sampling was used in this phenomenological study because as Creswell (2007) pointed out, to ensure the quality of the research, it is paramount that all participants have experienced the phenomenon being researched. The criterion for participants was that they were certified in their subject area and that they infused literacy skills and strategies into their instruction. Creswell further noted that this method of sampling is effective when all participants represent people who have experienced the phenomenon (p. 128). Hence, the potential participants in this study were all teachers at a central Florida middle school where (a) all faculty members are expected to infuse

literacy strategies into their instruction and (b) school standardized test scores affect all employees' final evaluations. This broad population represents teachers of all content areas and elective classes, men, women, and various cultural and socioeconomic backgrounds. This variation in the potential participant pool lends itself to a broad application of the results, as recommended by Merriam (2002).

A phenomenological design of qualitative research gave educators of various content areas a voice to share their experiences with Internet technology as they endeavored to integrate reading skills and reading strategies into their classes. This research study also gave educators an opportunity to share their perceptions of how their instructional choices shaped student progress reading and thinking critically about content throughout the school year. According to Creswell (2007), "a phenomenological study describes the meaning for several individuals of their lived experiences of a concept or phenomenon" (p. 57). This format suited the purpose of the current study because open-ended qualitative interviews with teachers from various disciplines provided a broad range of backgrounds and perspectives from educators who experienced the phenomenon. In doing so, there was an opportunity to consider educator interpretations of the learning process as well as their perspectives on whether or not Internet implementation in content area classes impacted student progress in reading.

It would not have been appropriate to employ a narrative or case study design because they focus on one or only a few individuals (Creswell 2007), which would not have provided the various perspectives sought for this study. Grounded theory would not have been appropriate because, as Creswell (2007) explained, it seeks to develop a theory

from the research, and this study was intended to describe the experiences of educators infusing literacy skills in their classes rather than to develop a new theory based on their experiences. An ethnographic design would not have been applicable to the population of this study because the potential participants shared a common career, but all represented different cultural backgrounds. Ethnography focuses on a culture-sharing group and this study endeavored to include a diverse group of people so that the focus was on the phenomenon they have all experienced, rather than their backgrounds or characteristics. Although participants' backgrounds can affect their experiences teaching literacy skills, a richer picture of their experiences can be drawn from having a diverse group instead of focusing on teachers with specific backgrounds.

Context of the Study

There were 79 classroom teachers at this school representing various content areas and electives; all teachers at the school were expected to infuse literacy skills into their curricula, regardless of what subject they taught. In fact, a new evaluation system was partially implemented during the 2011-2012 school year as an acclimation period for teachers and was implemented in its entirety for the 2012-2013 school year. Under this new evaluation system, 40% of teachers' evaluations relied on their students' scores on the state standardized test. For teachers of subjects other than language arts or math, their evaluation scores relied on the schoolwide data for the state test.

Criteria for Participant Selection

The sampling method best suited to this study was criterion sampling. The criterion was that participants must be certified in their subject areas and they must teach

literacy skills and strategies through the content. The school had 79 teachers of various disciplines. In Creswell's (2007) suggestions for conducting phenomenological research, he noted the research will often involve in-depth interviews of a recommended five to 25 participants (p. 61). The sample for this study was approximately 30 teachers who met the criteria and were willing to participate. However, if the number of willing teachers who met the criteria had exceeded 30, then the sample size would have been narrowed down to 30 by including an even distribution of teachers representing different content areas and electives. This purposeful method for narrowing participants was intended to ensure maximum variation across content specializations.

Measures for Ethical Protection of Participants

I gained access to potential participants by obtaining permission to conduct the study at the district and school levels. Once Institutional Review Board (IRB), district, and school-level approvals were granted, a letter was placed in the mailbox of each teacher in the school asking for volunteers and outlining the requirements so that staff members could volunteer to participate in the research. I arranged a face-to-face meeting with each individual teacher who expressed interest in participating in this study. During that meeting, I intended to discuss the participant's role in the study, his or her rights as a participant, and the consent form displaying IRB approval 12-17-14-0139205. If the teacher decided to participate and signed the consent form, then we scheduled the semistructured interview.

Participants were made aware at the beginning that their continued participation was completely voluntary, and they were reminded of this at the beginning of all

interviews. I did not share personal anecdotes with participants during interviews or any other interactions, as Creswell (2007) advised against it so participants would not be influenced or stifled in any way; Creswell also pointed out that in a phenomenological study such as this, sharing personal experiences with participants would impede the researcher from bracketing (separating personal background and biases), which is considered an essential component of phenomenological research.

To meet the goal of communicating teacher experiences, I collected data in their naturally occurring state; interviews focused on teacher perceptions of an experience they have already had (teaching literacy skills in their content area or elective classes with or without the use of Internet technology). The entire population for this study has been collaborating with their professional learning communities and the school's instructional coaches, ensuring that they have actively sought to incorporate literacy instruction into their content areas.

Role of the Researcher

My relationship with potential participants was strictly professional, as I did not socialize with any of the potential participants outside of the research process. I also do not live in the area of the school, so it was unlikely I would have seen potential participants outside of that setting. In order to establish an appropriate researcher-participant working relationship, I began by meeting with participants to obtain their consent and to make them aware of their rights as participants. I ensured they understood that their participation was completely voluntary and confidential, and that they could

choose to stop participating at any time. I also refrained from sharing personal anecdotes with them and I did not seek to forge personal relationships with participants.

To ensure that research practices were executed in the most ethical manner, participants were made aware of what exactly the research involved and what their roles would be before they signed any relevant paperwork to participate. Participants remained anonymous during this qualitative study and they were guaranteed confidentiality. They were made aware that the researcher would be the only person who had access to interview data, and their names were not used under any circumstances in the findings. I preserved research participants' anonymity by assigning numbers instead of using individual participants' names, as suggested by Creswell (2007). All relevant data is being stored on a password-protected computer or locked in a filing cabinet in my home office.

The role of the researcher during data collection was carefully considered in advance of interviews being conducted to maintain the integrity of the interview process. To avoid influencing participants during interviews, I made a conscientious effort not to make facial expressions or comments that would potentially hinder participants from speaking openly. Additionally, I did not share personal anecdotes with participants based on Creswell's (2007) recommendations. An interview protocol was utilized with open-ended questions, and follow-up questions were asked when appropriate to give participants the opportunity to elaborate on or clarify their responses.

Pertaining to data analysis, the role of the researcher was vital to deriving themes and patterns from the wealth of data the interviews yielded. I repeatedly engaged in a

process of reviewing interview transcripts, finding patterns in statements, identifying statements that directly conflicted others or that were outliers, determining themes from the patterns that emerged, assigning frequency indicators to certain types of responses, and comparing responses to certain questions with responses to related questions for additional insight. Throughout this process, it was crucial to remain neutral and unbiased, focusing on participants' perceptions instead of my own. I did so by concentrating on what participants said, and in constantly going back to their own statements, I found themes and points that offered insight into participants' own experiences with the phenomenon.

Data Collection

Qualitative data was collected in the form of semistructured interviews using an interview protocol. The interview instrument can be found in Appendix A. Creswell and Plano Clark (2011) advised using an interview protocol as an organizational tool as well as a back-up method of data collection should the audio recording device fail. The interviews focused on teacher perceptions of student reading and critical thinking progress in their classrooms as well as how they believed instructional practices impacted that progress (or lack thereof).

The primary goal of this study was to give a voice to educators so that they could share their lived experiences and perceptions of those experiences integrating reading skills and reading strategies into their content area and elective classes. This was important to offer insight into which instructional strategies are being utilized in real classrooms, what has been effective, what has been ineffective, and how Internet

technology has been utilized as part of that instruction. To reach the goal of giving participants a voice so that educators of various content areas can learn from each other's experiences, semi-structured interviews were conducted with 30 teachers of language arts, reading, social studies, science, math, English for speakers of other languages, and elective classes who ranged in experience from one year to approximately 30 years of experience.

One validation strategy that this research sought to employ was to achieve maximum variation of the population, and the wide range of content areas and levels of experience that participants represented helped to reach that goal. Another method of validation used was data saturation in that the desired number of 30 participants were interviewed and, although they shared a variety of experiences and perspectives, there were certain themes that emerged repeatedly.

Data collection began after approval was obtained from IRB, the school district, and the school principal. All faculty members received an invitation to participate in the research in their mailboxes at the research site. I met with volunteers to discuss what participation entailed and to provide them with a copy of the consent form. If they were interested in participating, an interview was scheduled. Although I had planned for interviews to be scheduled over the course of 4 weeks, most participants scheduled interviews for the last 2 weeks of the school year due to the testing schedule, so most of the interviews took place over a 2-week period instead of a 4- week period. All interviews were conducted using an interview protocol, which is provided in Appendix A, and they were audio recorded. The semistructured nature of the interviews gave me

the opportunity to ask follow up questions when appropriate to clarify responses or give participants the opportunity to elaborate, and this provided an additional avenue of ensuring that participants were able to share their experiences and perspectives openly, which also led to providing rich descriptions of participants' experiences and perspectives. I transcribed all interviews by typing them into Microsoft Word and participants were given the opportunity to participate in member checking, although no participants requested changes or additions.

Data Analysis

As explained in a previous section, I chose not to employ the use of coding software so that I could truly let the data speak for itself as part of a holistic process. This was achieved by engaging in a process of repeatedly returning to participants' statements and finding patterns among them, noting which statements did not fit into patterns, and identifying concepts that participants emphasized. Creswell's (2007) structure of phenomenological data analysis guided the approach taken to data analysis in this research study.

I began by bracketing out personal experiences by reflecting on and describing them per Creswell's (2007) recommendation. I then transcribed interview data by typing it into Microsoft Word. Afterward, I found statements expressing how participants experienced the phenomenon and created a chart in Microsoft Word to list the statements. I printed the chart, looking for similar statements and ideas, highlighting and making notes on the pages of the documents. Then I went back into the Microsoft Word chart and used the notated print out to narrow the chart to a more comprehensive list of non-

overlapping statements. Once I had achieved a chart of non-overlapping statements in Microsoft Word, I reviewed it for themes and color-coded them accordingly. I then grouped the color-coded themes within the chart to prepare for the next phase of data analysis.

To help organize the grouped data and to see what other patterns emerged from it, I read each color-coded grouping of statements and then wrote a summary of that theme. I chose to write summaries of each theme as a way to organize the color-coded statements and find the commonalities as well as recognize the discrepancies within them. I then went back into the chart and used specific statements to write a description of what the participants experienced with the phenomenon. Afterward, I wrote a separate description of how participants experienced the phenomenon using specific statements from the chart. The final phase of data analysis occurred when both descriptions were used to write a culminating description that captured the essence of participants' experiences.

Validity

Because the issue of validity was important to the integrity of the current research study, I employed several different procedures to establish validity. Creswell (2007) recommended that qualitative researchers utilize a minimum of two validation strategies in their work. I thought it was appropriate to use the following strategies to ensure the results were as accurate as possible.

Keeping measures that ensure validity in mind from the outset, I intended to have maximum variation so that results can be transferred to, and can thus benefit, as many

educators as possible. The diverse participant pool for this research study lended itself well to maximum variation. This study's population was all teachers at a middle school because all of those teachers were required to teach literacy skills; hence, they were all experiencing the phenomenon under investigation. However, the potential participants of this study could have ranged in terms of age, gender, cultural background, what subject they teach, how long they have taught, the amount of training they have received, and what their own beliefs were about best practices in education. By purposefully selecting participants from different departments, different genders, and varying years of experience, there was a greater chance that others in the educational community could relate to the participants and to their experiences. With such a diverse participant pool, the findings are transferable to a wider variety of educators.

This research study was designed with the goal of selecting 30 participants to reach data saturation and the goal was met. I planned this study aware the data would be saturated when the same themes and ideas repeatedly came up during the data collection process and no new data emerged. I considered this to be an integral part of the research process because it would indicate that the data which had been collected accurately represented the participants' experiences and there were not major themes that had been missed during data collection.

The final form of validation, member checking, occurred during data analysis. I engaged in member checking by sharing rough drafts of my analyses with participants so they could offer their perceptions and point out if they felt anything was missing or that they wanted to add anything else. While participants' feedback would have been taken

into consideration to ensure that participants' experiences had been accurately and fairly portrayed, none of the participants requested changes or additions. After member checking was completed, I proceeded with data analysis using the existing data without revision.

Section 4: Reflections and Conclusions

Introduction

This section will begin with a review of the purpose of the study and the problem that it sought to address. The methods of data collection and data analysis will be explained to ensure the quality of the research. Finally, the research questions will be listed and the findings for each research question will be presented.

Purpose of the Study

The purpose of this phenomenological study was to describe teacher experiences integrating reading instruction into their content area or elective classes and what role, if any, Internet technology had in that implementation. The research site was a middle school in the State of Florida that has adopted a whole school approach to literacy instruction as a strategy to meet both the needs of students at this Title I School as well as the demands of increasingly rigorous state tests. The problem this research sought to address was that the school where the research took place had an A rating from the Florida Department of Education from 2006-2012, but has since dropped to a B rating due to a decline in student reading scores. These data demonstrated that student reading achievement was an important academic issue challenging this school. The results of this study offered a view of teachers' authentic experiences and their perceptions of those experiences with implementing reading skills and strategies into their content area and elective class curricula, as well as how they may have chosen to incorporate Internet technology into that instruction. The findings presented an opportunity for educators to

learn from each other and for teachers to use the guidance of participants' experiences to benefit their students, as well.

Findings

Research Question 1

Research Question 1 was as follows: How does the content area teacher describe classroom implementation of Internet technology versus traditional methods of teaching reading related skills?

Approximately half of the participants reported that they often used Internet resources for reading and research-related activities in their classrooms, and the other half were split between using Internet resources occasionally and never using them for the purposes of reading and research. The primary use unrelated to reading and research-specific activities that virtually all teachers who used Internet technology commonly reported was to review content with students by playing games on sites or applications such as Kahoot. Teachers who implemented Internet technology into classroom instruction shared two characteristics, regardless of their training: they researched Internet technology implementation on their own, and they expressed willingness to try something new in their classroom, even if it was beyond their comfort zone, such as to supplement classroom texts, particularly for nonfiction reading. Many participants believed that using Internet resources as part of classroom reading made lessons more engaging, not only using Internet sources to supplement classroom texts, but also to replace them as reading materials. Teachers gave two primary reasons why they used Internet resources for reading activities: the material online was more current than the

textbooks, and students could read articles that have been tailored to their reading levels. Several teachers mentioned that the textbooks for their classes were outdated and that the Internet provided students with the opportunity to read about current topics that were ultimately more relevant to their own lives.

Many of the teachers who used Internet resources for reading reported that the websites they used for instruction offered reading materials targeting different reading levels, and either the websites adjusted to students' reading levels or the teachers could adjust the content for each individual student. These teachers indicated that material online was more customizable and therefore helped them meet the needs of various levels of student reading ability within one classroom. Participants who reported using websites that adjusted texts or offered a variety of texts based on student reading abilities agreed that these resources can impact the quality of instruction.

They also believed Internet integration was important not only because it was more engaging for students, but because they considered it an important part of preparing students for the future. According to Participant 4,

> it's not just engaging, it's a life skill because they need to be able to get on the Internet and understand what's important (for example): the content of the reading, is it valid, is it a good website to get your information from?

He concluded that, "understanding what they're actually engaging in (online) is really important."

Participant 18 was the only participant who stated that teachers must be cautious not to confuse engagement in an activity with actual learning taking place. Although

higher engagement may lend itself to deeper learning, it may also be giving the illusion that students are learning when they are really not achieving the goal of the lesson. This insight also demonstrates the need for and illustrates the value of scaffolding instruction online. It allows teachers to more effectively monitor student learning and guide students through the processes necessary to meet their learning goals when engaging in activities on the Internet. Participant 18 believed that integrating Internet technology can lead to higher student engagement, but he also cautioned that "you have to be really careful with Internet-based resources because you can confuse the engagement with what they're (the students are) actually taking out of it." He went on to say that his students have done activities that resulted in the students having a lot of information, "but the information that they have…is pretty low level."

Building on what Participant 18 observed in his classroom, Participant 16 was the only participant who specifically pointed out that she perceived a need to scaffold online instruction for students, an observation that aligns with recommendations made by educational researchers that I explored in Section 2. Students were engaged in project-based learning, and the teacher "didn't tell them anything…they had to research all of the information I gave to them." Some of the students "got the key points that I wanted them to get," but "some of them did not. They completely overlooked it…it was just about…the fun." In hindsight, the teacher felt that if she does the same project with students again next year, she would need to provide more guided inquiry. She considered providing students with "focusing questions" to guide them through the research process, "and that would help integrate the specific content more."

Many of the participants whose students engaged with text online reported noticing that their students were not able to discern the validity and reliability of information when conducting research. Several of these teachers commented that they worked with students on developing these skills, but not all of them realized that they should explicitly teach students how to determine what a good or bad source of information is online. Participant 8 struggled with integrating Internet sources into instruction because "the Internet is filled with resources and too much information can hinder their focus." He noted that higher level students may use information from websites with language that they do not necessarily understand, while lower level students may get distracted easily. Notably, his concerns about students using information incorrectly or getting distracted and losing focus were the primary concerns that were also raised by other teachers who expressed trepidation about Internet integration. Furthermore, this particular teacher commented that, "One has to be careful because not all of the information online is credible…I haven't actually spent time doing that (teaching how to evaluate sources online), quite honestly. I probably should."

This participant's response demonstrates that although teachers may be aware of the importance of scrutinizing sources of information online, they do not necessarily realize that students do not know how to do that on their own. This insight aligns with educational research on the new literacies, which was discussed in Section 2, and further affirms what researchers have warned the educational community about with regard to the discrepancies between the exposure that students have had to technology as digital natives and their levels of technological literacy. As Hutchison and Henry (2010)

espoused, educators must consider that students need to be explicitly taught how to locate and evaluate information online because their frequent Internet use does not necessarily indicate the depth of their online literacy skills.

Several teachers offered additional insights into what they have learned about students' computer knowledge, and it should be noted that each of these teachers reported using the Internet for reading and research-related activities sometimes, but not as often as they would like due to limited access to technology. Participant 21 noticed that "the kids are not really able to use the Internet well…they're really, really good at finding things on YouTube; but if you try to have them research a topic, they lack those skills." As Participant 7 pointed out, "They (the students) grew up in the computer age, but they don't know how to open up a Word document and actually do something with it…we think they do, but they really don't."

Using Internet technology as an instructional tool will be most effective if teachers understand their students' level of computer knowledge in advance, and gauge their progress once they begin integrating Internet technology. Participant 18 spoke of this problem when he described his experience with one "group of students that are really good with paper-pencil stuff" versus students who "are good with computer stuff." He felt that students who are fine when working with textbooks may need help when working with computers. He concluded that teachers "have to reassess the kids and understand what their technology literacy is."

Access to technology is the primary reason why some teachers do not integrate Internet resources into the curriculum and others do not integrate it as much as they

would like to. Participants agreed that the amount of equipment available to teachers at any given time is inadequate. However, the disparities in the amount of technology use reported are attributable to these factors: some teachers reported accessing the school's computer labs or iPad carts, and others said they allowed cell phones and tablets to be used in class for instructional purposes.

Participants whose students did not use cell phones for instructional purposes had several reasons why they chose not to do so. Teachers felt that it was unfair to have students who did not own cell phones sitting in a class with their peers who were able to use their own equipment, and teachers were also concerned about the possibility that students would become distracted by trying to use their phones for purposes other than what the teacher intended during the lesson. Participant 19 summed up the concerns that were raised repeatedly by teachers: "It's a bit of a challenge in a Title I school when you're creeping up on 70% free and reduced lunch, that not everybody has a device." She added that sometimes the school's Wi-Fi was not working for students who did have a device, so if the school cannot provide technology, teachers are unable "to use some of those awesome web-based programs." Multiple participants shared the concerns that some students would be left out of class activities and that it would be difficult to keep them on task if teachers relied on a "Bring Your Own Device" approach to classroom technology integration.

In contrast, some of the teachers who said they integrated Internet technology into content area curricula often said they were able to do so because of a "Bring Your Own Device" policy. Several of these teachers commented that despite the school's Title I

status, they were surprised that most of their students had cell phones or tablets they could use during class. For Participant 20, “One thing I thought would be a struggle that wasn’t…the access to devices.” Some teachers reported that students who did not have cell phones were either paired up with students who did, or they would do the same activity with paper and pencil.

While participants reported that testing takes most of the technology away from instruction, some teachers used iPad carts or were able to take their students to computer labs during certain class periods. However, many teachers reported not being able to access the iPad carts or computer labs due to testing or other teachers having signed up first. Participant 18 offered perspective on how the online format of state testing ties up school resources because “the test window is so wide, and they have to cycle every kid in (to the computer lab). It just gets difficult to get them (classes) down to the computer lab or check out computers.” Teachers who were not able to obtain iPad carts or sign up for computer labs, and who did not feel it was feasible to have students use their cell phones in class, reported that they hardly used Internet technology as an instructional tool.

About half of the participants said they integrated reading skills into content frequently, while the other half of participants reported doing so sometimes or never. Among the teachers who reported addressing reading skills often, many said they explicitly taught reading skills, while some other teachers reported that instruction occurred more often indirectly. Comparatively, teachers who reported hardly ever doing so generally said they were focused on trying to cover all of their content and did not have time for anything else. This sentiment further validated the notion that many

teachers viewed reading skill instruction as something extra rather than something complementary to their content.

Content area teachers described teaching vocabulary related skills, prior knowledge, inferences, summarizing, making predictions, paraphrasing, annotating text, and making connections. Many teachers reported that they have been trained in reciprocal teaching, so they focused on predicting, clarifying, summarizing, and questioning. However, the reading department also addressed decoding and fluency through corrective classes, and no other content area teachers except for language arts teachers reported addressing those two skills. These are the skills that content area and elective teachers reported being the most uncomfortable with teaching, though they also believed these skills were important to have background knowledge in because of their students' varied reading levels. When asked to identify the reading skills they incorporated in their curricula, some participants were unable to do so. This is a reflection of the lack of knowledge these teachers reported having about specific reading skills. When asked to describe how they integrated reading skills with their curriculum, participants mentioned vocabulary instruction, previewing information, summarizing information, finding the main idea and supporting details, and providing evidence to support a claim.

Teachers who integrated Internet technology into their lessons reported having received varied amounts of training. Some participants reported extensive training with Internet resources, while others reported having none. Teachers who have had training with Internet technology reported being part of schoolwide initiatives, having gone to summer conferences, or having gone to classes offered by the county on their own.

Participant 11 said that “we received a few (trainings), but as much as we are pushing for technology, I don’t feel like we’ve received as many as we should.” Participant 7 felt that “with enough training and quality training, I would have no problem with it (integrating Internet technology). As long as we have the software available and the typical issues that occur are at a minimum.” His comments align with concerns other teachers expressed that some of the teachers who do not currently utilize Internet resources are concerned about issues of availability and managing student behaviors while they use the technology.

Content area and elective teacher participants in this study had varying amounts of reading skill training independent of Internet technology. Some teachers reported having a reading endorsement, some mentioned taking a course on reading in content area classes as part of their teacher preparation programs, and others mentioned participating in trainings through the school, the county, or outside companies. Several content area teachers reported being members of the county literacy cadre. Participant 14 participated in the county’s literacy cadre and attended a total of three half-day meetings for science and social studies teachers. The tips she learned “help you realize where your kids are at...” She learned that students have difficulty visualizing what they read, and she “never would have thought of that.” The teacher noted that she learned a strategy to help students visualize what they read, and “little things like that were really cool.”

While teachers who received ongoing training felt it was beneficial, teachers who were not part of similar programs expressed a desire to receive ongoing training and support. Participant 24 said that, “any reading training I have received has been very

superficial." She felt that one-day trainings were designed to tell teachers to use a specific instructional approach, but the trainings were, "not in-depth enough to make me comfortable being able to use it past experimenting." On the contrary, she has been working with the school's reading coach during certain class periods, who has an elementary school background and has assisted the teacher with instructional strategies that "helps with the eighth-grade low readers." The teacher felt that the ongoing support she received from the reading coach "made a difference."

Research Question 2

Research Question 2 was the following: How does the content area teacher describe classroom implementation of Internet technology versus traditional methods of teaching reading related strategies?

Teachers reported fewer instances using Internet technology to incorporate specific reading strategies in their classes than to address skills. However, participants who described using the Internet to teach specific reading strategies in their classes tended to use it for vocabulary strategies such as using context clues. Participant 19 was unsure of how to implement Internet technology as a means of teaching reading strategies in her class, because she preferred to use traditional methods such as highlighting text when students are working with primary sources. She explained that, "if you don't have a big enough screen and it's a longer document…it works better if you have a hard copy." However, she indicated that using Internet resources for the activity may be more appropriate "if you're using a small piece of text and you're going to use context clues, or you're going to do the close reading strategy and focus on a specific idea." She concluded

that, “it’s all just how you plan the activity.” This teacher’s uncertainty regarding how to integrate Internet technology was shared by other content area teachers, with many participants stating that they would like to receive more training. Teachers expressed a desire for more training with Internet resources to address reading skills and to learn specific reading strategies. Nonetheless, it was more commonly reported that teachers focused on specific skills than strategies when integrating Internet technology.

Teachers integrated reading strategies into content area instruction with varying degrees of frequency, from never to all the time. Participant 11 did not integrate reading strategies with content often because “…we feel like we are being pulled in different directions and we have to teach this, this, and this.” This response validates findings that were previously discussed that showed teachers perceive reluctance from some colleagues to integrate content area literacy because it is viewed as an extra thing they have to do.

Regarding specific reading strategies utilized in content area classes: participants reported using prior knowledge, context clues, predicting, making text connections, text coding, highlighting key words and phrases, summarizing information, supporting ideas with evidence, vocabulary, close reading, identifying main ideas and supporting details, making inferences, interactive read-alouds, hot rod (hand over text, retell on demand), and reciprocal teaching. Participants also integrated reading strategies into their curricula in a number of ways. For example, teachers used prereading strategies to help prepare students to interact with the text. Participant 5 described the process students go through when they encounter primary source documents, and the teacher noted that “it’s hard for

students to comprehend them." He explained that students look for familiar words before they begin reading, and "we try to get them to highlight, box, or mark words they know or that they've heard of." The teacher also would go over words the students may not know to help them prepare for reading, and "once they preview it, most of the time it's not what they thought it was, so they know that they (need to) do the opposite of what they (originally) thought." Participant 9 described using a combination of prereading strategies and annotating the text during reading. The teacher said she has students create KWL charts (what a student knows, wants to know, and has learned) before they begin reading, and then "I give them post it notes…so they can take little notes or flag themes as we are reading..." Multiple participants reported having students interact with the text by annotating it.

Many content area teachers who integrated reading strategies into curricula reported that they often used reciprocal teaching in their content area and elective classes. Several teachers also used interactive readalouds in their classes, and multiple participants also reported using the Building Academic Vocabulary approach to vocabulary instruction in their classes, as well as deciding which specific reading strategies would be best to use based on the piece that the students will be reading. Using strategies that will prepare students for state testing was also mentioned by several participants.

Teachers believed that students are not the only ones who should receive customized instruction. Teachers would like to learn reading strategies that they can utilize within the unique context of their different content area and elective classes.

Teachers reported concerns that students would tire of using the same strategies repeatedly, as well as concerns about how reading strategies would apply to teachers' specific curricula.

One cause for concern among some content area teachers was that teachers felt the same types of reading strategies were utilized in every content area class. As Participant 22 explained,

> When I was working on those specific strategies (reciprocal teaching), I found that there was a lot of resentment with students because they felt like they were in their reading class since we're utilizing the same type of strategy over and over again.

The participant further elaborated on this idea and said that while she feels it is essential to integrate reading strategies into content area instruction, she thinks that content area teachers are all "doing the same thing" and that teachers should have knowledge of various strategies because, "teachers have different personalities and different ways to present their information." While many teachers expressed varying levels of enthusiasm for content area literacy, most of them said they would like training that focuses specifically on how to integrate literacy into their individual content areas. Participant 22 explained, "…I would like to see something maybe more customized for science and the way that we have to deal with very specific words."

Participants reported feeling more comfortable teaching reading strategies than specific reading skills because they received more training in using strategies in their classes than they have received in addressing skills. Consequently, some participants

reported that they were still not totally comfortable with it because they don't have much background with teaching reading strategies aside from the targeted trainings they have received on specific strategies.

Teachers described their experiences receiving training on teaching reading strategies through their content very differently from each other. Some teachers reported having no training in integrating reading strategies into their subject area content. This also relates to the previous discussion of teachers' desires to receive training that is customized for their content areas. Participant 2 could not recall "any training I've had where we've sat down and said, 'this is how to use a reading strategy so that kids can better understand a real life word problem.'" Other participants described which strategies they were comfortable incorporating because they have been trained on how to use them. Participant 7 described feeling comfortable guiding students to summarize and to find the main idea, but "I don't have much training beyond that."

Several participants mentioned professional development opportunities offered at the school. Participant 6 explained that trainings were, "usually Wednesday afternoons or sometimes in the mornings with the literacy coaches…those have been pretty helpful." However, teachers reported having mixed feelings about the training they have received, including these sessions. Several teachers reported that they were helpful, as the previously quoted participant had. In contrast, many participants felt these trainings were general reading strategy trainings and teachers did not always feel the single session trainings addressed their specific content adequately, as was discussed in a previous section.

Some teachers reported the training they have received was through college level programs. Participant 16 had received training to teach reading strategies through content "at the beginning of my Masters program…that's all I've learned." The fact that some teachers reported not having received reading strategy training since taking college level courses affirms educational research discussed in Section 2 which established that many content area teachers do not receive sufficient training in how to integrate reading strategies into curricula, and that they may only receive one course on teaching reading in content area classes during teacher preparation programs. There were also some teachers who had previous teaching experience in other parts of the country, and they had received training on reading strategies while working in those other states.

Meanwhile, several other teachers felt that activities utilizing specific websites or online programs were the most effective for their students. Some of these websites were for test preparation. Participant 10 "created DE's (Discovery Education probes) for my students to work on based on areas that they're struggling (in)." Another test preparation program that is Internet-based and that a participant felt was the most effective tool for students was Amplify projects. Participant 3 said, "I think those have more of an impact because they're working with something real world and the questions are very rigorous."

Edmodo was another Internet-based website that Participant 15 believed was the most effective instructional tool used because students would take their tests online and "it breaks apart each question, shows me who got it right and who got it wrong, and it gives me immediate feedback with the data." She added that the instant feedback provided by Edmodo "helps a lot." Although he did not report that it was the most

effective instructional tool he utilized, Participant 4 reported using Edmodo often because "it's also a great way to be able to track what students are learning…if I do something on Edmodo, I can get results back almost instantaneously…it really speeds up the process of monitoring the students' achievement."

Although teachers were asked a general question about which instructional strategy had the biggest impact on student learning, the majority of teachers reported specific reading strategies as the most effective strategies they used. Among the strategies reported as the most effective were using context clues, reciprocal teaching, summarizing, comparing and contrasting, text coding, hot rod (hand over text, retell on demand), BAV (Building Academic Vocabulary), reading the questions first, partner reading activities, using thinking maps, and teachers modeling interactive read alouds for their students. In particular, vocabulary related strategies were the most commonly reported instructional strategies that teachers felt had the most impact on student progress. Participant 4 explained the reason why guiding students to use context clues was so effective in that classroom. His class used Internet technology often, and he described how his students would go to dictionary.com to look up the meanings of words, but they encountered multiple definitions.

Additionally, several teachers reported feeling that kinesthetic activities such as labs, learning stations, and other hands-on lessons were the most effective. Participant 17 shared an activity that "involved the strategies of collaboration, research, applying meaning, sharing out with others, and then creating digital projects to showcase that landmark." It is interesting to note that it was not only a kinesthetic activity, but also a

vocabulary development activity which students participated in, further affirming the idea that vocabulary related strategies were often considered the most effective type of strategies which participants integrated in their content area and elective classes.

Evidence of Quality

The quality and accuracy of findings discussed within this study were ensured by employing multiple strategies discussed by Anney (2014), Creswell (2009), and Hatch (2002). Anney (2014) reviewed various forms of confirming what Guba (1981) first established as methods to ensure quality: credibility, transferability, dependability, and confirmability. The strategies used in this study to enhance the credibility of findings were interview technique, establishing authority of the researcher, and member checking. The interviews followed an interview protocol and were audio recorded. I remained cognizant throughout interviews of having neutral facial expressions to avoid influencing participants. Hatch (2002) advised that researchers should emphasize to participants that there are no right or wrong answers to interview questions, and that questions should be designed to allow participants to speak from their own perspectives. At the beginning of each interview, I explained that there were no right or wrong answers to the questions I was about to ask and that I was interested in hearing the participants' own perspectives. The interview protocol consisted of open-ended questions and I asked additional open-ended follow-up questions as appropriate to give participants the opportunity to further explain their perspectives. I followed Hatch's (2002) guidelines for conducting interviews to further solidify the integrity of the interview process. Authority of the researcher was established through appropriate use of an invitation to participate in

doctoral research, meeting and reviewing the consent form, and the use of an interview protocol to establish consistency across all interviews. Regarding triangulation, Creswell (2009) stated that "if themes are established based on converging several sources of data or perspectives from participants, then this process can be claimed as adding to the validity of the study" (p. 191). Triangulation established the credibility, dependability, and confirmability of results by employing a varied group of participants from different subject areas and representing varied levels of experience and training to provide their perspectives on the research questions. Transferability was enhanced by purposeful criterion sampling in which all participants were certified teachers, but they varied in gender, content area specialty, and years of teaching experience. Other methods outlined by Anney (2014) that were utilized to determine the quality of findings were strong interview technique as previously described, maintaining the anonymity of participants by assigning numbers, and researcher self-analysis throughout the process to consider issues of bias and accurately provide the varying perspectives participants expressed during their interviews.

Conclusion

Content area and elective teachers reported being more comfortable integrating specific reading strategies into their curricula than focusing on specific reading skills. This is because they have not received as much training in targeting reading skills. Any training in addressing reading skills has been through training on how to use a certain strategy. Teachers were therefore more likely to be able to name specific strategies they used and had been trained in rather than skills that they reinforced or had been trained to

address. Most teachers reported focusing on vocabulary through the Building Academic Vocabulary approach, guiding students to use context clues, and teaching students to apply context clues to help them determine the appropriate meaning of multiple meaning words. Teachers also relied on reciprocal teaching, hot rod (hand over text, retell on demand), and text coding strategies.

The amount of Internet implementation in each class varied, as did the training teachers had received with Internet technology. However, teachers whose students engaged with text online reported noticing that their students were not able to discern which sources of information were valid and reliable. Several of these teachers commented that they worked with students on that, but not all of them realized that they should explicitly teach students how to determine the validity and reliability of an online source. Teachers who utilized Internet technology often conducted their own research to find ways to integrate it into content. They also were willing to try something outside of their comfort zone.

Teachers expressed a desire for more customized learning, both for students and for themselves in terms of professional development. Teachers were confident teaching students to summarize and find the main idea and supporting details. However, participants did not believe they were prepared to adequately address the needs of struggling readers. They specifically mentioned decoding and fluency as skills they did not know how to address within their classes. Teachers commented that since their students' reading abilities vary significantly, they would like more training on how to address the different levels of readers present within one class.

Participants also expressed a desire for their learning to be customized as well, based on their area of specialty. Science teachers would like professional development that presents them with strategies and activities which would apply to scientific texts, and vocabulary was mentioned often among science teachers participating in the study. Math teachers noted that they have not received specific training showing them how to use reading strategies to break down a word problem and help students extrapolate meaning from it. Social Studies teachers generally reported feeling more progress was made among students, and they mentioned reciprocal teaching, hot rod (hand over text, retell on demand), and document based questioning as key strategies they relied on. Elective teachers tended to utilize more Internet technology as a department, but some of their classes had online components and were based in computer labs. These students were encountering online texts more than some other content areas, but teachers reported having varied amounts and types of training on using Internet technology.

Teachers would like to receive ongoing support through professional development that follows a time continuum, versus one time trainings. The data also showed that content area and elective teachers would like to have trainings that they feel are more applicable to their specific subject areas. Teachers also expressed a desire to have more technology available because they reported believing it is an integral aspect of life now and will be increasingly important for building skills to prepare students for the workplace of the future. Furthermore, educators would like to receive training in meaningful ways to integrate Internet technology as a means to deliver content area

literacy instruction that would enhance students' experiences with content, rather than be an addition to it.

Section 5: Discussion, Conclusions, and Recommendations

Overview

Educational researchers have offered suggestions regarding how content area and elective teachers can incorporate both literacy and Internet technology into their curricula. Despite the valuable recommendations on how to do so effectively, research has not offered a portrait of what attempting that integration looks like. Teachers navigating the challenges associated with content area literacy and Internet technology integration leave a void, which could be filled by their voices as they share their triumphs and their struggles. This study was conducted with the goal of describing how content area and elective teachers are integrating reading skills and strategies into their classes and how Internet technology fits into that implementation, so that educational research can be enriched by the insights of teachers' lived experiences. In order to reach data saturation and to achieve maximum variation by representing educators of various subject areas, years of experience, amounts of training, and cultural backgrounds, semistructured interviews were conducted with 30 teachers at a Title I middle school in central Florida. This school has adopted a whole-school approach to literacy instruction. Two research questions were addressed by the questions in the interview protocol:

1. How does the content area teacher describe classroom implementation of Internet technology versus traditional methods of teaching reading related skills?

2. How does the content area teacher describe classroom implementation of Internet technology versus traditional methods of teaching reading related strategies?

Summary of Findings

Through a structured approach to data analysis as described by Creswell (2007), a holistic view of the data emerged opening all possible avenues of data analysis and allowing the data to speak for itself. The data revealed that teachers who integrated Internet technology into their curricula as a means of teaching reading-related skills recognized that their students were not equipped to evaluate the validity and reliability of information they encountered online. Teachers addressed this in various ways, while some did not address it at all, but realized later that they should have. Internet technology implementation in content area and elective classes occurred more often as part of reading skill instruction rather than reading strategy instruction. Vocabulary strategies such as using context clues and determining the meaning of multiple meaning words were among the strategies most often taught through Internet implementation. Another strategy for which Internet technology was often utilized was finding evidence to support a claim.

Teacher training with Internet technology varied from teachers who reported that they had received no training to teachers who attended trainings regularly. This was intended to prepare for having one-to-one iPads in their classrooms during the upcoming school year. Participants expressed interest in utilizing Internet technology more within the framework of their curricula and cited higher engagement, the need to prepare

students for the workplace, and the fact that testing is now done online as reasons. However, access to technology and students becoming distracted by personal interests while using the technology were the two primary concerns that teachers had.

The data demonstrated that content area and elective teachers feel more comfortable integrating specific reading strategies into their curricula than focusing on addressing skill development of struggling readers or highly proficient readers. Teachers reported that this is because they have received more training in using certain reading strategies than they have received in addressing skills. The data showed that other factors impacted teachers' levels of comfort with content area literacy, such as their own personal experiences with reading. According to the data, teachers believed that student reading ability was important, but some teachers saw a benefit to integrating literacy into their content area and elective classes, while others either did not see a benefit at all or did not feel it was their job or responsibility.

Some of the most interesting findings related to professional development. Teachers reported wanting to receive training specifically focused on reading skill development or targeted reading strategies that would be directly applicable to their content areas, and they would like to be shown how. They would also like to receive training on how to implement Internet technology as a means of delivering literacy instruction in their classes. In more general terms, teachers expressed a desire for ongoing training, the ability to communicate with colleagues from other content areas, and to work more collaboratively on cross-curricular projects.

Interpretation of Findings

A wide variety of teacher perspectives on using Internet technology as a means of delivering reading instruction in content area classes were revealed through data analysis. However, common themes emerged that provided insight into which aspects of content area literacy instruction and Internet technology integration are of paramount importance to teachers. The data offered confirmation of existing research on new literacies, technology integration, and content area literacy, as discussed in Section 2. It also provided additional insight into which instructional strategies teachers chose to implement in their classes and why, as well as what kinds of professional development teachers have received and what kinds of professional development teachers feel would be most meaningful to receive in the future. An interpretation of the findings as they relate to each of the two research questions follows.

Interpretation of Findings Related to Research Question 1

Through data analysis, it became clear that teachers did not realize their students needed to be taught explicitly how to read and research information online and, more specifically, how to determine if information was valid and reliable. Teachers may have assumed that because this generation of students is a generation of digital natives, it means that students come to class equipped with technological literacy; however, educational research has established this is a misconception. While teachers who use Internet technology as a tool to engage students in inquiry-based learning are utilizing a meaningful instructional approach according to educational research, these teachers must scaffold instruction in order to do so effectively. The data demonstrated that content area

and elective teachers were not aware of the complex nature of reading online and that they did not necessarily understand the unique set of skills students must develop in order to effectively sift through information online. This finding aligns with school test data, which were discussed in Section 1 of this research study; student scores on the informational text/research process portion of the FCAT declined while the amount of emphasis those questions received on the test increased among eighth grade students at the school from 2011-2013. In addition to supporting the analysis of testing data, which were presented in Section 1, this finding demonstrates that a need still exists for teachers to address reading and research skills online through their instruction, and it therefore carries implications for future professional development opportunities for teachers of all content area and elective classes.

The idea of assessing students' technological literacy was recommended by Labbo and Place (2010) in their research, and was previously described in Section 2 of this paper. Interestingly, although a few other teachers pointed out that the students are not as technologically savvy as one might assume, Participant 18 was the only participant to state that he perceived a need to assess students' technological literacy, which was discussed in Section 4. However, it is a point that is bolstered by educational research and is worth highlighting for that reason. While participants reported noticing that students lacked research skills and the ability to evaluate sources of information, they did not mention whether or not they determined which specific students needed more support with online lessons.

According to the data, teachers recognized that different instructional strategies worked for different types of learners, and teachers also believed that this concept applied to students with varying levels of reading abilities. Teachers who expressed interest in learning new ways to integrate reading skill instruction in their content area classes cited reasons such as reaching different types of learners as well as having a personal belief that literacy skills will enhance students' interaction with content area material. Content area teachers said that they lack the knowledge to address the needs of struggling readers in their classes, and they expressed a desire to learn more ways to challenge highly proficient students who are prepared for higher level reading skill development.

However, one group that was not specifically mentioned by participants was the average proficient reader, with the exception of Participant 15, who offered the viewpoint that integrating literacy into all content areas would help to prevent these students from dropping in reading proficiency. She explained that "some kids that are on grade level still need that extra enhancement so that they don't drop or stay stagnant." This comment addressed a point made in Section 1 of this study; there are remedial reading programs in place for struggling readers and a gifted program for highly intelligent students, but the needs of students in the middle are not being met, and these students are not making enough learning gains to remain proficient in reading. The teacher who pointed out that consistently integrating literacy into content area classes will provide additional support for these students has provided a strong argument for colleagues who may be reluctant to embrace content area literacy.

Content area teachers reflected on their own personal experiences with reading as part of the reason why they were or were not comfortable teaching reading skills. Participant 22 stated that she was not comfortable teaching specific reading skills because that was not her area of expertise and she has not received training with that. Additionally, she noted that she "was a very avid reader. I was a good reader so I think I might have a little bit more trouble trying to understand the difficulty that some children have when they are presented with material." In contrast, Participant 5 also reflected on personal experience and said that he felt comfortable addressing reading skills in his class because

> I did remedial reading when I was a student. I know a lot of the skills and I'm working with the reading coaches and the social studies coaches…I'm always looking for things to help me understand, so it's easier for me to…guide them whenever they're reading through text.

It is interesting to note the contrast between both responses; the participant who considered herself a strong reader had trouble understanding the challenges a struggling reader may be dealing with, while the participant who considered himself a struggling reader while growing up felt that he could relate to students in his content area class who were experiencing similar challenges. This appeared to be a common thread, depending on the participants' own strengths and experiences.

While this insight certainly logically makes sense, it provides a valuable lens through which teacher experiences with content area literacy can be viewed. Educators who have not received extensive training in addressing reading skill deficits of struggling

readers within their content area classes may potentially feel more prepared to deal with these issues if they experienced them in their own personal lives and have background knowledge to inform their pedagogy. Comparatively, teachers who have not received extensive training in addressing reading skill deficits and did not personally encounter these challenges with reading may be at more of a loss to deal with them in their own classes, and are therefore more reticent to do so.

One of the topics on which participants offered a range of perspectives was the acceptance of content area literacy. One view teachers had was that although student reading ability is important, content is the teacher's priority. This belief demonstrated that some teachers viewed literacy and content as two distinct avenues for instruction, rather than viewing literacy as a vehicle for providing deeper engagement with content. This perspective was illuminated by educational researchers and was reviewed in Section 2; however, the data in this study confirmed that view still exists among content area teachers. If teachers are going to shed this view of literacy as one more initiative on top of everything else they are trying to do, they will need to be shown that literacy is a tool, not an initiative. The misconception that literacy and content are separate entities needs to be clarified so that content area teachers can begin to consider literacy as a support for their top priority, their content. They also need to see that there is a direct connection between the literacy instruction and the learning taking place in the content area classroom. Participant 26 confirmed

> that there needs to be more of a hook for the content area teachers…some, not all, content area teachers might feel that (by including) reading strategies in a content area, then we're not teaching our content; we're just becoming reading teachers.

He believed other teachers needed to be shown that "by learning to teach the strategies, it's going to help get our content across much easier because the students will be able to comprehend it."

The idea that teachers would like to receive more specialized training was discussed during responses to both research questions. Participants reported a desire for customized trainings on reading skills and reading strategies because they feel that their specific content presents students with unique challenges. Participant 11 explained that, "trainings that I have received previously, while they were informative, they haven't always been the most useful for our classroom." This is where teachers' desires for customized learning can be applied. Teachers expressed a desire to receive training that is specific to their subject area, and by providing them with opportunities to learn new instructional approaches that focus on their content while reinforcing literacy skills, teachers will begin to shift their perceptions of what teaching reading in a content area class means.

Interpretation of Findings Related to Research Question 2

The data revealed that teachers implemented Internet technology into the content area curriculum more often as a means to deliver reading skill instruction than to utilize it for reading strategy instruction. However, teachers who did teach reading strategies through Internet technology used it more for vocabulary strategies. Some participants

pondered how they would implement Internet technology for reading strategy instruction, and one participant explained that when students are highlighting important information in a primary source document, it is easier to use paper than to have students highlight text on the computer screen. This was an interesting commentary on convenience, because although it made sense for the teacher to use paper and highlighters, there are other factors that may also be worth considering. For example, the state test which requires students to read information on the computer screen allows for students to highlight important information as they read. However, as mentioned before, many students have not been trained how to read online, so they most likely have not had the experience of reading and highlighting or annotating on a computer. It is just as important to be able to do so on a computer as it is on paper, so giving students exposure to those types of strategies on the computer will better prepare them to utilize those strategies whenever they need to, regardless of the reading modality. If they see they can employ reading strategies across platforms, when they are engaging with text, they may be more likely to call on those strategies on their own.

When asked for her opinion of integrating Internet resources into lessons to deliver literacy strategies with subject area content, Participant 27 pointed out that the state tests are now online, yet students are still receiving most of their instruction through textbooks. She said that "if we could give them research projects where they could use the Internet, I think it would also help them with that test at the end of the year." She added that "I don't think it's fair that everything depends on that test even though they haven't really had the practice with the computer." The teacher concluded that students'

phones “are with them all the time. Their Internet is their life, so why not teach them how to use it for things that would help them learn?”

This participant made an interesting point, because the high stakes tests are online now, but many students are learning in a different modality. Although more technology is being implemented and multiple participants reported that next year they will teach in blended learning classes and will have one to one iPads in their classes, this is not the case for all classes in the school. While many schools are working to become future-ready laboratories of learning with the resources to prepare students for a technologically advanced society, it is a process that takes time and money. In the meantime, testing is already there, and students who are not exposed to online texts on a regular basis prior to the test may not be as comfortable as students who have encountered material online throughout the school year.

The data demonstrated that teachers believed it was necessary to address reading skills and to integrate reading strategies more often in lower level courses than it was to include reading skills and strategies in higher level courses. Multiple participants shared this belief in discussions of reading skills and reading strategies in response to various questions throughout the interviews. Therefore, teachers of classes with struggling readers expressed the most interest in having more knowledge of reading skills and strategies, though challenging higher level students was also mentioned. Although this finding was discussed in the interpretation of findings for Research Question 1, it did also receive attention as part of discussions regarding Research Question 2, so it is worth noting that emphasis. It is interesting that participants raised this topic at various points in

the interviews pertaining to both research questions; participants expressed a view that reading skills and strategies are connected, so if they believed it was only necessary to address specific skills in lower level classes or to infuse certain strategies with content in lower level classes, then they were acknowledging that content area literacy occurred more in classes where they expected to have higher numbers of struggling readers. This finding suggested that classes where teachers did not expect to have high numbers of readers who were not proficient were not receiving any specialized literacy instruction with their content, or that they were receiving higher level literacy instruction than they were equipped to handle as part of their interaction with content. If students in those classes were receiving high level reading skill instruction and did not understand the content, it would hopefully be evident through monitoring. Teachers would then be able to address the needs of those students, but if not, then the teachers may have missed opportunities for intervention and students' understanding of content may have been affected. Either way, teachers clearly indicated that students in lower level classes were more likely to receive additional literacy support in content area classes.

A particularly interesting finding was that reading strategies were most commonly reported to be the most impactful instructional strategies teachers utilized. This was noteworthy for several reasons. Teachers were asked to describe which specific strategies or activities had the biggest impact on their students' progress, and although a wide variety of responses were given, analysis determined that most of the strategies and activities that teachers described were reading strategies. This was interesting because findings revealed that teachers had mixed feelings about their own comfort levels and

abilities to teach reading strategies effectively. The data showed that teachers did feel more comfortable implementing specific strategies than addressing skills because they have had more training with that, yet according to the data, content area and elective teachers also believed that reading strategies had the biggest impact on their students' progress in their content area classes. Therefore, teachers already did integrate reading strategies effectively, based on their self-reporting. However, their own perceptions of what they knew did not match the idea that they believed the most impactful thing they did in their classes was a reading strategy.

Another reason why this finding was interesting was that further analysis of responses revealed that the teachers who reported using reading strategies more often in their classes were also the teachers who named a reading strategy when asked about the most impactful instructional strategies they utilized. This finding begs the question: Did the teachers who reported using reading strategies often do so because they felt those strategies were impactful, or were the reading strategies impactful because teachers used them more often? The findings in this study brought this question to light, but perhaps further study could clarify the issues this question addresses.

An interesting dichotomy that the data revealed was vocabulary strategies were more commonly reported as the specific type of instructional strategies that teachers believed had the most impact on students in their classes, yet vocabulary strategies were also the most requested area of professional development amongst science and math teachers. Going back to the idea that teachers would like to receive more customized trainings, science teachers expressed a desire for training that would help them address

the very specific language students encounter in science classes, while math teachers expressed a desire for training students to read and understand word problems. Teachers reported implementing Building Academic Vocabulary (BAV) and using context clues, but teachers clearly requested additional instructional approaches for enhancing vocabulary development in their classes. The emphasis on vocabulary in content area classes is an interesting finding because it aligns with educational research that vocabulary skills are the biggest predictor of student success on high stakes tests.

Implications for Social Change

As educators, we share knowledge every day with students, parents, and colleagues. This is the premise of the current research study. We can learn from each other's experiences to improve our pedagogy and ultimately better serve our students. In an increasingly technological society, students must be equipped with the complex skills necessary to read, research, and think critically about information. By describing the lived experiences of teachers navigating the challenges of blending Internet-based and non-Internet based instruction, this research has provided a portrait of what the teachers at one particular school have learned and what can be done to help improve instruction so that students learn the skills they need to be successful in a digital world. Participant 5 shared his view that "educating ourselves on how to better use the Internet…is only going to benefit us more." He added, "I just went to training and my mind was completely blown as to how different education is going to be in ten years just because of the Internet and what kids can do with all of this technology." He concluded that "if we don't educate

ourselves on it, we're going to run the risk of dating ourselves and doing a disservice to the kids by not raising our game or not adapting as education changes."

Besides providing insight that would assist teachers with lesson planning, this research also offers insight into what makes professional development on these topics meaningful for educators. Although teachers have differing views on using Internet technology to deliver content area literacy in their classes, they generally expressed desires for professional development that provides rationale, shows them how to implement it, and provides the tools or equipment needed to do so effectively. If teachers feel they are receiving ongoing support implementing an instructional strategy that will help students succeed in their specific content area class, teachers will be more confident and more willing to experiment with an unfamiliar instructional approach. This will presumably lead to a more dedicated effort to implement the strategy in their classes, and it will ultimately lead to more effective implementation that will benefit students.

Recommendations for Action

Central to the findings of this study were discussions of professional development. Throughout the data collection process, participants brought up training, even when they were not being asked specific questions about the topic. Participants expressed a desire to receive more training in meaningful Internet technology implementation as well as more training in content area literacy, with or without Internet technology as the primary vehicle for that instruction. More specifically, the data revealed that teachers want to receive training that provides information which will better prepare them to integrate reading skills and strategies with their unique curricula.

Therefore, administrators, instructional coaches, and professional development providers should consider tailoring training sessions to specific content areas rather than focusing on delivering one strategy to multiple content areas. It is a finding that makes sense, because education emphasizes differentiated instruction for students, and teachers are clearly requesting that they receive differentiated instruction based on the content they deliver.

In addition to emphasizing a desire for professional development that is customized for specific content areas, the data demonstrated that teachers believe ongoing training is more valuable than one time professional development sessions. Teachers in this study reported having successfully implemented instructional strategies they learned from programs with multiple sessions. Additionally, teachers expressed more feelings of uncertainty when they had not received ongoing support in implementing newly learned strategies. Based on these findings, professional development planners should consider designing programs that are focused on a specific strategy or activity and that provide multiple sessions for participants to learn why it would be beneficial to utilize, how to implement it, what it looks like when it is being implemented, and how it should impact student learning when implemented effectively.

One area that teachers of all content areas who participated in the research could benefit from professional development in is using Internet technology to teach research skills. Among participants who said they utilized Internet resources to deliver content area literacy instruction, a common theme was that teachers noticed their students did not know how to evaluate sources of information. All of them mentioned that they discovered

this when they had their students conduct research online, indicating that it was not something they were aware of and had considered when planning the lesson. Therefore, teachers would benefit from receiving professional development that makes them aware of current educational research on this topic and provides strategies teachers can use to scaffold instruction for students online and guide them through the process of determining the validity and reliability of the information they encounter online.

The sentiment that all classes would benefit from collaboration and reinforcing what each other was teaching was a commonly expressed theme amongst participants. Participant 23 noted not being aware of how certain concepts were being taught in other classes, which would impact how she handled similar assignments in her particular subject area. She described how when she was in school, she was taught five paragraph essays. However, her students told her they did not write five paragraph essays anymore. She conveyed uncertainty regarding what she could do to support her students' essay writing, adding that "I'm not sure what's new and what I'm supposed to be doing, so it's a little harder (when she tries to support other content areas through instruction)." Participant 11 commented that "we have to be accountable for everything. We can't just focus on our own content, because we should be working as a team, as a school." Since multiple teachers have requested the ability to communicate and collaborate across departments, administrators should consider providing opportunities for teachers to meet with colleagues from other departments to explore how they can support each other's content.

Recommendations for Further Study

As previously noted, the teachers who reported integrating reading strategies into their content area and elective curricula often were also the teachers who named a specific reading strategy when asked to name the most impactful instructional strategy or activity they had utilized in their classes. Data analysis brought this correlation to light, but it remains unclear whether these teachers felt that a reading strategy was effective because it was used often or if they used it often because they found it to be effective. Therefore, additional study would be necessary to determine if teachers who used reading strategies frequently chose to do so because they perceived those strategies to be effective, or if the teachers felt those strategies were effective because they were being utilized often within the framework of their curricula. This would provide insight into whether specific instructional strategies tend to be more effective and those are the ones teachers repeatedly used, or whether repeated use is what makes different instructional strategies more effective. It would assist teachers when planning their lessons if they understood that better, because it could impact how much content area teachers integrate reading strategies or which specific strategies they choose to utilize.

One teacher in the study commented that when utilizing Internet technology, student engagement can be confused with actual learning taking place. This was an interesting point because he was the only teacher who made this assertion, although many participants cited student engagement as one of the primary reasons why they already do or would like to integrate Internet technology into their content area classes. Further study could explore this topic more and clarify whether other teachers are aware of this

issue or not, and if they are aware of it, how they monitor student learning to ensure that students are not merely completing a task without achieving the goals of the activity.

Reflections of the Researcher

Reflecting on the research process, the amount of data the research yielded was amazing to me, and the process of sifting through it seemed at times to be quite arduous. The initial concerns that themes and patterns would not emerge were overcome by working through the process of data analysis systematically and by repeatedly going back into the data. The amount of data collected led to a wide variety of perspectives expressed, but there were no instances of discrepant data because none of the participants had views which stood apart from those expressed by others.

In hindsight, I am not sure that it would be possible to reach data saturation given the amount of questions, their subjective nature, and their open-ended structures. Although there were many common themes that emerged, I do not think it would be possible for absolutely no new data to emerge because there were so many possible responses participants could have had based on the unique nature of their own personal experiences. The research yielded a vast amount of data and responses varied from one extreme to another for the majority of topics covered, so perhaps it could be concluded that data saturation was reached because all possible perspectives were represented.

Although I did bracket out my own personal experiences and thoughts before analyzing the data, I do feel that I should acknowledge my own belief that Internet technology should be meaningfully integrated into any subject area instruction in order to develop students' skills in the areas of new literacies. This is to prepare them to think

critically and be savvy consumers of information in modern society. During data collection and analysis, I remained mindful of my own bias and worked to set that aside so that teachers' experiences were reported in teachers' own words, without researcher bias interfering with the results of the research. The wide variety of perspectives and experiences that were represented in the findings reflected the different viewpoints and pedagogical approaches of content area and elective teachers at the participating school, making the findings transferable to educators elsewhere who may be able to relate to the concerns, challenges, and triumphs shared by teachers participating in this study.

Although I had no expectations of what the findings would reveal and looked forward to seeing what themes emerged from the data in response to both research questions, I was surprised by how much teachers mentioned their views of and made specific requests for professional development. Teachers mentioned professional development in response to questions that did not specifically address training for both research questions, and their requests for additional training had very clear common themes among them; specifically, that training be ongoing, that training be tailored to their specific content areas, that training provide them the opportunity to collaborate across content areas so they can reinforce what their colleagues teach when it is appropriate in the context of their own subject areas, and also that they receive more training with Internet technology as well as in content area literacy.

Multiple participants also mentioned wanting to be presented with evidence for why they should integrate a specific strategy or instructional approach, indicating that they would like to better understand why they are being trained to use a certain strategy.

This would potentially alleviate the feeling that they are simply being told to implement a new initiative because it is trendy in education. These themes relevant to professional development made me realize how valuable it is as a tool to not only give teachers new strategies they can use, but also to show them why these strategies are beneficial to use in order to earn their support of instructional approaches that are unfamiliar to them. These discussions about training also showed me how important it is that teachers believe in the approach they have been trained to implement. When they have not been adequately convinced of its value, they are more likely to dismiss it or to attempt it without truly embracing it, and if they have been convinced of its value, they are more likely to try to integrate it into instruction and make it part of their pedagogy long after the training has ended. Before conducting this study, I did not truly grasp the value of professional development for shaping and influencing teachers' pedagogical choices.

Conclusion

This study has presented the perspectives of content area and elective teachers at a Title I middle school taking a whole school approach to literacy instruction and explored how teachers utilized Internet technology as part of that implementation. The findings revealed that teachers generally wanted to utilize Internet technology to deliver content area literacy, but not all teachers who wanted to felt they have access to the equipment or were comfortable introducing Internet resources into instruction in middle school classrooms due to their concern for student time on task. Teachers who utilized Internet technology as a means of delivering reading instruction within their content area classes realized that students do not know how to evaluate the reliability and validity of

information online, though some teachers said they addressed that while others said they did not. This demonstrated a need for professional development to help teachers scaffold instruction for students online, guiding them through the process of research and determining what information is valid and reliable, as opposed to that which is not.

Teachers had a variety of viewpoints on content area literacy, and some embraced it while others viewed it as an extra initiative rather than an instructional tool. Participants reported feeling more comfortable using specific reading strategies they have received training on rather than addressing reading skills, which they did not have much background in. Most participants requested additional training in reading strategies and skills that could help students tackle their unique subject area content, yet when asked about which instructional strategies were the most effective they had utilized, reading strategies were the most commonly reported, especially vocabulary strategies.

One key component for virtually all teachers who participated in the research was the quality of professional development they received and the amount of administrative support they had while attempting to integrate unfamiliar instructional approaches. The research demonstrated that if teachers were presented with evidence that unfamiliar approaches, whether they pertained to Internet technology or content area literacy, were effective, they tended to be receptive to that approach. When teachers are provided with meaningful training that shows them how to implement such approaches, they will be much more likely to embrace using Internet technology and content area literacy within their content area and elective classes. Teachers wanted to receive training on strategies that would help students interact with their specific content area material, and they also

wanted to be able to customize their instruction for the needs of the various levels of readers in their classes. My research gave a strong indication that if teachers are given professional development that provides effective strategies and activities to address student needs when interacting with course-specific content, and if the professional development offers ongoing support to guide teachers through this process, they will feel more confident and enthusiastic about experimenting with new instructional approaches.

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Appendix A: Interview Protocol

Date: _____ Participant: _____

Time: _____ Location: _____

1. Which subject do you currently teach and why did you choose that area to specialize in?
2. Describe your previous teaching experiences and how long you have taught.
3. How do you define reading skills?
4. For how long have you taught reading skills in your class?
5. How comfortable are you with teaching reading skills in your class and why?
6. Tell me about any training you have received in teaching reading skills through your content.
7. How often would you say you teach reading skills explicitly in your class?
8. Which specific reading skills do you teach in your class and why?

9. Tell me about how you integrate reading skills with your curriculum.
10. How do you define reading strategies?
11. For how long have you taught reading strategies in your class?
12. How comfortable are you with teaching reading strategies in your class and why?
13. Tell me about any training you have received in teaching reading strategies through your content.
14. How often would you say you use reading strategies explicitly in your class?
15. Which specific reading strategies do you use in your class and why?
16. Tell me about how you integrate reading strategies with your curriculum.
17. Which specific strategies or activities (Internet-based or not) that you have used in your class had the biggest impact on your students' progress and why do you think that strategy had such an impact?
18. Describe your students' progress in your classes this year and how literacy strategies played into the growth or lack of growth you observed.
19. How does this compare to prior years?
20. Tell me about your view of content area literacy.
21. What is your opinion of integrating literacy into all classes instead of just in language arts or reading?
22. Tell me about any training you have received in using Internet technology in your class.
23. How do you feel about using Internet technology to teach reading skills or reading strategies?

24. Tell me about your experiences with Internet resources in your classroom.
25. How do you feel those experiences affected student progress in reading and thinking critically about subject area content?
26. How often do you use the Internet for reading and research-related activities in your classroom?

    If often, ask A-E

    If not often, ask F-I

    A. Why do you choose to utilize Internet resources as much as you do?
    B. What specific websites or applications do you use and what activities do you use them for?
    C. What do you feel you can get out of these resources that you can't get out of non-technological resources for class activities?
    D. What challenges have you faced with Internet implementation?
    E. Do you feel that these Internet sources have an impact on the quality of reading instruction you deliver in your content area class? Why/why not?

       ~Skip to #23 for frequent user

       or

       ~Continue here for infrequent user

    F. What is your opinion of integrating Internet resources into your lessons to deliver literacy strategies with your content?
    G. Under what circumstances, if any, would you be willing to do so?
    H. What challenges do you anticipate from such implementation?

I. What benefits do you anticipate from such implementation?

27. Do you have any additional comments you would like to make regarding integrating reading skills and strategies or Internet resources in your class?