EFFECTS OF FIELD EXPERIENCE ON PRE-SERVICE TEACHERS' KNOWLEDGE OF BASIC LANGUAGE CONSTRUCTS AND PREPAREDNESS FOR TEACHING READING

A Dissertation

By

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ABSTRACT

According to the National Education Association, a knowledgeable, well-prepared teacher can be more influential on a child's academic success than any other resource; however, little empirical evidence exists to define effective teacher preparation. In the context of reading teacher preparation, abundant evidence documents the skills children need in order to become successful readers, yet few studies examine how educators learn to teach those skills.

This study considered effects on pre-service teachers' (n = 71) knowledge of basic language constructs and perceptions of preparedness for teaching reading after participation in a reading specific field experience that was closely integrated into university content. Instruments for data collection include a previously validated assessment of basic language constructs and a researcher developed survey of perceptions (10 constructs, Cronbach's $\alpha = .977$). The knowledge assessment was given at the beginning and end of the semester, and the perceptions survey was given at the conclusion of the semester.

In addition to descriptive statistics, findings from quantitative analysis found statistically significant differences in perceptions of knowledge, preparedness, and confidence between the experimental group that taught concepts to elementary students during a field experience and a comparison group that practiced teaching concepts to university classmates. Further analysis found large effect sizes for both independent and

paired sample *t* tests. No statistically significant differences were found in knowledge of basic language constructs between the experimental and comparison groups.

Results of this study support the inclusion of field experiences that are carefully integrated into university content for increasing participants' perceptions of knowledge, preparedness, and confidence for teaching reading. The large effect sizes for within group differences also validate use of situational learning theory, the study's theoretical framework. Ultimately, findings contribute to the body of knowledge surrounding effective teacher preparation, especially in reading.

DEDICATION

Two special young men, Jacob and Justin, provide the inspiration for this study. The first successfully learned to read, despite significant cognitive limitations, because of effective instruction. The second struggles to read because of the lack of effective instruction. For this struggling reader, and the thousands of students he represents, this research exists in the hopes of preparing knowledgeable, capable teachers who can insure all children become competent readers.

Credit for the field experience goes to Dr. Hugo Ibarra whose willingness to think outside the box led him to open his school to our pre-service teachers. The wonderful school librarian, Robin Cox, helped coordinate and facilitate the project. Thank you.

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Findings from the work of dedicated researchers (Foorman, et al., 2016; NIHCD, 2000) tell us the skills children need to acquire in order to become proficient readers. Thanks to the work of the International Dyslexia Association and The Center for Effective Reading Instruction, we are learning more about how to prepare teachers to develop those skills. The inspiration behind the current study goes primarily to Dr. Emily Cantrell and Dr. R.M. Joshi. Their mission to change the way children learn to read motivated me to find the answers to my questions. Thank you.

Our wonderful, dedicated pre-service teachers cheerfully and enthusiastically made their weekly visits to the elementary school. Their efforts contributed to our knowledge base and assisted children in learning to read. Thank you.

The content knowledge and teaching ability of our reading faculty prepared our pre-service teachers to be effective in the field. Willingness to participate in the study enabled this important data collection. Thank you.

Ultimately, family made the difference in the completion of this work. Thank you.

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CHAPTER I

INTRODUCTION

In early 2010, a diverse group of education experts convened to discuss teacher preparation in the United States. This Blue Ribbon Panel, appointed by the National Council for Accreditation of Teacher Education (NCATE, 2010), concluded that teacher preparation needs to be restructured from a primarily academic process loosely connected with field experiences to a carefully designed interweaving of theory and practical application. The panel found inconsistent standards within teacher education programs and identified a gap between traditional teacher preparation and actual school district needs. Additional findings suggest pre-service teachers need further opportunities to integrate academic content with authentic clinical practice. Their overall conclusion was that clinical preparation is a fundamental component in preparing teachers to meet the wide ranging needs in today's classrooms; however, the panel acknowledged the limited empirical data to indicate how the clinical experience should be structured.

The National Research Council (NRC, 2010) also cited evidence as to qualities skilled teachers possess, but noted limited research based pathways for teacher preparation programs to develop those characteristics. Along with content knowledge and general pedagogical competency, the need for teachers to blend theoretical understanding with sound methodology led the delegation to conclude that clinical teaching positively contributes to teacher effectiveness. Therefore, pre-service teachers

need mastery not only in content area knowledge which can be assessed by traditional examinations, but also the ability to help others learn which must be assessed in authentic settings. As with the NCATE report, the NRC calls for additional research to define the traits of useful clinical teaching experiences.

Statement of the Problem

The National Commission on Teaching and America's Future (NCTAF, 1996) highlighted the disconnected nature of typical teacher preparation: lecture based theoretical instruction, often by faculty that have not practiced what they taught; inconsistency between subject matter courses and methods courses; and a lack of continuity with courses on learning and development. The Commission urged the inclusion of opportunities for prospective teachers to (1) study subject matter; (2) practice the application; and (3) reflect with peers and faculty on what they observed and experienced. The fragmented, incoherent nature of many teacher education programs with few connections to practice received additional criticism from Darling-Hammond, Hammerness, Grossman, Rust, and Shulman (2005).

Every field faces the challenge of providing opportunity for novices to apply classroom knowledge to real situations; however, the effort may prove worthwhile because programs that link field experiences with classroom theory may be more beneficial than those that do not (NRC, 2010). The NRC report recommends the inclusion of extensive fieldwork that connects to strategies discussed in class, along with supervision and feedback from faculty and peers. As reported by Darling-Hammond (2006a), the most powerful teacher preparation incorporates clinical work throughout the

entire program. This clinical opportunity connects with simultaneous coursework that assigns problems to be explored and analyzed in the field. As a result, new teachers may be more likely to utilize the theory learned in coursework, rather than revert to teaching the way they were taught.

Teaching practice, similar to medical practice, requires opportunity to use research in hands on scenarios. Indeed, professional study must be connected to occasions for application (Lenski & Nierstheimer, 2006); therefore, some university-based programs place students in classrooms as early as their freshman year (Clift & Brady, 2005). These early opportunities often involve observing or tutoring students, watching teacher or parent conferences, reading to children, and observing instruction; however, little empirical evidence exists to identify which features are most beneficial. The limited available data tends to describe field experiences that are often largely disconnected from various components within the preparation program and primarily reinforce the status quo (Wilson, Floden, & Ferrini-Mundy, 2001). Therefore, additional research surrounding field experiences integrated into university coursework is justified.

Legislation endorsing No Child Left Behind (2001) highlighted a knowledgeable, well-prepared teacher as being more influential on a child's future success than any strategy or technology. In addition, the National Education Association (2000) determined that the teacher, rather than curriculum, makes the difference in a child's success with reading. Therefore, teachers in general need thorough content knowledge, assessment skills, and a wide range of strategies to meet the diverse needs within 21st century classrooms (Darling-Hammond, 2006b). To meet this goal, Darling-Hammond

(2000) calls on teacher education programs to provide experiences that integrate knowledge and skills and urges the inclusion of clinical experiences. These intentionally designed field experiences allow undergraduate pre-service teachers to apply and refine what is being learned, therefore increasing their learning and understanding of content area teaching (Darling-Hammond, et al., 2005). However, in a survey of teacher preparation programs, Levine (2006) found most students have limited field work experiences even though graduates typically view their student teaching opportunities as the most valuable aspect of the preparation program. Levine's conclusions echoed a previous summary (Wilson, et al., 2001) finding clinical experiences are often seen by both experienced and newly certified teachers as the single most powerful element of their teacher preparation.

Implementing the recommendations from both the NCATE (2010) and NRC (2010) to integrate theory with practice would allow the development of partnerships between teacher preparation programs and local school districts and thus address the perceived gap between educational theory and classroom reality (Allen & Wright, 2014; Darling-Hammond, 2006b; Richards & Gipe, 1993; Sanderson, 2016; Skillbeck & Connell, 2004; Zeichner, 2010). This collaboration provides pre-service teachers the opportunity to apply theoretical knowledge in real life circumstances and school districts to hire well prepared, capable teachers. These carefully structured clinical internships managed by experienced faculty provide a bridge between theoretical course work and successful classroom implementation. Ideally, as pre-service teachers increase

pedagogical skills, the students they instruct would potentially increase achievement levels.

The collaboration between teacher education programs and local school districts enriches reading teachers in particular because the need for strong content knowledge must combine with multiple pedagogical strategies in order for all students to become successful readers (Brady & Moats, 1997). The National Reading Panel (NICHD, 2000) found that excellent teacher preparation includes carefully supervised opportunities for coursework to be experienced in an actual classroom. The International Reading Association (2007) also endorses programs that include apprenticeships and field experiences that closely mirror coursework. Empirical evidence cited in the report found the following characteristics of effective field based learning: (a) early opportunities to participate in classroom situations similar to the content being studied; (b) extensive modeling of instructional methods by university faculty; and (c) feedback and mentoring with opportunities for debriefing to increase understanding and provide suggestions prior to the next field experience.

For future reading teachers, a balance between coursework and field application can contribute to increased understanding of literacy components and preparedness for teaching. Indeed, teacher preparation does not have to be a choice between theoretical coursework or fieldwork application, but should carefully combine both. According to the Knowledge and Practice Standards of the International Dyslexia Association (2010), pre-service teachers need opportunity to connect their knowledge base with field experiences that allow them to practice research-based teaching. As stated by Lenski and

Nierstheimer (2006), by coupling course work with field experiences, teacher candidates observe, apply, test, and try out methods studied in university coursework. In a review of the literature, Haverback and Parault (2008) found evidence that tutoring opportunities can positively affect pre-service teachers' teaching ability; however, little research exists to explore the simultaneous impact on efficacy and knowledge.

Although research clearly identifies the knowledge skilled reading teachers must convey (Foorman, et al., 2016; NIHCD, 2000), little empirical evidence exists for ways pre-service teachers best acquire that knowledge. According to Anders, Hoffman, and Duffy (2000), questions surrounding efficient ways to prepare reading teachers continue to plague the field. Indeed, teachers often cite differentiating instruction amongst a wide range of reading levels as their greatest challenge and express dissatisfaction with their pre-service preparation for teaching reading (Baumann, Hoffman, Duffy-Hester, & Moon Ro, 2000). The lack of empirical support for particular educational experiences and the impact on teachers' long-term development creates a gap in knowledge for teacher educators.

Acknowledging that pre-service reading teachers need a strong theoretical base and knowledge of the structure of English (Brady & Moats, 1997; Joshi, Binks, Hougen, Dahlgren, Ocker-Dean, & Smith, 2009; Moats, 1994), it can be argued that pre-service teachers deserve additional practical training that includes integrated clinical teaching practice (Worthy & Patterson, 2001). Other educators similarly urge teacher training programs to include field experiences that allow pre-service teachers to receive supervised practice (Baumann, Ro, Duffy-Hester, & Hoffman, 2000; Hoffman, Roller,

Maloch, Sailors, Duffy, & Beretvas, 2005; Sailors, 2005). These opportunities can be much more than the standard 12-14 week student teaching experiences that often form the culmination of university teacher preparation programs.

Walsh (2013) similarly points out that we have the knowledge which would allow most children to read, but few new teachers receive the necessary practical training. According to the National Commission for Teacher Quality (2013), approximately 70% of elementary teacher candidates do not receive practical training in research-based reading methods which could reduce the instance of reading failure from 30% to 5% of students. The crucial aspects of reading teacher preparation cannot be minimized because skillful classroom instruction between kindergarten and the primary grade years provides the single best hope for a child's reading success (Joshi, Binks, Hougen, Dean, Graham, & Smith, 2009). Thus, it can be proposed that a focus on practice and implementation should be the goal of effective teacher preparation (Ball & Forzani, 2009).

Purpose of the Present Study

The purpose of the present study is to explore the outcomes associated with a reading specific field experience that is closely integrated into university coursework. Specifically, objectives include (a) measure pre/post gains in knowledge of basic language constructs between students participating in a field experience and a comparison group that practiced concepts with peers; (b) evaluate perceptions of knowledge, preparedness, and confidence for teaching between field experience participants and the comparison group; and (c) determine overall outcomes from the

reading specific field experience. The need to describe attributes of powerful field experiences (NCATE, 2010; NCTAF, 1996; NRC, 2010) frames the study design.

Admittedly, this research situates on what some may consider "dated" publications (Darling-Hammond, 2000; IRA, 2000; NCTAF, 1996; NEA, 2000; NIHCD, 2000); however, it is noteworthy that these leaders in education have called for additional field experience and clinical teaching opportunities, but little empirical evidence exists to document effects. Zeichner (2010) offers explanations for the lack of empirical evidence by describing the typical instructors involved in teacher education as doctoral students, clinical faculty, or part-time faculty. Often, teacher education was not the primary field of study for these doctoral students, and although they may have been experts in a content area, they lacked the necessary knowledge to support teacher learning. Willingham (2012) also pointed to the tendency for faculty to prioritize theory over procedure and a hesitancy to communicate findings that may change practice. Therefore, this study contributes to the empirical evidence base by documenting field experience effects on pre-service teachers' knowledge of and preparedness for teaching reading.

This topic merits consideration because the goal of any teacher preparation should be for graduates to be prepared to implement effective teaching practices in challenging school settings. This goal can only be achieved through content mastery, opportunity to observe effective modeling, rehearsing, studying, and repeatedly practicing (Zeichner, 2012). These opportunities should be made available from the beginning of the preparation program. Unfortunately, the gap between university campus

course content and opportunity to enact that knowledge may be great (Zeichner, 2010) due to cooperating host teachers being unfamiliar with coursework content. This study attempts to bridge that gap by coordinating topics with host teachers.

Research Questions

This study builds upon the current base by describing characteristics of a reading emphasis field experience carefully integrated into university coursework and measuring differences between participants and a comparison group. The study investigated whether or not pre-service teachers who teach concepts in an elementary classroom differed in knowledge and feelings of preparedness and confidence from pre-service teachers who practiced teaching the same concepts with peers. The following questions guided the investigation: (1) Are there significant differences in knowledge of basic language constructs between pre-service teachers who participate in a field experience and those who do not participate in the field experience? (2) Are there significant differences in perceptions of knowledge, preparedness and confidence for teaching reading between pre-service teachers who participate in a field experience and those who do not participate in the field experience? (3) What effect does participation in a reading specific field experience have on pre-service teachers' knowledge of basic language constructs and perceptions of preparedness and confidence for teaching reading? (4) How do pre-service teachers rate their knowledge of and preparedness for teaching each essential component of reading acquisition?

In addition, the literature synthesis in Chapter 2 reviews published studies that evaluate and measure the effects of field experiences integrated with university

coursework. Specific aims explore the field experience's impact on pre-service teachers' knowledge of basic language constructs and perceptions of preparedness for teaching reading. This synthesis also considers differential effects based on field experience design.

Chapter 3 describes the methodology behind the design of an introductory reading course that incorporated a field experience. Specific research questions considered how the integrated design impacted pre-service teachers' knowledge of basic language constructs as well as preparedness for teaching. Pre-service teachers answered questions related to their knowledge of language constructs on a previously validated instrument, and self-rated their preparedness for teaching by using a researcher developed questionnaire. This questionnaire also investigated potential underlying structures between the variables of letter awareness, syllable awareness, rhyme, onset/rime, phonemic awareness, phonics, fluency, vocabulary, and comprehension. By preparing Student Center Activities from the Florida Center for Reading Research, participants evaluated their perceptions of preparedness for teaching research based reading components.

Chapter 4 provides results from statistical analyses that looked for significant differences between the comparison and experimental groups and measured growth within both groups. These calculations included ANOVA, ANCOVA and t tests. Factor analysis investigated possible variance in the ten variables related to essential components of effective reading instruction. Finally, means for each of 10 constructs

were compared to find how participants rated their perceived knowledge, preparation, and confidence for teaching reading.

Chapter 5 discusses results of the statistical analyses, limitations of the findings, and directions for future research. The discussion includes relevance of this study to previously published studies and theoretical papers. Finally, the chapter considers implications from these results upon the design of university level introductory reading courses.

Theoretical Framework

This study's design espouses the ideas of situational learning theory (Lave & Wenger, 1991) which theorize that learning best occurs under conditions that simulate the real world. Learning then connects to prior knowledge and builds within an actual context, rather than existing as decontextualized information. Within this design, classroom concepts become embedded into everyday situations. The theory encourages the careful design of authentic learning situations in which students apply critical thinking skills as they are immersed in problem solving activities.

In situated learning contexts, instructors must provide careful scaffolding for students and guide the learning process. Rather than being transmitters of learning, teachers become facilitators of learning (Choi & Hannafin, 1995) by building a collaborative environment and encouraging reflection. This process engages learners in significant problem solving and cultivates learning processes, rather than learning outcomes. Learning then becomes meaningful because it occurs within realistic contexts. By engaging in authentic, problem-solving tasks, learners gauge their progress and

evaluate how to implement new knowledge. True-to-life settings also potentially increase motivation because of purposeful tasks and personal relevance.

Brown, Collins, and Duguid (1989) explain situated cognition by discussing vocabulary acquisition. Word knowledge increases most rapidly through situational use, rather than decontextualized dictionary use. People who use, rather than merely acquire, knowledge build an increased understanding of the world, and this understanding expands with continued interaction. The authors argue that contemporary schooling merely enculturates the school, instead of the domain under consideration, because schooling differs from practicing. All too often, schooling frames one culture but attributes another; therefore, authentic settings provide the means to engage in meaningful, purposeful activity.

These contexts, much as a typical classroom, also present changes in circumstances which require adjustment. For pre-service teachers, accommodating the dynamics within a group of children can lead to the creation of advance organizers for related problems. Therefore, the development of skillful teaching requires situated practice.

Definition of Constructs

- *Field experience* – a reading specific teaching/tutoring opportunity using content concurrently studied in university coursework
- *Pre-Service Teacher* – currently enrolled in a university-based, EC-6, teacher preparation program; taking initial reading course
- *In-Service teacher* – host to pre-service teachers

- *Knowledge of Basic Language Constructs* – research based instrument for assessing teacher knowledge of literacy constructs (Binks-Cantrell, Joshi, & Washburn, 2012)
- *Survey of Preparedness* – researcher developed; Likert scale for self-rating pre-service teacher perceptions of preparedness for teaching essential components of reading acquisition
- *Student Center Activities* – research based materials developed by the Florida Center for Reading Research; used by teachers to differentiate reading instruction within small groups or centers and build skills in the essential components of reading
- *Print Awareness* – understanding and appreciating the forms and the functions of printed language, including punctuation
- *Letter Knowledge* – familiarity with the 26 upper and lower case letter shapes, names, and sounds
- *Rhyme* – words with the same middle sound (vowel) and same final sound (consonant or vowel)
- *Syllable* – a word or part of a word pronounced as a unit and containing only one vowel sound
- *Onset/rime* – onset: part of the syllable that comes before the vowel (may be a consonant, consonant blend, or digraph); rime: the vowel and following consonants. Found within each individual syllable.

- *Phonemic Awareness* – the ability to detect, identify, and manipulate phonemes (sounds) in spoken words
- *Phonics* – the relationship between letters and the sounds they represent
- *Fluency* – the accurate reading of connected text at a conversational rate with appropriate prosody or expression
- *Vocabulary* – the knowledge of words and word meanings
- *Comprehension* – deriving meaning from written text

Significance of the Present Study

Emphatic recommendations (NCATE, 2010; NRC, 2010) urge teacher educators to reexamine how pre-service teachers are prepared for their future classrooms. This research addresses these recommendations in several ways. First, an introductory reading course was structured to include research based components (NIHCD, 2000), then carefully integrated with a field experience. Second, pre-service teacher knowledge of basic language constructs was measured and comparisons drawn between participants in the field experience (experimental group) and those who practiced concepts with peers (comparison). Third, pre-service teacher perceptions of knowledge, preparedness, and confidence for teaching essential components of reading instruction were surveyed and comparisons drawn between the experimental and comparison groups. If results find significant differences in knowledge and preparedness between participants and the comparison, teacher educators may want to incorporate more integrated field experiences into university coursework.

This study addresses the perceived disconnect between university coursework and school-based fieldwork (Cochran-Smith, et al., 2015) and builds on the current base by considering the effects of carefully integrating the two domains. Results may outline procedures for increasing pre-service teacher knowledge of research based reading instruction and preparedness for actual classroom implementation. Such knowledge could be helpful to the teacher preparation field, specifically reading teacher preparation.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter discusses studies which measure field experience effects on pre-service teachers' knowledge of basic language constructs and perceptions of preparedness for teaching reading. It begins with the background and rationale for the problem. Next, it describes the search strategy and defines inclusion criteria. Third, study summaries and findings are presented. Fourth, the review critiques methodology used across the studies and categorizes findings according to results. Finally, the review considers implications for future university course designs.

In a blistering critique of teacher education programs, Levine (2006) unequivocally states that teacher preparation program graduates are not adequately prepared for the classroom. This conclusion resulted from a survey of 1,800 geographically grouped school principals, where less than half of the 720 respondents felt schools of education adequately prepared graduates in essential competencies. Principals also critiqued additional areas of classroom management, subject area mastery, ability to employ assessment, and capacity for working with diverse groups, by giving an overall satisfaction level of 40%. Levine cited a failure on the part of teacher education faculty to focus on the skills and knowledge a teacher needs in order to advance student learning and the inability to agree on what the program should produce. The report ultimately found an abyss between theory and practice, and when considering possible reforms, half of those surveyed prioritized the integration of subject matter

preparation and field experience over other options. Additional evaluations of exemplary teacher education programs found a common component of sustained field experiences that begin early and provide opportunity to immediately apply theory in real classrooms. Levine's report mirrors earlier work (Baumann, Ro, Duffy-Hester, & Hoffman, 2000) by summarizing conclusions from prominent educators that among the most significant problems teachers face is inadequate preparation at the university level.

According to the NRC (2010), capable teachers require both content and pedagogical knowledge, as well as mastery of a wide range of strategies for delivering that content. The report notes that the research base supports agreement regarding the characteristics teachers need, but no consensus on how to develop those attributes. The NRC also calls for additional research to examine how clinical experiences affect outcomes for the teacher candidates' future students. This outcomes based information could help teacher educators, along with federal and state policy makers, determine how best to prepare expert teachers and lead to standardization of teacher preparation programs.

Despite limited research into constructive pathways for teacher preparation, findings suggest pre-service teachers may improve their instruction when they receive feedback and observation data gathered during participation in field experiences (Abernathy, Beck, & Taylor, 2014; Linek, Raine, & Szabo, 2013). Also, field experiences can lead to more significant learning when assignments are focused and structured (Wilson, Floden, & Ferrini-Mundy, 2001). Furthermore, by embedding

fieldwork within a content area course, pre-service teachers have opportunity to reflect with peers and receive feedback from faculty (Cowan & Berlinghoff, 2008).

To find avenues for field experiences, Howey and Zimpher (2010) recommend partnerships between teacher preparation and local schools, thereby allowing pre-service teachers to connect theory and practice. Ultimately, teacher preparation becomes continuous clinical practice, rather than a capstone experience separated from academic coursework, and textbook learning becomes closely linked to authentic practice (Al Otaiba, Lake, Scarborough, Allor, & Carreker, 2016; Cunningham & Sherman, 2008; Smith & Souviney, 1997). Zeichner (2010) also emphasizes the need to build connections between school and community assignments, then further connections within the overall teacher preparation program.

As noted by Zeichner (2010), coordinated field experiences can successfully prepare future teachers to implement complex teaching practices. Indeed, Trauth-Nare (2015) and Flores (2015) found positive effects on pre-service teachers' self-efficacy for teaching environmental science after participating in a field experience. In addition, McDonnough and Matkins (2010) compared field experience designs and measured increases in self-efficacy resulting from integrated coursework and field work. Furthermore, Atiles, Jones, and Kim (2012) demonstrated significant gains in self-efficacy when pre-service teachers worked with students with disabilities during their field experience. Lancaster and Bain (2007) found positive effects for preparedness, although not significant, when pre-service teachers worked with secondary students in

inclusive classrooms; however, Reddy (2012) found significant effects on self-efficacy when teacher candidates work with multiple teachers in a variety of settings.

The field experience discussion now moves from a broad context to the particular domain of reading instruction. Although debate continues over the most advantageous methods for teaching reading, agreement can be found in the fundamental importance of teacher preparation (Anderson et al., 1985; Brady & Moats, 1997; IRA, 2007; Moats, 1994; Moats, 2009; National Council on Teacher Quality, 2006; NCTAF,1996; Washburn, Joshi, & Binks, 2010); however, pre-service teachers often lack sufficient knowledge of the components considered essential for reading acquisition (Mather, Box, and Babur, 2001; Washburn, Joshi, & Binks-Cantrell, 2011). As described in the Peter Effect (Binks-Cantrell, Washburn, Joshi, & Hougen, 2012), teachers cannot deliver knowledge that they themselves do not possess.

The International Reading Association (2000) position statement urges the inclusion of clinical practicum during teacher training that includes apprenticeships, field experiences, and clinical practice which provides candidates with the necessary knowledge and teaching skills that help all children learn to read. In substantiation of this position statement, Risko et al. (2008) reviewed reading teacher preparation and found benefits resulting from extended fieldwork and opportunity to practice teaching strategies with students, thus validating results from Hoffman and Roller (2001) showing an increased emphasis on the coordination of field experiences and a high rating for the importance of inclusion within a program. In further substantiation of the field experience, Salinger, et al. (2010) reviewed responses from 2,237 pre-service teachers

and found a strong focus on essential components of reading instruction were twice as likely to be contained in the field experience than in coursework.

Furthermore, supervised field based experiences which heavily emphasize practical experiences seem to have the most positive effects on reading teacher preparation, especially when coupled with ongoing support, guidance, and feedback (Hoffman, Roller, Maloch, Sailors, Duffy, & Beretvas, 2005). In addition, research by Hagen (2015) revealed that although student teachers valued the content learned in coursework, the opportunity to apply theory to practice during student teaching had the greatest effect on their beliefs about teaching reading. Student teachers cited a lack of experiences in teaching reading and requested additional field opportunities throughout the teacher education program. In a similar study, Blakeslee (2012) studied the effects of coursework on special education reading teachers and found high content knowledge but a lack of procedural knowledge. Interestingly, survey respondents indicated a desire for additional field experience opportunities. Likewise, Cowan and Berlinghoff (2008) received strongly positive feedback from participants regarding the value of course embedded fieldwork for increasing feelings of preparedness for teaching.

The NRC (2010) report emphasized the value of experimental research in addition to qualitative analysis and descriptive methods in order to examine the multiple factors that influence student achievement. Although previous research encourages the integration of coursework with field work application, no data synthesis exists; however, in an earlier literature review, Haverback and Parault (2008) explored outcomes from the

field experience and determined an overall benefit to pre-service teachers' confidence by connecting university-learned theory with practical application.

Looking at field experiences from a different angle, Sampson, Linek, Raine, and Szabo (2013) considered a year-long field experience and its effects on pre-service teachers' knowledge and use of reading comprehension strategies. A careful review of students' Self-Knowledge Rating Surveys, strategy logs, and lesson plans revealed little application of strategies learned at the university within the elementary classroom. Although results showed solid knowledge of strategies, only 4% of lessons incorporated university-taught strategies for reading comprehension. The authors discuss a disconnect between what is known, and what is actually implemented in the field, while attributing these results to the hesitance of pre-service teachers to use a strategy that may contradict the views of the supervising in-service teacher. Therefore, this chapter summarizes what is known to this point regarding reading specific field experiences by exploring the relevant literature and determining possible effects on pre-service teachers' knowledge of basic language constructs and preparedness for teaching reading.

Search Strategies and Inclusion Criteria

This review provides a systematic, or best-evidence, synthesis of the literature regarding university coursework integrated with a reading specific field experience. Due to the number of authorities calling for additional field experiences in teacher preparation and the acknowledgement of little research evidence (Darling-Hammond, 2005; 2006b; Levine, 2006; NRC 2010; NCATE 2010; Salinger et al., 2010), a broad literature search was carried out to identify all available research that discusses results

from the field experience. Using a time frame of 1985 – 2017, electronic searches of education databases (JStor, ERIC [Education Resources Information Center], EBSCO, PsycINFO, Web of Science, ProQuest, and Dissertation Abstracts International) as well as a general library search were conducted using the following key words: teacher education, field experience, clinical teaching, practice-based teacher preparation, reading teacher preparation, structured participation experience. Results included forty-three qualitative studies and thirty-three quantitative studies.

Results were further refined to those studies describing a reading specific field experience closely integrated with university coursework, thus yielding 12 qualitative studies and 14 quantitative studies, some of which included both as mixed methods. For each remaining study, references and citation indexes were considered with no additional studies identified. Qualitative studies were evaluated for themes, and quantitative studies were analyzed for findings.

Qualitative Studies

In reviewing search results, a number of themes emerged. First, participants reported an increase in their feelings of preparedness and confidence for teaching struggling readers (Al Otaiba & Lake, 2007; Brayko, 2013; Cowan & Berlinghoff, 2008; Duffy & Atkinson, 2001; Fang & Ashley, 2004; Hagen, 2016; Lee, 2009; Linek et al., 1999; Llpp & Helfrich, 2016; Worthy & Patterson, 2001; Worthy & Prater, 1998). Next, pre-service teachers learned about planning their lessons to meet individual students' needs (Al Otaiba, 2005; Danielson, Kuhlman, & Fluckiger, 1998; Duffy & Atkinson, 2001; Fang & Ashley, 2004; Lee, 2009; Linek, Sampson, Raine, Klakamp, & Smith,

2006; Llpp & Helfrich, 2016; Richards & Brumfield, 2002; Worthy & Patterson, 2001). Also, pre-service teachers benefitted from reflecting with peers (Danielson, Kuhlman, & Fluckiger, 1998) and cited the field experience as the most influential factor in changing their beliefs about literacy (Fang & Ashley, 2004; Lee, 2009; Linek, et al., 1999; Shotwell, 2009; Worthy & Prater, 1998). In addition, field experiences over the course of a semester provided opportunity to apply and test strategies in authentic settings (Linek, et al., 1999; Worthy & Patterson, 2001) while building an understanding of the complexities involved with teaching literacy (Lee, 2009).

Quantitative Studies

The following results from the literature search are grouped into studies evaluating perceptions of preparedness, studies evaluating construct knowledge, and studies evaluating both preparedness and knowledge. Table 1 lists studies pertaining to preparedness, and Table 2 lists studies pertaining to knowledge of constructs. Following the summaries, overall findings for both preparedness and knowledge are discussed.

Perceptions of preparedness. The following studies measured field experience effects on pre-service teachers' preparedness for teaching reading. The studies are considered according to: (1) comparing tutor/observer or (2) time in field.

Brannon and Fiene (2013) compared results between participants in Structured Participation Experiences (n = 13) that provided tutoring and those in more traditional, unstructured field experiences (n = 13) that primarily observed. Students taking a literacy course worked with Response to Intervention groups and provided tutoring at a partner school (structured experience), while a second student group helped with general

duties in a local reading classroom (unstructured experience). Researchers evaluated student reflections which revealed participants in the structured field experience differed significantly from the unstructured group in the number of teaching strategies learned, in their opportunity to work with students, and positive perceptions of strategy use.

Using the Reading Teachers' Sense of Efficacy Scale (Haverback, 2007) as a measure, Giles, Kent, and Hibberts (2013) compared two preparation programs based on time in the field. Participants (n = 54) completed a posttest to ascertain possible differences between the experimental group which had twice the number of hours in the field (470 hours) as the control (235 hours). Independent sample *t* test results showed no statistically significant differences between groups.

Kent, Giles, and Hibberts (2013) explored possible changes in pre-service teachers' (n = 92) feelings of efficacy for teaching reading as they progressed through coursework and fieldwork. Using a quasi-experimental design to compare 3 groups and the RTSES (Haverback, 2007) as a posttest measure, researchers found statistically significantly higher scores for participants who had completed coursework and fieldwork, thus having greater opportunity to merge theory with practice.

Clark (2012) considered possible differences in pre-service teacher perceptions of teaching ability in reading based on the amount of field experience they received. Using a quasi-experimental design, the control group followed nine weeks of coursework with a full-time, six-week practicum in an elementary school classroom. During coursework, participants practiced teaching skills with peers. The experimental group followed the same procedures, but included 45-60 minutes per week additional

fieldwork during the nine weeks of coursework to practice teaching skills with an elementary student. Participants (n = 71) responded to the Self-Assessment of Proficiency to Perform Reading Tasks scale, and results showed no statistically significant differences between groups.

Knowledge of constructs. The following studies measured field experience effects on pre-service teachers' knowledge of language constructs and essential components for reading acquisition. The studies are considered according to: (1) comparing tutor/observer with two groups; (2) comparing time in field between 2 groups; or (3) pre/post gains within one group.

Spear-Swerling (2009) examined pre/post changes in knowledge within a group when teacher candidates in special education tutored struggling readers. Participants (n = 45) included pre-service teachers who applied course content through a required field component, which was closely supervised by the course instructor. Results from a researcher developed pre/post measure of teacher knowledge revealed significantly higher posttest scores, and the correlation between perceived morphemic knowledge and pretest scores was significant. The author cites the integration of coursework with the fieldwork component as a factor leading to success in this program.

Lee (2009) investigated how an early literacy course with a field experience component impacted pre-service teachers' knowledge and perceptions of emergent literacy. Participants (n = 106) completed the Teacher Perceptions and Knowledge Questionnaire adapted by the Stern Center for Language and Learning which included

pre and post quantitative data. Using a dependent t-test, results showed a significant mean difference in knowledge and a significant mean difference in perceptions.

In an exploration of guided field observations, Roehrig, Guidry, Bodur, Guan, Guo, and Pop (2008) considered the correlation between observations of exemplary teaching and pre-service teachers' knowledge of early literacy instruction. Participants (n = 48) observed and collected field notes on teacher practices and student outcomes, then organized the observations according to category of exemplary teaching practice: motivating atmosphere and instruction. Concept maps further organized pre-service teachers' understanding. Researchers found a significant correlation between the total number of effective teaching practices observed and the depth of knowledge shown on the concept map. This finding supports the inclusion of guided field observations for expanding pre-service teachers' content and pedagogical knowledge; also, observing effective teachers seems to relate to knowledge of effective practice.

Al Otaiba (2005) looked into the effects of code-based tutoring on pre-service special educators' (n = 8) knowledge of language structure. After spending 15 hours tutoring at-risk English learners in reading, results showed benefits to both tutors and tutees alike as tutees experienced gains in word attack, word identification, and passage comprehension. Tutors demonstrated language knowledge growth as measured by a validated instrument *Structure of Language* (Mather, Bos, & Babur, 2001) and used this knowledge when individualizing instruction, while expressing the desire to implement research based instruction principles in their future classrooms. Results from the pre/post assessment showed participants demonstrated a statistically significant mean gain.

Spear-Swerling and Brucker (2004) tested novice teachers' word structure knowledge between those who received instruction and tutored children (n = 37) and those who received this instruction but merely observed and did not tutor (n = 43). A third group who did not receive the word-structure instruction was also included in the study, but is not relevant to the present analysis. Results were reported as pretest/posttest means and standard deviations for three constructs: grapho-phonemic segmentation (GPS), syllable types (ST), and irregular words (IW). Only the experimental group showed significant improvement, with pre-post GPS differences being highly significant. Posttest means for the experimental group were all higher than those for the control group, but not statistically significant. Researchers found no clear support that tutoring increases teachers' word-structure knowledge beyond that provided through coursework; however, participants noted the benefits of tutoring to their learning.

Perceptions of preparedness and knowledge of constructs. The following studies measured field experience effects on both pre-service teachers' perceptions of preparedness for teaching reading and knowledge of language constructs, the essential components for reading acquisition. The studies are considered according to: (1) comparing tutor/observer; (2) scripted/unscripted tutoring; or (3) time in field.

In a randomized, controlled trial, Al Otaiba, Lake, Greulich, Folsom, and Guidry (2012) investigated the learning between pre-service teachers randomly assigned to two code-focused tutoring programs: one highly scripted (n = 14) and the other merged with shared book reading (n = 14). Findings from a pre/post evaluation using the Teacher Knowledge Assessment: Structure of Language (Mather, et al., 2001) showed significant

gains in knowledge for both groups. A researcher developed survey, Preparedness to Teach Reading, found significantly higher scores on preparedness for those using the scripted tutoring materials. In addition, those using scripted materials applied all components (phonological awareness, phonics, fluency, vocabulary, and comprehension), whereas those merely using shared book reading focused more on meaning-focused skills (vocabulary and comprehension).

Al Otaiba and Lake (2007) found significant benefits to knowledge and preparedness when pre-service teachers (n = 18) tutored struggling readers. Results from a pre/post assessment using The Teacher Knowledge Assessment: Structure of Language (Mather, Bos, & Babur, 2001) showed a statistically significant gain. Researchers reported an effect size of 2.58 for growth in knowledge of language. Pre/post responses to a researcher developed questionnaire assessing preparedness to teach reading also reached significance with a researcher reported effect size of 1.76.

Haverback and Parault (2011) surveyed participants (n = 86) of a reading specific field experience using the researcher developed Teacher Sense of Efficacy Scale (Haverback, 2007) to measure preparedness, then evaluated scores on students' final exams to determine knowledge. Members of the experimental group engaged in one-on-one tutoring, while members of the control observed children being taught reading skills by qualified teachers. Tutoring occurred once/week for 30 minutes over a 10 week duration; observations required the same amount of time. All participants were currently enrolled in a language development and reading acquisition course. Both tutors and observers reported higher efficacy and knowledge from pre to post test, but the

difference was not statistically significant. Although observers had a greater increase in efficacy than tutors, tutors found the experience to be more worthwhile.

Helfrich and Bean (2011) probed differences in knowledge of literacy components and preparedness to teach reading between two groups of pre-service teachers, along with effects of coursework, field experience, and collaboration on feelings of preparedness for teaching. Participants in the experimental group (n = 53) spent approximately 1,200 hours in the field, while the control group (n = 50) spent 400 hours in the field. Course content was identical for both groups, and both groups received equal supervision and evaluation. Using a researcher developed Survey of Perceptions, teacher candidates rated their perceived preparedness to deliver literacy instruction or assessment. A paired sample *t* test showed the experimental group perceived themselves overall more prepared than the control, with a significant effect for formal assessments and differentiating instruction. The Knowledge Inventory, a researcher developed instrument, assessed phonemic awareness, phonics, vocabulary, fluency, comprehension, literacy instruction, and assessment with results showing almost equal understanding between groups and no statistically significant between groups differences. A knowledge pre-assessment was not given.

Tetley and Jones (2014) studied how pre-service teachers (n = 224) participating in a field experience acquired language conceptual knowledge while developing confidence for teaching reading. The design included second year students (n = 150) prior to their initial field experience and third year students (n = 74) after a field experience. Participants responded to a survey of their perceived confidence levels and

knowledge of language constructs. Results showed a weak, but positive, relationship between confidence levels and construct scores for second year students and similar results for third year students. In addition, pre-service teachers who worked with a commercial phonics program had higher construct scores, but no difference in confidence levels. Ultimately, confidence to teach reading was not associated with the field experience, and the authors speculate this may be due to a realistic understanding of the difficulty involved with teaching reading.

Summary for Preparedness

Table 1: Studies included in analysis of perceptions of preparedness (n = 9).

AUTHOR	PARTICIPANTS	DESIGN	DURATION	DATA	INSTRUMENT	RESULTS
BRANNON AND FIENE (2013)	n = 26 2 groups	Structured Participation (tutoring) compared to unstructured participation (observing)	Twice weekly	Student reflections		Significant differences in strategies learned, opportunity to work with students, perceptions of strategy use
GILES, KENT, AND HIBBERTS (2013)	n = 54 2 groups	Comparison of time in the field	Experimental group: 470 hours; Control group: 235 hours	Pre/post assessment	RTSES (Haverback, 2007)	No statistically significant differences
KENT, GILES, AND HIBBERTS (2013)	n = 92 3 groups Quasi-experimental	Comparison of time in the field	Experimental group: full time fieldwork during student teaching; Control group: 3 days/week	Posttest only	RTSES (Haverback, 2007)	Statistically significant differences based on time in the field
CLARK (2012)	n = 71 2 groups Quasi-experimental	Comparison of time in the field; practice with peer/practice with elementary student	Experimental group: 15 weeks, once/week, 45-60 mins. Control group: 9 weeks, once/week, 45-60 mins.	Posttest only	Self-Assessment of Proficiency to Perform Reading Tasks	No statistically significant differences between groups

TABLE 1: (CONT.)

AUTHOR	PARTICIPANTS	DESIGN	DURATION	DATA	INSTRUMENT	RESULTS
AL OTAIBA, LAKE, GREULICH, FOLSOM, & GUIDRY (2012)	n = 28 2 groups Random assignment	Tutoring with scripted vs. unscripted materials	Once/week 30 mins. 8 weeks	Pre/post assessment	Preparedness to teach reading survey (Al Otaiba & Lake, 2007)	Significantly higher scores for tutors using scripted materials; Cohen's d = 1.2; p = 0.05
AL OTAIBA & LAKE (2007)	n = 18 1 group	Tutoring struggling readers	Twice/week 30-45 mins. 10 weeks	Pre/post assessment	Researcher developed questionnaire	Significant gain in preparedness: p < .001; Cohen's d = 1.76
HAVERBACK & PARAULT (2011)	n = 86 2 groups	Tutoring vs. observing	Once/week 30 mins. 10 weeks	Pre/post assessment	RTSES	No significant differences between groups
HELFRICH & BEAN (2011)	n = 93 2 groups	Time in the field	One academic year; Experimental group: 1,200 hours; Control group: 400 hours	Posttest	Researcher developed Survey of Perceptions	Experimental group felt more prepared; Significant effect for assessment and differentiating instruction
TETLEY & JONES (2014)	n = 224 2 groups	Before (2nd year students) and after (3rd year students) field experience	Not specified	Posttest	Researcher developed questionnaire	No correlation between field experience and confidence for teaching

Overall findings from studies of perceptions of preparedness for teaching reading point to mixed results. Of the nine studies reviewed, five studies found statistically significant differences between groups (Al Otaiba, et al., 2012; Brannon & Fiene, 2013; Helfrich & Bean, 2011; Kent, Giles, & Hibberts, 2013) or significant gains within a group (Al Otaiba & Lake, 2007). The remaining four, however, did not find statistically significant differences between groups (Clark, 2012; Giles, Kent, & Hibberts, 2013; Haverback & Parault, 2011; Tetley & Jones, 2014). Interestingly, Haverback and Parault

(2011) report higher efficacy for observer participants over tutoring participants, but participants observed highly skilled teachers who were familiar with program goals.

Further insight may be gained by considering study design. Again, results are split between studies evaluating time in the field (Clark, 2012; Giles, Kent, & Hibberts, 2013; Helfrich & Bean, 2011; Kent, Giles, & Hibberts, 2013; Tetley & Jones, 2014) and studies comparing structured vs. unstructured field experiences (Al Otaiba, et al., 2012; Al Otaiba & Lake, 2007; Brannon & Fiene, 2013; Haverback & Parault, 2011). Of studies based on time in the field, three of the five studies showed no significant differences. Of studies based on structure, three of the four showed statistically significant differences. It is important to point out that the study showing no significant differences (Haverback & Parault, 2011) had a limited amount of time in the field: only ten, thirty minute sessions. Although Al Otaiba, et al. (2012) also had limited time in the field, participants used a highly scripted program when tutoring which may contribute to the significant findings reported.

Studies incorporating a more structured design seem to have more effects on preparedness for teaching than studies merely measuring the amount of time spent in the field; however, it is noteworthy that Kent, Giles and Hibberts (2013) included opportunity for feedback during the field experience and reported a growth in preparedness over time. Therefore, conclusions may be drawn that pre-service teachers may demonstrate growth in perceptions of preparedness after participating in field experiences with clear structure (tutoring vs. observing) and opportunity to receive feedback.

Summary for Knowledge of Constructs

Table 2: Studies included in analysis of knowledge of language constructs

AUTHOR	PARTICIPANTS	DESIGN	DURATION	DATA	INSTRUMENT	RESULTS
SPEAR-SWERLING (2009)	n = 45 1 group Integrated coursework and field work	Special ed. students tutor struggling readers	Once/week 60 mins. Began in 7th week of semester	Pre/post measure of teacher knowledge	Researcher developed	Significant gains
LEE (2009)	n = 106 1 group	Integrated coursework and fieldwork	12 hours during semester	Pre/post assessment	Teacher Perceptions and Knowledge Questionnaire	Significant gains in knowledge and perceptions of emergent literacy after fieldwork
ROEHRIG, GUIDRY, BODUR, GUAN, GUO, AND POP (2008)	n = 48 1 group	Guided field observations of effective teaching practices	36 hours during the semester; One full week at the end of the semester	Field notes based on teaching strategies compared to depth of knowledge shown on concept maps		Significant correlation between observations and knowledge growth
AL OTAIBA (2005)	n = 8 1 group	Code-based tutoring	Twice/week for a total of 15 hours	Pre/post assessment	Teacher Knowledge Assessment: Structure of Language (Mather, Bos, & Babur, 2001)	Statistically significant mean gain in knowledge; applied when individualizing instruction
SPEAR-SWERLING AND BRUCKER (2004)	n = 80 3 groups	Tutoring compared to observing	Once/week 60 mins. 8 weeks	Pre/post assessment	Researcher developed	Significant gains for tutors; No significant differences between groups based on tutoring over coursework
AL OTAIBA, LAKE, GREULICH, FOLSOM, & GUIDRY (2012)	n = 28 2 groups Random assignment	Tutoring with scripted vs. unscripted materials	Once/week 30 mins. 8 weeks	Pre/post assessment	Teacher Knowledge Assessment: Structure of Language (Mather, Box, & Babur, 2001)	Significant gains in knowledge; Cohen's d = 0.17
AL OTAIBA & LAKE (2007)	n = 18 1 group	Tutoring struggling readers	Twice/week 30-45 mins. 10 weeks	Pre/post assessment	Teacher Knowledge Assessment: Structure of Language (Mather, Box, & Babur, 2001)	Significant gains, $p <$ 0.001; Cohen's d = 2.58

Table 2: (Cont.)

AUTHOR	PARTICIPANTS	DESIGN	DURATION	DATA	INSTRUMENT	RESULTS
HAVERBACK & PARAULT (2011)	n = 86 2 groups	Tutoring vs. observing	Once/week 30 mins. 10 weeks	Posttest	Final exam	Knowledge growth but not statistically significant
HELFRICH & BEAN (2011)	n = 93 2 groups	Time in the field	One academic year; Experimental group: 1,200 hours; Control group: 400 hours	Posttest	Researcher developed Knowledge Inventory	No significant differences between groups
TETLEY & JONES (2014)	n = 224 2 groups	Before (2nd year students and after (3rd year students) field experience	Not specified	Posttest	Researcher developed questionnaire	Higher construct scores for students who worked with a commercial phonics program (more structured)

Findings from Table 2 strongly support the inclusion of field experiences as a method of increasing pre-service teachers' knowledge of language constructs. Across the ten studies examined, nine found growth in knowledge, with eight being statistically significant. Although not statistically significant, Haverback and Parault (2011) did find knowledge growth in participants who tutored. Only one study (Helfrich & Bean, 2011) found no significant differences between groups, but did not administer a pretest which may have had an impact on results. All studies measuring pre/post differences within a single group (Al Otaiba, 2005; Al Otaiba & Lake, 2007; Lee, 2009; Roehrig, et al., 2008; Spear-Swerling, 2009) found significant gains. Furthermore, the use of structured programs during the field experience (Al Otaiba et al., 2012; Tetley & Jones, 2014) may

have contributed to higher construct scores. Interestingly, Tetley and Jones (2014) found participants with higher confidence scores tended to have higher construct scores.

Discussion

Conclusions drawn from this literature synthesis support outcomes outlined by Capraro, Capraro, and Helfeldt (2010) that simply increasing time spent in the field does not necessarily increase pre-service teachers' feelings of competence; indeed, most studies considering perceptions of preparedness reported no significant differences based on time alone. Although Kent, Giles, and Hibberts (2013) reported significant differences based on time in the field, their design included opportunity for feedback, an essential component of effective field experiences as identified by Cochran-Smith, et al. (2015), as well as a carefully scaffolded design that allowed time for pre-service teachers to build efficacy for teaching.

Whereas the studies reviewed often show little effect based on time in the field, the addition of a structured component can have significant results (Al Otaiba et al., 2012; Brannon & Fiene, 2013). This finding also coincides with Capraro, Capraro, and Helfeldt (2010), who theorized that field experiences may become effective based on how time is spent, rather than the total time. In at least three studies (Al Otaiba & Lake, 2007; Lee, 2009; Spear-Swerling, 2009), participants demonstrated significant gains when coursework and fieldwork were integrated.

Because the nature and duration of fieldwork differed across the studies, possibly most noteworthy is the consistent significant gains reported in single group designs. All five studies (Al Otaiba, 2005; Al Otaiba & Lake, 2007; Lee, 2009; Roehrig, et al., 2008;

Spear-Swerling, 2009) measuring pre/post differences within groups found significant gains. Thus, methodological issues complicate the findings surrounding effects of field work on pre-service teachers' preparedness to teach reading and knowledge of language constructs. Certainly the consistent pre/post within group growth merits further investigation. Furthermore, feedback shows students value their time in the field (Helfrich & Bean, 2011) and report the experience helps them understand how to teach reading while providing opportunity to practice what was learned in the university classroom.

Practical Implications

According to Clift and Brady (2005), we know very little about how theory is learned in the university classroom, then applied in the elementary classroom. Do new teachers make adequate connections between their university coursework theory and recommended practice to take this information to their first classroom? Does the classroom reality cause new teachers to shelve theory and follow the practices of colleagues and schools? The realization that a closely integrated field experience can benefit pre-service teachers' preparedness and knowledge can motivate teacher preparation programs to interweave coursework and fieldwork, thereby solidifying the relationship between theory and practice.

Across studies in this synthesis, participants reported growth in perceptions of preparedness and knowledge of language constructs, but the significance varied according to study design. For instance, findings differed between scripted and unscripted methods, as well as observer or tutor designs. These findings support the need

for additional research to determine best practices for the inclusion of a field component. A more meaningful approach may be to consider both within and between group measures before comparing groups to determine significance, while carefully blending university coursework with field work and providing regular feedback. The following study contributes to the literature by merging scaffolded assignments and feedback (Kent, Giles, & Hibberts, 2013) with a systematic, structured approach (Al Otaiba, et al., 2012) in the design of an introductory reading course with an integrated field component.

CHAPTER III

METHODS

Rationale for Study Design

The literature review in Chapter 2 documents numerous examples showing benefits to pre-service teachers' conceptual knowledge and self-efficacy after participating in field experiences (Al Otaiba & Lake, 2007; Lee, 2009; Spear-Swerling, 2009); however, Lancaster and Bain (2007) note a lack of statistical significance when measuring this construct. Indeed, the authors emphasize the need for field experience participants to receive additional direct instruction in challenging areas, along with corrective, timely feedback during the field opportunity. Therefore, the current study incorporates these recommendations by mirroring course designs as described by Ferguson (1989) and advocated by Joyce and Showers (1980). By structuring a multi-step process, teacher preparation can become more effective if: (1) theory is clearly presented; (2) strategies are demonstrated; (3) classroom practice is allowed; (4) feedback is provided; and (5) coaching is included. As a result, future teachers connect theory with pedagogy as coursework becomes closely integrated with fieldwork, and theory is translated into practice.

In a research overview centered on teacher education, Cochran-Smith, et al. (2015) considered how school features and fieldwork impact teacher learning. Results showed most studies focused on fieldwork quality, rather than quantity. In addition, findings emphasized the collaborative nature required for learning and the social

network that supports novice teachers' growth, thus substantiating the situational learning theories of Lave and Wenger (1991). Overall, promising findings encourage program development that builds connections between pre-service teachers, their peers, and their cooperating teachers.

Ball and Forzani (2009) describe teaching as requiring "unnatural" (p. 499) attention toward others while simultaneously focusing on the content being taught. The authors advocate for practice-based teacher education that provides repetitive opportunities for pre-service teachers to interact with teaching. Furthermore, this practice should allow novice teachers to (1) try out methods; (2) correct their efforts; (3) refine their teaching; and (4) develop mastery. Ultimately, this process concludes by enabling teachers to deliver instruction that helps children learn.

Although research has not conclusively identified an ideal amount of fieldwork, Abernathy, Beck, and Taylor (2014) suggest pre-service teachers grow as professionals by receiving support and feedback during fieldwork prior to clinical teaching. The authors list the following as components of quality field experiences: (1) integration with coursework; (2) opportunity for pre-service teachers to work with children from diverse backgrounds, a variety of schools, and a variety of grade levels; and (3) supervision and consistent feedback. This emphasis on the role of feedback echoes the work of Anderson and Radencich (2001) who explored feedback options that included three sources: peers, supervisors, and cooperating teachers. Although all three sources proved valuable, professional feedback was most highly regarded.

Research Questions

By building on the situational nature of learning (Cochran-Smith, et al., 2015), the process required to develop mastery (Ball & Forzani, 2009), and the necessity for consistent feedback (Abernathy, Beck, & Taylor, 2014; Anderson & Radencich, 2001), the current quantitative, quasi-experimental study explores the design of an initial undergraduate reading course that includes a carefully integrated field experience component. Research questions to be investigated include:

1. Are there significant differences in knowledge of basic language constructs between pre-service teachers who participate in a field experience and those who do not participate in the field experience?
2. Are there significant differences in perceptions of knowledge, preparedness and confidence for teaching reading between pre-service teachers who participate in a field experience and those who do not participate in the field experience?
3. What effect does participation in a reading specific field experience have on pre-service teachers' knowledge of basic language constructs and perceptions of preparedness and confidence for teaching reading?
4. How do pre-service teachers rate their knowledge, preparedness, and confidence for teaching each essential component of reading acquisition?

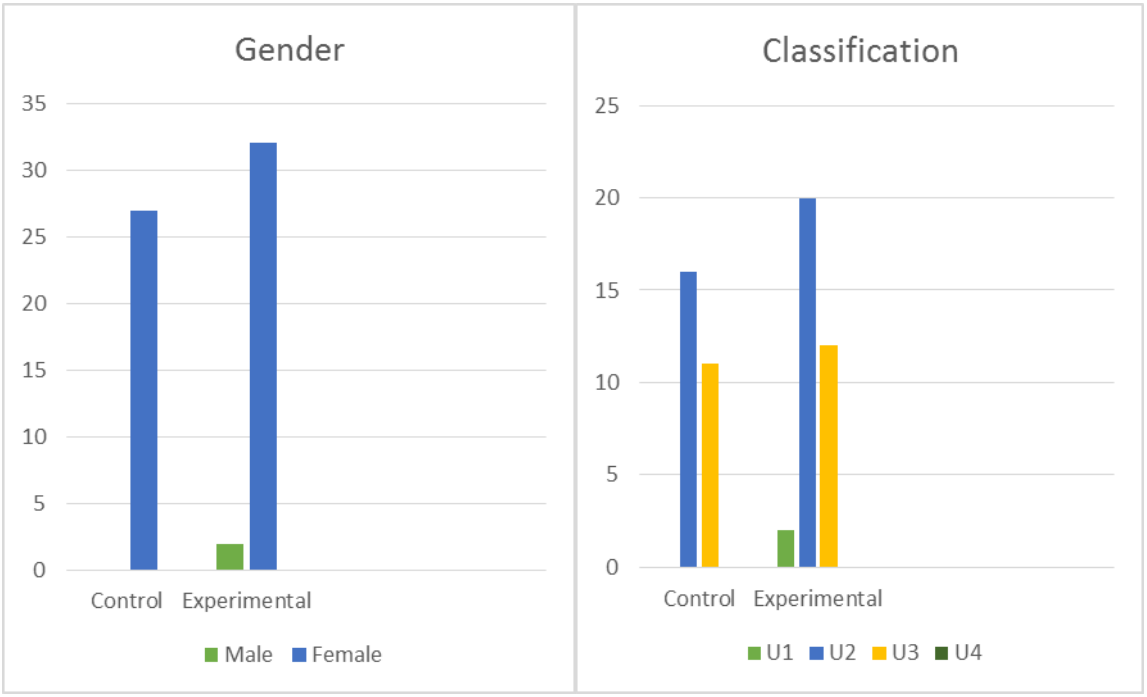
This chapter describes the participants, sampling, coursework/fieldwork coordination, treatment fidelity, and procedures. Next, the instruments for measuring knowledge and

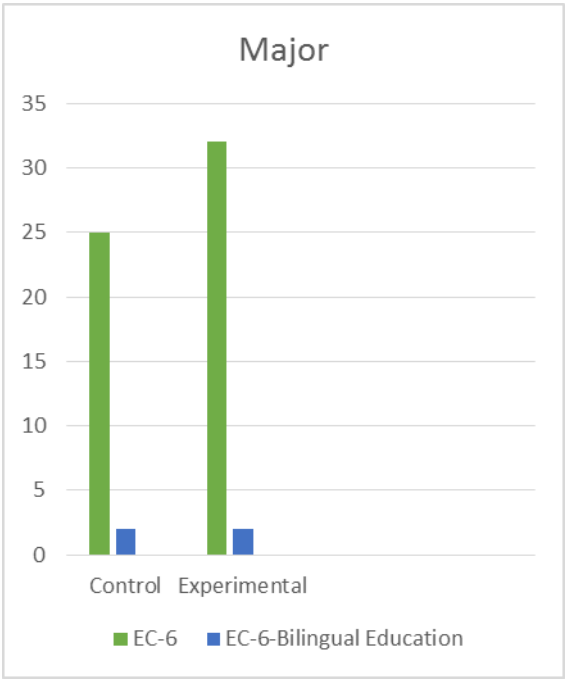
perceptions of preparedness, along with procedures for data collection, are discussed. Finally, data analysis is presented.

Participants

Pre-Service teachers. This research utilized purposive sampling to consider feedback from pre-service teachers (n = 71) taking their initial reading course at a large university in the southeastern United States. The project involved three sections of the course with one section serving as the comparison (n = 27) and two sections serving as the experimental group (n = 44). Students self-enrolled in the reading course with no prior knowledge of which sections would participate in the field experience and which section would be the comparison group. Figure 1 shows participant characteristics. Participants in the experimental group (n = 44) participated in a field experience at a local elementary school and made weekly, one hour visits to an elementary school in a local district.

Figure 1: Pre-service teacher participant characteristics





Elementary School. Because of low performance on state standardized tests, the school was designated as Improvement Required. Ninety-seven percent of students received free lunch and were designated as economically disadvantaged. In addition, over 80% of students were at risk for academic failure. Figures 2 and 3 show demographics of the elementary school.

Figure 2: Elementary student racial demographics

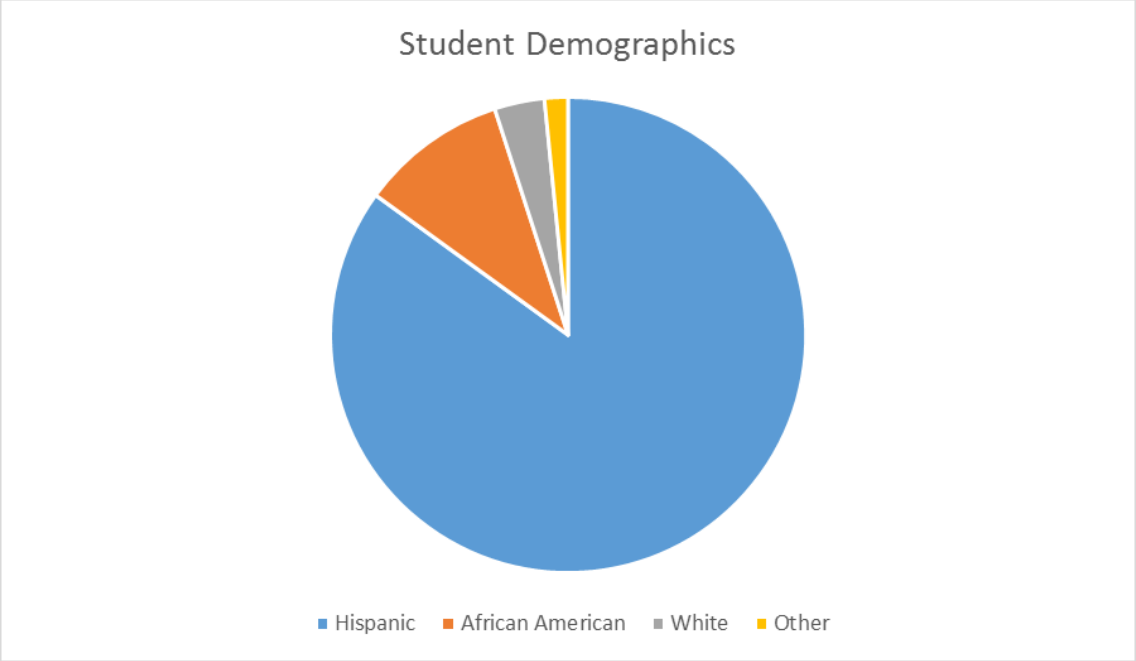
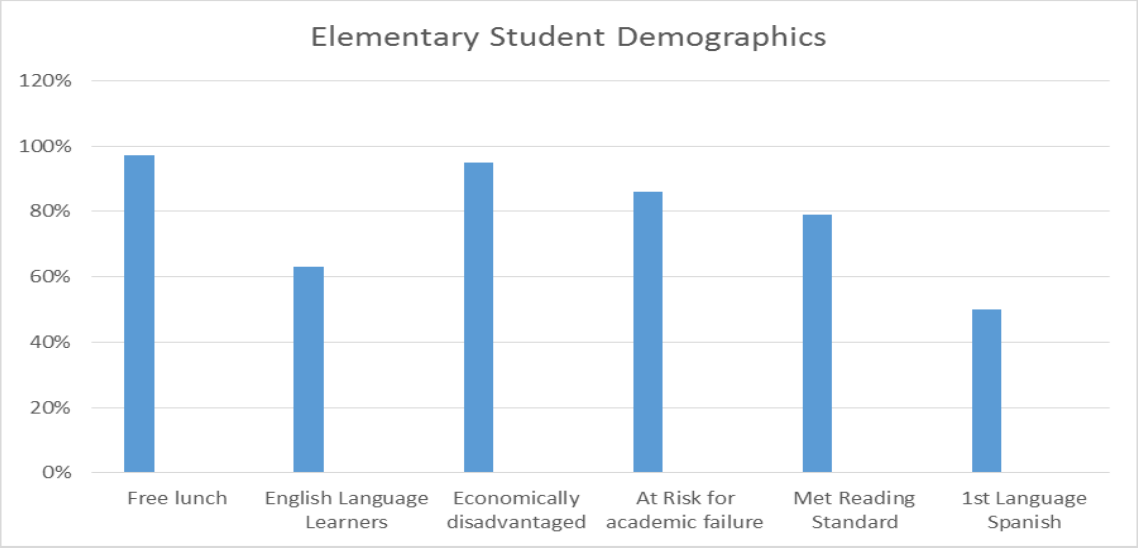


Figure 3: Elementary student economic and academic demographics



The elementary school principal used purposive sampling to determine which in-service teachers would host pre-service teachers in her classroom. Criteria included grade level and dual language status. It was decided to place pre-service teachers in early grade levels which were not required to complete mandatory state testing. Approximately one-half of the participating classrooms were dual language status, meaning all instruction during the previous semester was conducted in Spanish. Based on a district level decision, these classrooms switched to English-only instruction in January, just prior to the beginning of this study.

In order to schedule the pre-service teachers, the elementary school principal provided their guided reading schedule for each grade level. Pre-service teachers selected several days and times that worked with their schedule, then university

instructors matched them accordingly. Final assignments placed forty-two pre-service teachers in four kindergarten classrooms, five 1st grade classrooms, and two 2nd grade classrooms to work with approximately 179 elementary children. Figure 4 shows the placements. Within these 11 classrooms, six were dual language (primarily Spanish speaking) and five were English emphasis. Of survey respondents, 23 worked in English emphasis classrooms and 11 worked in dual language classrooms. Only one pre-service teacher survey respondent who worked in a dual language classroom identified as bi-lingual, or Spanish speaking. Figure 5 illustrates this breakdown.

Figure 4: Pre-service teacher school assignments

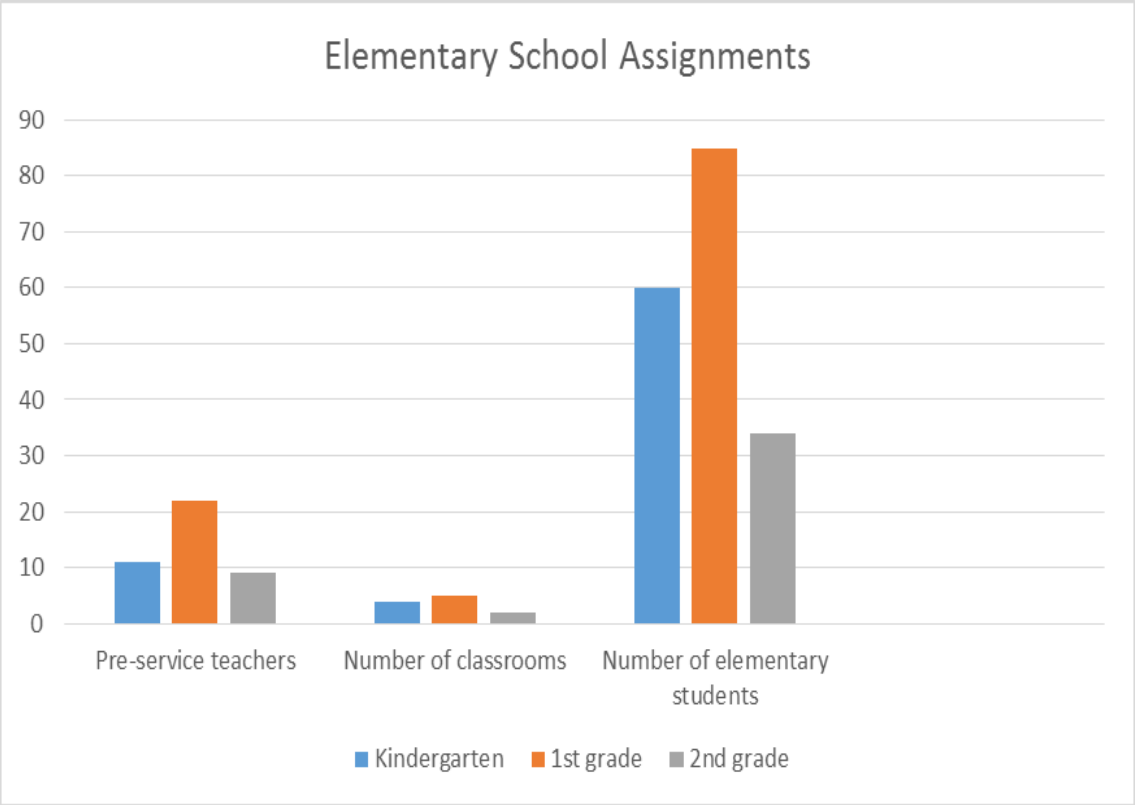
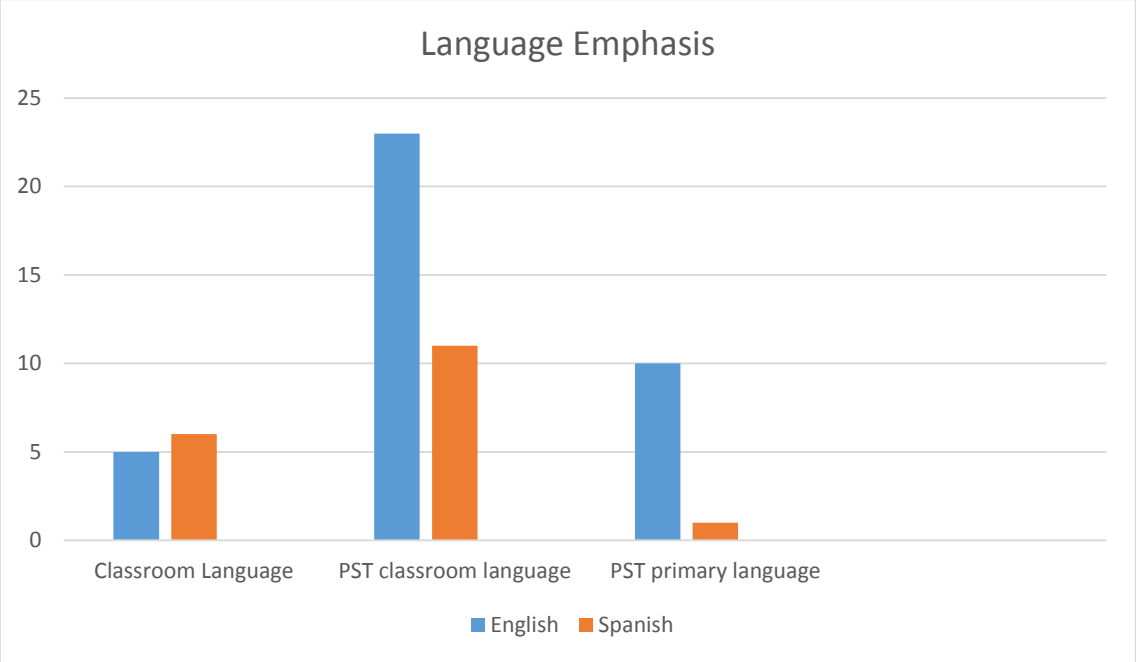


Figure 5: Language emphasis

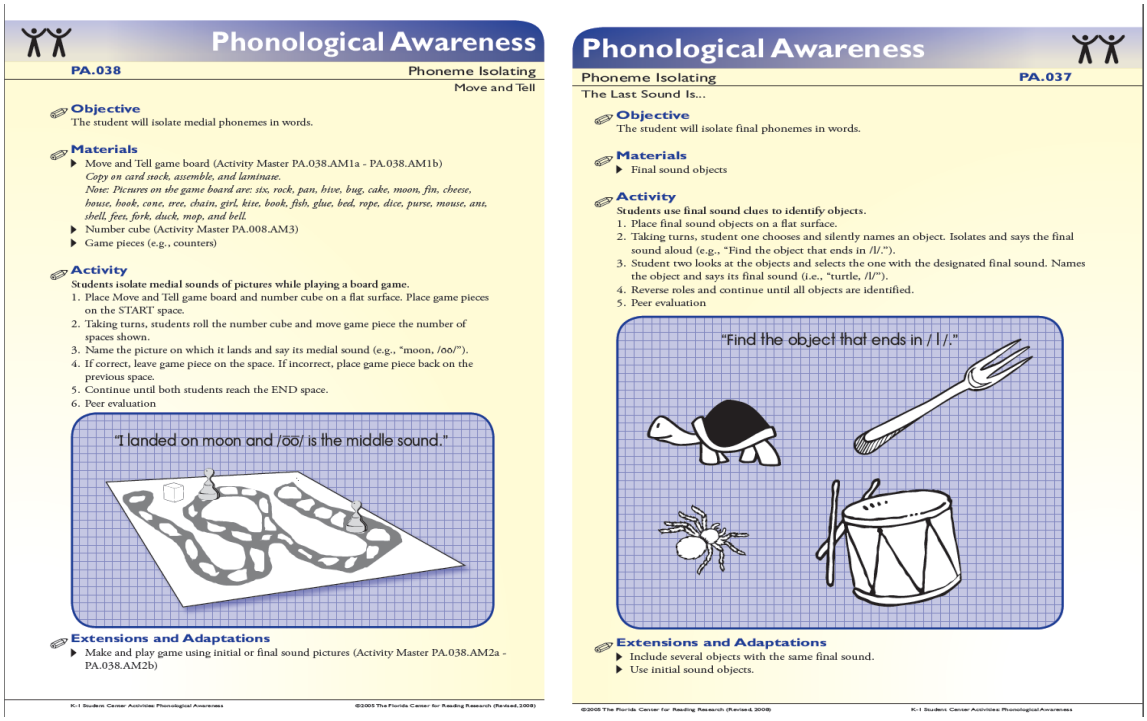


The Intervention

The reading course merged textbook theory with pedagogical options by having all participants, both comparison and experimental, prepare Student Center Activities from the Florida Center for Reading Research. These research-based instructional resources, compiled by faculty at Florida State University, provide game-like, engaging methods for differentiating instruction across multiple reading levels. The activities are available online at no charge in a downloadable, pdf format. It was theorized that these well designed instructional materials could allow university students in an introductory reading course to effectively conduct reading centers and thereby increase their feelings of preparedness for teaching reading.

Between 2004 and 2008, a research team at the Florida Center for Reading Research assembled center activities for students ranging from kindergarten to 5th grade. These activities are grouped according to skills deemed essential by the National Reading Panel (NIHCD, 2000): phonological awareness, phonics, fluency, vocabulary, and comprehension. Within each skill, teachers have multiple options from which to choose. For example, kindergarten and 1st grade options under comprehension include: sentence meaning, monitoring for understanding, expository text structure, narrative test structure, and text analysis. Phonics options for 2nd and 3rd grade include: letter-sound correspondence, syllable patterns, high frequency words, morpheme structures, and variant correspondence. Vocabulary options for 4th and 5th grade include: word knowledge, words in context, morphemic elements, word meaning, and word analysis. In addition, teacher guides and instruction sheets provide clear directions. All necessary materials are included; however, students sometimes added unique manipulatives to the activity. Preparation typically required cutting out word or letter cards, and pre-service teachers reported an acceptable amount of time was required for assembly. Figure 6 shows an example of kindergarten/1st grade activities for phoneme isolation.

Figure 6: Student Center Activities for phoneme isolation



Phonological Awareness

PA.038 Phoneme Isolating

Move and Tell

Objective

The student will isolate medial phonemes in words.

Materials

- Move and Tell game board (Activity Master PA.038.AM1a - PA.038.AM1b)

Copy on card stock, assemble, and laminate.

Note: Pictures on the game board are: six, rock, pan, hive, bug, cake, moon, fin, cheese, house, hook, cane, tree, chain, girl, kite, book, fish, glue, bed, rope, dice, purse, mouse, ant, shell, fees, fork, duck, mop, and bell.

- Number cube (Activity Master PA.008.AM3)
- Game pieces (e.g., counters)

Activity

Students isolate medial sounds of pictures while playing a board game.

1. Place Move and Tell game board and number cube on a flat surface. Place game pieces on the START space.
2. Taking turns, students roll the number cube and move game piece the number of spaces shown.
3. Name the picture on which it lands and say its medial sound (e.g., "moon, /oo/").
4. If correct, leave game piece on the space. If incorrect, place game piece back on the previous space.
5. Continue until both students reach the END space.
6. Peer evaluation

Extensions and Adaptations

- Make and play game using initial or final sound pictures (Activity Master PA.038.AM2a - PA.038.AM2b)

K-1 Student Center Activities: Phonological Awareness ©2005 The Florida Center for Reading Research (Revised, 2009)

Phonological Awareness

Phoneme Isolating PA.037

The Last Sound Is...

Objective

The student will isolate final phonemes in words.

Materials

- Final sound objects

Activity

Students use final sound clues to identify objects.

1. Place final sound objects on a flat surface.
2. Taking turns, student one chooses and silently names an object. Isolates and says the final sound aloud (e.g., "Find the object that ends in /l/.").
3. Student two looks at the objects and selects the one with the designated final sound. Names the object and says its final sound (i.e., "turtle, /l/").
4. Reverse roles and continue until all objects are identified.
5. Peer evaluation

Extensions and Adaptations

- Include several objects with the same final sound.
- Use initial sound objects.

©2005 The Florida Center for Reading Research (Revised, 2009) K-1 Student Center Activities: Phonological Awareness

SCA designers intended for the activities to be used in centers during small group reading instruction, thus encouraging independent skill practice of previously taught concepts. The current study included SCA based centers during the reading instruction block, but with the guidance of a pre-service teacher to provide additional direct instruction and explanation.

For the present study, participants in both groups prepared Student Center Activities. The experimental group prepared enough materials for3-4 groups of 2-4 children then implemented these activities with small groups in an elementary

classroom, while the comparison group practiced activities with university peers. See Figure 7 for an example of an activity that is ready to be used in the classroom.

Figure 7: Prepared Student Center Activity, ready for classroom use

Procedures

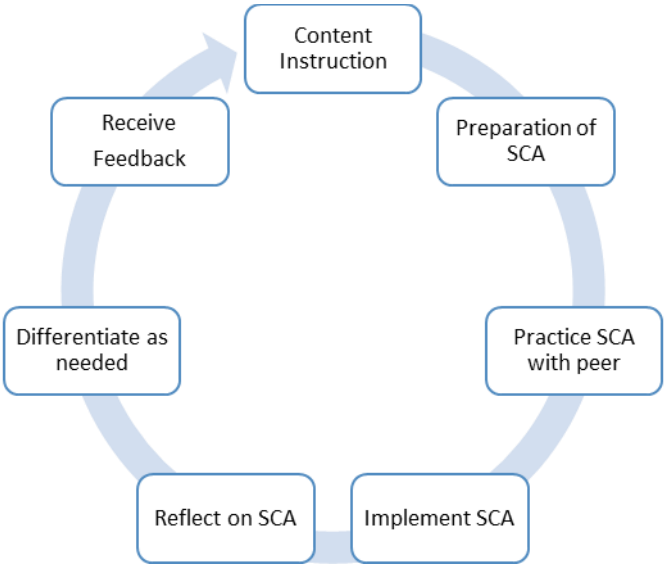
Experimental group. Pre-service teachers in the experimental group received weekly theoretical instruction in the fundamental components required for reading acquisition (Foorman, et al., 2016; NIHCD, 2000). These components included print awareness, letter knowledge, phonological awareness (rhyme, syllable, onset/rime, and phonemic awareness), phonics, fluency, vocabulary, and comprehension. Following the "I do", "We do", "You do" model, each instructor presented concept theory and demonstrated effective teaching strategies, students practiced those strategies in class with a partner, then students in the experimental group implemented the strategies during the ten weekly, one hour visits to the elementary school.

During these hourly field visits, teacher candidates worked with 2 – 4 small groups of children in grades K – 2. This typically occurred in the classroom during the time set aside for guided reading, and in some cases, occurred in the library during specials. Pre-service teachers prepared and provided all materials necessary for the elementary students; therefore, the only preparation required of the in-service teacher was small group organization and provision of workspace in the classroom.

After each session, students submitted weekly reflections on the field experience. Reflection prompts asked participants to consider issues such as what did and did not work, what adjustments they needed to make for the upcoming week, and what they needed to do to differentiate instruction within their small groups. Often, participants asked for suggestions to manage behavior. This allowed opportunity to illustrate the need to match instructional activities to a child's skill level. The instructor then provided

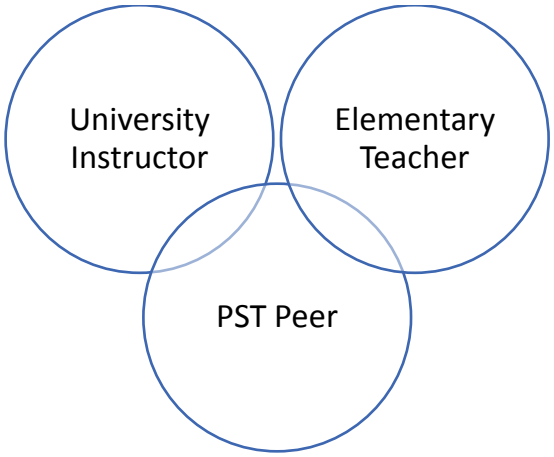
feedback and suggestions for changes to implement in the coming week. Figure 8 illustrates this process.

Figure 8: The recursive process for field experience participants



As the semester progressed, relationships developed between pre-and in-service teachers, thus allowing time to discuss issues and concerns. Often, pre-service teachers consulted their host teacher regarding behavior management. In addition, participants worked with their field partner to plan and coordinate future SCAs to meet the needs of the elementary children. University instructors saw opportunity for triangulated feedback as pre-service teachers collaborated with their field experience peer, consulted the classroom teacher, and submitted reflections to the university instructor. Figure 9 illustrates this triad.

Figure 9: The feedback triad



Comparison group. Pre-service teachers in the comparison group used the same text and prepared Student Center Activities; however, this group practiced these activities and teaching strategies with a peer during class time, rather than implementing in the elementary school. Although students in the comparison group did not write reflections on a field experience, they did provide survey feedback on perceived effectiveness of the SCAs and rated their perceived preparedness for teaching each construct.

Instruments

Knowledge of Basic Language Constructs. Pre-service teachers' knowledge of basic language constructs was assessed by using a validated instrument (Binks-Cantrell, Joshi, & Washburn, 2012), the Survey of Basic Language Constructs (Cronbach's α = 0.90). In addition to knowledge measures such as term definitions, the survey assesses skill-based items such as number of phonemes in a word, along with number of syllables

and morphemes in a word. Items also ask participants to self-evaluate their knowledge of phonemic awareness and vocabulary. Respondents define terms and perform reading-related tasks such as counting phonemes (speech sounds in words) and morphemes (meaningful parts of words). Knowledge and skill items are scored as either correct or incorrect (1 or 0) with a total possible score being 38.

Perceptions of Knowledge, Preparedness, and Confidence. Because this project was specific to reading instruction, standardized questions on instruments such as the Reading Teachers' Sense of Efficacy Scale (Haverback, 2007) related to general classroom management and general pedagogy were not applicable. Therefore, the content-focused study design required the development of a survey instrument in order to measure pre-service teachers' self-rating for conceptual knowledge and perceptions of preparedness for teaching. The researcher wanted to find not only overall self-ratings, but also ratings for each of ten constructs: (1) print awareness; (2) letter knowledge; (3) rhyme; (4) syllable; (5) onset/rime; (6) phonemic awareness; (7) phonics; (8) fluency; (9) vocabulary; and (10) comprehension. Analysis considered possible differences between coursework and field experience effects.

The customized survey instrument was designed and pilot tested in a two-step process. First, six former students, selected from initial field experience participants during a previous semester, received a paper version of the survey and were asked to review wording for clarity. Next, comments from this feedback were incorporated into an online version and sent via Qualtrix to forty former students who participated in the field experience during the two previous semesters. Twenty-six students completed the

pilot survey, and comments led to adjustments for clarity and presentation. The final version contained both open and closed ended questions. Table 3 contains results of tests for internal consistency and reliability reported as Cronbach's Alpha.

Table 3: Reliability scores for tests of internal consistency

CONSTRUCT	CRONBACH'S ALPHA
OVERALL	**.977**
COURSE KNOWLEDGE	.962
FIELD EXPERIENCE KNOWLEDGE	.967
COURSE PREPAREDNESS	.976
FIELD EXPERIENCE PREPAREDNESS	.977
PRINT AWARENESS	.844
LETTER KNOWLEDGE	.749
SYLLABLE	.725
RHYME	.742
ONSET/RIME	.726
PHONEMIC AWARENESS	.854
PHONICS	.850
FLUENCY	.802
VOCABULARY	.786
COMPREHENSION	.765

At the conclusion of the field experience, the final edited version was distributed to study participants via Qualtrix. Responses contained no personal identifiers. All items were scored on a Likert-type scale ranging from 1 to 5 with 1 being slight, 3 as average, and 5 as thorough. Self-ratings of construct knowledge and preparation for teaching were analyzed according to university classroom instruction vs. field experience implementation, then compared between field experience participants and the comparison group**.**

Data Collection

Knowledge of Basic Language Constructs. At the beginning of the semester, students in all three sections completed an online version of the knowledge survey. This was distributed by a Google form and was automatically scored on Google sheets. All students completed the same survey at the conclusion of the semester, also via a Google form.

Perceptions of Knowledge, Preparedness, and Confidence. At the conclusion of the semester, instructors sent a link to Qualtrix, and all participants responded to the survey instrument. These questions considered the level of content knowledge and pedagogical confidence gained through university classroom discussion and assessed how that knowledge and confidence did or did not increase through actual elementary classroom implementation. Open ended questions asked for feedback on the field experience such as: (1) what did they like; (2) how did they benefit; or (3) what would they change. Participants in the comparison group did not receive questions pertaining to

the field experience; rather, they provided perceptions of preparedness for teaching based on their classroom instruction alone.

Data Analysis

Knowledge of Basic Language Constructs. To begin data analysis for knowledge and answer research question #1, overall scores on the pretest and posttest were entered into SPSS and grouped according to comparison or experimental group. All significance tests were based on a 95% confidence level. Specific analyses considered possible differences in pretests, pre/post gains, posttests, and overall effects after controlling for the pretest.

One-way ANOVA measured pretest differences between groups, and Tukey Post hoc tests provided further details on group differences. Additional one-way ANOVA examined the mean pre/posttest gain between sections, and Tukey Post hoc tests were also applied. Paired samples *t* tests measured within group growth by instructor, and independent samples *t* tests compared the groups on overall knowledge gain.

In an analysis of posttest scores, ANOVA determined differences between groups, Tukey post hoc tests were applied, and independent samples *t* tests compared the treatment and comparison groups. Next, ANCOVA was used to control for possible pretest influence. The results helped to answer research question number one: Are there significant differences in knowledge of basic language constructs between pre-service teachers who participate in a field experience and those who do not participate in the field experience?

In addition to statistical significance tests and as an effort to measure the magnitude of differences, the standardized mean difference effect size (Wilson, n.d.) was calculated as Cohen's *d* for each independent *t* test, ANOVA, and ANCOVA using the standard formula:

$$d = \frac{M_1 - M_2}{SD_{pooled}}$$

Effect sizes for within group measures were calculated by dividing the mean by the standard deviation. Effects of $d = 0.2$ are considered small, $d = 0.5$ are considered moderate, and $d = 0.8$ are considered large. The results helped to answer a portion of research question number three: What effect does participation in a reading specific field experience have on pre-service teachers' knowledge of basic language constructs?

Perceptions of Knowledge, Preparedness, and Confidence. Survey results were also entered into SPSS and grouped according to instructor, then according to comparison or field experience participants. For each grouping variable (comparison or experimental), values from one to five were entered for each of 10 constructs: print awareness, letter knowledge, rhyme, syllable, onset/rime, phonemic awareness, phonics, fluency, vocabulary, and comprehension. In order to determine group homogeneity, independent *t* tests first looked at differences based on coursework alone, then considered differences between the comparison and field experience groups. Next, paired sample *t* tests examined potential growth in perceptions of knowledge, preparation for teaching, and confidence for teaching within the experimental group after

field experience participation. The results helped to answer research question number two: Are there significant differences in perceptions of knowledge, preparedness and confidence for teaching reading between pre-service teachers who participate in a field experience and those who do not participate in the field experience?

In addition, paired sample *t* tests explored potential changes in participants' perceptions before and after the field experience based on construct. Values were determined for possible growth in knowledge, preparation, and confidence for each of the ten constructs listed above. Effect sizes were then calculated for each construct using the standardized mean difference. Next, overall effect sizes were calculated for knowledge, preparation, and confidence by entering each mean and standard deviation into Excel and finding the average mean for each construct. The pooled standard deviation was found by squaring each standard deviation, averaging that value, then taking the square root of the average. The average mean was then divided by the pooled standard deviation to give the overall effect size. In total, survey data analysis yielded ninety statistical comparisons, with effect size calculations for each.

Effect sizes for each statistic were also calculated using the same formulas referenced above. Results helped answer the remaining portion of question three: What effect does participation in a reading specific field experience have on pre-service teachers' perceptions of knowledge, preparedness, and confidence for teaching reading?

The fourth research question investigated how pre-service teachers rated their knowledge, preparedness, and confidence for teaching each of ten essential components

necessary for reading acquisition. Means and standard deviations for each construct were calculated based on groups. The experimental group ratings after the field experience are also included as comparisons. In addition, factor analyses with Varimax rotation measured possible shared variance between the ten constructs. Finally, independent and paired sample *t* tests looked for possible significant differences between construct ratings.

CHAPTER IV

RESULTS

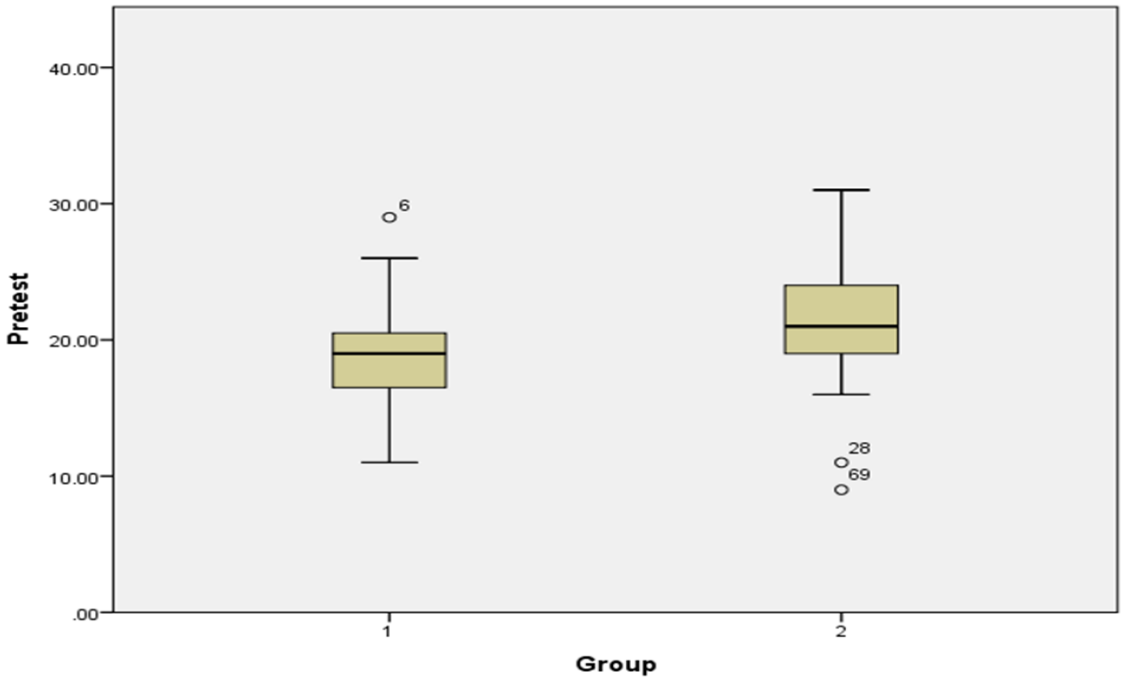
This study began with two primary objectives: determine what differences, if any, exist in (1) knowledge of basic language constructs; and (2) perceptions of knowledge, preparedness, and confidence for teaching reading between an experimental group that participates in a field experience and a comparison group that does not participate in the field experience. In addition, effect size calculations were applied to the above. Finally, analysis considered possible differences in perceptions between the ten constructs being evaluated. Data collection occurred through a previously validated pre/post assessment of language constructs and a researcher developed end-of-semester survey of perceptions. The following analyses reveal the group comparisons.

Knowledge of Basic Language Constructs

At the beginning of the semester, all students responded to the validated knowledge instrument (Binks-Cantrell, Joshi, & Washburn, 2012), then repeated the same measure at semester's end. The researcher entered individual, overall scores into SPSS and conducted the following analyses: ANOVA, ANCOVA to control for the pretest, Tukey post hoc tests, Independent sample *t* tests for between group differences, and paired sample *t* tests to measure within group changes.

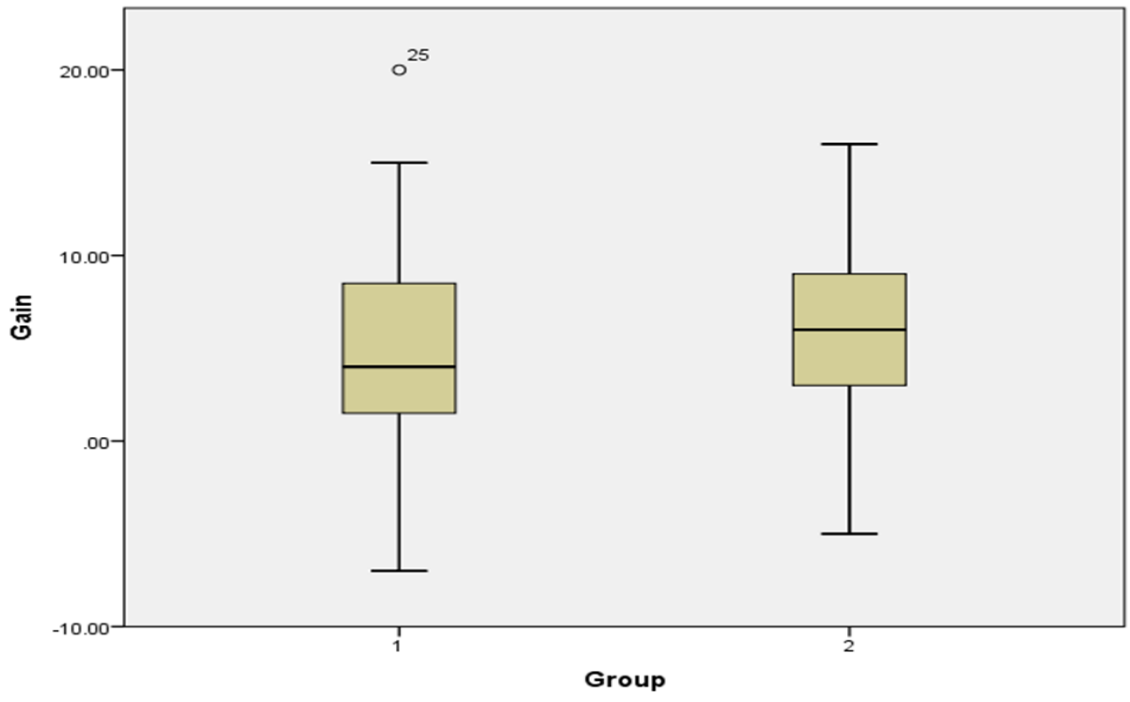
Pretest Comparisons. There was a statistically significant difference in pretest scores between groups as determined by one-way ANOVA ($F(1,67) = 5.807$, $p = .019$. See Figure 10. Effect size, using means and standard deviations for each group, was 0.5944.

Figure 10: Pretest scores between comparison (1) and experimental (2)



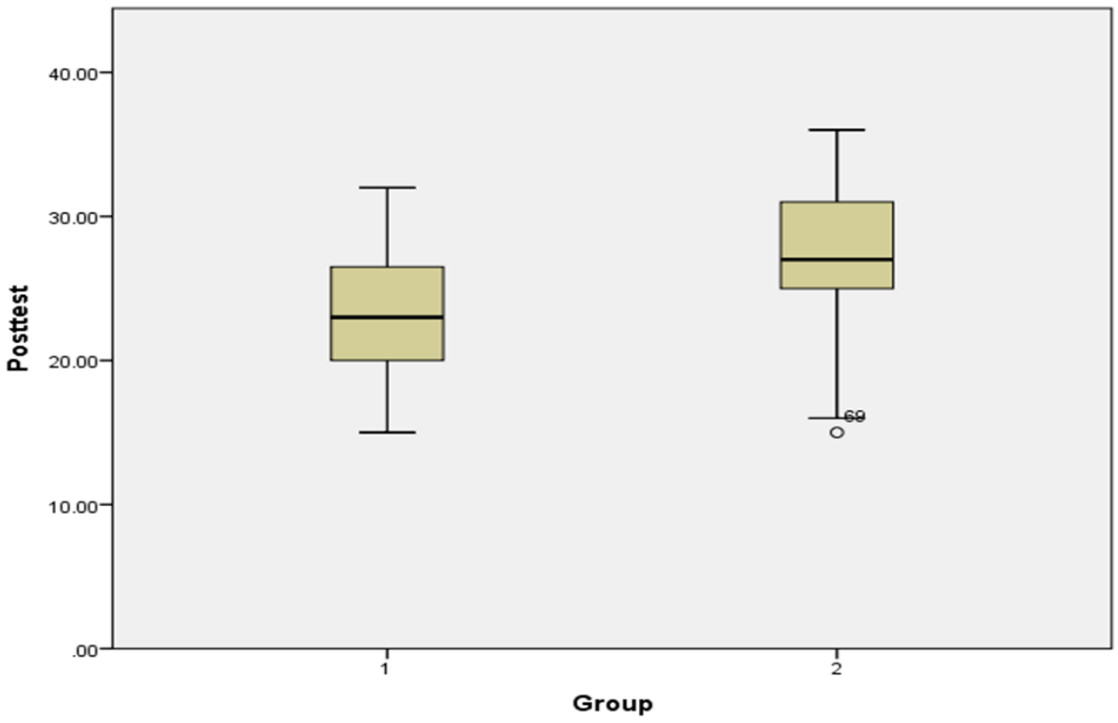
Pretest/Posttest gains. Paired sample *t* tests were conducted to measure overall gains in conceptual knowledge between groups with both groups showing statistically significant growth: Comparison group ($t(26) = 4.375$, $p = .000$, $d = 0.8420$); Experimental group ($t(41) = 8.294$, $p = .000$, $d = 1.2798$). However, an independent samples *t* test found no statistically significant differences in gain between the experimental and comparison groups ($t(67) = 2.586$, $p = .519$, $d = 0.1598$) as illustrated in Figure 11.

Figure 11: Pretest/Posttest gain scores between comparison (1) and experimental (2)



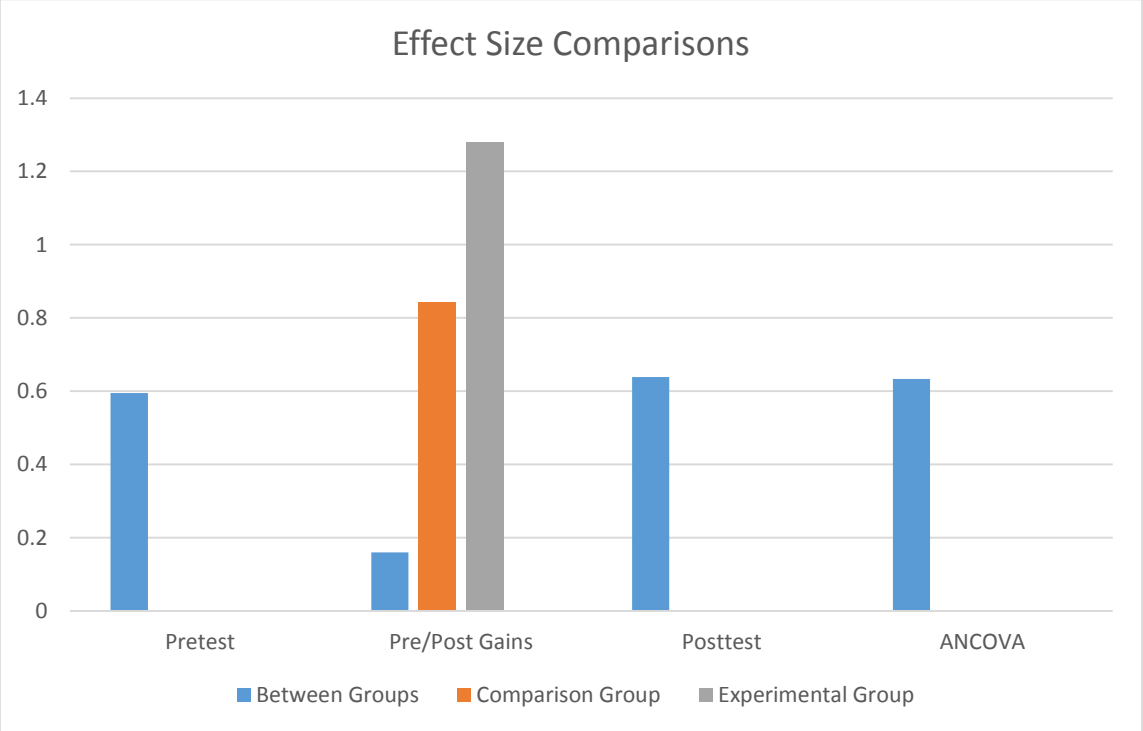
Posttest Comparisons. Independent samples *t* test showed a statistically significant difference in posttest scores between the experimental and comparison groups ($t(67) = 3.177$, $p = .002$, $d = 0.638$) as shown in Figure 12; however, ANCOVA to control for the pretest found no statistically significant differences between groups ($F(1,66) = 2.666$, $p = .107$, $d = 0.6328$).

Figure 12: Posttest scores between comparison (1) and experimental (2)



Summary for Knowledge of Basic Language Constructs. Statistical analyses found significant differences and a moderate effect size between groups based on the pretest. Pre/post gains showed significant differences with large effect sizes. Posttest scores also resulted in significant differences with a moderate effect size. However, ANCOVA showed no significant differences in posttest scores between groups after controlling for the pretest. The effect sizes illustrate the magnitude of these differences. See Figure 13.

Figure 13: Effect size comparisons



Perceptions of Knowledge, Preparedness, and Confidence

At the conclusion of the semester, students in both the experimental and comparison groups responded to the researcher developed survey to rate their level of (1) construct knowledge, (2) preparedness for teaching, and (3) confidence level for teaching each research based component of effective reading instruction. For students in the experimental group, the survey asked respondents to first compare knowledge, preparedness, and confidence based on coursework, then rate the same three categories after field experience participation. Comparison group students merely rated each category based on coursework and the opportunity to prepare Student Center Activities, then practice with peers. Statistical analyses compared each category based on coursework alone, then each category between the comparison group and experimental group after field experience participation. Finally, change in each category within the experimental group before and after field experience was measured.

Construct Knowledge

Between groups based on coursework alone. Independent samples *t* tests found no statistically significant differences in construct knowledge between the experimental and comparison groups based on coursework alone as shown in Table 4. All but three constructs, syllable, vocabulary, and comprehension reported negative effects.

Table 4: Construct knowledge based on coursework alone. CI (.95).

Construct	***t* value**	***p* value**	**Cohen's *d***
Print Awareness	*t*(58) = 1.991	.051	-0.5167
Letter Knowledge	*t*(58) = 1.495	.140	-0.3881
Syllable	*t*(58) = -0.16	.874	0.0415
Rhyme	*t*(58) = .763	.448	-0.1981
Onset/rime	*t*(58) = .778	.440	-0.2019
Phonemic Awareness	*t*(58) = 1.405	.165	-0.3647
Phonics	*t*(58) = 1.843	.070	-0.4784
Fluency	*t*(58) = 1.568	.122	-0.4067
Vocabulary	*t*(58) = -0.321	.749	0.0833
Comprehension	*t*(58) = -.159	.875	0.0411
Overall effect			**-0.2496**

Between experimental group after field experience and comparison group.

Independent samples t tests found statistically significant differences for eight out of 10 constructs as shown in Table 5. Only print awareness (p = .072) and letter knowledge (p = .066) were not statistically significant. Effect sizes were all moderate to large.

Table 5: Construct knowledge between experimental group after field and comparison. CI (.95).

Construct	***t* value**	***p* value**	**Cohen's *d***
Print Awareness	$t(58) = 1.831$	.072	0.4752
Letter Knowledge	$t(58) = 1.875$	.066	0.4866
Syllable	$t(58) = 3.191$	.002*	0.8282
Rhyme	$t(58) = 2.464$	.017*	0.6393
Onset/rime	$t(58) = 2.860$	.006*	0.7422
Phonemic Awareness	$t(58) = 2.812$	.007*	0.7297
Phonics	$t(58) = 2.746$	.008*	0.7126
Fluency	$t(58) = 3.405$	.001*	0.8837
Vocabulary	$t(58) = 2.809$	.007*	0.729
Comprehension	$t(58) = 4.190$	.000*	1.0872
Overall effect			**0.7265**

Within experimental group before and after field experience. Paired sample *t* tests revealed statistically significant differences in perceived construct knowledge for the experimental group before and after participating in the field experience. Effect sizes were all large to very large. See Table 6.

Table 6: Perceived construct knowledge within experimental group. CI (.95).

Construct	***t* value**	***p* value**	**Cohen's *d***
Print Awareness	*t*(32) = 7.400	.000*	1.288
Letter Knowledge	*t*(32) = 4.770	.000*	0.8303
Syllable	*t*(32) = 4.923	.000*	0.8570
Rhyme	*t*(32) = 4.784	.000*	0.8329
Onset/rime	*t*(32) = 6.143	.000*	1.0694
Phonemic Awareness	*t*(32) = 8.857	.000*	1.5418
Phonics	*t*(32) = 10.276	.000*	1.7888
Fluency	*t*(32) = 7.220	.000*	1.2568
Vocabulary	*t*(32) = 5.488	.000*	0.9553
Comprehension	*t*(32) = 5.933	.000*	1.0328
Overall effect			**1.1194**

Preparedness for Teaching

Between groups based on coursework alone. Independent sample *t* tests found no statistically significant differences in preparedness for teaching between the experimental and comparison groups based on coursework alone as shown in Table 7.

Table 7: Preparedness based on coursework alone. CI (.95).

Construct	***t* value**	***p* value**	**Cohen's *d***
Print Awareness	*t*(58) = .785	.436	-0.2036
Letter Knowledge	*t*(58) = .785	.444	-0.1999
Syllable	*t*(58) = -0.242	.810	0.0628
Rhyme	*t*(58) = .699	.487	-0.1814
Onset/rime	*t*(58) = .400	.690	-0.104
Phonemic Awareness	*t*(58) = .270	.788	-0.0703
Phonics	*t*(58) = .541	.591	-0.1405
Fluency	*t*(58) = 1.205	.233	-0.3127
Vocabulary	*t*(58) = .411	.682	-0.1067
Comprehension	*t*(58) = -.923	.360	0.2396
Overall effect			**-0.1048**

Between experimental group after field experience and comparison group.

Independent samples *t* tests found statistically significant differences for all constructs with moderate to very large effect sizes as shown in Table 8.

Table 8: Preparedness between experimental group after field and comparison group. CI (.95).

Construct	***t* value**	***p* value**	**Cohen's *d***
Print Awareness	*t*(58) = 2.477	.016*	0.6428
Letter Knowledge	*t*(58) = 2.542	.014*	0.6596
Syllable	*t*(58) = 3.299	.002*	0.8561
Rhyme	*t*(58) = 2.158	.035*	0.5601
Onset/rime	*t*(58) = 3.084	.003*	0.8002
Phonemic Awareness	*t*(58) = 3.165	.002*	0.8214
Phonics	*t*(58) = 3.344	.001*	0.8676
Fluency	*t*(58) = 3.168	.002*	0.8219
Vocabulary	*t*(58) = 3.927	.000*	1.0188
Comprehension	*t*(58) = 4.279	.000*	1.1106
Overall effect			**0.8125**

Within experimental group before and after field experience. Paired sample *t* tests revealed statistically significant differences in perceived preparedness for teaching all constructs within the experimental group before and after participating in the field experience. Effect sizes were all very large. See Table 9.

Table 9: Perceived preparedness within experimental group before and after field. CI (.95).

Construct	***t* value**	***p* value**	**Cohen's *d***
Print Awareness	*t*(32) = 7.278	.000*	1.2669
Letter Knowledge	*t*(32) = 6.672	.000*	1.1615
Syllable	*t*(32) = 8.000	.000*	1.3926
Rhyme	*t*(32) = 8.000	.000*	1.3926
Onset/rime	*t*(32) = 9.339	.000*	1.6258
Phonemic Awareness	*t*(32) = 8.615	.000*	1.4997
Phonics	*t*(32) = 10.876	.000*	1.8932
Fluency	*t*(32) = 10.276	.000*	1.7888
Vocabulary	*t*(32) = 9.604	.000*	1.6718
Comprehension	*t*(32) = 8.805	.000*	1.4074
Overall effect			**1.4954**

Confidence for Teaching

Between groups based on coursework alone. There was a statistically significant difference between the experimental and comparison groups in confidence for teaching comprehension based on coursework alone ($t(58) = 2.366$, $p = .021$, $d = 0.614$). Independent samples *t* tests found no additional statistically significant differences. See Table 10.

Table 10: Confidence based on coursework alone. CI (.95).

Construct	***t* value**	***p* value**	**Cohen's *d***
Print Awareness	$t(58) = -0.26$	.796	0.0673
Letter Knowledge	$t(58) = -0.226$	.822	0.0587
Syllable	$t(58) = -0.837$	.406	0.2173
Rhyme	$t(58) = -0.492$	.625	0.1276
Onset/rime	$t(58) = -0.705$	.484	0.183
Phonemic Awareness	$t(58) = 0.152$	.880	-0.0394
Phonics	$t(58) = -0.529$	.599	0.1373
Fluency	$t(58) = -0.328$	.744	0.0852
Vocabulary	$t(58) = -1.671$	.100	0.4337
Comprehension	$t(58) = -2.366$	.021*	0.614
Overall effect			**0.1859**

Between experimental group after field experience and comparison group.

Independent samples *t* tests found statistically significant differences in confidence for teaching all constructs with moderate to very large effect sizes as shown in Table 11.

Table 11: Confidence between experimental group after field and comparison. CI (.95).

Construct	***t* value**	***p* value**	**Cohen's *d***
Print Awareness	*t*(58) = 3.028	.004*	0.7859
Letter Knowledge	*t*(58) = 3.459	.001*	0.8977
Syllable	*t*(58) = 3.67	.001*	0.9524
Rhyme	*t*(58) = 3.67	.001*	0.9524
Onset/rime	*t*(58) = 4.573	.000*	1.1868
Phonemic Awareness	*t*(58) = 3.014	.004*	0.7821
Phonics	*t*(58) = 3.814	.000*	0.9898
Fluency	*t*(58) = 3.479	.001*	0.9027
Vocabulary	*t*(58) = 5.318	.000*	1.3803
Comprehension	*t*(58) = 7.072	.000*	1.8352
Overall effect			**1.0767**

Within experimental group before and after field experience. Paired sample *t* tests revealed statistically significant differences in perceived confidence for teaching all constructs within the experimental group before and after participating in the field experience. Effect sizes were all very large. See Table 12.

Table 12: Perceived confidence within experimental group before and after field. CI (.95).

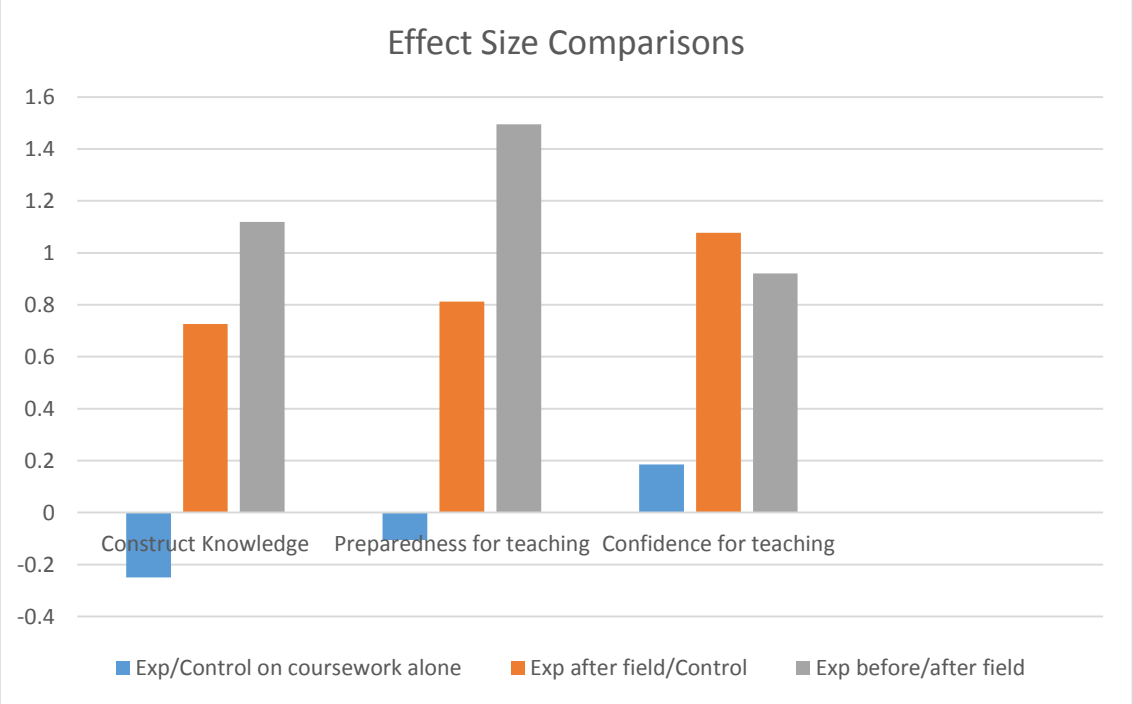
Construct	***t* value**	***p* value**	**Cohen's *d***
Print Awareness	*t*(32) = 4.707	.000*	0.8193
Letter Knowledge	*t*(32) = 4.667	.000*	0.8124
Syllable	*t*(32) = 4.707	.000*	0.8193
Rhyme	*t*(32) = 5.600	.000*	0.9748
Onset/rime	*t*(32) = 6.886	.000*	1.1987
Phonemic Awareness	*t*(32) = 6.672	.000*	1.1615
Phonics	*t*(32) = 7.089	.000*	1.2340
Fluency	*t*(32) = 5.933	.000*	1.0328
Vocabulary	*t*(32) = 4.667	.000*	0.8124
Comprehension	*t*(32) = 5.125	.000*	0.8921
Overall effect			**0.9212**

Summary from Survey of Perceptions

There were no statistically significant differences between the groups in perceptions of knowledge or preparedness based on coursework alone; however, there was a statistically significant difference in confidence for teaching comprehension based on coursework alone ($t(58) = 2.366$, $p = .021$, $d = 0.614$). In comparing the experimental group after the field experience to the comparison group, there were statistically significant differences in all categories (knowledge, preparedness, and confidence) and

all constructs except for knowledge of print awareness (p = .072) and letters (p = .066). Within group analyses of the experimental group before and after the field experience yielded statistically significant differences in all categories and all constructs. The within group findings also led to very high effect sizes. Figure 14 illustrates the overall effect sizes resulting from the survey of perceptions for teaching reading.

Figure 14: Effect sizes across domains



Construct Rating

Participants (n = 60) also rated their perceptions of knowledge, preparedness, and confidence for teaching based on the following ten constructs: print awareness, letter knowledge, syllable, rhyme, onset/rime, phonemic awareness, phonics, fluency, vocabulary, and comprehension. Data from these ratings helped answer research question number four. Findings will be applied to future university course designs based on constructs identified as needing additional instruction and reinforcement.

Factor analysis considered possible underlying structures between the above ten constructs. Principal components analysis was conducted for knowledge, preparedness, and confidence utilizing a varimax rotation with the initial analysis retaining only one component in all three domains. Each loading was positive, and all constructs loaded onto only one factor, print awareness. This accounted for 89% of the variance in knowledge, 91% of the variance in preparedness, and 88% of the variance in confidence. Table 13 shows the component matrix for each domain. The output generated from this analysis is presented in Tables 14 to 16. The eigenvalue criterion is considered appropriate because the number of variables is less than 30 (Mertler & Vannatta, 2013); therefore, only one component with eigenvalue greater than 1, print awareness, was retained. Results from the factor analysis reveal a high degree of overlap, or shared variance.

Table 13: Component matrix for knowledge, preparedness, and confidence

	Component Matrix (1)		
Construct	**Knowledge**	**Preparedness**	**Confidence**
Print Awareness	.954	.949	.954
Letter Knowledge	.944	.951	.947
Syllable	.933	.957	.970
Rhyme	.925	.961	.967
Onset/Rime	.942	.949	.955
Phonemic Awareness	.958	.960	.936
Phonics	.941	.945	.942
Fluency	.957	.953	.967
Vocabulary	.941	.942	.957
Comprehension	.955	.954	.770

Table 14: Total variance for knowledge

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.931	89.312	89.312	8.931	89.312	89.312
2	.278	2.781	92.094			
3	.229	2.293	94.386			
4	.165	1.649	96.035			
5	.109	1.093	97.128			
6	.085	.850	97.978			
7	.078	.782	98.760			
8	.060	.595	99.355			
9	.036	.363	99.718			
10	.028	.282	100.000			

Extraction Method: Principal Component Analysis.

Table 15: Total variance for preparedness

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.069	90.693	90.693	9.069	90.693	90.693
2	.273	2.727	93.420			
3	.152	1.522	94.942			
4	.139	1.393	96.334			
5	.109	1.088	97.422			
6	.080	.797	98.219			
7	.077	.772	98.991			
8	.043	.425	99.416			
9	.037	.367	99.783			
10	.022	.217	100.000			

Extraction Method: Principal Component Analysis.

Table 16: Total variance for confidence

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.803	88.032	88.032	8.803	88.032	88.032
2	.455	4.552	92.584			
3	.294	2.938	95.522			
4	.131	1.313	96.835			
5	.090	.897	97.733			
6	.071	.711	98.444			
7	.059	.595	99.038			
8	.043	.427	99.465			
9	.040	.396	99.861			
10	.014	.139	100.000			

Extraction Method: Principal Component Analysis.

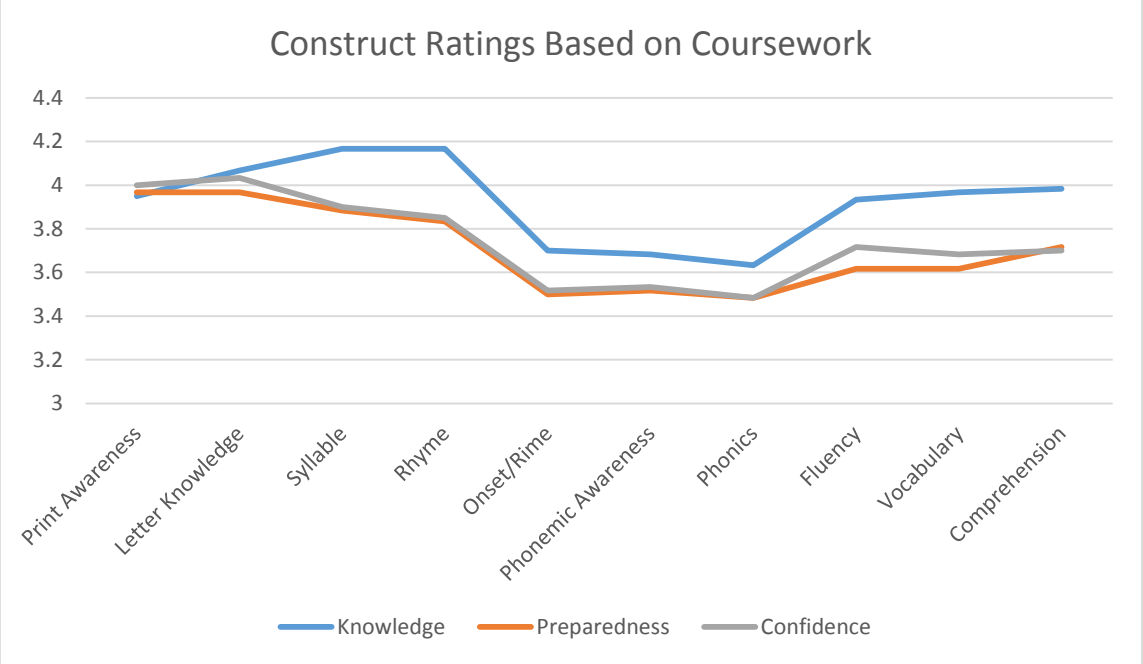
In order to evaluate construct ratings, means and standard deviations were calculated within each domain as shown in Table 17.

Table 17: Means and SD for each construct

N=60	**Knowledge**		**Preparation**		**Confidence**	
Construct	Mean	SD	Mean	SD	Mean	SD
Print Awareness	3.95	.7511	3.9667	.9561	4.0	.9915
Letter Knowledge	4.0667	1.0872	3.9667	.9737	4.0333	1.0246
Syllable	4.1667	.8061	3.8833	.9037	3.9	1.0201
Rhyme	4.1667	.8471	3.8333	.9236	3.85	1.0222
Onset/Rime	3.7	1.0301	3.5	.9655	3.5167	1.0813
Phonemic Awareness	3.6833	1.0332	3.5167	.9999	3.5333	1.0163
Phonics	3.6333	.9909	3.4833	.9296	3.4833	.9999
Fluency	3.9333	.9719	3.6167	.9405	3.7167	1.0591
Vocabulary	3.9667	.8823	3.6167	.8456	3.6833	1.0167
Comprehension	3.9833	.8924	3.7167	.9405	3.7	1.0135

Figure 15 illustrates the lower ratings for onset/rime, phonemic awareness, and phonics. This indicates the need for additional university level instruction in these concepts.

Figure 15: Construct ratings based on coursework



CHAPTER V

CONCLUSION

The primary purpose of this study was to determine if statistically significant differences in construct knowledge, along with perceptions of knowledge, preparedness, and confidence for teaching would be found between an experimental group that participated in a field experience and a comparison group. A second purpose was to calculate effect sizes based on these differences. In addition, consideration was given to how pre-service teachers rated their knowledge of and preparedness for teaching ten essential components of reading acquisition. Ultimately, results from this study may help to determine the design of a university level introductory reading course and provide direction for the effective preparation of future reading teachers.

This chapter addresses each research question and discusses the findings. Next, study limitations are presented and directions for future research are suggested. Finally, implications for practice are reviewed.

Discussion of Results

Research Question #1: Are there significant differences in knowledge of basic language constructs between pre-service teachers who participate in a field experience and those who do not participate in the field experience?

Using data from a validated pre/post assessment measure (Binks-Cantrell, Joshi, & Washburn, 2012), pre-service teachers' knowledge of basic language constructs was

compared between the comparison and experimental groups. Results were categorized according to pretest, pre/post gains, and posttest comparison. Statistical analyses found the following.

First, students in the experimental group had significantly higher scores on the pretest than students in the comparison group. This potentially confounds the results; however, the university course involved with the research was the initial reading course in the degree plan, so participants should have limited, if any, prior knowledge of course contents. Participants ranged in classification from U1 to U3. Therefore, this difference should not be due to prior coursework or classification, but could be explained by a lack of randomization.

Second, pre/post gain scores showed significant growth in all participants, regardless of group, but no significant differences between groups. Of particular note is the large effect size for field experience participants (d = 1.2798). The lack of significant differences in growth between the experimental and comparison groups points to effective instruction delivered by the university faculty because all pre-service teachers demonstrated knowledge growth.

Next, posttest comparisons found significant differences between the comparison and experimental groups; however, ANCOVA found no statistically significant differences between groups after controlling for the pretest. Although each group showed growth through higher scores on the posttest, ANCOVA results indicate the field

experience component did not lead to significant differences in content knowledge over the comparison group.

Findings from this study parallel those of Haverback and Parault (2011) and Helfrich and Bean (2011), with some differences in research design. For example, Helfrich and Bean (2011) measured time in the field, while Haverback and Parault (2011) compared tutoring or observing. Interestingly, Haverback and Parault (2011) rated observing higher than hands on tutoring, but this could be the result of observing skilled, knowledgeable teachers. The current study is unique in the comparison of two groups using the same research based, structured materials, but different applications—one in an elementary classroom, the other with peers.

Overall, findings from the knowledge assessment run counter to previous studies (Al Otaiba, 2005; Al Otaiba & Lake, 2007; Al Otaiba, Lake, Greulich, Folsom, & Guidry, 2012; Lee, 2009; Roehrig, Guidry, Bodur, Guan, Guo, & Pop ,2008; Spear-Swerling, 2009; Spear-Swerling and Brucker, 2004) showing significant differences in knowledge growth after participating in a structured, integrated field experience. In the current study, the inclusion of a planned, hands on field element, rather than mere observation, can lead to significant knowledge growth (Al Otaiba, et al., 2012; Tetley & Jones, 2014), but does not necessarily lead to statistically significant differences between groups.

Research Question #2: Are there significant differences in perceptions of knowledge, preparedness and confidence for teaching reading between pre-service

teachers who participate in a field experience and those who do not participate in the field experience?

The researcher developed survey allowed participants (n = 60) to rate their perceived knowledge, preparedness, and confidence for teaching each of ten essential constructs. This post measure was given at the conclusion of the semester to both the experimental and comparison groups and considered ratings based on coursework alone, experimental/comparison, and growth within the experimental group before and after the field experience.

First, findings for perceived knowledge based on coursework alone found no significant differences and many negative effect sizes (Table 4). It cannot be assumed that participants did not value coursework; rather, this could indicate a differential between knowledge gained in the classroom, then exponentially increased through field application. The significant differences and moderate to large effect sizes comparing the experimental and comparison groups seem to affirm this interpretation (Table 5). The significant differences and large effect sizes for growth within the experimental group also support this explanation (Table 6).

Next, findings for perceived preparation based on coursework alone showed no significant differences between groups and many negative effect sizes (Table 7). Again, this does not necessarily minimize coursework; rather, it emphasizes field work effects because Table 8 shows significant differences and large effect sizes between groups. In

addition, Table 9 illustrates the significant growth and very large effect sizes within the experimental group.

In contrast to knowledge and preparation, confidence ratings showed significant differences and moderate effect sizes for teaching comprehension based on coursework alone (Table 10). In comparing groups, significant differences and very large effect sizes were found for all constructs (Table 11). Similarly, within group growth exhibited significant differences and very large effect sizes (Table 12).

The significant differences and large effect sizes from these results underscore the benefits of carefully integrated fieldwork and coursework. This is congruent with findings from Kent, Giles, and Hibberts (2013) as well as Al Otaiba, Lake, Greulich, Folsom, & Guidry (2012) and Al Otaiba and Lake (2007). Similar to the current research, these three studies used a structured field experience to measure perceptions of preparedness and compared with observers or time in the field.

In contrast, Tetley and Jones (2014) argue there is no correlation between time in the field and increased perceptions of preparedness. This may be attributed to pre-service teachers developing an appreciation for the complexities involved with teaching reading after participation in a realistic field experience. In response, the current research provides quantitative evidence of significant growth in perceptions of knowledge, preparedness and confidence after field experience participation.

Research Question #3: What effect does participation in a reading specific field experience have on pre-service teachers' knowledge of basic language constructs and perceptions of knowledge, preparedness, and confidence for teaching reading?

Thompson (2006) explains effect size as a statistic which quantifies the difference between the sample and the null hypothesis. This standardized measure allows for comparison across studies by setting a consistent parameter and defines the magnitude of difference between groups. Although the *p* value may provide statistical significance, the effect size allows significance to be compared across studies.

The current study included effect size calculations for each construct measured for perceptions of knowledge, preparedness, and confidence for teaching. This data pertains to category comparison, rather than construct comparison. Results support the inclusion of carefully integrated field experiences for increasing knowledge perceptions, preparedness, and confidence. Figure 16 shows knowledge, Figure 17 illustrates preparedness, and Figure 18 diagrams confidence levels. In general, these effect sizes range from large (.6-.8) to very large (>.8).

Figure 16: Effect sizes for knowledge perceptions

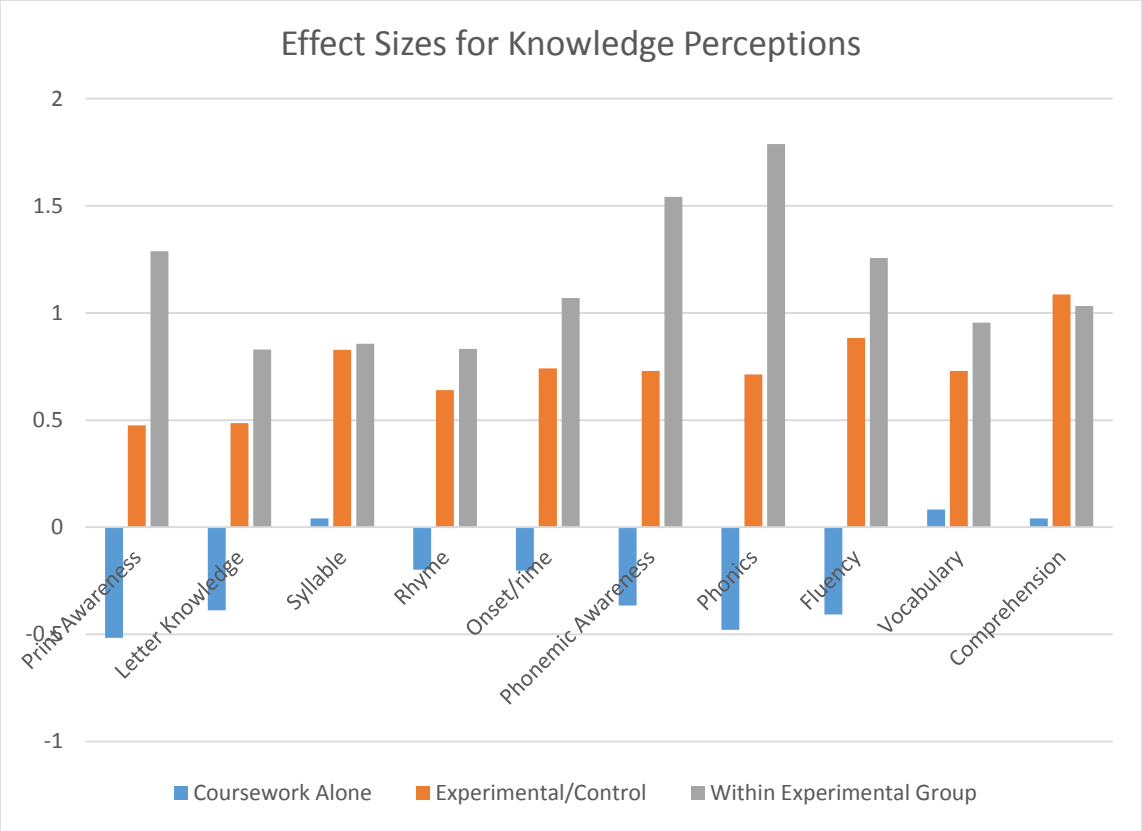


Figure 17: Effect sizes for preparedness perceptions

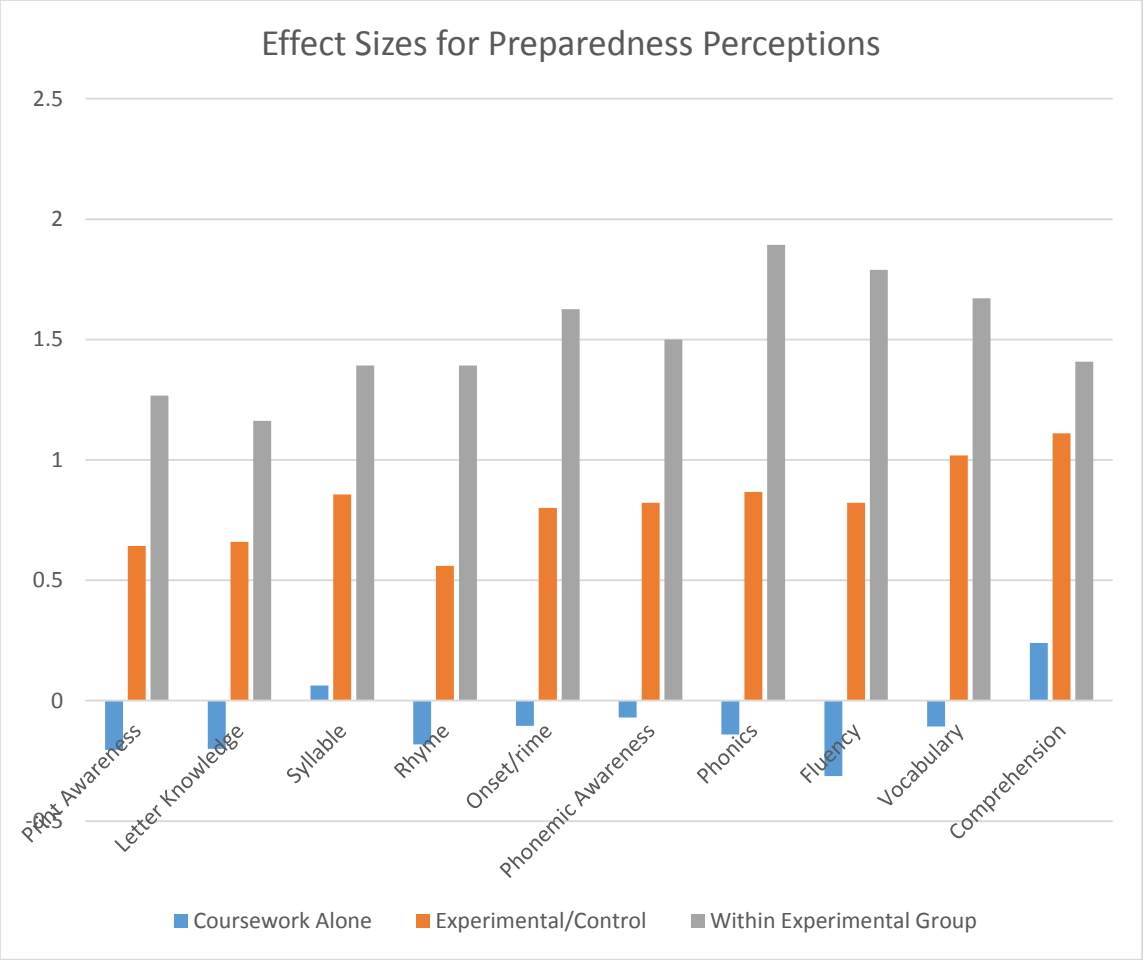
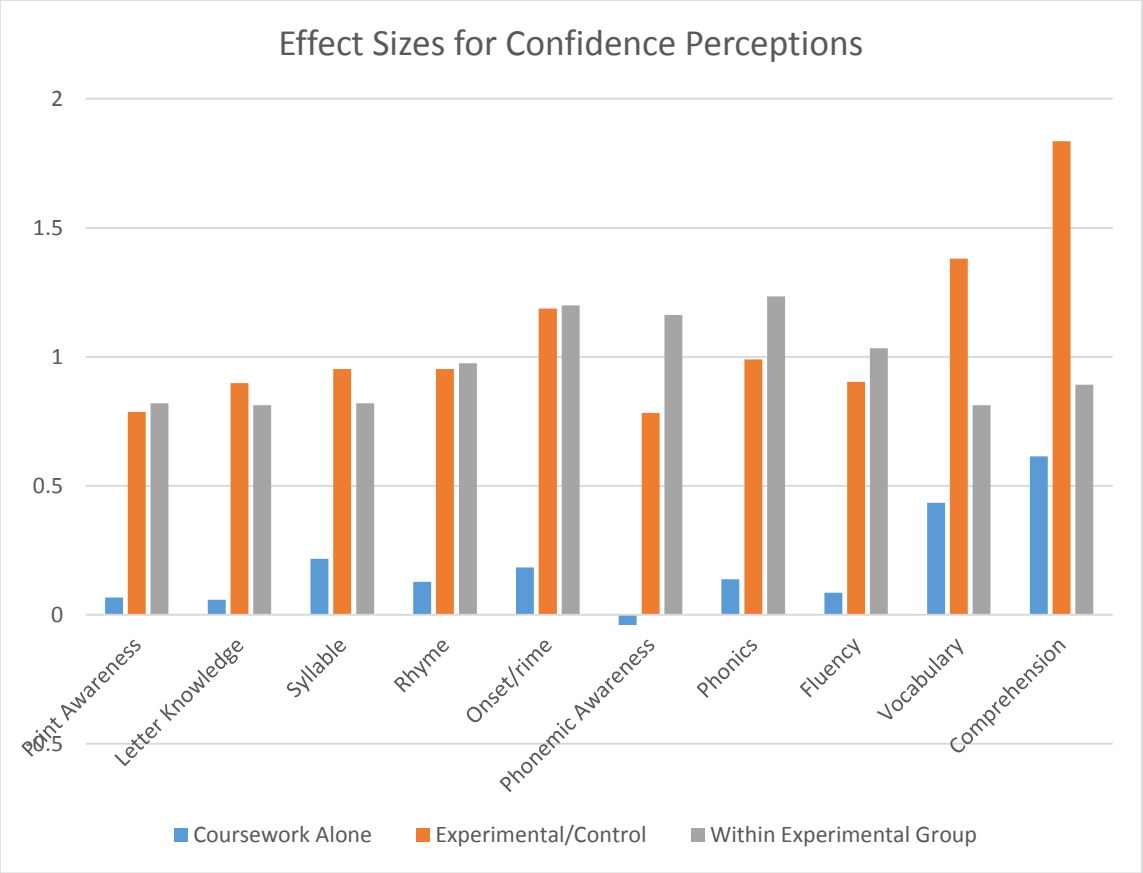


Figure 18: Effect sizes for confidence perceptions



Research Question #4: How do pre-service teachers rate their knowledge, preparedness, and confidence for teaching each essential component of reading acquisition?

Factor analysis showed a high correlation between the constructs being surveyed, therefore only retaining one component. This indicates that participants did not

discriminate in their construct ratings; however, Figure 14 points to lower confidence ratings and the possible need for additional university level instruction and practice in onset/rime, phonemic awareness, and phonics. Onset/rime ability helps children recognize phonograms, or common chunks in words. Phonemic awareness, the ability to work with individual sounds in words, is a strong predictor of future reading success or difficulty (Juel, 1988; Moats, 1994). Phonics covers the relationship between phonemes (individual sounds) and graphemes (written representation of sounds).

As noted by Juel (1988), children with poor reading skills typically entered 1st grade with low phonemic awareness skills. This deficit contributed to lower decoding skills by the end of 4th grade as compared to skilled peers. Indeed, Moats (1994) emphasizes the common theme within the scientific community that most reading difficulties result from impairment with language processing, rather than visual/perceptual issues, comprehension struggles, or attention deficits.

The inability to process phonological information leads to further difficulty with phonics as children begin matching the sounds in words to the applicable letters. A child's awareness of the Alphabetic Principle, written letters represent the sounds in spoken language, sets the stage for decoding, spelling, and writing skills. Therefore, access to systematic instruction from a knowledgeable teacher is key to reading success.

In order to effectively facilitate the learning of these skills, teachers themselves must have a strong understanding of the sound structure within English and know *what* to teach *when*. Merely being literate does not ensure an understanding of phonology and

morphology or the ability to communicate this content area to children. Sadly, teachers are often under or misinformed about the relationship between speech and print. Responsibility for delivering this information to future teachers rests with university faculty and teacher preparation programs.

Theoretical Framework

As illustrated in Figures 16 -18, significant differences and large effect sizes found between the experimental and comparison groups reinforce the ideas of situational learning theory. Under this model, learning results from the activity and context, rather than an abstract application. Using these principles, students participate in a "cognitive apprenticeship" (Brown, Collins & Duguid, 1989) as they connect with background knowledge while developing skills in authentic contexts. This framework requires instructors to carefully design problem solving situations and scaffold instruction to encourage collaboration and reflection. As a result, concept knowledge and understanding increases, while perceptions of preparedness and confidence grow.

Limitations

The researcher obtained data from three sections of an initial undergraduate reading course taught by three different instructors. Although instructors used the same text as well as the same instructional activities, teacher effect must be acknowledged; however, all three instructors were reading specialists.

As mentioned in the discussion of the knowledge assessment, significant differences existed between groups on the pretest. Lack of randomized assignment may

contribute to this issue; however, the knowledge assessment covered construct knowledge rather than pedagogical knowledge. Therefore, field experience would not necessarily transfer or be relevant to the question types used on the assessment. See appendix for question types.

In addition, participating sections were determined by instructor agreement. This purposive sampling makes the study quasi experimental because random sampling for pre-service teacher participants was unfeasible. Future participant demographics could be measured to determine homogeneity of section enrollments and similarity to pre-service teachers in general; however, it is assumed that participants represent the general population of pre-service teachers enrolled in a university based teacher preparation program despite this limited sample size.

A pre/post measure of basic language constructs determined participants' overall knowledge. Testing effects may have an impact because participants took the same version as pre- and post- measures. Because pre-service teachers took this assessment online, it is possible that outside help was used during the assessment. Results may also be impacted by those who test well, rather than those who are knowledgeable. All responses were voluntary.

A researcher developed questionnaire measured pre-service teachers' perceptions of knowledge, preparedness, and confidence for teaching essential components of reading acquisition. Some respondents may have allotted more time to provide answers than other respondents, or may have given more thoughtful ratings than others. The

questionnaire assumed respondents understood the referenced concepts because of their recent university coursework. All responses were voluntary.

Implications for Practice

Given that the best resource for a child to become a competent reader is a knowledgeable teacher, the combination of significant differences and large effect sizes based on field experience has important implications for teacher preparation. First, it is recommended that reading courses present not only theoretical information and knowledge of language structure, but also opportunity to apply this knowledge in an authentic setting. As reported, field experience participants scored significantly higher in knowledge assessments than the comparison group.

Next, in addition to theoretical content, university coursework needs to give pre-service teachers multiple strategies for teaching children the essential components of reading acquisition. For example, the current study incorporated Student Center Activities as a teaching resource. At the semester's conclusion, the experimental group rated their perceptions of knowledge, preparedness, and confidence significantly higher than the comparison group after using these research-based activities in the field.

Teachers cannot be expected to convey knowledge which they themselves do not possess (Binks-Cantrell, Washburn, Joshi, & Hougen, 2012; Lancaster & Bain, 2007). It is therefore incumbent on university faculty to design coursework that explicitly teaches language structure, while providing opportunity for realistic practice. In addition to content knowledge, pre-service teachers need a process that includes feedback while

trying new methods and reflecting on the effort (Abernathy, Beck, & Taylor, 2014; Ball & Forzani, 2009; Joyce & Showers, 1980).

This empirical support for an integrated field experience helps fill a gap in the teacher education knowledge base. This carefully designed introductory reading course included not only the "what", "when", and "why" to teach, but provided multiple options for "how". The "how" portion included an integrated opportunity to practice in a real life context. Ultimately, strong findings from data analysis answer the challenge (NCATE, 2010; NRC, 2010) to find effective avenues for preparing teachers to lead classrooms where all children learn to read.

Directions for Future Research

This small scale pilot is currently under replication with an expansion of the field experience to include university students in four sections of the initial reading course (n = 240) with children in two elementary schools (n = 32 classrooms; n = 500+ children). In addition to measuring pre-service teachers' perceptions, children's reading scores will be monitored and compared to reading scores in two similar demographic schools. As an additional validation of pre-service teachers' perceptions of preparedness, in-service teachers (n =32) will be asked to rate the pre-service teacher's performance in the classroom. This data will provide a cross measure to substantiate the self-evaluation of the pre-service teachers.

REFERENCES

Abernathy, T., Beck, G., & Taylor, S. (2014). Supervised field experiences for pre-service teachers: Is it worth the effort? *Journal of Teaching Effectiveness and Student Achievement, 1*(1), 5-16

Al Otaiba, S. (2005). How effective is code-based reading tutoring in English for English learners and pre-service teacher-tutors? *Remedial and Special Education, 26*(4), 245-254.

Al Otaiba, S., & Lake, V.E. (2007). Preparing special educators to teach reading and use curriculum-based assessments. *Reading and Writing, 20*(6), 591-617.

Al Otaiba, S., Lake, V.E., Greulich, L.,, Folsom, J.S., & Guidry, L. (2012). Preparing beginning reading teachers: An experimental comparison of initial early literacy field experiences. *Reading and Writing, 25*(1), 109-129. doi: 10.1007/s11145-010-9250-2

Al Otaiba, S., Lake, V.E., Scarborough, K., Allor, J., & Carreker, S. (2016). Preparing beginning reading teachers for K-3: Teacher preparation in higher education. *Perspectives on Language and Literacy, 42*(4), 25-33.

Allen, J. M., & Wright, S. E. (2014). Integrating theory and practice in the pre-service teacher education practicum. *Teachers and Teaching, 20*(2), 136-151. doi: 10.1080/13540602.2013.848568

Anders, P.L., Hoffman, J.V., & Duffy, G.G. (2000). Teaching teachers to teach reading: Paradigm shifts, persistent problems, and challenges. In M.L. Kamil, P.B. Mosenthal, P.D. Pearson & R. Barr (Eds.), *Handbook of Reading Research* (pp. 719-744). Mahwah, NJ: Erlbaum

Anderson, N.A., & Radencich, M.C. (2001). The value of feedback in an early field experience: Peer, teacher, and supervisor coaching. *Action in Teacher Education, 23*(3), 66-74. doi: 10.1080/01626620.2001.10463076

Anderson, R. C. (1985). *Becoming a Nation of Readers: The report of the commission on reading.* Retrieved from http://files.eric.ed.gov/fulltext/ED253865.pdf

Atiles, J.T., Jones J.L., & Kim, H. (2012). Field experience + inclusive ECE Classrooms = Increased pre-service teacher efficacy in working with students with developmental delays or disabilities. *Education Research Quarterly, 36*(2), 62-84.

Ball, D.L., & Forzani, F.M. (2009). The work of teaching and the challenge for teacher education. *Journal of Teacher Education, 60*(5), 497-511. doi: 10.1177/0022487109348479

Baumann, J.F., Hoffman, J.V., Duffy-Hester, A.M., & Moon Ro, J. (2000). The first R yesterday and today: U.S. elementary reading instruction practices reported by teachers and administrators. *Reading Research Quarterly, 35*(3), 338-377. doi: 10.1598/RRQ.35.3.2

Baumann, J. F., Ro, J. M., Duffy-Hester, A. M., & Hoffman, J. V. (2000). Then and now: Perspectives on the status of elementary reading instruction by prominent reading educators. *Reading Research and Instruction, 39*(3), 236-264.

Binks-Cantrell, E., Joshi, R.M., & Washburn, E.K. (2012). Validation of an instrument for assessing teacher knowledge of basic language constructs of literacy. *Annals of Dyslexia, 62*(3), 153-171. doi: 10.1007/s11881-012-0070-8

Binks-Cantrell, E., Washburn, E.K., Joshi, R.M., & Hougen, M. (2012). Peter effect in the preparation of reading teachers. *Scientific Studies of Reading, 16*(6), 526-536. doi: 10.1080/10888438.2011.601434

Blakeslee, C.D. (2012). *A mixed methods study of special education teachers' knowledge of reading instruction and perceptions concerning their preparation to teach reading* (Doctoral Dissertation). Proquest (3535747)

Brady, S., & Moats, L. (1997). *Informed Instruction for Reading Success: Foundations for teacher preparation.* Retrieved from http://files.eric.ed.gov/fulltext/ED411646.pdf

Brannon, D., & Fiene, J. (2013). The effect structured participation experiences have on pre-service teachers' preparedness to teach reading. *Education, 134*(2), 185-194.

Brayko, K. (2013). Community-based placements as contexts for disciplinary learning: A study of literacy teacher education outside of school. *Journal of Teacher Education, 64*(1), 47-59. doi: 10.1177/0022487112458800

Brown, J.S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32-42.

Capraro, M.M., Capraro, R.M., & Helfeldt, J. (2010). Do differing types of field experiences make a difference in teacher candidates' perceived level of competence?. *Teacher Education Quarterly, 37*(1), 131-154.

Choi, J., & Hannafin, M. (1995). Situated Cognition and Learning Environments: Roles, Structures, and Implications for Design. *Educational technology research and development, 43*(2), 53-69.

Clark, S.K. (2012). Examining the influence of additional field-based experienceson pre-service teachers and their perceived ability to teach. *Journal of Education for Teaching, 38*(3), 359-362.

Clift, R.T., & Brady, P. (2005). Research on methods courses and field experiences. In M. Cochran-Smith & K. M. Zeichner (Eds.), *Studying Teacher Education: The report of the AERA panel on research and teacher education* (pp. 309-424). Mahwah, NJ: Erlbaum

Cochran-Smith, M., Villegas, A.M., Abrams, L., Chavez-Moreno, L. Mills, T., & Stern R. (2015). Critiquing teacher preparation research: An overview of the field, part II. *Journal of Teacher Education, 66*(2), 109-121. doi: 10.1177/0022487114558268

Cowan, R., & Berlinghoff, D. (2008). Course embedded fieldwork: A look at a working model. *Issues in Literacy, 18*, 20-27.

Creswell, J.W., & Plano-Clark, V.L. (2011). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage

Cunningham, W.G., & Sherman, W.H. (2008). Effective internships: building bridges between theory and practice. *The Educational Forum, 72*(4), 308-318.

Danielson, K.E., Kuhlman, W., & Fluckiger, J. (1998). Benefits of literacy field experiences: Three views. *Reading Horizons, 39*(1), 33-47.

Darling-Hammond, L. (2000). How teacher education matters. *Journal of Teacher Education, 51*(3), 166-173.

Darling-Hammond, L., Hammerness, K., Grossman, P. Rust, F., & Shulman, L. (2005). The design of teacher education programs. In L. Darling-Hammond and J. Bransford (Eds.), *Preparing teachers for a changing world: What teachers should learn and be able to do* (pp.390-441). San Francisco, CA: Jossey-Bass.

Darling-Hammond, L. (2006a). *Powerful teacher education: Lessons from exemplary programs*. San Francisco, CA: Jossey-Bass.

Darling-Hammond, L. (2006b). Constructing 21st-century teacher education. *Journal of Teacher Education, 57*(3), 300-314. doi: 10.1177/0022487105285962

Duffy, A. & Atkinson, T. (2001). Learning to teach struggling (and non-struggling) elementary school readers: An analysis of pre-service teachers' knowledge. *Reading Research and Instruction, 41*(1), 83-102.

Fang, A., & Ashley, C. (2004). Pre-service teachers' interpretations of a field-based reading block. *Journal of Teacher Education, 55*(1), 39-54. doi: 10.1177/0022487103259814

Ferguson, P. (1989). A reflective approach to the methods practicum. *Journal of Teacher Education, 40*(2), 36-41.

Flores, I.M. (2015). Developing pre-service teachers' self-efficacy through field-based science teaching practice with elementary students. *Research in Higher Education Journal, 27,* 1-19.

Florida Center for Reading Research. (2017). *Student Center Activities*. Retrieved from http://fcrr.org/resources/resources_sca.html

Foorman, B., Beyler, N., Borradaile, K., Coyne, M., Denton, C. A., Dimino, J.,… Wissel, S. (2016). *Foundational skills to support reading for understanding in kindergarten through 3rd grade* (NCEE 2016-4008). Washington, DC: National Center for Education Evaluation and Regional Assistance (NCEE), Institute of Education Sciences, U.S. Department of Education. Retrieved from http://whatworks.ed.gov

Giles, R.M., Kent, A.M., & Hibberts, M. (2013). Investigating pre-service teachers' sense of reading efficacy. *The Reading Professor*, *35*(1), 18-24.

Hagen, B.D. (2015). *Student teachers' beliefs in practice: Impact of teacher education preparation on reading curriculum assessment, and instruction.* (Doctoral dissertation). Proquest. (3724842)

Haverback, H. (2007). *Pre-service reading teachers as tutors: An examination of efficacy and content knowledge* (Doctoral dissertation).

Haverback, H.R., & Parault, S.J. (2011). High efficacy and the pre-service reading teacher: A comparative study. *Teaching and Teacher Education, 27*(4), 703-711.

Haverback, H.R., & Parault, S.J. (2008). Pre-service reading teacher efficacy and tutoring: A review. *Educational Psychology Review, 20*(3), 237-255. doi: 10.1007/s10648-008-9077-4

Helfrich, S.R., & Bean, R.M. (2011). What matters: Preparing teachers of reading. *Reading Horizons, 50*(4), 241-262.

Hoffman, J.V., Roller, C., Maloch, B., Sailors, M., Duffy, G., & Beretvas, S.N. (2005). Teachers' preparation to teach reading and their experiences and practices in the first three years of teaching. *The Elementary School Journal, 105*(3), 267- 287. doi: 0013-5984/2005/10503-002$05.00

Hoffman, J.V., & Roller, C.M. (2001). The IRA excellence in reading teacher preparation commission's report: Current practices in reading teacher education at the undergraduate level. *In Learning to teach reading: Setting the research agenda.* Newark, Del: International Reading Association

Howey, K.R., & Zimpher, N.L. (2010). *Educational partnerships to advance clinically rich teacher preparation.* Retrieved from http://www.ncate.org/LinkClick.aspx?fileticket=hccwyqMLlSo%3d&tabid=715

International Dyslexia Association. (2010) *Knowledge and practice standards for teachers of reading.* Retrieved from https://dyslexiaida.org/knowledge-and-practices/

International Reading Association. (2000). *Teaching all children to read: The roles of the reading specialist.* Retrieved from http://files.eric.ed.gov/fulltext/ED438533.pdf

International Reading Association. (2007). *Teaching reading well: A synthesis of the International Reading Association's research on teacher preparation for reading instruction.* Newark, DE: International Reading Association.

Joshi, R.M., Binks, E., Hougen, M.C., Ocker-Dean, E., Graham, L., & Smith, D.L. (2009). The role of teacher education programs in preparing teachers for implementing evidence-based reading practices. In S. Rosenfield & V. Berninger (Eds.), *Implementing evidence-based academic interventions in school settings* (pp. 605-626). New York, NY: Oxford University Press.

Joshi, R.M., Binks, E., Hougen, M., Dahlgren, M.E., Ocker-Dean, E., & Smith, D.L. (2009). Why elementary teachers might be inadequately prepared to teach reading. *Journal of Learning Disabilities, 42*(5), 392-402.

Joyce, B., & Showers, B. (1980). Improving inservice training: The messages of research. *Educational leadership, 37*(5), 379-385.

Juel, C. (1988). Learning to read and write: A longitudinal study of 54 children from first through fourth grades. *Journal of Educational Psychology, 80*(4), 243-255.

Kent, A.M., Giles, R.M., & Hibberts, M. (2013). Preparing elementary educators to teach reading: An exploratory study of pre-service teachers' evolving sense of reading efficacy. *International Journal for the Scholarship of Teaching and Learning, 7*(2), 1-16.

Lancaster, J., & Bain, A. (2007). The design of inclusive education courses and the self-efficacy of pre-service teacher education students. *International Journal of*

Disability, Development and Education, 54(2), 245-256. doi: 10.1080/10349120701330610

Lave, J., & Wenger, E. (1991). *Situated learning*. New York, NY: Cambridge.

Lee, K.M. (2009). *An examination of changes in pre-service teachers' perceptions and knowledge of emergent literacy during an early literacy course* (Doctoral dissertation). Proquest. (3358519)

Lenski, S.D., & Nierstheimer, S.L. (2006). Teacher preparation programs offer targeted field experiences in literacy. In S.D. Davis, D.L. Grisham, & L.S. Wold (Eds.), *Literacy teacher preparation* (pp. 54-62). Newark, DE: International Reading Association.

Levine, A. (2006). *Educating school teachers.* Retrieved from http://edschools.org/pdf/Educating_Teachers_Report.pdf

Linek, W.M., Nelson, O.G., Sampson, M.B., Zeek, C.K., Mohr, K.A., & Hughes, L. (1999). Developing beliefs about literacy instruction: A cross-case analysis of pre-service teachers in traditional and field based settings. *Reading Research and Instruction, 38*(4), 371-386. doi: 10.1080/19388079909558302

Linek, W.M., Sampson, M.B., Raine, I.L., Klakamp, K., & Smith, B. (2006). Development of literacy beliefs and practices: Pre-service teachers with reading specializations in a field-based program. *Reading Horizons, 46*(3), 183-213.

Lipp, J., & Helfrich, S. (2016). Pre-service teachers' growth in understandings of best practice literacy instruction through paired course and field experience. *Reading Horizons, 55*(2), 45-62.

Lipsey, M.W., & Wilson, D.B. (2001). *Practical meta-analysis*. Thousand Oaks, CA: Sage

Mather, N., Bos, C., & Babur, N. (2001). Perceptions and knowledge of pre-service and in-service teachers about early literacy instruction. *Journal of Learning Disabilities, 34*(5), 472-482.

McDonnough, J.T., & Matkins, J.J. (2010). The role of field experience in elementary pre-service teachers' self-efficacy and ability to connect research to practice. *School Science and Mathematics, 110*(1), 13-23.

Mertler, C.A. & Vannatta, R.A. (2013). *Advanced and multivariate statistical methods: Practical application and interpretation.* Glendale, CA: Pyrczak

Moats, L. (2009). Still wanted: Teachers with knowledge of language. *Journal of Learning Disabilities, 42*(5), 387-391. doi: 10.1177/0022219409338735

Moats, L. C. (1994). The missing foundation in teacher education: Knowledge of the structure of spoken and written language. *Annals of Dyslexia, 44*(1), 81-102.

National Commission on Teaching & America's Future. (1996). *What matters most: Teaching for American's future.* Retrieved from http://files.eric.ed.gov/fulltext/ED395931.pdf

National Council for the Accreditation of Teacher Education. (2010). *Transforming Teacher Education through Clinical Practice: A national strategy to prepare effective teachers*. Retrieved from http://ncate.org/LinkClick.aspx?fileticket=zzeiB1OoqPk%3d&tabid=715

National Council on Teacher Quality. (2006). *What education schools aren't teaching about reading and what elementary teachers aren't learning*. Retrieved from http://www.nctq.org/nctq/images/nctq_reading_study_app.pdf

National Education Association. (2000). *Report of the NEA Task Force on Reading 2000.* Retrieved from http://www.nea.org/home/18301.htm

National Institute of Child Health and Human Development (NICHD). (2000). Report of the National Reading Panel. *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction*: *Reports of the subgroups* (NIH Publication No. 00-4754). Washington, DC: U.S. Government Printing Office.

National Research Council. (2010). *Preparing Teachers: Building evidence for sound policy.* Committee on the Study of Teacher Preparation Programs in the United States, Center for Education. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press. doi: 10.17226/12882

No Child Left Behind Act of 2001. Pub. L. No. 107-110, (H. R. 1).

Reddy, A.M. (2012). *The influence of teacher preparation programs' field experiences on pre-service teacher candidates' sense of teaching efficacy*. (Doctoral dissertation). Proquest. (3534958)

Richards, J.C. & Brumfield, D. (2002). Three steps forward, one step back: Two pre-service teachers learn to teach in consecutive, field-based literacy courses. *Literacy Research and Instruction, 42*(2), 63-84.

Richards, J.C. & Gipe, J.P. (1993). *Inside an urban elementary school: Nurturing an exemplary university/public school collaborative*. Paper presented at the Annual Meeting of the Americna Association of Colleges for Teacher Education, San Diego, CA.

Risko, V., Roller, C., Cummins, C., Bean, R., Block, C.C., Anders, P., and Flood, J. (2008). A critical analysis of research on reading teacher education. *Reading Research Quarterly, 43*(3), 252-289.

Roehrig, A.D., Guidry, L.O., Bodur, Y., Guan, Q., Guo, Ying, & Pop, M. (2008). Guided Field Observations: Variables related to pre-service teachers' knowledge about effective primary reading instruction. *Literacy Research and Instruction, 47*(2), 76-98. doi: 10.1080/19388070801938247

Sailors, M. (2005). Early field experiences offered to and valued by pre-service teachers at sites of excellence in reading teacher education programs. *Teacher education and practice: The journal of the Texas Association of Colleges for Teacher Education, 18*(4), 458-470.

Salinger, T., Mueller, L., Song, M., Jin, Y., Zmach, C., Toplitz, M., Partridge, M., & Bickford, A. (2010). *Study of teacher preparation in early reading Instruction*. Retrieved from https://ies.ed.gov/ncee/pubs/20104036/index.asp

Sampson, M.B., Linek, W.M., Raine, I.L., & Szabo, S. (2013). The influence of prior knowledge, university coursework, and field experience on primary pre-service teachers' use of reading comprehension strategies in a year-long, field-based

teacher education program. *Literacy Research and Instruction, 52*(4), 281-311. doi: 10.1080/19388071.2013.808296

Sanderson, D.R. (2016). Working together to strengthen the school community: The restructuring of a university-school partnership. *School Community Journal, 26*(1), 183-197.

Shotwell, K.H.H. (2009). *Pre-service teachers' understandings of how to teach literacy* (Doctoral dissertation). Proquest (3389562)

Skilbeck, M. & Connell, H. (2004). Teachers for the Future: The changing nature of society and related issues for the teaching workforce. Retrieved from http://files.eric.ed.gov/fulltext/ED534330.pdf

Smith J., & Souviney, R. (1997). The internship in teacher education. *Teacher Education Quarterly, 24*(2), 5-19

Spear-Swerling, L. (2009). A literacy tutoring experience for prospective special educators and struggling second graders. *Journal of Learning Disabilities, 42*(5), 431-443. doi: 10.1177.0022219409338738

Spear-Swerling, L. & Brucker, P.O. (2004). Preparing novice teachers to develop basic reading and spelling skills in children. *Annals of Dyslexia, 54*(2), 332-364.

Tetley, D., & Jones, C. (2014). Pre-service teachers' knowledge of language concepts: relationships to field experiences. *Australian Journal of Learning Difficulties, 19*(1), 17-32. doi: 10.1080/19404158.2014.891530

Thompson, B. (2006). *Foundations of behavioral statistics: An insight-based approach.* New York, NY: Guildford Press.

Trauth-Nare, A. (2015). Influence of an intensive, field-based life science course on pre-service teachers' self-efficacy for environmental science teaching. *Journal of Science Teacher Education, 26*(5), 497-519. doi: 10.1007/s10972-015-9434-3

Walsh, K. (2013). *Teacher education: Ed schools don't give teachers the tools they need.* Retrieved from http://educationnext.org/21st-centruy-teacher-education/

Washburn, E.K., Joshi, R.M., & Binks-Cantrell, E. (2011). Are pre-service teachers prepared to teach struggling readers? *Annals of Dyslexia, 61*(1), 21-43. doi: 10.1007/s11881-010-0040-y

Willingham, D. (2012). *TEDS-M and the study of teacher preparation in early reading instruction: Implications for teacher education policy and practice*. Retrieved from https://www.educ.msu.edu/epc/documents/EPCatMSU_2012_Representative_Studies_of_Teacher_Preparation_New_National_Evidence.pdf

Wilson, D.B. (n.d.). Practical Meta-Analysis Effect Size Calculator [Online calculator]. Retrieved from https://www.campbellcollaboration.org/effect-size-calculato.html

Wilson, S.M., Floden R.E., & Ferrini-Mundy, J. (2001). Teacher preparation research: Current knowledge, gaps, and recommendations. Retrieved from https://www.stcloudstate.edu/tpi/initiative/documents/preparation/Teacher%20Preparation%20Research-Current%20Knowledge,%20Gaps,%20and%20Recommendations.pdf

Worthy, J., & Patterson, E. (2001). “I can’t wait to see Carlos!”: Pre-service teachers, situated learning, and personal relationships with students. *Journal of Literacy Research, 33*(2), 303-344

Worthy, J., & Prater, S. (1998). Learning on the job: Pre-service teachers’ perceptions of participating in a literacy tutorial program. *National Reading Conference Yearbook, 47,* 485-495.

Zeichner, K. (2012). The turn once again toward practice-based teacher education. *Journal of Teacher Education, 63*(5), 376-382. doi: 10.1177/0022487112445789

Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college- and university-based teacher education. *Journal of Teacher Education, 61*(1-2), 89-99.

APPENDIX

Survey of Basic Language Constructs

1. A phoneme refers to
    a. A single letter
    b. A single speech sound
    c. A single unit of meaning
    d. A grapheme
    e. No idea
2. If "tife" is a word, the letter "i" would probably sound like the "i" in
    a. If
    b. Beautiful
    c. Find
    d. Ceiling
    e. Sing
    f. No idea
3. A combination of two or three consonants pronounced so that each letter keeps its own identity is called a
    a. Silent consonant
    b. Consonant digraph
    c. Diphthong
    d. Consonant blend
    e. No idea
4. How many speech sounds are in the word box? For example, the word "cat" has 3 speech sounds 'k'-'a'-'t'. Speech sounds do not necessarily equal the number of letters.
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
    f. 6
    g. 7
    h. 8
    i. No idea
5. How many speech sounds are in the word "grass"?
    a. 1
    b. 2
    c. 3

d. 4
e. 5
f. 6
g. 7
h. 8
i. No idea

6. How many speech sounds are in the word “ship”?
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
    f. 6
    g. 7
    h. 8
    i. No idea
7. How many speech sounds are in the word “moon”?
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
    f. 6
    g. 7
    h. 8
    i. No idea
8. How many speech sounds are in the word “brush”?
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
    f. 6
    g. 7
    h. 8
    i. No idea
9. How many speech sounds are in the word “knee”?
    a. 1
    b. 2
    c. 3
    d. 4

e. 5
f. 6
g. 7
h. 8
i. No idea

10. How many speech sounds are in the word “through”?
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
    f. 6
    g. 7
    h. 8
    i. No idea
11. What type of task would the following be? “Say the word ‘cat’. Now say the words without the /k/ sound”.
    a. Blending
    b. Rhyming
    c. Segmentation
    d. Deletion
    e. No idea
12. A “soft c” is in the word
    a. Chicago
    b. Cat
    c. Chair
    d. City
    e. None of the above
    f. No idea
13. Identify the pair of words that begins with the same sound.
    a. Joke/goat
    b. Chef/shoe
    c. Quiet/giant
    d. Chip/chemist
    e. No idea
14. The next 2 items involve saying a word and then reversing the order of the sounds. For example, the word “back” would be “cab”. If you say the word, and then reverse the order of the sounds, “ice” would be:
    a. Easy
    b. Sea
    c. Size

d. Sigh
e. No idea

15. If you say the word, and then reverse the order of the sounds, enough would be
    a. Fun
    b. Phone
    c. Funny
    d. One
    e. No idea
16. All of the following nonsense words have a silent letter except
    a. Bamb
    b. Wrin
    c. Shipe
    d. Knam
    e. Phop
    f. No idea
17. Determine the number of syllables in the word “disassemble”.
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
    f. 6
    g. 7
    h. 8
    i. No idea
18. Determine the number of morphemes in the word “disassemble”.
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
    f. 6
    g. 7
    h. 8
    i. No idea
19. Determine the number of syllables in the word “heaven”.
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

f. 6
g. 7
h. 8
i. No idea

20. Determine the number of morphemes in “heaven”.
a. 1
b. 2
c. 3
d. 4
e. 5
f. 6
g. 7
h. 8
i. No idea

21. Determine the number of syllables in the word “observer”.
a. 1
b. 2
c. 3
d. 4
e. 5
f. 6
g. 7
h. 8
i. No idea

22. Determine the number of morphemes in the word “observer”.
a. 1
b. 2
c. 3
d. 4
e. 5
f. 6
g. 7
h. 8
i. No idea

23. Determine the number of syllables in the word “spinster”.
a. 1
b. 2
c. 3
d. 4
e. 5
f. 6

g. 7
h. 8
i. No idea

24. Determine the number of morphemes in the word “spinster”.
a. 1
b. 2
c. 3
d. 4
e. 5
f. 6
g. 7
h. 8
i. No idea

25. Determine the number of syllables in the word “pedestal”.
a. 1
b. 2
c. 3
d. 4
e. 5
f. 6
g. 7
h. 8
i. No idea

26. Determine the number of morphemes in the word “pedestal”.
a. 1
b. 2
c. 3
d. 4
e. 5
f. 6
g. 7
h. 8
i. No idea

27. Determine the number of syllables in the word “frogs”.
a. 1
b. 2
c. 3
d. 4
e. 5
f. 6
g. 7

h. 8
i. No idea

28. Determine the number of morphemes in the word “frogs”.
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
    f. 6
    g. 7
    h. 8
    i. No idea
29. Which of the following words has an example of a final stable syllable?
    a. Wave
    b. Bacon
    c. Paddle
    d. Napkin
    e. None of the above
    f. No idea
30. Which of the following words has 2 closed syllables?
    a. Wave
    b. Bacon
    c. Paddle
    d. Napkin
    e. None of the above
    f. No idea
31. Which of the following words contains an open syllable?
    a. Wave
    b. Bacon
    c. Paddle
    d. Napkin
    e. None of the above
    f. No idea
32. Phonological awareness is:
    a. The ability to use letter-sound correspondences to decode
    b. The understanding of how spoken language is broken down and manipulated
    c. A teaching method for decoding skills.
    d. The same as phonics.
    e. No idea
33. Phonemic awareness is:

a. The same as phonological awareness.
b. The understanding of how letters and sounds are put together to form words.
c. The ability to break down and manipulate the individual sounds in spoken language
d. The ability to use sound-symbol correspondence to read new words.
e. No idea

34. A morpheme refers to:
    a. A single letter
    b. A single speech sound
    c. A single unit of meaning
    d. A grapheme
    e. No idea
35. A Grapheme refers to
    a. A single letter
    b. A single speech sound
    c. A single unit of meaning
    d. A written representation of one sound
    e. No idea