Creating a Linguistically-Responsive Intervention for Developing Readers: A Formative Experiment with a Teacher Study Group

A Dissertation
SUBMITTED TO THE FACULTY OF
UNIVERSITY OF MINNESOTA
BY

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IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY/

Dr. Lori Helman, Adviser

May 2017

Acknowledgements

Dr. Lori Helman. You have shown me what it is like to be an excellent teacher educator, researcher, and literacy professional. Your guidance and support have been constant and always uplifting. I am thrilled to have such a knowledgeable mentor and I look forward to more work together. *Dr. David O'Brien.* Your dedication to the field of literacy education is captivating. You have instilled a great sense of rigor and pragmatism into my perspectives of literacy research and education. *Dr. Debra Peterson.* You are an incredible role model for me in the area of literacy teacher education. Your work in schools and university classrooms, has taught me about advocating for quality literacy education for all students. *Dr. Mistilina Sato.* I have learned a great deal about what it means to be a teacher educator from you. Your innovation and commitment to developing and sustaining excellent teachers is commendable.

To the teachers in my study. It is with sincerity that I express gratitude for your honesty, hard work, and commitment to making your instruction excellent for emergent bilinguals. *To the students in my study.* Your love of learning propels my work everyday.

My family and friends. Greatest thanks to my husband, Dan, who is a constant source of laughter and joy. I am happy beyond words I completed the graduate school journey with you by my side. To my big, loving Tigan family. I learned what it means to serve the world and think critically around the dinner table with you. To all the teacher friends I've had along the way, especially Mel, Sally, Maggie, Andrea, Amy, Annie, and Kathy.

Dedication

This dissertation is dedicated to immigrant and refugee students and families, and their teachers.

Abstract

How are we to ensure that emergent bilinguals in early elementary settings receive linguistically-responsive reading interventions in response to intervention (RtI) frameworks? One way is to harness the collective expertise of classroom teachers, reading interventionists, and English language learner teachers. A collaborative relationship amongst these crucial school personnel is warranted in order to support the implementation of evidence-based practices in intervention, language development, and assessment. The goal of this study was to create, implement, and study a linguistically-responsive reading intervention for emergent bilinguals in an elementary RtI setting. Alongside a teacher study group that consisted of two classroom teachers, a reading interventionist, and an English language learner teacher, the teachers and I co-constructed and implemented the intervention. I used a formative experiment framework to conduct and execute the study. In six phases of design, I collected qualitative and quantitative data. Qualitative data collection included transcripts from teacher study group sessions, observations of teaching and learning in the intervention, interviews, and document review. Quantitative data collection included weekly reading assessment data and sentence repetition measures. Results indicate that language and reading development were fore fronted as a result of teachers' collaborative efforts. Teachers who implemented the intervention contend that the strategies helped students' overall comprehension. Students in the linguistically-responsive intervention showed growth in reading and language outcomes.

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CHAPTER ONE

INTRODUCTION

Background

This dissertation is a reflection of my life as a teacher. In the pages of this study there is a snapshot of my teaching story, a story that has been and will continue to be rooted in advocacy.

I am an advocate for emergent bilinguals because I have felt the exhaustion, misunderstandings, and frustration of language immersion as so many of them do. My first teaching job was in a language I didn't know. After I graduated from college with a degree in Elementary Education and Art, I moved to Ecuador. I took a position as an art teacher and adult educator at a school located in a high poverty area of Quito. In front of a classroom of 30 elementary students, I realized very quickly what it would take for me to communicate and expand my vocabulary: I needed tangible opportunities to communicate effectively with my students and focus on building relationships. My language learning was contextual and experience-driven. While teaching students how to paint, wash brushes, and clean up, I learned all the words that would help me ensure that the classroom was not left in chaos. I listened intently to my students who taught me the words and the phrases of their language as I demonstrated what to do. I practiced this new language with American and Ecuadorian friends who allowed me to be vulnerable in my learning. I learned Spanish by talking, interacting, listening, and looking up words in the dictionary. Though I never reached full proficiency, after that year of teaching I was a more confident and capable Spanish speaker. When I returned to the United States and

started teaching in an elementary school, I carried with me the experience of vulnerability. I became dedicated to fostering spaces for emergent bilinguals in classrooms where they could talk, listen and absorb, ask questions, and use their peers to seek understanding.

I am an advocate for teachers because I understood what it was like to be unprepared to differentiate instruction for all the language levels and reading abilities in my classroom. In my fifth grade classroom in rural Colorado, I struggled with creating instructional groups for my Readers and Writers Workshop. I wondered, how I could teach the newcomer students with little English proficiency how to read, while most of the native English speakers were reading at their grade level. It seemed like both I and the newcomer students were overwhelmed by learning how to read and discerning the language of routines and the classroom. Here, I was in another vulnerable situation, and I sought a way to understand how students acquire language and develop literacy. With this challenge in mind, I went back to school and received a Master's degree in Education in Language, Literacy, and Culture. I obtained an English Learner (EL) K-12 teaching license and, upon completion of the program, I took a position as a K-4 EL teacher.

Now better prepared with knowledge and teaching strategies, I taught emergent bilinguals in pull-out classes, and I was able to put language development at the center of my teaching. My teaching focused on helping students to learn content with plenty of supports and multiple opportunities to talk. I provided a safe learning environment where students could access the content and build language. However, I got disheartened when I observed the same students within their traditional general education classrooms. Often,

they were offered few interactive opportunities and little language development. I understood the demands of the general education classroom and I also knew that many teachers had no prior training on how to make their classrooms language-rich. Having once been in a similar situation, my advocacy for teachers grew. To support my colleagues, I asked the principal if I could lead professional development sessions for the K-4 staff. As an EL teacher, I understood that my responsibility to my students and my colleagues was to share what I knew about language development. To that end, in my six years as an EL teacher, I operated with the perspective, "we are all language teachers" as I coached classroom teachers, modeled lessons, and facilitated professional development.

I am an advocate for linguistically-responsive curriculum and instruction because I've seen materials and strategies that not all students can access. One of my responsibilities as an EL teacher was to make content accessible for emergent bilinguals. Differentiating curriculum involved the daily task of refining and simplifying textbooks, worksheets, and class presentations. It involved a lot of simple and complex vocabulary instruction. It became second nature to look at curriculum, scrutinize it, critique it, and modify it so that it would work for emergent bilinguals.

After six years as an EL teacher, I took a position as a literacy coach with a university research project, Reaching Everyone through All Directions (READ), a pseudonym I use throughout the dissertation. Here, my advocacy work continued with emergent bilinguals, teachers, and for responsive curriculum. READ's project goal was K-3 reading achievement through the framework of response to intervention (RtI). As a READ literacy coach, I helped teachers implement quality literacy instruction, reading

interventions, and a comprehensive reading assessment approach. I was placed at a school whose entire population consisted of emergent bilinguals. As I coached classroom teachers to use READ reading interventions, I often encouraged them to differentiate and modify based on language needs. I facilitated data team meetings to include conversations about language development, and I included the school's EL teacher into our READ workshops. When my years as a READ literacy coach came to an end, I became a fulltime graduate student and continued to work with the READ project. As the university project expanded, I facilitated professional development, visited schools from across the region, and heard stories of how other teachers were implementing the READ interventions and applying their own modifications for the benefit of emergent bilinguals. At times, I met teachers who were confused as to how to best implement the READ interventions for emergent bilinguals. One day, after I delivered a workshop on reading interventions at a small, rural school whose student demographics included children from bilingual migrant families, a reading interventionist pleaded, "But, what about our English language learners? Will this help them? We don't know what to do if they can't speak English."

It was sentiments like this one that inspired my drive to support teachers as they implemented RtI for the emergent bilinguals in their classrooms. I thought it was promising to build a research agenda rooted in the dilemma that teachers face as they navigate language and reading development in RtI contexts.

Emergent Bilinguals and the READ Framework

While my experiences as a teacher and literacy coach in the READ project cemented my advocacy on behalf of emergent bilinguals, teachers, and a responsive curriculum, my years as a graduate student in Literacy Education framed my investigation of the research and scholarship of the teaching and learning of literacy and language. In coursework, I examined research methods and theoretical frameworks in the field of teacher learning through professional development and literacy coaching, linguistically-responsive pedagogies, and frameworks for reading achievement such as RtI and multi-tiered systems of support (MTSS). Scholarship in these areas has greatly influenced my personal research agenda. My teaching experiences and graduate school work are represented in the content, rationale, and questions that are at the heart of this dissertation.

During my tenure as literacy coach in the READ RtI framework for grades K-3, I worked primarily with students who were beginning readers. Alongside teachers, we discussed several approaches to decoding words, especially for those students who were taking longer as they learned to read words and sentences with confidence and fluency. We wondered what helped them to progress. What more could we do to support their learning? Were we implementing the most suitable intervention available? I began to realize that in order to grow emergent bilinguals into strong readers, it would be necessary to discuss key elements for developing reading and language and give teachers opportunities to learn from each other so they could put their learning into practice.

Learning How to Read

Learning how to decode words without providing language practice is like planting a seed and watering it, but never exposing it to sunshine. The plant's growth trajectory never fully realizes its potential. When students, especially those who are emergent bilinguals, learn how to read words but don't have the opportunity to practice the words in context, they miss out on important vocabulary development. In the READ school where I coached, there was a strict phonics program that all teachers implemented with fidelity. There was coaching for teachers in the program and ongoing assessment of student data. These structures worked for the benefit of emergent bilinguals, but what was missing was a balanced literacy approach that allowed the students to interact and talk. Administration expected a quiet, traditional classroom with copious worksheets and lots of whole group instruction. As I supported the implementation components of MTSS in this school, such as data-driven decision making and tiered interventions, I noticed that emergent bilingual students made progress in the discrete skills such as phonics and phonemic awareness and fluency, but improvement in other significant areas such as comprehension and vocabulary did not occur. This problem was not unique to the school where I worked- much empirical evidence points to similar results. Emergent bilinguals develop discrete reading skills at a similar pace as native English speakers (Lesaux & Siegel, 2003) but, without a focus on vocabulary and contextualizing the new phonics words, their comprehension lags (Filippini et al., 2012; Solari & Gerber, 2008; Vadasy & Sanders, 2012; 2013).

The READ project staff developed an intervention manual that focused on the five essential components of reading (phonemic awareness, phonics, fluency,

comprehension, and vocabulary). In the manual there are reading intervention protocols that are designed to support students in reading development. The lesson structure of each intervention protocol includes a gradual release of responsibility and effective components of lesson delivery (e.g., state the objectives, check for understanding). However, there is little direction as to how to deliver the interventions so that emergent bilinguals have the opportunity to engage in the interventions in a way that builds both reading skills and language skills, which are necessary for success in comprehension. Moreover, while other approaches to MTSS include culturally and linguistically-responsive practices in their framework, the components in the READ framework do not explicitly outline a culturally and linguistically approach that permeates the components of the model. As the project continues to grow and is shared in many different educational contexts, I feel an eagerness and heavy responsibility to help the project create materials that are culturally- and linguistically-responsive.

To that end, the goal of my study was to tailor the READ phonemic awareness and phonics interventions and align data-driven decision making approaches to be linguistically-responsive. My plan was to create a teacher study group comprised of me, some classroom teachers, a reading interventionist, and an EL teacher. The goal was to collaboratively tailor the READ interventions through a process of sharing knowledge. It was my hope that we would review reading and language data, contribute our own objectives for reading and language development, and plan for improved instruction.

Learning How to Teach

A lot of what I know as a teacher I learned from watching colleagues in their classrooms, planning together, and asking questions. At times, I participated in structures that were designed to support collaboration such as instructional coaching and professional learning communities. Other times my peer learning came from informal opportunities to connect and share with fellow teachers. As an EL teacher I spent a lot of time preparing, planning, and executing a co-teaching classroom with K-4 general education teachers. As we sat down and planned our instruction, we navigated our own objectives for content and language learning in order to build a cohesive approach that benefitted students. In the professional development that I led as an EL teacher, I taught my colleagues the components of sheltered instruction and was able to coach them as they implemented strategies. This balance of co-teaching, coaching, and professional development is characteristic of ongoing and embedded practices that are well cited as the gold standard for teacher learning (Darling-Hammond, Chung Wei, Andree, Richardson, & Orphanos, 2009; Desimone, Porter, Garet, Yoon, & Birman, 2002;Joyce & Showers, 2002).

As a literacy coach, I realized that another significant topic of learning for teachers was in the area of data-driven decision making. Teachers need support as they learn to look at data and use it for instructional purposes, especially within RtI frameworks (Richards, Pavri, Golez, Canges, & Murphy, 2007; Wayman & Jimerson, 2014). My work as a literacy coach involved collecting universal-screening and progress-monitoring data and supporting teachers and interventionists as they planned for intervention. In monthly data meetings that included classroom teachers, interventionists,

and paraprofessionals, I answered questions, facilitated conversations, and developed structures to support this process. I followed up with teachers in individual coaching sessions to look at their reading data and have conversations about student progress. These processes of looking collaboratively at data and planning for instruction are characteristic of a formative experiment and a design-based approach to research.

Using Formative Experiments to Reach Goals

I have been in the practice of co-constructing instructional practices for emergent bilinguals since I was an EL teacher. Through a process of planning, executing, and delivering lessons, I refined instructional approaches with classroom teachers to make the content more accessible for students. The processes noted above are part of the rationale that made a formative experiment suitable for my study. I felt energized by the approach of design-based research because at the heart of formative experiments and design-based research is a commitment for researchers and teachers to work together to reach a pedagogical goal (Barab & Squire, 2005; Brown, 1992). Researchers are not observers, but partners (Reinking & Bradley, 2008) in formative experiments. As someone who has spent many years and good deal of energy collaborating and advocating for responsive education, a formative-experiment approach to language and literacy research has been a natural path for me. Moreover, formative and design-based research are characterized by being grounded in theory and driven by theory (Gravemeijier & Cobb, 2006). When I extended my journey in education from teacher to researcher, I examined theoretical frameworks that helped me understand more clearly my experiences as a teacher and a literacy coach. Framing my experiences within theoretical frameworks helped explain

what I had encountered as a practitioner, but learning the theoretical underpinnings of studies characteristic in my field also allowed me to conceptualize what is possible.

Reinking and Bradley (2008) provide a framework for formative experiments that involves a series of questions that help researchers conceptualize, conduct, and report research. Their questions are as follows:

1. What is the pedagogical goal to be investigated, why is that goal valued and important, and what theory and previous empirical work speak to accomplishing that goal instructionally?
2. What intervention, consistent with a guiding theory, has the potential to achieve the pedagogical goal and why?
3. What factors enhance or inhibit the effectiveness, efficiency, and appeal of the intervention in regard to achieving the set pedagogical goal?
4. How can the intervention be modified to achieve the pedagogical goals more effectively and efficiently and in a way that is appealing and engaging to students?
5. What unanticipated positive and negative effects does the intervention produce?
6. Has the instructional environment changed as a result of the intervention? (p. 74).

I address these six questions in subsequent chapters as I situate my study within a review of the literature and explain how I collected and analyzed data in order to answer the research questions and arrive at my goal.

Orosco and Klingner (2010) contend that there are multiple opportunities for investigation in order to describe how teachers implement reading interventions with emergent bilinguals within a RtI framework. They urge researchers to use mixed methods approaches to detail the descriptive and contextual information that make RtI an approach that can support emergent bilinguals as they learn to read. My study uses qualitative methods to investigate how teachers learn to implement RtI for emergent bilinguals within an RtI framework and employs quantitative methods to describe the efficacy of interventions. In the following section I outline key vocabulary terms that the reader will come across in this dissertation.

Key Terms

There are several terms I use for emergent bilinguals throughout the paper. When I cite research, I write the title that the authors use. Some titles used are language minority (LM), English learner (EL), or English language learner (ELL). Some authors decided not to abbreviate the title, and so my writing honors their decision on that front. When I speak from my own perspective, I use the term *emergent bilinguals*. I prefer this term because it capitalizes on the potential of the student, as I understand students to be moving towards bilingualism instead of moving away from their first language(s) to learn English. Moreover, Garcia (2009) argues that terms such as English-language learner (ELL) and Limited English proficient (LEP) make reference to the person as deficient in something, instead of recognizing that they have a home language and are adding English as a linguistic resource. Other labels that are pervasive throughout the literature are “at-risk” and “struggling.” These terms carry a deficit perspective. As Enriquez, Jones, and

Clarke (2010) argue, those terms have the potential to hold back rather than boost students. Throughout the paper I use the terms the way they were written in the study I reference, and attempt to use my own wording in a way that describes the potential of students. Also of note is the title RtI. A more current conceptualization of this prevention model is multi-tiered systems of support (MTSS). MTSS emerged as a framework for supporting the assessment and instruction of all students by adhering to the tiered instruction model present in RtI and encouraging a data-driven decision making framework (Jimerson, Burns & VanderHeyden, 2016). MTSS and RtI have similar tenets in that they both use assessments, evidence-based instruction and intervention, and data-driven decision making. I use both terms throughout this dissertation, depending on how the structure was identified in the literature I reviewed. Finally, in this study, the term *linguistically-responsive* is in alignment with the framework of orientations, skills, and knowledge proposed by Lucas and Villegas (2013). Specifically, there are three orientations that are needed for teachers to be linguistically responsive. They should value linguistic diversity, have an understanding that language and culture are interrelated (socio-linguistic consciousness), and have an inclination to advocate for emergent bilinguals. Moreover, teachers who are linguistically responsive utilize strategies that help to differentiate instruction for emergent bilinguals.

Organization of the Study

This dissertation is organized in five chapters. In this chapter, I introduced my work as an educator and graduate student and discussed how it has propelled me to this study. I shared the formative-experiment methodology I believed to be most suitable for

my study. In Chapter Two, I present a conceptual framework rooted in sociocultural theories of teacher learning, language acquisition, and instruction. I share empirical studies that guided my work as I engaged in creating a linguistically-responsive intervention with the expertise of a teacher study group. I close Chapter Two with my research goal and questions. In Chapter Three, I further explain how I collected and analyzed data within a research design of formative experiment. In Chapter Four, I describe the results of my qualitative findings in a data vignette that follows the story of how the teachers tailored and implemented the READ interventions. Then, I share the quantitative findings from the reading and language data. In Chapter Five, I synthesize the qualitative and quantitative findings for interpretation; then, I make recommendations for the classroom, and discuss how this investigation contributed to the study of emergent bilinguals in RtI frameworks.

CHAPTER TWO:

REVIEW OF THE LITERATURE

The framework for conducting formative experiments outlined by Reinking and Bradley (2008) helped me to conceptualize, conduct, and report the study. In this chapter, I address two of the questions in the framework:

> Question 1) What is the pedagogical goal to be investigated, why is that goal valued and important, and what theory and previous empirical work speak to accomplishing that goal instructionally?
>
> Question 2) What intervention, consistent with a guiding theory, has the potential to achieve the pedagogical goal and why?

To address the first question, I describe the conceptual framework and the theoretical foundation that explain how I organized and implemented the teacher study group and drew on theories to guide the components of the linguistically-responsive reading intervention. Then, I provide a review of the literature that grounds my research in the area of reading interventions, response to intervention, emergent bilinguals, and teacher learning. From there, I present my research questions and goal for the formative experiment. I conclude the chapter by addressing the second question that defends the position that this study has the potential to further the discussion regarding linguistically-responsive intervention in a RtI framework.

My Conceptual Framework: Factors Influencing Literacy Development in a Second Language

In order to articulate the complete account of the teachers, students, and structures in this study, I used Helman's (2009) framework (see Figure 1) that details the factors that influence literacy development in a second language. This provided an overarching conceptual framework for describing what was happening as the teachers gathered to discuss the reading interventions and how they worked towards planning and implementing a linguistically-responsive reading intervention. The framework consists of four factors that contribute to literacy development for emergent bilinguals: linguistic, sociocultural, psychological, and educational. Each of the four factors and many of their subcomponents are present in the story of the teachers learning from each other and the students' reading and language development in the modified intervention.

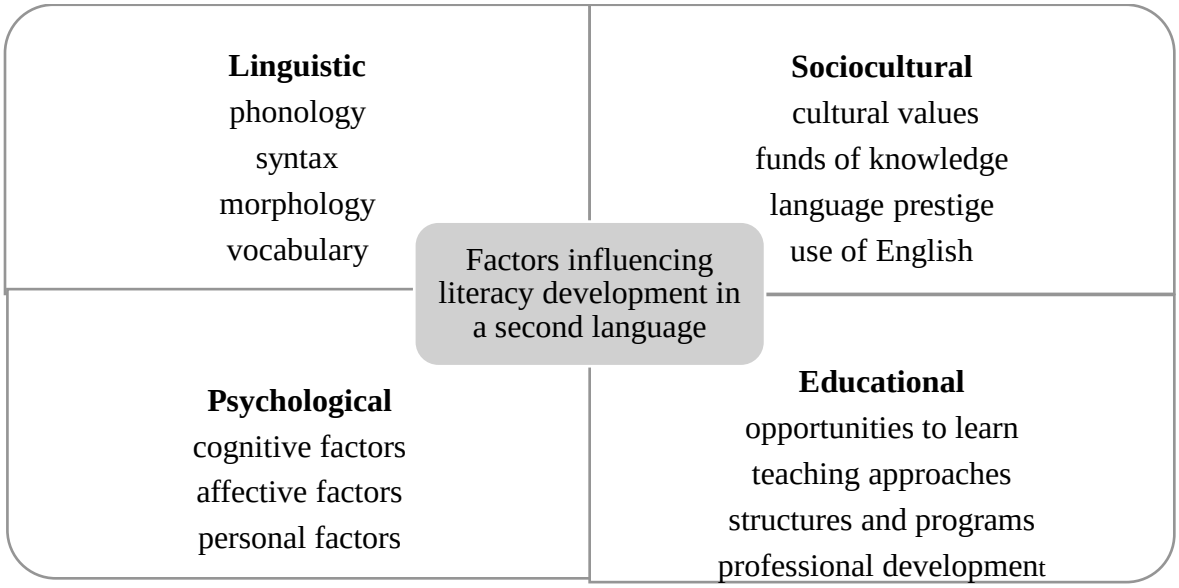

Figure 1. Helman's (2009) factors influencing second language literacy learning.

One area of the framework highlights the linguistic demands of learning how to develop literacy in a second language which includes the *phonology*, *syntax*, *morphology*, and *vocabulary* of the new language. The sociocultural factors that influence

development of literacy in another language are *cultural values* (Au, 2009; Villegas & Lucas, 2002), *funds of knowledge* (Moll, 1994), *language prestige* (Rueda, August, & Goldenberg, 2006), and *use of English* (Hansen, 1989). The social structure of school and the cultural and language background of students also influence the development of literacy. Teachers must be intentional in the way that they draw on the cultural and linguistic diversity of their students (Villegas & Lucas, 2002). Psychological elements that influence literacy development are *cognitive, affective,* and *personal* factors. "These processes are connected to and inseparable from sociocultural and linguistic dimensions, yet they stand apart in many ways" (Helman, 2009, p. 9). *Cognitive* factors in reading are those that contribute to a student's abilities to process and understand the written word. *Affective* and *personal* factors are related to literacy development as they explain how the student feels and is motivated. Educational factors are those that fall within teaching and systems of curriculum and instruction. The factors that influence literacy development in a second language in this framework are *opportunities to learn, teaching approaches, structures and programs* and *professional development.*

In my study, I focused on several subcomponents in Helman's framework to structure the manner in which teachers worked together to modify the phonics intervention in a response to intervention framework. Specifically, I understood that *professional development* was the avenue for exploration of all other factors and subcomponents (see Figure 2). This figure reorganizes the factors and subcomponents from Helman's framework in order to pay attention to the fact that teachers need

opportunities for professional development in all four areas in order to plan instruction and intervention for emergent bilinguals.

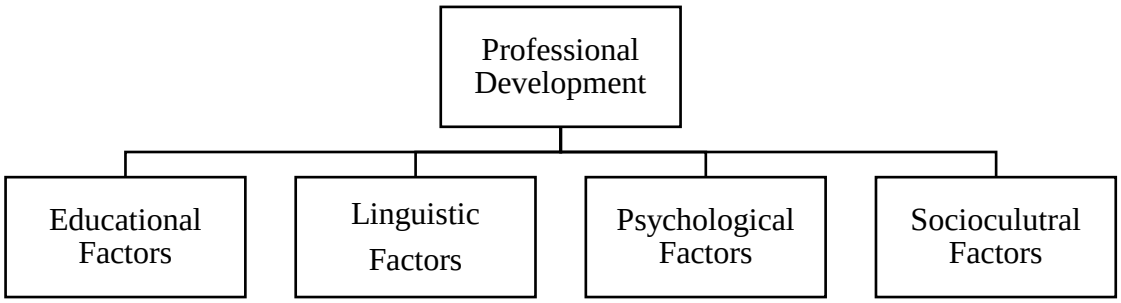

Figure 2. Avenues for teacher learning with emergent bilinguals.

Theoretical Foundation

Broadly, the theoretical foundation that comprised the design of this study draws from sociocultural theory that contends that knowledge is socially constructed (Vygotsky, 1978). As I studied both how teachers learned over the course of the study and how students learned over the course of the intervention, I understood that knowledge with both populations (teachers and students) was socially constructed. I drew on the concepts of teacher study groups (Gersten et al., 2010) that come from a tradition of practice based professional development (Ball & Cohen, 1999). Practice based professional development involves teachers who engage with materials of their practice and design lessons collaboratively. Then, they come together to share interpretations of how lessons were executed. In the process, "Teachers would learn from one another's views and interpretations, thus extending and enhancing their own capabilities" (Ball & Cohen, 1999, p. 26). Moreover, this theory of professional learning works when the content of the learning is directly related to teachers and students, it involves practical tasks, is

participant driven, and is collaborative. (Darling-Hammond & McLaughlin, 2000). In my study, the teacher study group served as the place where teachers would gather to discuss their practice and innovate using their field expertise (e.g., EL, reading, general education instruction).

I drew on second language development theories and instructional theory to guide the design of the tailored reading intervention. The input hypothesis (Krashen, 1985) and collaborative dialogue (Swain, 2000) provided guidance for how students might develop language during the intervention. The input hypothesis (aka comprehension hypothesis) posits that people acquire new language when they are provided manageable amounts of language exposure. Krashen uses the term *comprehensible input* to describe the "just right" amount of exposure of language. As a teacher, it can be helpful to be aware of individual student language proficiency levels in order to provide comprehensible input. However, input hypothesis alone cannot explain how language is acquired (Lantolf, 2000), as it does not take into consideration the activities of interaction,

> Nevertheless, from the sociocultural perspective, the nature of language is inextricably linked to the culturally framed and discursively patterned communicative activities of importance to our groups, howsoever those groups are defined. (p.81)

The main tenet of sociocultural theory is that the human mind is *mediated* (Lantolf, 2000); understanding how students acquire a second language demands that educators pay attention not just to the input, but also atttention to the interactions between expert and novice or amongst peers that occur that help to produce language (output).

Swain (2000) suggests that in order for learners to produce language (output), they must interact with the language meaningfully. Swain (2005) describes *collaborative dialogue* to be where learners engage in active participation of knowledge building and problem solving. Dialogue between learners mediates language building.

The instructional theory that framed the delivery of the intervention was the gradual release of responsibility (Pearson & Gallagher, 1983). The modified phonics intervention used in this study was targeted towards students who were striving towards accuracy and fluency in word reading. It is an already-in-place phonics intervention (PRESS, 2013) that is grounded in the gradual release of responsibility (Pearson & Gallagher, 1983). The gradual release of responsibility is an instructional method that is based on the premise that students will achieve mastery and independence of a skill when they have systematic support from a teacher. In a gradual release there are four phases that move students towards independence: explicit instruction, guided practice, collaborative learning, and independent practice (Fisher & Frey, 2013). The premise for the gradual release of responsibility is rooted in Vygotsky's zone of proximal development (ZPD; Vygotsky, 1978) that posits that optimal learning occurs when teachers provide support that is sufficient for students to achieve understanding. In the phonics intervention used in this study, students gradually moved towards independence of reading skills from teacher modeling, guided practice of the reading skills, and independent practice.

Reading Intervention with Emergent Bilinguals

In this section, I further address Question 1 from the framework: What is the pedagogical goal to be investigated, why is that goal valued and important, and what theory and previous empirical work speak to accomplishing that goal instructionally? Specifically, I draw upon previous empirical work in the area of reading interventions with emergent bilinguals and discuss the literature that contextualizes reading intervention within a response to intervention framework.

Research Syntheses on Reading Interventions with Emergent Bilinguals

Numerous studies demonstrate that explicit and systematic approaches to word reading for students who may have reading difficulties are beneficial (c.f., Ehri, Nunes, Stahl, & Willows, 2001; Snow, Burns & Griffin, 1998). For students who are emergent bilinguals, the research base is still developing (August & Shanahan, 2006, 2010; Klingner, Artiles & Barletta, 2006). While the report from the National Reading Panel (NRP, 2000) suggests that systematic and explicit approaches work to develop reading, none of the studies reviewed by the panel included emergent bilinguals.

To provide further direction in the scholarship of emergent bilinguals and literacy development, Shanahan and Beck (2006) published a seminal report: *Developing Literacy in Second Language Learners: Report of the National Literacy Panel on Language Minority Children and Youth*. They concluded that, though there were too few studies on intervention for emergent bilinguals to make any recommendations, approaches to systematic and explicit instruction were beneficial. August and Shanahan followed up with an update of the report in 2010. This review included 20 studies in the area and reiterated recommendations for explicit and systematic phonologically-based

interventions for emergent bilinguals. The authors noted that methods that differentiate, such as clarifying difficult words, providing extra practice, setting up routines for vocabulary and comprehension, and presenting ideas were clearly beneficial. August and Shanahan (2010) concluded that research is still needed to look at the effects of these types of interventions over time.

During the same time period, other scholars were also at work investigating and sharing effective instructional practices for emergent bilinguals in reading intervention. Because of the scarcity of research at that time in this area, Gersten and Baker (2000) gathered work groups made up of professionals and researchers to review findings across studies and identify themes that might guide practice and further research. Their research synthesis (2000) was not limited to studies in interventions, though nine included interventions studied with emergent bilinguals. Of these nine studies, none were in the area of phonics specifically, though they give direction for further research that could be applied to reading intervention. The authors gathered evidence from qualitative and quantitative studies, and called upon the expertise of the work groups, to identify five instructional variables that seem to be essential for instruction with emergent bilinguals, a) build and use vocabulary in curriculum, b) use visuals to support curriculum, c) use cooperative learning and peer learning strategies, d) use native language strategically, and e) vary cognitive and language tasks (Gersten & Baker, 2000).

Later, Klingner et al. (2006) reviewed empirical evidence related to emergent bilinguals who experience reading difficulties. They discussed a number of issues regarding research and practice, including assessments that identify emergent bilinguals

as having a reading difficulty, processes for referral for special education, and interventions. The team compiled and reviewed 42 studies in these areas. Of the 42 studies, eight were in the area of reading intervention. Two of the eight studies were experimental, with just a small handful in the area of phonics, and participants in all studies represented Spanish speakers. Based on the areas identified, the authors suggested recommendations for future research and practice. Their suggestions were similar to the recommendations of Gersten and Baker (2000). Best practice in teaching students who are emergent bilinguals and are in reading intervention include:

a) combine phonological awareness with other reading and English language development activities
b) provide explicit vocabulary instruction to facilitate reading comprehension in students' first and second language
c) teach and encourage use of reading comprehension strategies in the first and second language
d) help students develop a strong foundation in their first language as a way to promote literacy in both their native language and English (Klingner et al., 2006, p. 125).

Klingner et al. (2006) recommended that future research describe emergent bilinguals in greater detail, including information regarding their language proficiency levels, learning contexts, histories of opportunities to learn, and quality of interventions.

The continued shortage of intervention studies detailing the contexts under which interventions are beneficial for emergent bilinguals is still a problem. Recently, Richards-

Tutor, Baker, Gersten, Baker, and Smith (2015) added to the knowledge base by investigating studies of reading intervention for emergent bilinguals. The authors took into account several intervention characteristics: group size and composition of the intervention group, intervention delivery, and content of intervention. Based on the criteria that the studies must be randomized control trials, include emergent bilinguals who were identified as "at risk," take place between 2000 and 2012, and include a discussion of fidelity, authors identified and reviewed 12 studies. To analyze specific features of the interventions they used a regression analysis to examine how the specific variables interacted. This comprehensive analysis of reading interventions and participants revealed several noteworthy findings: some addressed the call from Klingner et al. (2006) to study emergent bilinguals in greater detail, and some illustrated the continued shortage and need for research to focus on emergent bilinguals in reading intervention. One noteworthy finding was that all the interventions in all the studies were delivered by someone besides the classroom teacher. A variety of teachers delivered the interventions: bilingual teachers hired just for the study (Vaughn, Cirino et al., 2006; Vaughn, Linan-Thompson et al., 2006; Vaughn, Mathes et al., 2006), special education teachers (Lovett et al., 2008), English-speaking teachers hired just for the study (Vaughn et al., 2011;Wanzek & Roberts, 2012), paraprofessionals (Gunn et al., 2000; O'Connor et al., 2010; Vandasy & Sanders, 2010), or undergraduate or graduate students (Begney et al., 2012; Denton et al., 2004; Solari & Gerber, 2008). When the authors ran moderator variable analyses to see the effect of delivery, they found that there was not a difference in who delivered the intervention, be they researchers or school-based personnel. In part

this is a promising finding as it demonstrates that a variety of personnel can effectively implement interventions. Nonetheless, it illustrates a need for further investigation of interventions delivered by a classroom teacher or on-site reading specialist.

Further, Richards et al. (2015) noted that of the 12 reading interventions, seven were considered comprehensive interventions, meaning they focused on a number of the five identified components of reading instruction: phonemic awareness, phonics, fluency, comprehension, or vocabulary (NRP, 2000). The other five interventions focused on two or three components of reading. No intervention content focused on a single one of the five components. The method of intervention delivery was cohesive among all interventions, where explicit instruction, scaffolding, and opportunities for feedback were hallmarks of lesson delivery. In all but two of the studies, the interventions that were tested were ones designed for native English speakers and tried out or modified for emergent bilinguals. Further, as the authors analyzed the outcomes of the interventions, they investigated which ones had greater impacts and "interventions that focused on improving foundational skills such as PA and phonics, with younger students in kindergarten and first grade obtained better and more consistent effects than other outcomes, such as those interventions that focused on improving vocabulary and comprehension" (Richards-Tutor et al., 2015, p. 21). Notably, of all the studies, only four included a vocabulary measure. Finally, the authors recommend that future research include a focus on the individual differences in emergent bilinguals, consider development of interventions that focus on language and vocabulary, and include calculations of an "effort variable"- one that would describe the needed personnel to

deliver intervention, minutes of instruction, and amount of students who could be served in an intervention group.

Phonics Interventions for Emergent Bilinguals

Whereas the reading interventions I studied focused on addressing several components of reading in an intervention, I found no research that focused on phonics alone for emergent bilinguals. I found interventions that were paired with phonemic awareness, spelling, fluency, comprehension, or vocabulary. Moreover, some researchers studied interventions that were designed for native English speakers to see if they were also beneficial for emergent bilinguals, while other researchers created interventions for specific use with emergent bilinguals. My review includes both types of studies. In most cases, someone besides the classroom teacher delivered the interventions. I explicate the trends found in these studies in Table 1 which details intervention characteristics for each study.

The first two studies (Vadasy & Sanders, 2010; 2011) detailed in Table 1 were essentially the same approach but at different grade levels- kindergarten and 1st grade, respectively. The kindergarten study was designed to measure the efficacy of code-

Table 1

Characteristics of Phonics Interventions with Emergent Bilinguals

Study	*Who delivers*	*Content of intervention*	*Intervention duration*
Vadasy & Sanders, (2010; 2011)	Paraeducators	Letter sound Segmenting Word reading Spelling Irregular word reading Alphabet naming Assisted oral reading Vocabulary (only when time)	18 weeks, 4 days per week, 30 min. per day
Vaughn et al., (2006)	Bilingual teachers trained and hired by the research team	PA Decoding Vocabulary Text reading	32 weeks, 5 days per week, 50 min. per day
Filippini et al., (2012)	Undergraduate and graduate students	PA Decoding Vocabulary	8 weeks, 4 days per week, 15 min. per day
Solari & Gerber, (2008)	Graduate assistants	Listening comprehension PA Alphabetic knowledge	8 weeks, 3 days per week, 20 min. per day

oriented reading intervention with low-skilled language minority (LM) and non-LM students. To that end, Vadasy and Sanders (2010) randomly assigned students performing in the bottom half of their classrooms to either the code-oriented reading intervention or their regular classroom literacy instruction for half of a school year. Researchers trained and supported paraeducators hired by the school district to carry out the study. Paraeducators followed a scripted lesson format that was systematic and explicit and included the following areas of literacy instruction: letter sound correspondence, segmenting using Elkonin boxes, word reading and spelling, irregular word reading, alphabet naming, and assisted oral reading practice using decodable texts. Only when

there was time remaining did paraeducators add vocabulary instruction into the intervention.

While the treatment group received the intervention plus classroom phonics instruction, the control group received phonics instruction only during their classroom literacy block. Researchers observed both treatment and control classrooms to see what amount of time was spent on phonics instruction in the literacy block and throughout the day. Results indicate that control students benefitted from being in classrooms with more phonics instruction in the areas of spelling, and treatment students fared better in comprehension. “In other words, additive phonics instruction may have comprehension benefits for treatment students in this early stage of reading development when decoding problems represent a major, word-level obstacle to comprehension” (Vadasy & Sanders, 2012, p. 800).

Though this study showed positive results for emergent bilinguals in kindergarten in both the intervention and classroom time, neither instructional time was specifically modified to address or take into account language learning. In the two years following kindergarten, Vadasy and Sanders (2012), continued to observe the control and treatment students in the original study and published a follow-up study. Findings in the follow-up study indicate there were advantages for emergent bilinguals in the phonics only condition in word reading and spelling outcomes, however participants fell behind their non-emergent bilinguals in fluency and comprehension.

In Vadasy and Sanders’ first grade study, the researchers studied how a code-oriented intervention for lower-skilled first graders benefitted emergent bilinguals and

non-emergent bilinguals on several measures of literacy (2011). The code-oriented intervention included the same components (see Table 1) as the kindergarten study, and was also implemented by paraeducators. Researchers included classroom observation measures the year of the intervention for first grade and in the following two years. Their findings were similar to the kindergarten study- students in the intervention group had better outcomes in the follow-up study in third grade, except for one area- comprehension. Though the LM students made gains in comprehension, they still lagged behind to reach grade-level comprehension.

When bilingual teachers implement comprehensive reading interventions students show significant growth. Vaughn, Mathes et al., (2006) compared the effectiveness of a literacy intervention modified for emergent bilinguals and a district assigned reading intervention for struggling readers. The researchers employed a randomized, controlled trial for two hundred eighteen first grade emergent bilinguals whose primary language was Spanish (Vaughn, Mathes et al., 2006). After staff administered universal screening measures in both English and Spanish, students who fell below seasonal benchmarks were randomly assigned to either a reading intervention modified for emergent bilinguals (treatment) or the district intervention curriculum (contrast). Forty-eight students were eligible for intervention. Researchers assigned 24 students to each condition. They placed students in the treatment and control conditions in student groups of 3-5 for 50 minutes daily for seven months. In both groups the students had low proficiency in both English and Spanish. The research team hired, trained, and coached bilingual teachers to deliver the treatment intervention. Researchers interviewed classroom teachers who implemented

the district reading intervention curriculum (contrast) three times throughout the year to inquire about implementation. The intervention treatment was comprised of explicit teaching, promotion of English language learning, phonemic awareness and decoding, vocabulary development, interactive teaching that maximizes student engagement, and instruction that provides opportunities for accurate responses with feedback for struggling learners. In addition to the 50-minute intervention delivered by the bilingual teachers, students received core instruction.

Results indicated that students who received the intervention made significant gains in most reading measures, including comprehension. These gains were greater than the students in the contrast group, who received district assigned reading intervention only. Since the intervention was considered a comprehensive approach (including several areas of literacy), researchers kept in mind that it was difficult to see the effect of each component. “In particular, we are interested in knowing effects of the retell routine on oracy and comprehension because this component can be easily conducted independently” (Vaughn, Mathes et al., 2006, p. 77).

Adding vocabulary to phonemic awareness and phonics interventions may help emergent bilinguals who have been identified as “struggling.” In another study modified for emergent bilinguals, Filippini, Gerber, and Leafstedt (2012) included an explicit vocabulary component to a phonemic awareness and decoding intervention. They argued, “it seems clear that the most vulnerable students (those who are struggling readers learning in a second language) have a twofold need: intensive instruction in PA [phonemic awareness] and decoding skills, *and* intensive instruction in vocabulary and

vocabulary learning skills" (p. 15). The intervention, Vocabulary Plus PAD (PA, decoding, and vocabulary) was designed to take place in the classroom during the literacy block and the purpose was to "facilitate word learning through focus on language structure" (p. 16). In an experimental design, the researchers compared students who had Vocabulary Plus PAD, which was comprised of 30% PAD and 70% vocabulary during the intervention time, to students who had 100% PAD (no vocabulary). Trained undergraduate or graduate students delivered the interventions during the classroom literacy block. The intervention components of PAD included phonemic awareness activities such as rhyming and manipulation, and then moved into decoding at the word level, using a systematic and explicit approach. In the Vocabulary Plus PAD condition, the same method was used for phonemic awareness and decoding, but then interventionists introduced new words, gave opportunities to hear the words in text, practiced the words, and pointed out their morphological structure and semantic relationships.

Results indicated that students who received Vocabulary Plus PAD fared better on both vocabulary and nonsense word fluency (NWF) measures. Researchers used three measures to evaluate the effect of intervention: NWF measures, a receptive vocabulary measure (Peabody Picture Vocabulary Test- Revised; Dunn & Dunn, 1981), and an expressive vocabulary measure (Expressive One-Word Vocabulary Test; Brownell, 2000). Students in this study were mainly living in low SES families and were primarily emergent bilinguals. "This work demonstrates that initial support for teaching vocabulary

skills side by side with PA and decoding before students struggle with comprehension is a promising practice for at risk readers" (Filippini et al., 2012, p. 23).

Finally, the last study (Solari & Gerber, 2008) detailed in Table 1 is an investigation of listening comprehension (LC) as an indicator of word reading skills. This study builds an argument based on research that indicates that although emergent bilinguals can attain word reading, spelling, and oral reading fluency at similar rates at their native English peers, they continue to lag behind in reading comprehension (e.g. Vadasy & Sanders, 2012; 2013). "The ultimate goal of reading is to derive meaning from words in print; however, there is a great need for intervention-based research to determine the effective strategies for teaching comprehension skills to language minority students" (Solari & Gerber, 2008, p. 157). To strengthen their argument, researchers employed a randomized control trial with emergent bilinguals who were identified as "at-risk" based on screening measures. Students were placed in one of three groups: 1) control group, phonemic awareness (PA only), or either treatment group, 2) PA Concentration or 3) Listening Comprehension (LC) Concentration. The percentage breakdown for time spent on different components was as follows: PA Only students received 20% instruction on alphabetic knowledge and 80% on PA. PA Concentration students received 70% PA, 10% alphabetic knowledge, and 20% LC and vocabulary. LC Concentration received 70% LC and vocabulary, 10% alphabetic knowledge, and 10% PA. LC tasks involved typical comprehension skills such as leading students to the main idea, retellings of text passages, figuring out difficult words in texts, and asking questions. Research graduate assistants taught the interventions during the classroom

literacy time. Results indicated that for all three groups, students identified as "at-risk" showed significant improvements in PA and decoding. To show intervention effectiveness, researchers used measures of story retell, listening comprehension, early PA (onset and rime), late PA (segmentation and blending), word attack and word identification. Even for students in the LC Concentration group, with the smallest instruction time spent on PA, PA skills improved. In measures of listening comprehension, students who received the LC Concentration intervention did better on LC measures than the other two groups. Though the intervention did not focus on decoding words specifically, results from word decoding measures indicated roughly the same effectiveness for all three groups. It seems promising that, when there is a LC concentration in an intervention, other skills such as PA and decoding are not compromised. This work adds to the limited research on achieving a balance of skill and language-based tasks while trying to teach all components of literacy to students identified as "at-risk" who are emergent bilinguals.

Implementing RtI with Emergent Bilinguals

While some researchers have grappled with finding appropriate interventions to deliver to emergent bilinguals, others have taken a broader look into the whole system of RtI and have studied the ways that schools have initiated the assessment, referral, and implementation of the tiered model. When RtI was introduced in 2004 with the reauthorization of Individuals with Disabilities Educational Act (IDEA), there was a small research base on interventions for emergent bilinguals (e.g., August & Shanahan, 2006, 2012; Orosco & Klingner, 2012). As described in the previous section, both

practitioners and researchers took what they knew to be effective for native speakers and have tried to modify it- or simply use it- for emergent bilinguals. Even though there seems to be potential in RtI to provide a successful pathway aside from assignment to special education, many challenges arise with RtI implementation with emergent bilinguals. Orosco and Klingner (2010) state:

> Even now, as researchers, professional organizations, and education agencies offer guidelines for how to set up RtI and use it to provide early intervening services and identify students with LD, some school personnel have the sense that these guidelines do not adequately take into account the many challenges they face. These challenges can affect any school but may especially be of concern in schools with culturally, linguistically, and socioeconomically diverse student populations (p. 270).

Specifically, one of the challenges is that there is "inconsistent and insufficient information for teachers" (Samson & Collins, 2012, p. 8) about how to teach emergent bilinguals. Though the research base is expanding on effective methods to teach emergent bilinguals, state policies and legislation are struggling to catch up. As of 2012, there were still 15 states that had no requirements in teacher education programs specifically preparing teachers to instruct emergent bilinguals (Samson & Collins, 2012). Additionally, as Orosco and Klingner (2012) argue, RtI requires a paradigm shift for teachers. Historically, a deficit in reading needed to be identified *before* looking at the quality of core literacy instruction as a factor in emergent bilinguals' ability to learn. "There is still too little focus on the learning environment when implementing RtI"

(Orosco & Klingner, 2012, p. 270). A final challenge is that many evidence-based interventions may not have been "tested" for emergent bilinguals specifically, and some of those that have been studied have issues with validity for this population (Moore & Klingner, 2014).

Nonetheless, researchers have attempted to integrate linguistically-responsive practices into RtI models. Sanford, Brown, and Turner (2013) proposed a conceptual framework for RtI that complements effective instructional practices for emergent bilinguals and the components of tiered instruction. The PLUSS model includes, Pre-teaching critical vocabulary, Language modeling and opportunities to use academic language; Using visuals and graphic organizers; Systematic and explicit instruction; and Strategic use of native language and teaching for transfer. PLUSS is not an intervention, but is a guide by which teachers can ensure that evidence-based practices for emergent bilinguals are integrated at all three tiers in the RtI framework. Authors defend this framework by noting that classroom teachers or others who are responsible for delivering intervention for emergent bilinguals are more likely to have an understanding of the influences of the stages of second language acquisition and these understandings will inform their instruction.

In an overview of the PLUSS model (Sanford, et al., 2013) the authors share a story of how the model was used in practice. They describe a teacher who worked with an English language development (ELD) specialist to identify the language acquisition stages of her students. The teacher and ELD specialist determined that in one of the tier 2 groups, students were in either Level 2 (Early Production) or Level 3 (Speech

Emergence). Based on their language proficiency level, they chose two of the components of the PLUSS model to infuse into the tier 2 intervention. Based on what they knew about the language levels of the students, they chose to pre-teach critical vocabulary and model language structures. The focus of the lesson was teaching the word level skills of the "silent e," in words such as "rebate." The teacher used the gradual release of responsibility to teach students the silent *e* words and complemented the lesson by adding explicit vocabulary and oral language development. She provided sentence frames for students to use the words they learned how to decode and use words in context. At the close of the illustration of this model, the teacher noted how the PLUSS framework and working with an ELD specialist contributed to her increased comfort in meeting the language and reading needs of her students.

On the other hand, some studies of RtI implementation demonstrate negative consequences for teachers and students. In a qualitative investigation studying one school's perceptions of RtI with emergent bilinguals, researchers describe practices, beliefs, judgments, and professional development around the model (Orosco & Klingner, 2012). They interviewed teachers, observed in classrooms, attended grade level RtI team meetings, and reviewed RtI documents (e.g., referral forms) over the course of five months. At the close of the study, they presented four themes as major findings in the study that contributed to the deficit-based RtI model that was evident in the school: misalignment in instruction and assessment, negative schooling culture, inadequate teacher preparation, and limited resources (Orosco & Klingner, 2012).

Deficit thinking of most of the teachers in the study permeated the instruction and assessment of ELs, as they did not take into account linguistically- or culturally-oriented pedagogy. This mindset resulted in an over-identification of ELs into intervention. For example, one teacher in the study was observed during a portion of the lesson designed to teach alphabetics. She used a traditional, alphabet chant that did not include names or animals familiar to emergent bilinguals in her classroom. Researchers noted a lack of interest and understanding from the students while singing the song and followed up with a conversation with the teacher. Though she was trying her best, and wanted her students to learn how to read, she didn't understand why "they couldn't just learn to speak English" (Orosco & Klingner, 2012, p. 277). Other teachers in the study made similar comments. They felt that limited English proficiency was the cause of student learning difficulties.

The theme "negative school culture" also contributed to the implementation of this school's RtI initiative. Some teachers noted that if their Spanish speaking students just had parents who were engaged in their education and took them to museums, bookstores, or libraries, then they would have a better chance of keeping up with the middle class white students in the district. Researchers noted that this negative school culture affected the values, expectations, and practices of the teachers' assessment and instruction. They stated, "Undoing the impact of negative school culture needed to be just as important and integral a part of the RtI process as any intervention or reading curriculum" (Orosco & Klingner, 2012, p. 281). Certainly, these instances reflect another theme- inadequate teacher preparation. Evidence from data collected in the study

suggested there had been little time devoted to preparing teachers to meet the linguistic and cultural needs of their Latino students. They noted that teachers were unprepared to take the evidence-based interventions and modify them to meet the needs of their students.

The final theme presented in this study was “limited resources.” Based on interviews, observations, and curriculum review, the researchers labeled the reading curriculum used by the teachers as outdated and insufficient. With high teacher turnover in the school, curriculum was lost, disorganized, and inconsistent. The average number of books in classroom libraries was 32, with many books not suited to the specific grade level. “As teachers applied inadequate instruction and were given weak professional development and resource support, they were implicitly qualifying students for further interventions based not on student qualifications but on instructional deficits” (Orosco & Klingner, 2012, p. 282).

A weak core instruction program with emergent bilinguals can be a cause for concern. Stahl, Keane, and Simic (2012) used a mixed methods approach to observe and document the implementation of RtI with first graders in three urban schools where almost half the student population was comprised of emergent bilinguals and there was a high percentage of referrals to special education in all diverse population groups represented in the study. As part of the implementation of RtI in these schools, district leaders decided to add a new phonics curriculum to core instruction, as there had not been a consistent approach used in the building. This study was not to evaluate the RtI process; rather, researchers set out to examine if the model reduced the number of students

identified as being at risk for reading difficulty, and how effectively school staff were able to implement the components of RtI. Student data collection consisted of DIBELS assessments of Phoneme Segmentation Fluency (PSF), Correct Letter Sound Fluency (CLSF), and Oral Reading Fluency (ORF). Student attendance was also taken into consideration. Teacher data collection included an Instructional Practice Questionnaire (IPQ) in which teachers indicated on a likert scale information about their classroom literacy practices. Researchers conducted focus groups and investigated teacher beliefs and perceptions about implementing RtI, professional development, staff communication, resource allocation, and decisions about special education referral and grade level retention. Researchers also observed during the classroom literacy block and grade level planning meetings (Stahl et al., 2012). Evidence from classroom observations and DIBELS measures indicated that the addition of the phonics curriculum, as well as professional development support from a facilitator of the curriculum, helped to strengthen phonics instruction. However, it appeared to come at a cost. With 35-45 minutes of phonics instruction given whole group every day, students had little time to engage in focused and meaningful reading in connected text. Stahl et al., (2012) note:

> In our urban setting, this transfer was particularly difficult for ELLs. Despite achieving DIBELS PSF and CLSF benchmarks, many ELLs still struggled to fluently read and understand grade level texts. As a result, teachers retained disproportionately higher numbers of ELLs than other children in the cohort (p. 367).

The continued retention of emergent bilinguals, despite their growth on some measures, could indicate that teachers needed more training to better understand the language acquisition and development of these students (Orosco & Klingner, 2012; Sanford, Brown, & Turner, 2013) Without opportunities for engagement during core literacy instruction, students lack an opportunity to apply their word reading knowledge to meaningful tasks, and that can be detrimental to overall comprehension (Vadasy & Sanders, 2012, 2013). The prevalence of isolated practice without engagement could be alleviated if there were teachers who understood and could support students in literacy and language development. In all three schools studied by Stahl et al. (2012) there was only one first grade teacher who held an EL certification.

The school-wide implementation studies I reviewed indicate that professional development in both the RtI process and culturally and linguistically-responsive teaching was warranted. Without adequate preparation and support, teachers may continue to misunderstand the reading development of the emergent bilinguals in their classroom. In two studies, (Orosco & Klingner, 2012; Stahl et al., 2012) this was detrimental to the students (retention) and the teachers (negative school culture).

Issues of Research with RtI and Emergent Bilinguals

Some scholars are scrutinizing the current practices in RtI research (Moore & Klingner, 2014; Thorius & Sullivan, 2012). In particular, several crucial components to the development of language and literacy are missing in the research: consideration of language proficiency, opportunities to learn, and the appropriate use of assessments. Research with emergent bilinguals and RtI has mainly focused on the effectiveness of tier

2 interventions, and even though some have shown some promise, many of studies have serious and consequential issues with validity.

An earlier suggestion to expand teacher preparation and development to enhance work with culturally and linguistically diverse students (Orosco & Klingner 2012; Stahl et al., 2012) is echoed in a recent review of literature by Thorius and Sullivan (2012). The two researchers set out to analyze RtI research to "examine the extent to which research considers the appropriateness and quality of general education curriculum and instruction for emergent bilinguals within the RtI framework" (Thorius & Sullivan, 2012, p. 66). Their concern was that without investigation of the classroom context, emergent bilinguals will continue to be identified as having academic difficulties, instead of considering first the opportunities to learn that were provided in their general education classrooms. This is not just a concern to be addressed in classrooms, but should also be addressed by the research community.

Thorius and Sullivan (2012) found 13 studies on the topic of emergent bilinguals and RtI using the following criteria: the study had to be empirical, published in a peer-reviewed journal, include emergent bilinguals, and be grounded in an RtI framework. The 13 studies they found took place between 2004 and 2008. Though there was ample research of RtI before 2004, none fit all four of their criteria. Review of the studies included a search for how language was accounted for within the RtI framework and intervention being studied, a review of the components of the intervention, and a description of how teachers identified students in a given tier in the model. Additionally,

studies were examined for their descriptions of tier 1, and how they provided information regarding tier 2 and tier 3 interventions.

Thorius and Sullivan (2012) found that "of the 13 studies reviewed, 11 address Tier 2 interventions only, indicating that the quality and appropriateness of general education instruction in Tier 1 for emergent bilinguals is largely unaccounted for in the literature" (p. 77). Moreover, as I found in my own review of intervention studies (see Table 1) presented earlier in this chapter, someone aside from the classroom teachers delivered the intervention in the 13 studies. The two studies that *do* describe the general education context (Koutsoftas, Harmon, & Gray, 2009; McMaster, Kung, Han, & Cao, 2008) do so by asking teachers to report classroom practices (McMaster et al., 2008) or collect data in tier 1 using a classroom observation protocol (Koutsoftas et al., 2009). With consideration of the linguistic factors impacting instruction and intervention, researchers found a variety of detail in the 13 studies. Most studies included Spanish speakers and none of the studies included any information about the level of English proficiency. Another notable omission was in the area of assessments to determine placement in tiers. *None* of the studies included discussion of any assessments besides curriculum based measures (CBMs). Moreover, Thorius and Sullivan (2012) raised a significant question about one of the underlying principles of RtI. In the model, 80-85% of students should be able to reach grade level norms. This percentage is certainly dependent on the opportunities to learn for emergent bilinguals in general education classrooms. However, if emergent bilinguals are failing to meet benchmarks in tier 1, they wondered if there were enough learning opportunities to support their progress.

"Although RtI is intended to prevent such instructional casualties, without consideration of the relationship between instructional quality and lack of growth on progress monitoring tools, the implementation of RtI might actually perpetuate one of the very problems it was designed to prevent" (Thorius & Sullivan, 2012, p. 81). Findings suggested several gaps in the literature relating to emergent bilinguals and RtI. More attention should be paid to the general education context of the tiered model; language levels should be considered when making instructional and assessment decisions; and school-based personnel, such as classroom teachers, should be included in the study and implementation of RtI.

Emergent bilinguals vary greatly in their level of proficiency in English and should not be seen as a fixed group. Moore and Klingner (2014) examined the population validity of 67 studies of reading intervention targeting at-risk elementary students between 2001 and 2010. The purpose was to speak to the generalizability of intervention findings, surmising that if "population validity issues are not addressed, researchers cannot generalize findings to other populations of students, and it becomes unclear what intervention strategies work, especially with English language learner student populations" (p. 391). Population validity is significant to generalizability, as it allows researchers to understand subsets of participants in a study (Bracht & Glass, 1968). In the case of emergent bilinguals, there is great diversity in the use of the term itself. Not only is language proficeincy level a significant component for knowing the context of an English learner's progress, other demographics account for a broader, more holistic view of the student. Moore and Klingner (2014) found both troubling and promising trends in

their extensive review. Of the 67 reading intervention studies, 25 studies researched students who were at-risk, struggling, or low-performing elementary students, even though no student demographics were shared. However, another 25 of the studies *did* describe the demographics of their participants and researchers defended that the findings were enough to generalize to broader emergent bilingual populations. These investigations into population validity are significant, as they encourage a deeper consideration of the research. “It is not enough to ask, ‘What works?’ We must consistently ask, ‘What works with whom?” (Moore & Klingner, 2014, p. 403).

Teacher Learning in RtI

Johnston (2011) argues that if we are to “capitalize on the promise of RtI” (p. 529), we must pay attention to the complex nature of literacy and focus on developing teacher expertise. Ongoing professional development is necessary if teachers are to implement and sustain RtI practices and appropriate decision making (Richards, Parvi, Golez, Canges, & Murphy, 2007). For schools that implement RtI under the larger framework of MTSS, ongoing professional development and collaboration is a key tenet to effective implemetation (PRESS, 2013). One way for teachers to develop expertise is to encourage collaborative networks among teachers and school staff. When emergent bilingual students are represented in the school population, it can be beneficial for the EL teacher to be a part of the collaborative network. When emergent bilinguals are identified as struggling readers or needing a tier 2 intervention, reading specialists such as the Title 1 staff or other interventionists can also be an integral part of the collaborative.

WIDA Consortium and professional learning. The WIDA Consortium works towards advancing "academic language development and academic achievement for children and youth who are culturally and linguistically diverse through high quality standards, assessments, research, and professional learning for educators" (WIDA, 2014). The state represented in my study is one of 33 states in the US that have adopted WIDA standards and assessments. Each school year, students identified as LEP (Limited English Proficient) are administered a WIDA assessment. EL teachers and instructional leaders use the results of these assessments to plan instruction and program design.

In the handbook, *Developing a Culturally and Linguistically-Responsive Approach to Response to Intervention for English Language Learners* (WIDA Consortium, 2013) the WIDA Consortium outlines how schools, districts, and agencies should enact policies related to MTSS. Their comprehensive look at the instructional and assessment systems that comprise a school's decision-making process regarding tiered supports includes a checklist titled, "Necessary Conditions for ELLs to Experience the Benefits from a Responsive RtI system" (WIDA Consortium, 2013). Among the conditions, WIDA suggests that teachers provide linguistic supports in instruction and intervention, that teachers have time to plan authentic and meaningful instruction, and that teachers differentiate for language at all three tiers of instruction. The WIDA handbook details a framework for examining the effects of socioculutral contexts for learning when implementing RtI for emergent bliniguals and includes several suggestions for professional development opportunities for teachers who are working towards building a more responsive RtI system in their schools. Particulary, they outline

characteristics for creating a *collaborative solution seeking team*, or "multi-perspective team" that consists of several personnel of different roles including administators, social workers, reading interventionsists and others. This team works collaboratively using a cyclical processs that begins with gathering information, describing student behaviors, and moves toward building specific interventions, and finally assessing progress (WIDA Consortium, 2013). To work towards productivity and cooperation, they provide several tips for collaborators: value students' home languages and cultures, remain open to multiple perspectives, foster mutual respect among colleagues, depersonalize difficult exchanges, seek to develop common language, ask for clarification or examples, triangulate data from multiple sources, use an ethnographic approach, and reflect on the process.

Teacher study groups. Several professional learning approaches support the cyclical process noted above (Joyce & Showers, 2002; Kujipers, Houtveen, & Wubbels, 2010) as well as the other goals highlighted by the WIDA consortium. Approaches such as professional learning communities (DuFour, 2004), collaborative inquiry groups (e.g. Butler & Schnellert, 2012; Nelson, Deuel, Slavit, & Kennedy, 2010; Slavit, Nelson, & Deuel, 2013), teacher study groups (Gersten et al., 2010), and practice-based professional development (Harris, Graham, & Adkins, 2015) are ways that teachers begin the process towards improving instruction and intervention in the tiered model.

The Teacher Study Group model (TSG) is one professional learning design that includes ongoing support for teachers implementing new pratices. In various studies it has consisted of a variety principles, but in general involves gathering small groups of

teachers to work towards a pedagogical goal. Cunningham, Etter, Platas, Wheeler, and Campbell (2015) connected its origin to “lesson study” groups (Lewis, Perry, & Murata, 2006). They structured the TSG with teachers and a highly trained facilitator who engaged in dialogue and problem-solving around instructional issues. A doctoral student who acted as a trained facilitator led the TSG over the course of 7 months with preschool teachers who were working towards implementing phonemic awareness strategies into their core instruction. In each two-hour session, the group followed a process for learning new content, practicing in groups, and applying learning to classroom teaching.

In an attempt to link teacher learning with student outcomes, Gersten et al. (2010) conducted a randomized field trial to examine the impact of TSG groups that were learning about vocabulary and comprehension instruction. Classroom observations over the course of the nine months of the TSG indicated an improvement in the areas of study for teachers who particpated in them. The primary purpose of this work was to inform teachers of research-based practices and allow them time to dicsuss and collaborate about how to apply these methods in their own classrooms.

Progress Monitoring for Emergent Bilinguals

Universal screening and progress monitoring approaches that are used with native English language speakers can also be used in the RtI process for emergent bilinguals (Brown & Doolittle, 2008; Gersten et al., 2007; Klingner, Artiles, & Bareletta, 2006; Lesaux & Marietta, 2012). Still, they must be scrutinized for validity in regards to use with linguistically- and culturally-diverse students. Esperanza and Brown (2012) suggest collecting language proficiency data in addition to screening measures. The WIDA

Consortium (2013) and others (e.g., Esperanza & Brown, 2011; Klingner, Hoover, & Baca, 2008; Lesaux & Marietta, 2012;) advocate for multiple measures to be used in RtI frameworks. Assessments such as rubrics, rating scales, and observation checklists are suggested as useful additions to universal screening and progress monitoring while teachers make decisions about intervention and instruction (WIDA, 2013). However, there is no empirical evidence that evaluates how students fared on these additional measures (Thorius & Sullivan, 2015). MacSwan and Rolstad, (2006) contend that finding a language assessment that accurately captures students' language proficiency is difficult. They state: "We urge practitioners to engage in careful analysis of actual speech samples, either immediately in an interview format or recorded for careful study, rather than relying on commercially available language tests" (p. 2324).

In the next section, I state my research questions and a goal that I crafted based on what I understood to be an opportunity for investigation. Then, I draw on the literature to defend the design of my study.

Research Questions and Goal

Formative experiments and design-based research are characterized by the replacement of research questions for obtainable goals (Reinking & Bradley, 2008). As such, my study includes research questions that guide the goal. I reviewed three dissertations that use formative experiments; two of them (Colwell, 2013; Howell, 2014) did not include research questions at all, while another included research questions and a goal (Vasquez, 2015). The research questions I selected related to my goal for the study- to discover how a group of teachers used their expertise to work towards tailoring and

implementing a reading intervention to become linguistically-responsive. The following graphic (see Figure 3) illustrates the three research questions that guided how I determined if the goal was met, namely were we able to accomplish creating a linguistically-responsive reading intervention through the work of a teaching study group?

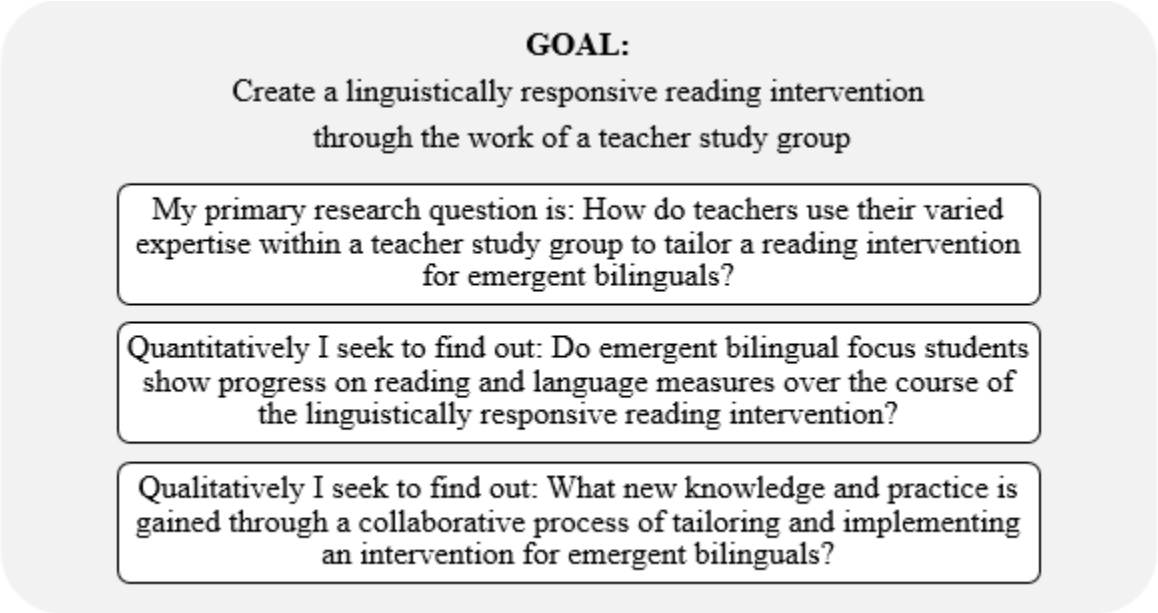

Figure 3. Goal and research questions for the study.

Using the Literature to Inform the Design of this Study

Question 2 in my formative experiment framework (Reinking & Bradley, 2008) asks, "What intervention, consistent with a guiding theory, has the potential to achieve the pedagogical goal and why?" In the next few paragraphs I lay out how the literature I reviewed helped me design this study.

The research syntheses described in this chapter put into context the research for emergent bilinguals related to phonics interventions. Since the time of the National

Literacy Panel's (2006) recommendations for explicit and systematic phonics instruction and intervention, the research base has been slowly growing. With each synthesis, approaches to studying interventions have become more complex, taking into account more variables that contribute to the effectiveness of the interventions. Yet, there is much that has not been considered in the research. Most recently, Richards-Tutor et al. (2015) requested that future research include more attention to significant variables in the delivery of interventions, such as student language proficiency, personnel delivering interventions, and minutes of instruction.

In the study of phonics interventions, it seemed promising to add some sort of meaning-making component to contribute to students' ability to comprehend. In the phonics interventions reviewed for this study, emergent bilinguals were able to learn to read words (Vadasy & Sanders, 2010, 2011) but when there was not a comprehension component to the intervention, students lagged behind their peers in measures of reading comprehension in later years (Vadasy & Sanders, 2012, 2013). Interventions that included components of vocabulary or listening comprehension, in addition to phonics, showed improvements in comprehension (Filippini et al., 2012; Solari & Gerber, 2008; Vaughn et al., 2006). Moreover, based on the sociocultural nature of language and literacy learning, it is apparent that emergent bilinguals needed opportunities to talk and engage in the words they are learning in order to process for later use. This is reflected in the description of the PLUSS model, where Sanford et al. (2012) encouraged the use of a variety of strategies within tiered interventions for optimal learning. In their description

of modified interventions, one teacher took a decoding intervention and embedded opportunities for talk and engagement.

Overall, there was a surprising lack of intervention studies that took into consideration the real-life context of the classroom. Not one of the phonics intervention studies I reviewed included classroom teachers, Title 1 teachers, reading specialists, or EL teachers who were in charge of delivering the interventions. It is worth considering that one of the studies that showed the greatest growth in comprehension (Vaughn et al., 2006) was delivered by bilingual teachers hired by the research team. Could that have contributed to student comprehension gains? It was not mentioned in the study how or if the bilingual teachers used the first language to clarify concepts in English. As Orosco and Klingner (2012) state: "Much needed are qualitative descriptive studies that help understand how school personnel make sense of RtI and incorporate it into their daily routine" (p. 273).

In particular, there has been a scarcity of studies that have considered core instruction as an integral part of the RtI process and research. Much attention has been given to intervention effectiveness, but without attention to what happens in the classroom, interventions are not likely to sustain growth. The problems of over-identification of culturally and linguistically diverse students will continue unless teachers receive professional learning opportunities to recognize the language demands and cultural backgrounds of their students.

My study was designed to address the missing accounts of intervention studies that represent the real life contexts of classrooms where school staff implement reading

interventions for emergent bilinguals in multi-tiered systems of support. Moreover, since the literature that I reviewed indicated that some classroom teachers have inconsistent understandings of the contributions of language to reading, the current study uses the teacher study group to facilitate teacher linguistic responsiveness. I use the suggestions from WIDA for a multi-perspective team to organize and implement the teacher study group with an EL teacher, reading specialist, and two general education teachers.

Though the language and vocabulary development approach through reading intervention has been investigated in other studies, future research is needed to consider implementation of the intervention by someone else besides the researcher, someone hired for the study, or a paraprofessional (Richards-Tutor et al., 2015). The teacher study group in my study was comprised of teachers who implemented the interventions. Teachers in this school worked together to identify and implement interventions for students in all tiers. The process by which students were chosen for intervention in the past have included the use of a universal screener and some diagnostic tools to help idenitfy the student's reading developmental level. My study used the suggestions from the WIDA consoritum to address multiple measures of students.

Summary

In this chapter I addressed two of the questions in a formative experiment framework: Question 1) What is the pedagogical goal to be investigated, why is that goal valued and important, and what theory and previous empirical work speak to accomplishing that goal instructionally? Question 2) What intervention, consistent with a guiding theory, has the potential to achieve the pedagogical goal and why? I presented

the conceptual framework and theoretical foundation that support teachers to collaborate and learn about emergent bilinguals' reading and language development through a reading intervention. Then, I shared previous empirical work that grounds my research in the area of emergent bilinguals and reading interventions, specifically in a response to intervention framework. I concluded the chapter by presenting an argument that this intervention has the potential to achieve the goal of creating a linguistically-responsive reading intervention through the work of a teacher study group. In the next chapter, I describe the methodology I used to answer the research questions and arrive at my intended goal.

CHAPTER THREE:

METHODOLOGY

In this chapter I describe the methodology I used to create a linguistically-responsive phonics intervention through the work of a teacher study group. Then, the chapter proceeds as follows, a) the context of the study, b) the phases of the study, c) data collection and analysis techniques, d) methodological rigor, and e) summary.

Formative Experiment

Formative experiments are used in research in order to bring theoretical perspectives to instructional approaches in authentic contexts (Reinking & Bradley, 2008). The approach and term *formative experiment* is commonly used in literacy research. This approach has the same conceptual origins as the broader research approach *design-based research*. Design-based research or design experiments (Brown, 1992) are conducted to develop theories (Gravemejier & Cobb, 2006) as well as contribute to a pedagogical goal. They provide meaningful descriptions of how practitioners can find solutions to complex and dynamic pedagogical issues within classroom contexts. A dominant metaphor used to explain formative experiments is model building and engineering (Sloane & Gorard, 2003). Participants are partners with researchers in order to engineer and formulate context-specific recommendations and suggestions (Reinking & Bradley, 2008).

Reinking and Bradley (2008) and others (e.g., Barb & Squire, 2005, McKinney & Reeves, 2012) characterize formative and design experiments by the following features: 1) intervention centered in authentic instructional contexts, 2) theoretical, 3) goal

oriented, 4) adaptive and iterative, 5) transformative, 6) methodically inclusive and flexible, and 7) pragmatic. An intervention carried out in an authentic context takes into consideration the naturally-occurring incidents that lead towards a deeper understanding of the responses. Interventions are implemented in naturalistic settings and are both guided by theory and have humble theoretical development as a goal (Barab & Squire, 2005; Brown, 1992). A pioneer researcher in educational design experiments, Brown, states: "Even though the research setting has changed dramatically, my goal remains the same: to work toward a theoretical model of learning and instruction rooted in a firm empirical base" (1992, p. 142). The goal-oriented nature of a formative experiment sets the approach apart from research investigations that seek to describe, explain, or predict (McKenney & Reeves, 2012). The starting point for a formative experiment is a pedagogical goal connected to theory and practice. The goal can be defined as an instructional problem, a gap in the curriculum or instruction, or other practice that could be accommodated (Reinking & Bradley,2008). Another defining characteristic is that interventions are adaptive and iterative. When working within authentic settings, adjustments are made along the way in order to reach the goal. In this way, formative designs are iterative in nature as they include "cycles of invention and revision" (Cobb et al., 2003). Formative experiments are intended to transform instruction towards the goal and to reach the goal, any methodology of investigation is possible (Bell, 2004). Finally, the goals of design research align with the philosophies of pragmatism (Cobb et al., 2003; Reinking & Bradley, 2008) as their purpose is instructional improvement. Research that

takes a pragmatic stance is meaningful and credible and has the potential to influence teacher and student learning (Dillon, O'Brien, & Heilman, 2000).

Context of the Study

In this section, I describe the setting and participants in the study. I provide a rationale for why the school was an appropriate setting for achieving my research goals. I explicate the rationale for choosing participants for the teacher study group and describe the emergent bilingual students who were chosen as focus students.

Setting

Weston is a town of approximately 3,000 people, located 75 miles southeast of a major metropolitan area in the upper Midwest. Weston School District includes one high school, one middle school, and one elementary school. All schools are in one building on a sprawling campus just outside of the downtown area. Weston Elementary School (grades K-5) has a student population of 513 students; 38% qualify for the free or reduced lunch program. Weston's student body is majority White (80%) with a growing Hispanic population (20% in 2015). Fewer than 1 percent of students identify as American Indian/Alaska Native, Asian/Pacific Islander, or Black. In the 2015-2016 School Year, 62 percent of the 262 students, grades 3 through 5, were proficient in reading, as measured by the state's comprehensive assessment. For Hispanic students who were also English learners, two of the 15 (13 %) were proficient. Data provided on the WIDA ACCESS, the English language proficiency test given to all K-12 English language learners, show that in the elementary school 47% (16 students) achieved a

Composite Literacy Score of level 4, 5, or 6 which deems these students “proficient” in English. 51% (18 students) achieved a Composite Literacy Score of 3, 2, or 1.

I chose Weston Elementary School as the place for this study for several reasons. Weston Elementary had a collaborative culture with strong leadership, staff were familiar with the RtI framework, and a significant percentage of their student population were emergent bilinguals. Weston Elementary had been engaging in revamping and restructuring their RtI program for two years. In 2014, several teachers took part in READ workshops that included learning about classwide interventions, understanding how to use reading data to making instructional decisions, and analyzing diagnostics to choose a targeted intervention for individual students. This training helped teachers incorporate a process and structure for conducting reading intervention and tiered supports. In 2015, they continued learning and implementing parts of the RtI framework. Under the leadership of the principal, a literacy coordinator with the READ project continued to support the teachers by visiting data meetings, observing reading interventions, and answering questions about logistics.

According to a conversation from the READ literacy coordinator who worked with the school, teachers in the school were actively using the READ interventions, assessments, and diagnostics. Adopting the RtI framework was a school-wide effort and all teachers and interventionists were involved. This was an important consideration because I felt the school had a firm understanding and application of the RtI interventions. Not only were they a part of a collaborative culture, but they understood that they could take implementation to the next level of differentiating the

implementation for emergent bilinguals. Additionally, Weston Elementary was a school that had regularly scheduled professional learning communities. Collaboration was part of the schedule and school structure. The International Literacy Association contends that a collaborative culture is a guiding principle for an effective RtI program (ILA Guiding Principles, 2009). With a balance of motivated and experienced teachers, and evidence that they were working towards instructional change, this appeared to be a place where I could innovate with teachers to problem solve some instructional issues in RtI implementation.

Participants

In the planning stages of the study, I adhered to the suggestion from the framework for conducting a formative experiment (Reinking, Colwell, & Ramey, 2013) that recommends that researchers specify general and specific criteria for selecting sites and participants (see Table 2). To garner interest from Weston Elementary teachers, I emailed the principal to see if she and her staff might be willing to work with me to modify one of the phonics interventions for the benefit of emergent bilinguals. She was interested and offered the email addresses of her staff. Then, I emailed the entire staff in early summer of 2016 and promptly heard back from several teachers who were willing to work with me. When we began our sessions in early fall 2016, I worked with the teachers to identify focus students. In the next two sections, I describe the teachers and focus students in more detail.

Teachers. There were six teachers at Weston Elementary with whom I worked over the course of the study (August 2016- December 2016). I interacted with the teachers in differing capacities throughout the study. The reason for the variation of

Table 2

General and specific criteria and rationale for sites and participants

	Criterion	Rationale
General	School/Classroom where emergent bilinguals are receiving a university research center's phonics interventions in a tiered model	The goal is to enhance an existing phonics intervention for emergent bilinguals. The site must have working knowledge of the intervention.
Specific	Reading specialist, Title 1 teacher, or intervention teacher	The teacher has reading development expertise.
Specific	English as a Second Language Teacher	The teacher has language acquisition expertise.
Specific	Classroom Teacher	The teacher has elementary education expertise.
Specific	Emergent bilinguals receiving tier 2 phonics intervention support	The student is developing in both language and reading in a second language.

teacher participation was due to schedule conflicts and class and intervention demographics (lack of emergent bilinguals in class). When I made initial contact with the teachers before the school year, they did not know the demographics of their incoming students. They agreed to participate before they knew if they would be teaching emergent bilinguals in their classroom. Another reason for variability in teacher participation was that as the school year progressed students shifted intervention groups, changing the nature of how teachers implemented the modified intervention. All of the teachers who

came to the first teacher study group session agreed to be in the study. In the second session, a new teacher came to the group and agreed to participate.

Table 3

Participants of the Teacher Study Group

Name (Pseudonym)	Teaching Position at the school	Years Teaching	Licensure Areas, Teaching Experiences
Joan	EL teacher	35 years	K-6 Elementary Ed K-12 ESL Adult ESL
Sharon	Reading Interventionist	37 years	K-6 Elementary Ed Special Education
Karen	Kindergarten teacher	18 years	K-6 Elementary Ed
Joy	Kindergarten teacher	9 Years	Early Childhood Education, Masters in Ed. Leadership
Cori	1st grade teacher	18 years	K-6 Elementary Ed
Lana	2nd grade teacher	4 years	K-6 Elementary Ed

Joan. Joan was the only EL teacher for Weston Elementary. I asked her to be in the group because of her expertise in language teaching and learning. Joan attended each of the four teacher study group sessions and implemented the modified intervention in the first and second iteration. She had been teaching for 35 years. There were 31 students in her EL program. She taught classes for some students in her own classroom, and also "pushed in" to general education classes to assist primarily the new-to-country students as they navigated school work in the content areas. Joan showed great interest in the study primarily because she wanted to know how she could integrate some of the intervention work that the other teachers were doing into her program. Prior to our meeting, Joan had not attended any of the workshops given by the university research

center. The principal did not think that she needed the training since she was already doing her own pull-out groups that focused on language. Therefore, she was not familiar with the READ intervention protocols or decision-making frameworks. Joan was a strong advocate for her students and talked often about how she valued her students' bilingualism. It was clear that she understood that linguistically-responsive teaching could permeate outside the walls of the EL room.

Sharon. Sharon was the lead Title 1 teacher at Weston Elementary. I asked her to be a part of the study because of her expertise as a reading interventionist. Sharon attended each of the four teacher study group sessions and implemented the modified intervention in the first iteration. She had been teaching for 37 years. She was responsible for delivering tier 2 and tier 3 math and reading interventions for students in grades K-5. Sharon was the teacher who was most familiar with the READ intervention manual and resources. She had attended several workshops and also worked to train a handful of educational assistants to deliver the interventions. She managed the universal screening and progress monitoring for all students identified as needing an intervention. Additionally, each week she led the grade level data meetings where teachers would discuss progress in interventions. Her position as a reading interventionist gave her access to all the students in the elementary school. She had been teaching some students throughout their time at Weston and was knowledgeable and passionate in their progress and obstacles. The classroom teachers trusted her as an expert and called upon her when their students were showing signs of difficulty.

Karen. Karen was a Kindergarten teacher who had been teaching for 18 years. She agreed to participate in the study when I made initial contact with teachers in the spring of 2016, but when she got her class list in the Fall of 2016, none of her students were identified as emergent bilinguals. Nonetheless, she came to the first session and offered insights into the planning and brainstorming of the intervention.

Joy. Joy was a kindergarten teacher who has been teaching for 9 years. I asked her to participate in the study because she was a classroom teacher who was implementing the university center's reading interventions in her classroom. Joy came to all the teacher study group sessions and she implemented the modified intervention in her classroom. Joy showed excitement about the possibility of expanding the interventions to have a language focus. Since she held a license in Early Childhood Education, she was knowledgeable about the role of oral language development in teaching and learning for students in early education contexts. This modified intervention seemed to fit in with her philosophy as a teacher and early educator. Moreover, she had several years of experience teaching in another school district that had a high population of emergent bilinguals. In that district she received sheltered instruction training and coaching in this area.

Cori. Cori was a 1st grade teacher who had been teaching for 18 years. I asked her to be in the teacher study group because she had emergent bilinguals in her classroom. She participated in three of the teacher study group sessions and did not deliver the tailored interventions. While she agreed to the study in the spring of 2016, once she got her class list and her intervention assignments, she realized that she would not be

delivering the READ interventions to the emergent bilinguals in her classroom. Sharon, the Title 1 teacher, was the reading interventionist for Cori's students. However, Cori was very familiar with the interventions and had delivered them in the past year.

Lana. Lana was a 2nd grade teacher who had been teaching for 4 years. I asked Lana to be in the teacher study group because she had emergent bilinguals who were working in phonics instruction. Due to a schedule conflict, Lana participated in only two study group sessions. Also, like Cori, once the intervention groups were split up among the teachers, she was not responsible for delivering an intervention for the emergent bilinguals in her classroom, so she did not implement the modified intervention. She contributed her expertise as a classroom teacher as we discussed the modifications.

Students. During our first teacher study group session, I asked teachers to identify two emergent bilinguals in their intervention group or classroom who we could study in more detail. Throughout the study we would conduct language assessments and observations of these students in order to comment on whether or not the modifications were producing more opportunities for them to talk (the intended goal of the modification). Once the teachers identified the students, we discussed the language and reading background of the students to see if they were a good fit for the study. Then, I took time to meet with each student and obtain consent. I provided an English and Spanish letter to their parents and asked them to return the letter with a signature. I offered a small prize for returning the letter and all the consent forms were returned within a week. In Table 4, I detail each focus student's name, WIDA language level, and the universal screening benchmark score that was the original data point for identifying

them as a candidate for a reading intervention. I explain the FastBridge Universal Screener and the WIDA scores in more detail in a subsequent section.

Luisa. Luisa was in kindergarten. Her teacher, Joy, described her as motivated and with a love for learning. She liked to play and her interests were princesses and kitties. In interventions and classroom time, she was engaged and on task. She had two

Table 4

Language level and universal screening scores of the focus students

Name	Grade	WIDA language level* (overall**)	FastBridge universal screening score letter sound fluency (LSF) or words per minute (WPM)	Grade level expectation letter sound fluency (LSF) or words per minute (WPM)
Luisa	K	2	3 LSF	5 LSF
Mateo	K	1.5	10 LSF	5 LSF
Gabriel	1st	2.7	6 WPM	9 WPM
Juan	1st	3.4	8 WPM	9 WPM
Henry	2nd	2	22 WPM	59 WPM
Alejandro	2nd	2.4	5 WPM	59 WPM
María	3rd	No score***	No score	91 WPM
Amalia	4th	2.5	No score	116 WPM

* Language levels are on a 1-6 proficiency scale. 1 is the lowest, 6 is the highest
**Overall scores are calculated as follows: 35%reading +35% writing + 15%listening + 15%speaking
*** No score in this case is an indication that the test was too difficult to attempt, or the student was not enrolled during the time of the assessment

brothers in the elementary school and one older sister in high school. Her teacher reported that her parents were monolingual Spanish speakers. While her English proficiency was low (WIDA overall score, 2), with extra directions she was able to keep up with directions (?) in her kindergarten classroom. She communicated in Spanish when prompted. Unfortunately, Luisa was tardy or absent frequently. Her teacher thought that

her older sister was responsible for getting all of her siblings ready for school and to catch the bus. She wondered if this was the reason for tardiness and absenteeism.

Mateo. Mateo was a sweet child who tried hard and liked to please his teachers. This was Mateo's second year in kindergarten. He was retained due to concerns about his development. His teacher, Joy, was concerned that he was very behind in oral language development. He showed difficulty in communicating in Spanish and English. At the beginning of the study it was already clear that teachers and the reading specialist, Sharon, were thinking about a special education referral. By December, Mateo had been through the referral process and was getting intervention services with the special education staff at the school. Mateo's teacher described his parents as very involved and willing to help in whatever way they could.

Gabriel. Gabriel was a 1st grader. At the beginning of the school year his teacher, Cori, described him as quiet and easily distracted. As the year went on, this appeared to change. My observations in his ELL and intervention classes revealed that he was a talkative and affable child. He seemed engaged in the classroom activities presented to him, and worked well with the other students. He was Luisa's (kindergarten focus student) brother and also missed school or was tardy frequently.

Juan. Juan was a 1st grader. His teacher, Cori, described him as easily motivated by play. He told her that he loved boating with his family. I observed him during intervention and in-class time as an engaged student who moved along with the group and tried hard. He used Spanish during the intervention when prompted. His English speaking and listening skills were nearly proficient (see Chapter 4), but he lagged behind

in reading and writing. However, by the end of the study, he was well on his way to progressing out of intervention services.

Hector. Hector was a 2nd grader. Every time I saw him he yelled my name and was very excited to work with me or show me what he was doing. He was very proud of his bilingualism. The first day I met him he heard me speaking Spanish to another student. He shouted, "I speak Spanish!" Then, he continued to tell me about his trip to Mexico to see his family and described how he spoke a lot of Spanish in Mexico. He was an only child and just returned to Weston Elementary after spending the previous school year in Arizona. The EL teacher, Joan, told me that he "unknowingly" used Spanish words to describe situations that happen at home. By the end of the study he was close to exiting intervention services.

Alejandro. Alejandro was a 2nd grader. Alejandro was a likable, friendly kid who enjoyed joking around. His teacher, Lana, said that he worked hard in his classroom and during intervention. He liked to play with friends and watch TV. Alejandro was in his second year of 2nd grade. He used Spanish when prompted. The previous year he had arrived as a new-to-country student in mid-November. Though he made some gains over the course of the year, his teachers felt that it was wise to retain him. By December, Alejandro was being tested for special education services. The teachers who worked with him all agreed that this could be a good step for him. The EL teacher, Joan, said that compared to another student the same age, who was new-to-country at the same time, Alejandro was remarkably behind his peer in academic development.

María. María was a 3rd grader. She had just moved to the U.S. that summer from Mexico and arrived at Weston Elementary in the fall. She went to school in Mexico from kindergarten to 2nd grade. She spoke, read, and wrote in Spanish. María was a very sweet girl and was well-liked among her peers. One day when I was observing, some of her third grade friends were anxious to tell the EL teacher, Joan, how they invited María to sit with them on the bus. María was beaming with pride that she had made new friends. She worked hard and when she did not understand directions, she spoke Spanish to clarify.

Amalia. Amalia was a 4th grader. The EL teacher, Joan, described her as highly motivated and very focused. She liked to read and play math games. Amalia was a kind and sociable child. During a classroom observation of her 4th grade room, I could tell that she felt comfortable moving and interacting with students and the teacher. She moved to the U.S. from Mexico in the middle of third grade. Like María, she attended school in Mexico and could read and write in Spanish. Amalia also used Spanish when she needed to, but oftentimes was able to communicate what she needed in English. She was proud of her bilingualism and offered to help María by explaining directions in Spanish.

Role of Researcher

My role was influenced by the commitment in formative experiments to teacher/researcher collaboration. A design-based research principle proposed by Wang and Hannafin (2005) is that researchers are collaborators and co-constructors in design. They state this about the researcher: "…they neither adopt their clients' values nor impose their own, acting instead as facilitators and adapting to their clients' perspectives, beliefs, and strategies, while aligning and extending the design processes" (p. 17). I

viewed my role in the study as a participant observer, which is the most "realistic and justifiable role" in a formative experiment (Reinking & Bradley, 2008). During the teacher study group I participated as a facilitator. When the interventions were delivered by the teachers, I participated as an observer. I took notes and observed how the intervention was implemented. I also had follow-up conversations after observations and found myself coaching the teachers towards implementing the agreed-upon intervention, which is a possible approach in a teacher/research collaborative (Herrenkohl, Kawasaki, & Dewater, 2010). In one post-observation informal meeting, I modeled the intervention for the EL teacher. During the teacher study group, I helped some of the teachers make decisions about progress-monitoring data.

I was aware of my own perspectives and biases as I participated in the teacher study group. The teaching role that I held for the greatest number of years and the one I identify most with is as an EL teacher. Throughout the study, I found myself advocating for the emergent bilingual students as we discussed the complexities of language acquisition and reading development. Moreover, Weston Elementary was implementing the READ framework and interventions. I have been an integral part of building, refining, and implementing the READ framework materials and resources. Along with other staff and faculty at the university research center where READ was developed, we designed decision-making flow charts, intervention protocols, and intervention and assessment resources. I found myself explaining some of the RtI resources we created to make sure that processes were done as intended.

Research Design: Phases of the Formative Experiment

The design of this study was pragmatic in nature, as the teacher study group convened around an instructional problem, suggested innovations for an intervention to solve the problem, and then collected student data along the way to see how the problem was solved. Figure 4 illustrates the phases of the formative design experiment. The subsequent sections detail the procedures for each phase. Phases of the formative design experiment were created based on a document titled, *Conducting a Formative Experiment* (Reinking, Colwell & Ramey, 2013).

Phase 1 *Recruit*	**Phase 2** *Become familiar with the environment*	**Phase 3** *Baseline*	**Phase 4** *Intervention*	**Phase 5** *Post Assessment*	**Phase 6** *Retrospective Data Analysis*
May 2016	*Sept. 2016*	*Sept. 2016*	*Sept.- Dec. 2017*	*Dec. 2016*	*Dec. - April 2017*
Contact teachers to gauge interest in study	Teacher Study Group Session One: *Current Realities*	Teacher Study Group Session Two: *Sharing our Knowledge* Session Three: *Proposing Strategies* Collect Student reading and language data	Teachers implement the intervention (iteration 1)	Teacher Study Group Session Four: *Next Steps* Teachers implement the intervention (iteration 2) Collect Student reading and language data	Teacher Interviews Analyze Data Write up study

Figure 4. Phases of the formative experiment.

Phase 1: Recruiting Participants

As discuessed earlier in this chapter, I recruited participants based on the general and specific criteria (see Table 2). The teacher participants were chosen based on their job description and the student participants were chosen based on their reading and language data. Though initial recruitment began in May of 2016, I completed the recruitment of the teachers and students once I received IRB approval. The teachers and I agreed on a time after school in early September to hold the first teacher study group session.

Phase 2: Becoming Familiar with the Environment

The primary means for becoming familiar with the environment was to meet with the principal to discuss the study and facilitate the first teacher study group session. I planned each teacher study group session for a specific purpose (see Table 5).

Session One: Current Realities. The objectives of the first session were to a) become familiar with the current approaches to intervention instruction and decision making for the emergent bilinguals at Weston Elementary, b) make introductions, and c) discuss the study timeline and agenda. I allotted one hour for this first session. I created an agenda and objectives document (see Appendix A) that served as a guide to support our objectives. I facilitated the introductions and a conversation that started with these questions: “What sparked your interest in participating? What are your questions about ELs and learning to read?” With these questions I hoped to gain an understanding of teachers’ knowledge base and perspectives regarding literacy development for emergent bilinguals. Moreover, formative experiments are characterized by the teacher/researcher

collaborative. I hoped that an outcome of this conversation would be to get us on the same page to start co-constructing a pedagogical approach to teaching and learning for emergent bilinguals. After this first discussion, I presented the timeline for the study (see Appendix B) and we discussed some initial logistics, and I gave teachers the opportunity to ask questions. Finally, I presented the teacher consent form for the study and all the teachers present at that session signed the document.

Table 5

Teacher Study Group Session Objectives

Teacher Study Group Meeting Title:	Objective of meeting
Current Realities (Phase 2)	• Describe purpose of study • Discuss current practices of using READ interventions • Discuss student progress monitoring data from previous school year
Sharing our Knowledge (Phase 3)	• Use professional learning designs that encourage teachers to share their field expertise • Develop common understandings about language and literacy development
Proposing Strategies (Phase 3)	• Decide on enhancements to use during intervention sessions • Practice using enhancements and decide on procedures for implementation • Consider language proficiency levels
Next Steps (Phase 4)	• Discuss student reading and language growth • Hypothesize how instructional approaches contributed to growth • Suggest further iterations for study • Name strategies to include in READ Intervention Manual

Phase 3: Gather Baseline Data

The purpose of this phase was to establish a benchmark against which progress toward achieving the pedagogical goal could be measured (Reinking et al., 2013). In my

study, I used the research questions to help me determine if I had met my goal (see Chapter 2). To that end, I facilitated two sessions that would help me to answer my research questions, “What new knowledge and practice is gained through a collaborative process of modifying and implementing an intervention for emergent bilinguals?” and “What are the effects of a modified reading intervention on word reading and oral language measures for individual students in a phonics intervention?” In the two sessions in this phase I established a baseline for what teachers knew about language development and reading and I collected student reading and language data so I would know where the students started before the intervention. In the following two sections I describe each meeting in more detail.

Session two: Sharing our knowledge. The purpose of this meeting was to share knowledge about reading and language development in reading interventions. The outcome was to develop common understandings about literacy and language development. I developed this purpose and the outcome based on the theoretical underpinnings supporting teacher study groups and practice based professional development (Ball & Cohen, 1999). Similarly, as I explain in a subsequent section in this chapter, the design of the teacher study groups built off of the theoretical conjecture that when teachers of varying expertise come together to problem solve they learn from each other. As I stated in Chapter 2, the practice based professional development works when the content is directly involved to the work of teachers and teachers are engaged in authentic tasks (Darling Hammond & McLaighlin, 1995). I made the decision to structure this session with a protocol (Garmston & Wellman, 2009). I understood that this structure

would help me as a facilitator to stay on track, and also give the participants an idea of where we were headed. Moreover, in the conjecture map, which I explain later on in this chapter, I outlined specific embodiments that would facilitate observable interactions. I created the protocols to incite discursive practices. In the conjecture map, I outlined that the protocols would foster the ability to hear from all voices in the teacher study group.

Additionally, I introduced the WIDA document *Developing a Culturally and Linguistically-Responsive Approach to RtI for English Language Learners* (WIDA, 2012). The document outlines strategies for a *collaborative solution seeking team,* to convene towards developing a responsive RTI program. Our teacher study group was representative of a *collaborative solution seeking team,* and I hoped to emphasize the collaborative nature of these sessions and ground the work in a trusted source such as WIDA.

Session three: Proposing strategies. The purpose of this meeting was to build on foundations from the previous meeting in order to propose modifications for the interventions. The intended outcome was that teachers would agree on the modifications in order to prepare to implement the intervention. We reviewed the READ intervention protocols and considered where the modifications would be appropriate in order to sustain the elements of the intervention already in place. The READ phonemic awareness and phonics interventions include elements that are representative of effective lesson delivery and the gradual release of responsibility (Pearson & Gallagher, 1994). The elements of each intervention are as follows: 1) Gather materials, 2) State objective, 3) Explain game or activity, 4) Check for understanding, 5) Model the activity, 6) Provide

guided practice, 7) Give specific feedback, and 8) Provide independent practice. The task for the teachers in this meeting was to consider how they would keep these elements and make space for the modification.

Phase 4: Intervention

I considered Phase 4, *Intervention,* as one iteration with two microcycles. Microcycles work towards local instructional theory and are defined as tight cycles of design and analysis (Gravemeijer & Cobb, 2009). In the timeline that I presented to the group in the first meeting, I had proposed one iteration of the intervention that would take place from late September to December 2016, and would result in around eight weeks of intervention. However, due to some instructional staff changes, the teachers were able to implement the interventions for only six weeks. In the second iteration, which was four weeks, only the EL teacher, Joan, implemented the intervention. During Phase 4, I took the role of researcher. I observed the three teachers as they implemented the interventions. I had informal conversations with the teachers as we discussed student progress and the logistics of adding the modification to the READ intervention protocols. I also provided support as needed, such as coaching or help with gathering materials for the intervention.

Phase 5: Post Assessment

According to Reinking et al., the purpose of this phase is to "Synthesize pedagogical (local, humble) theories, design principles, recommendations for practitioners, and specifications for subsequent iterations of the intervention" (2013, p. 5). Moreover, in formative experiments, researchers and practitioners work together to

do this. I wanted to find ways to make my thinking transparent to the teachers. To this end, the teacher study group met for a final session to discuss the intervention implementation, and draw some conclusions.

Session four: Proposing strategies and conclusions. The purpose of this session was to discuss the intervention implementation, make additional suggestions about the intervention, and reflect on the process of the teacher study group. One of the resources that I had been using to guide the teacher study group were recommendations from WIDA (referenced in Chapter 2) that included specific strategies that teachers could use as they were building a linguistically inclusive RTI program. Specifically, they present a checklist titled: "Necessary Conditions for ELLs to Experience the Benefits of a Responsive RtI2 Program" (WIDA, 2013). Following the discussion, we reviewed language and reading data that had been collected over the course of the intervention period. In the next section, I explain how mixed methods research methodology contributed to reaching my pedagogical goal and answering my research questions.

Mixed Methods

Johnson and Onwuegbuzie (2004) define mixed methods as a "class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods approaches, concepts or language into a single study" (p.17). My study employed mixed methods approaches to data collection and analysis because I needed both qualitative and quantitative data to reach my pedagogical goal and answer my research questions. The use of mixed methods typically accompanies formative experiment and design based research methods (e.g., Bradley & Reinking, 2011;

Cunningham, Etter, Platas, Wheeler, & Campbell, 2015). I used qualitative data collection methods to closely examine the depth and detail in the process of creating and implementing the intervention (Patton, 2002). Through the process of interviewing teachers, observing interventions, and conducting focus groups, I used case study methods that would help me answer the qualitative research question: What new knowledge and practice is gained through a collaborative process of modifying and implementing an intervention for emergent bilinguals?

Additionally, I hoped to see how the students fared in the modified intervention by collecting quantitative data. I collected reading assessment and language assessment data throughout the intervention period in order to answer the quantitative research question: What are the effects of a modified reading intervention on word reading and oral language measures for individual students in a phonics intervention? I was committed to a quantitative data collection method because the teachers in the study collect quantitative data as part of their RtI framework that includes data-driven decision making. In order to see the extent to which the modified intervention worked, I knew that I would have to use the same data collection techniques that the teachers were already using in the real world of practice (Reinking & Bradley, 2008). Moreover, mirroring the data collection of the teachers would contribute to the ecological validity of the findings (Gravemeijer & Cobb, 2006).

Finally, a mixed-methods approach was appropriate for this study because neither the findings from the qualitative data collection nor the findings from the quantitative data collection alone would be sufficient (Creswell, 2013) to reach my pedagogical goal.

In order to create a linguistically-responsive READ intervention, the varied expertise of several teachers was warranted. To evaluate if the intervention had worked, we would need student outcome data in reading and language.

Concurrent triangulation. Specifcially, I employed a concurrent triangulation mixed methodology design (see Figure 5, Creswell & Plano Clark, 2007). In a mixed-methods design, the researcher must decide whether or not to conduct the phases of data collection concurrently or sequentially (Johnson & Onwuegbuzie, 2004). In a concurrent design, qualitative and quantitiave data collection methods occur at the same time (Figure 5). The mixing or integrating of the data can occur along the way or in the intrepretation of findings (Johnson & Onwuegbuzie, 2004).

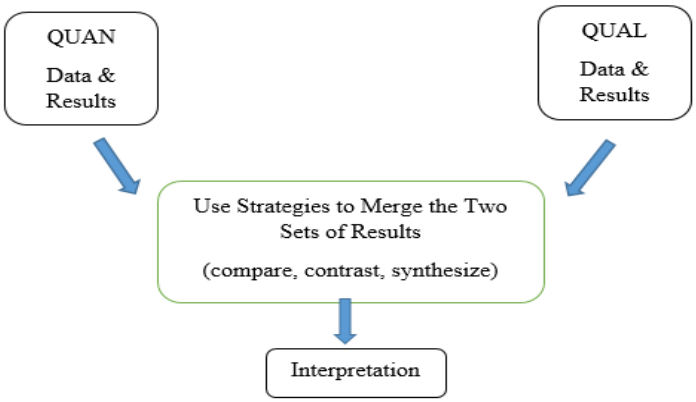

Figure 5. Concurrent triangulation design (Creswell & Plano Clark, 2007).

***Case study*.** I used the qualitative approach of case study in order to provide an in depth anaylsis of a bounded group (Miles & Huberman, 1994), the teacher study group. Case study is characterized by the the ability to be particularistic, descriptive, and heuristic (Merriam, 2009). A case study focuses on a particular event or phenomenon. In

my study, the particular phenomenon is the varied expertise of the teacher study group: the EL teacher, the reading specialist, and the classroom teachers. To be descriptive, a case study uses a variety of data collection strategies in order to portray a rich, thick description of the bounded system. I used a variety of data sources and analysis techniques to provide a rich description of the learning of the teacher study group. Finally, case study methods are heuristic. The description of the case should "illuminate the readers understanding of the phenomenon under study" (Merriam, 2009, p. 44). In the next section, I describe the qualitative and quantitative data collection and analysis techniques that I chose.

Data Collection and Analysis

The goal of this formative experiment was to create a linguistically-responsive reading intervention through the work of a teacher study group. Answering the research questions would add to the argument that I reached the goal. My data collection was planned in order to answer the research questions: a) How does the varied expertise of a teacher study group modify a reading intervention for emergent bilinguals?, b) What new knowledge and practice is gained through a collaborative process of modifying and implementing an intervention for emergent bilinguals?, and c) What are the effects of a modified reading intervention on word reading and oral language measures for individual students in a phonics intervention?

Moreover, with the data that I collected I adhered to the Reinking and Bradley framework (2008) that guided my practice of conducting a formative experiment. Of the

six questions in the framework, my data sources allowed me to answer the following four questions.

> Question 3) What factors enhance or inhibit the effectiveness, efficiency, and appeal of the intervention in regard to achieving the set pedagogical goal?
>
> Question 4) How can the intervention be modified to achieve the pedagogical goals more effectively and efficiently and in a way that is appealing and engaging to students?
>
> Question 5) What unanticipated positive and negative effects does the intervention produce?
>
> Question 6) Has the instructional environment changed as a result of the intervention?

Teacher Data Sources

Multiple data sources are a hallmark of case study design (Yin, 2009). There are three sources for data collection from teachers in this study. First, audio recordings were made during the teacher study group sessions. Second, standardized, open-ended interviews (Patton, 2002) with individual teachers were conducted during Phase 5 of the study. Third, artifacts that were produced and used during the teacher study group were considered as evidence (meeting agendas, reflection activities, teacher study group learning artifacts). Yin (2009) proposes collecting evidence based on theoretical propositions in order to prepare for analysis.

Audio recordings of the teacher study groups. I recorded the four teacher study group sessions that lasted from 45 minutes to 70 minutes. Following the sessions I

listened to the session and decided which segments to transcribe. I based the decision to transcribe on how the conversation in the session aligned with the research questions or goals. The content of these teacher study groups included questions and answers that were asked and answered by both the teachers and me. In many instances, I asked an initial question, and then conversation included all teachers answering, clarifying, and extending thinking.

Standardized open-ended interviews. When the intervention phase was completed I scheduled a standardized open-ended interview with the three teachers who implemented the intervention modifications. In a standardized open-ended interview (Patton, 2002), the "exact wording and sequence" of the questions are decided on ahead of time and designed to be open ended. Table 6 details the list of interview questions that I compiled in the four phases based on the field notes, theoretical memoing, observations, and early analysis of the teacher study group. I only conducted the in-person interviews with the teachers who implemented the intervention. However, via email, I asked the two classroom teachers who did not implement the intervention (Lana and Cori) to respond to some of the questions.

Artifacts and documents. In the teacher study group, we produced artifacts and documents based on our conversations; these were used as data sources. First, in one session teachers wrote answers to questions from our agenda on post-it notes. Following the session, I gathered the post it notes and typed up the responses. In the second session I asked teachers to fill out a data profile for each students that was to be considered a focus student (see Appendix C). The data profile included information about student

reading and language data and personal information (e.g. student interests). While the teachers were implementing the interventions I asked them to document how the

Table 6

Interview Questions, Rationale, and Purpose.

Interview Question	Rationale	Purpose in the study
1. Talk about what you did in your intervention modification and why you chose it.	Answers to this question would help to triangulate what I observed in the intervention modifications as well as give an indication of teaching learning	Theoretical &Methodological
2. What new knowledge and practice is gained through the collaborative process of designing and implementing an intervention for ELs?	I wanted to give the teachers the voice to answer the research question. Research was not conducted on the teacher study group, but with the teacher study group, as is characteristic of design research (McKenney & Reeves, 2012).	Theoretical
3. What has adding the modifications helped us understand more about the students? Would you use this in problem solving?	I surmised that the teachers would learn from each other in the teacher study group as illustrated in the theory distributed cognition (Lave & Wenger, 1999).	Theoretical
4. What would you recommend for others who might want to try something like this?	One final product from this formative experiment is recommendations for teachers to use the Vocabulary Study. These answers would contribute to the pedagogical goal of creating a linguistically-responsive intervention	Methodological
5. Look at these factors that influence the literacy development of ELs. How do you think we addressed these factors	In this final question, I presented Helman's (2009) framework. I wanted the teachers to be co-constructers in developing theory based on the teacher study group	Theoretical

intervention was going (see Chapter 4). I provided them a series of questions they could respond to that would help me understand the implementation process. A few times throughout the intervention period I collected this type of observation form.

Observations. I observed each teacher twice during the intervention phase. The purpose of the observations were to document how the intervention was being implemented. Primarily, I focused on the extent to which teachers followed the intervention protocol and in what ways they included vocabulary study into the intervention. The settings of the interventions were in a small group, ranging from 2 to 4 students. During observation, I interacted very minimally with the students and teacher.

Student Data Sources

Universal screening and progress monitoring. A characteristic of the tiered model of RtI and MTSS frameworks is on-going assessment (Fuchs, Mock, Morgan, & Young, 2003; Lipson & Wixon, 2010).Typically, assessments in the frameworks are comprised of universal screening measures and progress monitoring. At Weston Elementary, teachers collected three types of student data to measure progress in their tiered framework. They conducted universal screening in reading three times a year for all students. For students who have been identified as needing a tier 2 or tier 3 intervention (based on the universal screener) they monitored progress every other week using a curriculum based measure (CBM). For the universal screener and progress monitoring, Weston Elementary uses CBMs from FastBridge Learning (Christ 2010, 2012). The CBM that is used in decision making for RtI in kindergarten at Weston Elementary is letter sound fluency (LSF). For 1st grade, a decodable word fluency

measure is used in the fall and winter. In 2nd grade, students read a grade level passage. The CBMs are 1-minute timed assessments and are administered by the reading interventionist, Sharon. I did not administer any of these assessments, as they are part of the data collection done by the staff at Weston Elementary. At the end of Phase 4, Sharon shared the results from the weekly CBMs.

Skill assessments. Skill assessments are a type of formative assessment designed to measure the specific skill that is targeted in the intervention**.** Sometimes these are referred to as subskill mastery measurements (Fuchs & Deno, 1991). Sharon uses the READ Skill Assessment measures to monitor the progress of skills that are practiced in the intervention (see Appendix D for a sample). At the end of Phase 4, Sharon shared the results of the skill assessments with me.

Sentence repetition tasks. With little guidance from the research literature on specific additional measures to use in a responsive RtI framework, I considered a few options. Sentence repetition measures are designed to measure language ability and have been used with English language learners (e.g., Manis, Lindsay, & Bailey, 2004). I administered one such sentence repetition measure (see Appendix E) that is under review for validation (Arañas, under review).They begin with simple sentences and increase in complexity. I administered this assessment at the beginning of the intervention phase and then at the end (six weeks later).

WIDA-ACCESS for ELLs 2.0. WIDA ACCESS is a "large-scale English language proficiency assessment administered to Kindergarten through 12th grade students who have been identified as English language learners (ELLs)" (wida.us, 2017).

The WIDA ACCESS is administered state-wide in Weston Elementary's region and is the measurement by which it is determined whether or not schools meet the Annual Measureable Achievement Objectives (AMAO). AMAO is the language proficiency version of meeting Annual Yearly Progress (AYP). Results from WIDA specify English language proficiency in the four modalities: speaking, listening, reading, and writing. Score outputs include two composite or overall scores that are based on percentages of each modality. The overall score is calculated as follows: 35% reading + 35% writing + 15% listening + 15% speaking.

Observations. I observed each student at least twice during the intervention implementation phase. The purpose of my observations were to see to what extent they engaged in the intervention. To the best of my ability, I scripted word for word what I heard from both the student and the teacher during the intervention.

Researcher Data Sources

Field notes. Field notes are descriptive notes of what is observed (Sanjek, 1990). I recorded classroom settings, intervention group participants, and interactions that occurred while I informally met with teachers and talked with students. During the teacher study group sessions I was an active participant and so I did not take field notes extensively during this time. There were other times I was at the school observing or meeting informally with the teachers that field notes were appropriate. I was invited to a kindergarten team meeting where they discussed reading data and interventions. In this instance I collected field notes to document what I observed.

Scratch notes. At the conclusion of each visit to the school I took scratch notes (Sanjek, 1990). These were thoughts or streams of consciousness that I audio-recorded during the car ride home (70 minutes). They documented my immediate reflections after I spent time observing an intervention or facilitating a teacher study group. These audio memos were reminders of what I needed to do as well as some initial analysis of what was happening in the sessions methodologically and theoretically. I listened to these audio scratch notes and transcribed sections that were useful for answering my research questions.

Researcher journal. Within a day of each visit to Weston Elementary, I documented the study processes in a journal. The journal included my thoughts on researcher reflexivity (Patton, 2002). I explored and addressed my positionality as a member and coordinator of the READ project as well as from my perspectives as an EL educator and reading specialist. Moreover, I addressed the reflexive questions, "How do they perceive me?" and "How do I perceive them" (Patton, 2002). I examined and reflected on my role as a researcher, especially within the context of a research role that is committed to participation. The journal also included theoretical and methodological memos. The theoretical memos were notes written about instances where I saw that my theoretical frameworks could explain something I observed. The methodological memos included notes about how I might continue to design or conduct the study. For example, I looked through my researcher journal in order to develop interview questions.

Analysis Strategies

Conjecture mapping. To begin the discussion of data analysis strategies, I share two of the common critiques of design-based research. These critiques are outlined in a recent publication (Sandoval, 2014) that proposes that researchers detail theory and design into a conjecture map. Some researchers (e.g., Dede, 2004; Kelly, 2004) have argued that design-based research lacks methodological rigor or clear standards. Others argue that "design research fundamentally cannot live up to the claim of *simultaneous* design evaluation and theory building" (Sandoval, 2014, p. 19). Both these critiques can be remedied by a clear and structured design and data analysis approach: *conjecture mapping,*" …a means of specifying theoretically salient features of a learning environment design and mapping out how they are predicted to work together to produce desired outcomes" (Sandoval, 2014, p. 19).

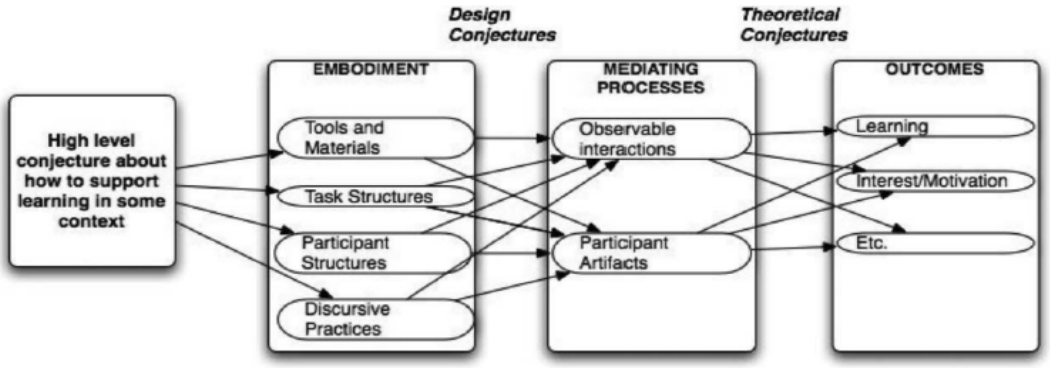

Figure 6. Generalized conjecture map for educational design research (Sandoval, 2014).

Sandoval (2014) proposes a map (see Figure 6) to learning that is grounded in theory (high level conjecture). In order to identify what learning occurred, analysis of the data considers how the interactions in the learning environment led to learning outcomes.

A conjecture map allows for the "argumentative grammar" (Kelly, 2004) required for justification. In the case of my study, the design of the teacher study group and the enhancements of the reading interventions were designed according to the two conjectures (Figure 7 and Figure 8). "The elements of a conjecture map provide a syntax for articulating hypothesized interactive between designed elements and the people who act within a designed environment" (Sandoval, 2014, p. 30).

		Design conjectures	Theoretical conjectures
	Embodiments	**Mediating Processes**	**Outcomes**
Theoretical Conjecture #1 **When teachers of varying expertise come together to problem solve, they learn from each other.** **(Teacher study groups, Gersten et al., 2010; Practice-based professional development, Ball & Cohen, 1999)**	**Tools & materials:** Protocols used in Teacher Study Group Materials that teachers have used to deliver interventions Student reading data Student language proficiency data Field appropriate documents **Task structures:** Teacher Study Group is formed in order to problem solve around struggling emergent bilinguals **Participant structures:** Teachers share their field expertise in the teacher study group **Discursive practices:** Protocols and teacher learning designs that include all voices	**Observable interactions:** Teachers share perspectives and have opportunities to respond and reflect Teachers propose enhanced elements of intervention Teachers make decisions about student intervention progress Teachers consider oral language development of students **Participant artifacts:** Documents created during teacher study group – charts, activities engaged in during Teacher Study Group, meeting notes, agendas	**Learning:** Teachers learn ways to deliver reading interventions that take into account the language and reading development of their students **Interest and motivation:** Addition of enhancements section for phonics intervention

Figure 7. Conjecture map related to teacher outcomes.

Figure 6 is the template for a conjecture map recommended by Sandoval (2014). Figure 7 is the conjecture map I created in order to articulate the design decisions of the teacher study group that I surmised would lead to teacher learning. Figure 8 is the conjecture map created in order to articulate the design decisions for the tailored reading intervention.

	Design conjectures		Theoretical conjectures
	Embodiments	**Mediating Processes**	**Outcomes**
Theoretical Conjecture #2 **When emergent bilinguals engage in a tier 2 intervention that is responsive to their language development, they develop word reading and oral language** **(Input and output hypotheses)**	**Tools & materials:** READ phonics intervention Materials and tools that enhance intervention **Task structures:** Develop word reading and oral language **Participant structures & discursive practices:** Students have opportunities to use targeted words in meaning making	**Observable interactions:** Students develop sentence structure and vocabulary as they engage in activities in the enhanced phonics intervention **Participant artifacts:** Individual student language examples Writing samples from students	**Learning:** Word reading increases Oral language increases **Interest & motivation:** Students engage in instruction that is meaningful and connected to what they are learning

Figure 8. Conjecture map related to student outcomes.

Qualitative data analysis. The design of the teacher study group was based on the theoretical conjecture (see Figure 7), "when teachers of varied expertise come together to problem solve, they learn from each other." To begin with a high level theoretical conjecture, and measure whether or not that conjecture was accomplished requires a *deductive* analysis approach. Miles, Huberman, and Saldaña (2014) suggest that researchers generate codes from conceptual frameworks or research questions prior

to fieldwork for deductive analysis. In my analysis, I determined several codes that aligned with my theoretical foundation and my conceptual framework. I uploaded all of the qualitative data set into Dedoose, a web-based coding and analysis program. First, I reviewed the data set without creating any codes, simply for the purpose of familiarizing myself with the entirety of my qualitative data. Then, I set up a "start list" (Miles et al., 2014) of several codes that were reflective of my conceptual framework and theoretical foundation. As I conducted my first round of coding using a *deductive* approach, I also used open coding to identify initial concepts that were interesting to the story of teacher learning and that I had not anticipated in my conjecture mapping. In order to generate local theory regarding the teachers using their varied expertise, I created codes that were interesting to investigate further or that were not represented in my start list.

In the second round of coding, I began by reviewing all the coded excerpts from the first round of data. I read excerpts again to add additional codes that had been created in the first round. Then, I continued by making constant comparisons in the data (Glaser & Strauss, 1967), especially asking questions such as, "What is being said or done? Who is doing it? Why?" (Corbin & Strauss, 2015). I applied codes as I interpreted what was being said or done. I also made analytic memos (Miles et al., 2014); analytic memos are "brief or extended narrative that documents the researcher's reflections and thinking processes about the data" (p. 95). These memos included explanations of where I saw instances of the outcomes of the theoretical conjectures.

In the third round of coding, I condensed the data further by joining similar codes and either renaming them or choosing one code that would summarize both. For example,

in my first round of coding I began with a "start list" that included the code: *sociocultural.* As I coded deductively in the first round I also created two codes: *culturally relevant* and *funds of knowledge.* In my third round of coding, I condensed *culturally relevant* and *funds of knowledge* into *sociocultural* because these coded excerpts could be organized under *sociocultural (*for the codebook and a sample of coding, see Appendix G and Appendix H)

Also in this round of coding I began identifying data exemplars, instances that would exemplify the *observable interactions* and *learning outcomes* detailed in my conjecture maps. Gravemeijer and Cobb (2006) describe this sort of process within a design experiment as retrospective analysis, where the researcher reviews the entirety of the data set in an iterative fashion for the purpose of building local instructional theory Miles et al., (2014) suggest three concurrent flows of activity that occur in qualitative analysis: a) data condensation, b) data display, and c) conclusion drawing/ verification. The conjecture maps I outlined in the previous section provided guidance towards the stream of analysis activity. I condensed data in a way that aligned with the *embodiments, mediating processes,* and *learning* in the conjecture map. In each flow of activity, the conjecture map was consulted as a frame of reference, with an end goal of providing the "argumentative grammar" necessary for theory building.

Quantitative data analysis. I analyzed three quantitative data sources for each focus student in the study: CBMs, skill assessments, and sentence repetition tasks. I calculated the growth for each student over the course of the intervention in order to

analyze the CBMs and the skill assessments. I calculated growth in CBMs for two reasons. First, my quantitative research question asks: What are the effects of a modified

Table 7

Curriculum Based Measures Used to Calculate Growth

Grade level	***Curriculum based measure used to calculate growth***
Kindergarten	*FastBridge* letter sound fluency
1st grade	*FastBridge* decodable word fluency
2-4th grade	*FastBridge* oral reading fluency

reading intervention on word reading and oral language measures for individual students in a phonics and phonemic awareness intervention? Second, growth calculations with CBMs are useful indicators for decision making in response to intervention (Burns & Gibbons, 2012) and have been used to calculate growth with English language learners (Burns, Frederick, Helman, Pulles, McCommas, & Aguilar, 2016) Third, Weston Elementary uses growth calculations to make decisions about interventions. To calculate growth I subtracted the initial CBM score from the most recent CBM score and divided the difference by the number of weeks the student was in intervention. This result provided the average growth per week over the course of the intervention. Finally, I calculated the growth in the sentence repetition tasks from the baseline (Phase 3) of the intervention to the post-assessment (Phase 5).

In the next section I discuss how I maintained methodological rigor through a systematic and comprehensive design and data collection and analysis.

Methodological Rigor/ Trustworthiness

Design-based research and formative experiments are concerned primarily with usability and putting theory to work. To execute this effectively, researchers change environments and approaches with the purpose of working towards usability. Therefore, formative experiments are the antithesis to fidelity and can lead to questions of generalizability (Hoadley, 2004). While researchers are held accountable for ensuring methodological rigor in a formative experiment (Reinking & Bradley, 2009), they are fundamentally concerned with the problem of context (Hoadley, 2004). To address the methodological rigor in this study, while documenting context specific variables that contributed to understanding of the reaching the pedagogical goals, I adhered to Hoadley's (2004) concept of methodological alignment within design-based research. Hoadley (2004) contends that design-based researchers should be concerned with research validity that is characterized by *treatment validity, systemic validity,* and *consequential validity*. *Treatment validity* relates to whether or not the treatment is aligned with theories that will support actual achievement of the goal of the intervention. In this study, the intervention was grounded in theories that reflect language acquisition and reading development in order to increase word reading and language. A design-based research study conducted with *systemic validity* in educational settings is characterized by the ability to make the intervention usable in real-world contexts. "To achieve true *systemic validity* as educational researchers, our studies must inform our theories, which must inform our practice" (Hoadley, 2004, p. 205). To document why and how the intervention worked, rich descriptions of context are warranted. In this study, I used several data sources that supported the ability to create rich descriptions of contexts.

Moreover, I used the technique of *triangulation* to improve credibility (Lincoln & Guba, 1985). To this end I collected data from multiple sources (see Table 8). Finally, for a study to achieve *consequential validity,* results must be able to be applied and have some consequence in practice. In this study, I considered how my results may be applicable

Table 8

Methods to Establish Credibility

Purpose	**Data Source**
To provide a rich description of the context of the intervention	Interviews, reading data, observations, researcher journal
To provide a rich description of teacher learning	Interviews, observations, teacher study group sessions researcher journal

for the future use of the READ intervention protocols. In particular, by conducting a formative experiment that aimed to create a linguistically-responsive READ intervention, I hoped to achieve *consequential validity* by disseminating the results and informing the READ community of users.

Summary

In this chapter I detailed the methodology of the formative experiment. I began by explaining the characteristics of a formative experiment. Then, I described the context of the study, including the setting and the participants. I shared the five phases of my formative experiment and then defended how a mixed-method approach would help me to reach the pedagogical goal set out in the design of the study. I named the qualitative and quantitative data sources that were collected and the means for analyzing them. Specifically, I outlined why conjecture mapping (Sandoval, 2014) would help in data

analysis as I considered how the theoretical conjectures were met. Finally, I explained how I ensured methodological rigor within the design based research approach.

In the next chapter I share the qualitative and quantitative findings.

CHAPTER FOUR:

RESULTS

In this chapter I present the results from the formative experiment I conducted. I begin by restating the pedagogical goal and the research questions that guided the attainment of the goal. I divide the remainder of the chapter into a qualitative and a quantitative section. In my mixed methods study, I employed concurrent triangulation design (Creswell & Plano Clark, 2007). In a concurrent triangulation design, mixing of data can happen either along the way or in the interpretation of the findings. In my study, I share the qualitative and quantitative results in separate sections of Chapter 4. Then, in Chapter 5, I synthesize both results for interpretation. In the qualitative section of this chapter, I share the results of the case of the teacher study group as a *vignette*, which is defined as "a focused description of a series of events taken to be representative, typical, or emblematic of the case you are studying" (Miles et al., 2014, p.182). A vignette was appropriate for sharing the results because I could detail the outcomes of the entire teacher study group as they moved through four sessions as they a) developed an intervention, b) implemented the intervention, and c) reflected on its implementation and next steps. In the quantitative section, I share the results from the student reading and language data for each focus student. Further, I use frequency counts to illustrate the extent to which students engaged in the intervention in language development and reading tasks. Finally, I conclude the chapter with a summary.

Research Questions and a Goal

The pedagogical goal of this formative experiment was to tailor, through the work of a teacher study group, a reading intervention to be linguistically-responsive. Three research questions contributed to the understanding of how I achieved the goal:

1) My primary research question is: How do teachers use their varied expertise within a teacher study group to tailor a reading intervention for emergent bilinguals?
2) Quantitatively, I seek to find out: Do emergent bilingual focus students show progress on reading and language measures over the course of the linguistically-responsive reading intervention?
3) Qualitatively, I seek to find out: What new knowledge and practice is gained through a collaborative process of tailoring and implementing an intervention for emergent bilinguals?

Teacher Learning and Knowledge Building in a Teacher Study Group

Over the course of one month, the teacher study group met three times to discuss what modifications might be made to the READ phonics and phonemic awareness interventions so they would be more linguistically-responsive. As described in Chapter 3, I organized and facilitated each session purposefully and with set objectives. The purpose was to draw on the expertise of the reading specialist, the EL teacher, and the classroom teachers in order to build an intervention that would complement each educator's perspectives. In subsequent sessions, I detail the results of how our meetings unfolded and the conclusions we reached as we created and implemented a linguistically responsive reading intervention.

Session One: Current Realities

Session One was the first time that I had visited the school to work together with the educators to tailor the intervention. Since the principal had been instrumental in supporting my study by providing the names and emails for her staff, I decided to plan a short meeting with her in order to detail my plan for the teacher study group. In our meeting we discussed the demographics of emergent bilinguals at the school, and she emphasized that her staff needed support in finding ways to meet their needs in their classrooms (Researcher journal, 9/14/16). After our short meeting, the principal accompanied me to the Title 1 classroom where I would begin the first teacher study group session.

I began Session One: *Current Realities* by introducing myself and outlining goals for the teacher study group. I positioned myself as both the researcher and a participant in the group. "We're all here together to figure this out," (Audio transcript, 9/11/16) I told the teachers as I explained that we would be looking at the READ intervention protocols and tailoring them. I intended this to be a message in which I was transparent about researching *with* the teachers. I shared my teaching background as a READ literacy coordinator, an EL teacher, a reading specialist, and a classroom teacher. I did this with the purpose of connecting with the personnel from various roles in the group.

The following teachers were present at the session: Joan (EL teacher), Sharon (reading interventionist), Karen (kindergarten teacher), and Joy (kindergarten teacher). The objectives of the first session were to a) become familiar with the current approaches to intervention, instruction, and decision making for the emergent bilinguals at Weston

Elementary, b) make introductions, and c) discuss the study timeline and agenda. I allotted one hour for the first session. I facilitated the introductions and a conversation that started with these questions: "What sparked your interest in participating? What are your questions about ELs and learning to read?" I asked these questions with the purpose of gaining an understanding of their knowledge base and perspectives regarding literacy development for emergent bilinguals. In the phases of the study (see Chapter 3, Figure 3) this session was the *baseline*, and I crafted the questions to have an understanding of teacher knowledge regarding emergent bilinguals and reading. When I asked the first question about interest in participating, Karen, one of the kindergarten teachers, voiced a desire to want to learn specifically about the language of the students:

> "I think for me there is so much I don't understand about the Hispanic language and even having been here for 19 years, if there is more I could learn… and if there's something that I can do that is better for some it's gonna be better for everybody, so I might as well learn it."
>
> (Audio transcript, 9/13/16)

Then, the conversation shifted to teachers' perspectives on the nature of learning how to read and speak in another language. They wondered about the emergent bilingual students who seemed to learn to read and speak so easily, and others who did not. What could be the cause? Though Karen began the conversation with a wondering that perhaps if she knew more about the Spanish language she might be able to support her students in new ways, she also felt that there were many things in her students' lives that she could not control, and factors that left her students "grasping for whatever."

> Well I think with some of our population, and I think we've seen it maybe more, or maybe I've seen it more lately; that we 've got kids who aren't strong in either language and so not like they are coming in fluent in Spanish and they're acquiring English as a language. They moved somewhere in the middle and they

> live with Grandma and Grandpa who speak Spanish and Mom and Dad speak both and they are you know and maybe siblings speak English or maybe not, and so they're floating in the middle, grasping for whatever.
>
> (Audio transcript, 9/13/16)

Others in the group agreed with the notion that students had a difficult time when there appeared to be tension between the language at home and the language of school, that students were confused by the differences. The conversation continued with similar reasons for wanting to participate in the group, mainly, to find ways to help students. Joan stated that she "felt stuck" and wanted the students to practice English at home,

> I'm tired of thinking to myself, well, it's because it's not a high priority at home, or because there is no books at home, um it's yeah, because mom and dad aren't practicing with the child and nothing I say or do, you know can convince them to practice at home. (Audio transcript, 9/13/16)

She also felt overwhelmed by the testing that some of her students would be doing. We all agreed that the students had too many assessments; so, I moved the group to respond to the next question.

To gain an understanding of what the teachers had already been doing to differentiate for emergent bilinguals either in the interventions or in their instruction, I asked: "What are some ways that you adjust your interventions currently when you have an EL student; does it matter? Do you know their language levels? Is that something that you talk about? Do your language levels help?" Each teacher responded with her own unique perspective of this question. Joan, the EL teacher, reminded the teachers the purpose of the WIDA summative language assessment (called the ACCESS) that indicated each student's language level. She told them that each year, when she received the results of the WIDA ACCESS, she placed the class score sheet into each teacher's

mailbox. She explained that she did not do much follow-up because she did not want to overwhelm them with another assessment to look at. Karen admitted that she had never looked at any language levels before and didn't think that any of the other teachers in the school did, "I guess I would be curious how many teachers actually look at it [the WIDA ACCESS score sheet]. I bet there is not many. I think we look at our students as a whole" (Audio transcript 9/13/16). Joy, the kindergarten teacher with the most experience teaching ELs as a classroom teacher, said that she looked at the WIDA levels and it did help her differentiate areas of speaking, listening, reading, and writing. As the conversation continued between the group about if and how the language levels were used at the school, Karen finished the conversation by saying,

> "If you had just said 'What are your levels?' I would go immediately to our reading levels. I wouldn't even know…what I'm saying is that already for our staff I can see that *just* the education of these… the levels and this is what it means. I mean, I don't know any of that and I've been here awhile, you know.
> (Audio transcript, 9/13/2016)

The teachers agreed on the fact that there was more work to do in the area of learning how the language levels might benefit classroom teachers. They wondered what it might look like to bring the language levels of the students into the monthly data team meetings where they discussed students who were not progressing in the interventions.

As I reflected on the outcome of this session, and tried to plan for the agenda of the next session, I thought about the way the discussion of language levels went (Researcher journal, 9/14/2016). I knew that the role of an EL teacher is to disseminate the results of the WIDA assessments and discuss the language levels with classroom

teachers. However, this conversation revealed that some of the seasoned teachers knew very little about this assessment and its purpose.

Session Two: Sharing Our Knowledge

The following week we met after school in the Title 1 room. These teachers were present at the session: Joan, Sharon, Joy, and Cori, a first grade teacher who was not able to attend Session One but showed an interest in participating. Karen, one of the kindergarten teachers who attended the first session, did not continue to come to the remaining sessions because she did not have any students in her classroom who were emergent bilinguals. The purpose of this meeting was to "Share knowledge about reading and language development in reading interventions." The outcome was to "Develop common understandings about literacy and language development" (see Figure 7). We began by reviewing a few main ideas from the previous session. I did this to remind the teachers of where we were headed, but also because Cori had not been present at the first session. After the review, I showed the teachers the document from the WIDA Consortium, *Developing a Culturally and Linguistically-Responsive Approach to Response to Instruction & Intervention (RtI 2) for English Language Learners* (WIDA, 2013). In the document there are professional development suggestions to help school teams ensure that their RtI approach is culturally and linguistically-responsive. I shared that some of the things we would be doing in the teacher study group session were inspired by the WIDA suggestions.

Meeting Two: Sharing Our Knowledge

9/19/2016

Purpose: Share knowledge about reading and language development in reading interventions

Outcome: Develop common understandings about literacy and language development.

Content	Process
Opening	• Review last week's meeting • Discuss research goals • Sign consent forms
Core	**1. Decide on goal together.**
	2. Each person answers this question on a sticky note #1 *"What can we do in our instruction to help a student achieve this goal?"* **3. Each person answers this question on a sticky note #2** *"Why is this important?"*
Sharing Ideas	**4. Share**
	5. Each person answers this questions on sticky note #3 *"What do we have to know about the student for this to be effective?"*
	6. Each person answers this question on sticky note #4 *"How will we know if it worked?"*
	7. Share
Closing	• Discuss next week's meeting purpose

Figure 9. Session two agenda.

As noted on the agenda, the first order of business was to decide on a goal together. The first goal we agreed upon was, "Create strategies to help ELs in phonics." Then, I presented the questions: "What can we do in our instruction to help a student achieve this goal? Why is this important?" I chose these questions because I thought they would reveal each teacher's unique perspective towards building language and reading. I surmised teachers would get insights from each other as they shared an instructional strategy that would help achieve the goal and defend it with a rationale for why it was important.

Ahead of the meeting, I had prepared the materials to model and engage the teachers in what answering these questions might look like. I did this for two reasons. First, since I was an active participant in the meeting, my contributions to the sharing would contribute to the overall knowledge building. Second, I wanted to model what a

Table 9

Part One: Developing Common Understandings

	Question: What can we do in our instruction to help a student achieve this goal?	**Question: Why is this important?**
Joan **EL teacher**	Use pictures or objects to show what we're talking about. Let students draw from their own experiences and talk together about the picture or object.	"leveling the playing field". Students need to become familiar with the content of pieces of the content to gain meaning.
Cori **1st grade teacher**	Students share with their elbow partner teacher walks around and listens to answers. Show picture cards to help students understand vocabulary. Use different manipulations like magnet letters, white boards, etc.	Students need to feel comfortable and safe sharing and to learn that it's OK to make mistakes. Picture cards allow students what to see what a word means. Magnet letters/writing words allows extra practice with building and writing words.
Joy **Kindergarten teacher**	Using pictures for vocab or concepts that are new (like "sun " with a pic) Bring in students 1st language (if able) - Hola! Hello! Explicitly model expectations I do, we do, you do Have high expectations for all students. Open and honest parent communication.	Students need to feel safe, welcome, challenged, and engaged in order to learn. Students need concrete ideas and expectations for specific PA and phonics instruction.
Sharon **Reading interventionist**	Have students retell story. Model. Repeated reading – I read, you read. Partner read. Asking questions to find out what students know about a topic.	Students need repeated practice to learn new skills. Students will be more engaged in learning if they have some knowledge about the topics.
Annie **Researcher**	Allow for wait time. Allow students to talk with each other before sharing with the group.	Students need to be in a comfortable and safe place to practice language.

response might look like, to make my ideas transparent. I read my response to the first and second question. In order to enact this process, I handed everyone two sticky notes that were large enough to write several sentences. Participants took several minutes to respond to these questions.

Once the teachers had responded to the questions using their post-it notes, they placed them on the white board that was directly behind the table where we sat. We each read our responses aloud. Each read aloud prompted a rationale for what the person wrote, and others chimed in or drew on each other's thoughts. Joan was the last person in the group to read her ideas, and she built on a response that had already been shared:

> So I said like you, Cori, using pictures or objects, actual objects to show what we are talking about, and then letting students draw from their own experiences so I like so I want to give a lot um, language going from the get go, and they are in small groups, so that lends itself to being more comfortable.
>
> (Audio transcript, 9/19/2016)

While we read and listened to the responses from the first question, the group decided that our goal should be changed from "Create strategies to help ELs in a phonics intervention" to "Build proficiency in reading, writing, speaking and listening." This goal made more sense as an outcome, as we would be tailoring strategies in the reading intervention in order to build language and reading proficiency. We followed the same structure for the next two questions, "What do we have to know about the student for this to be effective? How will we know if it worked?" I chose these two questions so that we could have a conversation about assessments and observations that we would be making during the intervention.

Table 10

Part Two: Developing Common Understandings

	Question #3: What do we have to know about the student for this to be effective?	**Question #4: How will we know if it worked?**
Joan **EL teacher**	Names How many parents, member school (s) they came from How well they speak, write, read If they can follow 2-5 directions What some of their favorites are Learning disabilities Schedule	Assessing Making a "me" chart, which includes making family crest (graphic organizer)
Cori **1st grade teacher**	Language level of students, their understanding	Anecdotal notes Student feels safe taking turns, making mistakes, and talking with others (via observation) Language structure develops Use graphic organizers
Joy **Kindergarten teacher**	Talk with students and learn their interests and strengths/ areas of need. Family / parent survey or questionnaire about prior experiences Family life Observations- interactions in classroom, with friends, on playground,etc. Understand and talk about prior knowledge – allow time to verbalize thoughts.	Formal and informal assessment Observations Curriculum assessments School-wide assessments Communication with families
Sharon **Reading interventionist**	Student personality Who they sit by What they are like in the classroom (if you pull out)	FastBridge fluency READ skills tests Observations Talk with teacher and/or student
Annie **Researcher**	Language levels Teacher observation	Anecdotal notes Student feels safe taking turns, making mistakes, and talking with others (via observation) Language structure develops Use graphic organizers

After Sharon and Joy read their responses, Joan commented on how each person's responses were, "very specific, both of yours are specific to your work" (Audio transcript,

9/19/2016). Each teacher read her comments and others in the group responded with affirmations and additions. As we ended the meeting I asked the teachers to look at the chart to see if there were any of the responses that people disagreed with, or that they wanted to comment on further in order to build consensus. It appeared at this point that each teacher's perspective had been highlighted through the responses, and that Joan felt that her perspective of ways to develop language and literacy was a combination of a classroom teacher and an interventionist. Joan and Sharon, the reading interventionist, commented,

> **Joan:** …what I find fascinating is the classroom teacher perspective and you know, Sharon as the, the
> **Sharon:** the interventionist
> **Joan:** and Sharon as the interventionist. And you know, I'm both.
>
> (Audio transcript 9/19/2016)

We ended the meeting with a look towards the next week where we would take what we had shared in this session and use it to tailor the intervention. I asked the teachers to think about a couple of students from their intervention groups who we could use as focus students in the study. Over the course of the intervention I would collect language data and observe the students in the modified intervention.

Session Three: Proposing Strategies

Session Three occurred one week later. The following teachers were present at the session: Joan, Sharon, Karen, Joy, Cori, and Lana. Lana was not present at the other meetings, but she had two students who were to be focus students. She was interested in learning about how we were tailoring the intervention. The purpose of this meeting was to build on the discussions and consensus from the previous meeting in order to propose

strategies for tailoring the interventions. The outcome would be for teachers to agree on the modifications in order to prepare to implement the intervention (see Figure 10).

Meeting Three: *Proposing Strategies*

9/26/2016

Purpose: Propose modifications/ enhancements/ strategies to use for ELs in PRESS reading interventions

Outcome:

- Agree on modifications for students
- Have an understanding of pertinent data (reading, language, etc..) for EL students
- Practice using enhancements and decide on procedures for implementation

Content	Process
Opening	• Review last week's meeting • the four questions we answered and the goal we created
Core **Proposing Strategies**	1. Choose one or two students. 2. Gather all the data that you have to have an idea of the reading and language capacities of the student. 3. Look at the modifications/ strategies and decide which ones may be best suited for your student 4. Read the Intervention Protocol you will be using with your student. Decide where in the sequence of the components you will add your modifications. 5. Think about materials you may need
Closing	• Discuss logistics about intervention implementation • Discuss note taking and observations during interventions

Figure 10. Session three agenda.

I prepared the meeting with several documents. First, I gathered the responses from the four questions from the previous meeting and put them on one document (see Table 9 and Table 10) based on what participants had shared- "What do we have to know about the student for this to be effective?" I created a data-profile document that included suggestions about gathering pertinent information on each student.

I structured the meeting with the same protocol as the previous meeting that explicated the purpose and how the content and process would lead to the outcomes. I briefly reviewed the outcomes from the previous meeting and the goal we had created. First, each teacher would choose one or two students to study in more depth. I gave them a few minutes to fill out the data profiles for each student. Joan came to the meeting with the language profiles from WIDA for each student. Sharon came prepared with pertinent reading data.

After we completed the data profiles, we began our discussion about how we might tailor the intervention. I showed the teachers the charts I compiled from the previous week and asked them to consider what we had discussed. I intended this activity to encourage some ideas about making modifications to the intervention. Sharon initiated the conversation about students who were currently in the READ phonics intervention. In her current READ phonics intervention practice, students would read a list of targeted words with a similar phonics pattern (for example, a word list targeted with short *a* words might include words: *nap*, *tap*, *rat*, *bat*, and so on). After reading the word list, the students might read a story that included the words they had just practiced within the context of sentences. She wondered if it might benefit the students to discuss multiple-meaning words. She thought of this idea because in the previous meeting we had discussed that there were some words that were quite simple to read, like *bat*, but had multiple meanings. This often confused students she said, especially the emergent bilinguals. She made a suggestion, and the rest of the group chimed in, as to how to tailor the phonics intervention,

Sharon: Well every now and then, well often, when they have words that have a couple different meanings and they don't always get what it means and so then we have to talk about that but then if we could do that on a page and you know start a little book
Joan: Mm hm,
Joy: We could use a graphic organizer
Annie: Yeah
Sharon: They could do a little picture
Joy: Right
Sharon: Right,
Annie: I mean that could be a couple different ones of these even together
Sharon: Pictures for vocab
Annie: Allowing students to talk using pictures, I mean
Joan: Mm hm,
Annie: Bringing in their first language, I mean I know you don't speak Spanish but sometimes a good thing to say to a student is "Do you know what that word is in Spanish?" and that's ok, right
Sharon: Sure
Annie: And if they say that you could even put that in the graphic organizer
Sharon: Right right
Joan: Mm hm.

(Audio transcript, 9/26/2016)

After several people built on these ideas, the group agreed on a modification that we would call “vocabulary study” (see Figure 9). Sharon, the reading interventionist, and Cori and Lana, the classroom teachers, would work towards implementing the modification during the phonics interventions. Since Joy, the Kindergarten teacher, would be implementing a phonemic awareness intervention, she agreed on a similar modification to build vocabulary. I reiterated that the teachers would be tailoring the READ intervention protocol. In order to make this plan concrete, I gave each teacher a copy of the READ phonics protocol and asked them to write in on the protocol where they would add vocabulary study.

Table 11

Placement of Vocabulary study as an Addition to the Eight Components of the READ Protocol

Phonemic Awareness: Segmenting +Vocabulary study	**Phonics: Letter sound recognition +Vocabulary study**	**Phonics: Decoding CVC words +Vocabulary study**
Gather Materials	Gather Materials	Gather Materials
State the Objective	State the Objective	State the Objective
Explain the Game or Activity	Explain the Game or Activity	Explain the Game or Activity
Check for Understanding	Check for Understanding	Check for Understanding
VOCABULARY	**VOCABULARY**	Model the Activity
STUDY	**STUDY**	Give Guided Practice
Model the Activity	Model the Activity	Give Feedback
Give Guided Practice	Give Guided Practice	Independent Practice
Give Feedback	Give Feedback	**VOCABULARY**
Independent Practice	Independent Practice	**STUDY**

With this goal in mind, the teachers understood that the main components of the intervention were to remain intact. Once the teachers decided where they would add vocabulary study, we had a brief conversation about gathering materials. Everyone agreed that they would be able to implement vocabulary study with the materials they had in their classrooms. I agreed to write up a document that outlined the process of the modification. I also provided a document where they could take weekly notes regarding the implementation of the modifications. I closed the session by scheduling observations for the intervention in the following weeks.

Intervention Implementation

Phase 4 of the study, *Intervention,* consisted of two iterations. In the timeline that I presented to the group in the first meeting, I proposed one iteration of the intervention

Phonics Intervention Enhancement:

Vocabulary Study

Purpose: build vocabulary knowledge of words practiced during the phonics intervention

Where to add: Teach the intervention as written in the protocol. After "Step 8: Independent Practice" **ADD** Vocabulary Study *(IF you want to add this at a different step of the intervention, please do. We will talk about where this should be placed, so try something else if you feel fit)*

What to add:

1. Choose a word in the word list that would be beneficial for extended vocabulary practice (such as multiple meaning words, adjectives, verbs, etc.)
2. Tell the students that they are going to learn a little more about that word.
3. Use a graphic organizer (next page) like this, or try another and make sure to let us know!

Choose 1- 4 or ALL approaches to learning more about the word:

Here are some things *you might say* or do to add this to the intervention. I'll use the word "plump" as an example:

#1: Use Visuals:

You could DRAW it too! And you can let the students draw it as well

- "Look at this picture of a plump squirrel. Plump means round. How did this squirrel get so plump? Tell your partner how you think this squirrel got so plump" Give students sentence frames or starters to respond:
  - This squirrel is plump because_____.

#2: Talk about the word:

- "When something is "plump" it means it is really round. What other animals might be plump?

#3 Use students' first language:

- "Do you know what word in Spanish is the same as "plump"

#4 Let students draw from their own experience: (Some words are better than others for this one, but here's a example)

- "Was there ever a time that you saw a plump animal? Where were you?"

Figure 11. Tailoring the intervention with vocabulary study.

that would take place from late September to December 2016, and would result in around eight weeks of interventions. However, due to instructional staff changes that occurred about four weeks into the intervention, the teachers were only able to implement the

interventions for six weeks. Due to staff changes, all the emergent bilinguals would receive interventions from the EL teacher, Joan, in the second iteration. At this point we decided that Joan would still implement the tailored intervention. Therefore, I considered Joan's implementation of the same interventions to the same students to be the second iteration. What changed in the second iteration was the person delivering the intervention. I will describe the three interventions delivered in two iterations in the next sections.

Iteration 1. There were three teachers who implemented interventions to a total of nine students. Table 12 details the specific teachers who delivered the intervention, which READ intervention protocol they used, the students who received the intervention, and the duration of implementation.

Table 12

Intervention Iteration 1 Overview

Teacher delivering the intervention	READ Intervention	Focus students who received the intervention	Duration
Joan (EL teacher)	Phonics: Decoding CVC words +Vocabulary study	María, Amalia	Six weeks, daily, 15-20 min.
Sharon (Reading Interventionist)	Phonics: Decoding CVC words +Vocabulary study	Gabriel, Juan, Henry, Alejandro	Six weeks, daily, 20-25 min.
Joy (Kindergarten teacher)	Phonemic Awareness: Segmenting +Vocabulary study	Luisa, Mateo	Six weeks, daily, 15-20 min.

READ phonics: Decoding CVC words + vocabulary study. The objective of this intervention was to build decoding skills for consonant-vowel-consonant (CVC) words. The protocol outlines eight steps for teachers to follow in each intervention session: gather materials, state objective, check for understanding, explain the activity, model the

activity, give guided practice, give feedback, and allow independent practice. The intervention modification, vocabulary study, is an addition to the eight steps (see Table 11). Joan and Sharon used various materials to conduct the eight steps as well as add vocabulary study including whiteboards, markers, magnetic letters, and graphic organizers.

According to the notes I took while I observed the delivery of the READ phonics intervention, decoding CVC words + vocabulary study (Observation notes, 10/24/16), Sharon and Joan had differences and some similarities in the delivery of the same intervention. While they both followed the same protocol and added vocabulary study, they differed on the extent to which they implemented some of the steps of the protocol and the extent to which they implemented vocabulary study.

In one intervention session where I observed Sharon and one of the focus students, Alejandro, Sharon moved quickly through the set of words, each time asking the students to sound out the CVC words and then blend them together to read them. Over the course of the twenty-minute intervention Alejandro read four words that included a strategy from vocabulary study and 12 words without engaging in the vocabulary study. Sharon used one of the strategies, "Talk about the word" and encouraged the students to answer brief questions about the words, "Let's sound out this word, /v/ /e/ /t/; who can tell me what is a *vet*?" This question prompted a short conversation about Alejandro taking his cat to the vet. Towards the end of the intervention, Alejandro read a short decodable word story that included some of the targeted words (Observation notes, 10/24/16).

Throughout the iteration, Sharon took notes on how the intervention was going using an observation document I provided (see Figure 10). The observation document encouraged the teachers to note specific things about the intervention that might help us decide on the viability of the tailored intervention. I asked them to comment on a number of things:

- Things I am noticing about language use…..
- Things I am noticing about the logistics of adding this to the intervention… *(time, materials, ease of implementation, etc.)*
- Things I am noticing about motivation and engagement….
- Things I want to share with the group…
- Successes, obstacles

Figure 12. Intervention observation questions.

In Sharon's notes, there were comments about specific words that were practiced during the intervention sessions and what strategies of vocabulary study they were able to try during the session. On the notes from 10/6/2016, she writes, "Finding that I don't get to the vocabulary talk every day."

Joan followed the same intervention protocol. In the intervention I observed, the focus student, Amalia, read three CVC words that were intended for the 20-minute intervention. With each word read, Joan and Amalia talked at length about the word while creating a full sentence that was read and written in a notebook. Joan drew pictures of the words, used Spanish to clarify, and taught language structures that were necessary for understanding. For example, the first word presented to Amalia was the word *ham*.

Amalia sounded out the word, blended the sounds, and quickly turned it into a sentence, "I eat ham yesterday!" Joan saw this as an opportunity to clarify past and present tense. Explaining the past tense *ate* moved into a brief conversation about the "silent e" rule of words, and then prompted reading of a short list of "silent e" words to further demonstrate the rule. Joan then returned to the CVC words that were the focus of the intervention. The intervention session ended with Amalia reading the sentence with the word *ham* (Observation notes, 10/24/16).

Throughout the iteration, Joan also took notes on how the intervention was going using an observation document I provided. In one observation she noted,

> As I think of the word in connections with other words they often begin telling stories, which is great language practice. It's also nice when I have enough time to listen to their stories and am not rushing them.
>
> (Document, 10/10/2016)

Most of Joan's notes referred to how student language was progressing in the intervention.

READ phonemic awareness: Segmenting sounds + vocabulary study. During this six-week iteration the kindergarten teacher, Joy, tailored the phonemic awareness intervention by adding vocabulary study for her two students, Luisa and Mateo. The objective of this intervention was to practice segmenting sounds using picture cards. The protocol (see Appendix F) included the same eight steps as the phonics intervention. Whereas Joan and Sharon added vocabulary study to the end of the eight steps, Joy added vocabulary study before she modeled how to segment the sounds. Joy followed the steps to the READ intervention protocol by modeling first how to segment two-phoneme words. The words practiced in this intervention were, *day*, *boo*, *tea*, *zoo,* and *bee*. For

each word, Joy found a corresponding picture card. She modeled how to segment *day*, /d/ /ay/ by first showing the representation of the word and then segmenting the two phonemes. She showed the rest of the picture cards so the students knew what each picture represented. Each time the students practiced segmenting the words, they talked about the word. For example, when Luisa saw the picture card with a ghost representing the two-phoneme word, *boo*, she replied, "That's Halloween! Like what happened in our story!" (Observation notes, 10/24/2016). The intervention I observed was the last week of October and the class has just read a book about Halloween. Throughout the intervention Luisa used a few words in Spanish that were aligned with the words being practiced. At the end of the intervention session Joy reviewed the five words that the students practiced.

At the end of six weeks, the teacher study group met again in Session Four (detailed in a subsequent session). This session signaled the end of implementation for the interventions delivered by Joy and Sharon.

Intervention iteration 2. This intervention iteration began in the second week of November and lasted until mid-December. Though I describe it here as sequential and occurring before Phase 5, this second iteration actually occurred after the last session of the teacher study group. As mentioned previously, this second iteration was due to instructional staffing changes. The change in this iteration was not in the intervention modification, but in who delivered the intervention. In this iteration the EL teacher, Joan, was responsible for implementing all the interventions for all of the emergent bilinguals (Table 13). One student, Mateo, who received an intervention in the first iteration, got

placed into special education and so no longer received a READ tiered intervention. In iteration 2, Joan began implementing the READ letter sound recognition intervention with Luisa. In the previous iteration Luisa was in a phonemic awareness intervention, but she progressed to the intervention where she would practice letter sound identification.

Table 13

Intervention Iteration 2 Overview

Teacher delivering the intervention	READ Intervention	Focus students who received the intervention	Duration
Joan (EL teacher)	Phonics: Decoding CVC words +Vocabulary study	María, Amalia Gabriel, Juan, Henry, Alejandro	Four weeks, daily, 15-20 min.
	Phonics: Letter sound recognition + Vocabulary study	Luisa	Four weeks, daily, 15-20 min.

READ letter sound recognition + vocabulary study. The objective of this intervention was to develop letter sound recognition skills. The protocol included the same eight steps as the previous interventions. To introduce and practice letter sounds in this intervention, students matched the beginning sound in a picture card with its corresponding letter (e.g., a picture of a *tent* with the letter *t*). There are three to four target letters that are introduced and practiced in each session. Of the target letter sounds chosen for the intervention, two are intended to be letter sounds that the student has mastered. In the intervention activity, students are shown several picture cards and their corresponding letters (which are usually letter tiles). Figure 11 shows students (not the focus students) matching letter sounds to picture cards. Joan delivered this intervention to

Figure 13. READ letter sound recognition intervention. *(Photo courtesy of READ)*

Luisa during iteration 2 and added vocabulary study before the students matched the picture to the letter. Students had opportunities to talk about the pictures or name the picture in their first language. Since this intervention included picture cards (shown above), the two approaches that include visuals or drawing were not used in this intervention. The end of six weeks signaled an end of the intervention phase where Sharon, Joy, and Joan implemented the tailored READ interventions.

Phase 5: Post-Assessment

According to Reinking et al. (2013), the purpose of this phase is to "Synthesize pedagogical (local, humble) theories, design principles, recommendations for practitioners, and specifications for subsequent iterations of the intervention" (p. 5). This part of the formative experiment and design research is referred to as *retrospective analysis* (Gravemeijer & Cobb, 2006). In my study, I conducted this analysis with the teachers two times in the last weeks of the study. Additionally, once I analyzed the data with the teachers on my own, I utilized *retrospective analysis* to prepare to make assertions, which I will explain in the next chapter. In the final study group session, we synthesized the work we had done together in previous sessions and discussed how

teachers might continue to learn from each other. Then, I conducted interviews with the teachers who had implemented the intervention in order to make recommendations for future iterations of the intervention. In the next two sections, I share the findings from each opportunity where I discussed the intervention and student learning with the teachers.

Session four: Proposing strategies and conclusions. There were five teachers present at the final session: Sharon, Joan, Cori, Joy, and Lana. The session took place six weeks after Session Three and was designed to be the closing of the intervention timeline; only Joan implemented the interventions in the second iteration. I organized our meeting using the same protocol as that of previous sessions. Our purpose was to discuss how the tailored intervention implementation had gone. I hoped we would have suggestions that would contribute to the goal of tailoring a reading intervention for emergent bilinguals. Additionally, I designed part of the meeting to reflect on the learning that occurred as we met in the teacher study groups. One of the resources that I had been using to guide the teacher study group in tailoring a linguistically-responsive intervention was the WIDA Consortium handbook (2013) on RtI. The recommendations included specific strategies that teachers could use as they were building a linguistically inclusive RtI program. Specifically, they presented a checklist titled: “Necessary Conditions for ELLs to Experience the Benefits of a Responsive RtI2 Program” (see Figure 12). This checklist and the protocol I presented with it was an embodiment from the conjecture map (see Chapter 3, Figure 5) for instigating an observable interaction that

could be analyzed as a *learning outcome.* To begin the process, I handed out the document to each teacher in the group.

Necessary Conditions for ELLs to Experience the Benefits of a Responsive RtI2 Program
Use innovative practices and reforms in all tiers with a focus on enrichment, increased comprehensibility, and meaningfulness rather than remediation.
Customize RtI2 systems according to a school or district's individual needs, and select multiple and different practices for the multiple tiers of support. Implement these practices in a cohesive, contextualized, and comprehensible way from a sociocultural perspective.
Make certain that all educators are aware of the research on what practices, strategies, approaches, and interventions work with whom, by whom, and in what contexts (Klingner & Edwards, 2006) : ***EL teacher response***
Ensure that students receive culturally responsive, appropriate, quality content and language instruction that is evidence-based at all levels.
Provide linguistic supports when assessing students' content knowledge.
Provide time for team members to plan for students' instruction, resulting in instruction and intervention strategies that are cohesive, authentic and meaningful, and connected to the core curriculum.
Include approaches that focus on complex sociocultural phenomena and better address students' unique educational contexts.
Look not only at classrooms, but also at languages and outside social/educational settings for insights into students' performance. ***One classroom teacher***
Recognize the need for both appropriate ELL literacy instruction as well as academic language instruction across content areas. ***Two classroom teachers***
Differentiate at all tiers of support according to students' academic language proficiency levels. ***Reading interventionist***

(WIDA Consortium, 2013)

Figure 14. Teacher study group responses.

We took turns reading the ten conditions presented, then we used a structured protocol to discuss each condition. I asked the teachers to choose one of the conditions that we addressed during our previous sessions and gave them a minute to explain their response. Then, the other teachers in the group would have a minute to respond. This way, each person read one of the "necessary conditions" and others had a chance to comment. This

protocol allowed the teachers to have equal opportunities to speak and respond to each other. I made the design decision to use this document and provide time for comments because I thought that it would allow the participants to see how the group used each other collaboratively, and it could help me answer my research questions about teacher learning.

To begin, the EL teacher, Joan, started by reading condition # 3 "Make certain that all educators are aware of the research on what practices, strategies, or approaches, and interventions work with whom, by whom, and under which contexts." She felt this was important for teachers to understand, and others agreed that they needed her support,

> **Joan**: …I feel that many of our educators aren't aware of the research about our ELLs um, they've been overwhelmed with all of this READ … I do feel that somewhere we need to make it more clear of the research and practices, strategies and approaches we use in ELLs, and also, for many of the ELLs it's not that different than what is being done for other students in the class.
>
> **Annie**: So let's get about a minute to respond.
>
> **Joy:** I agree, a lot of people aren't as experienced or informed as maybe we should be with the ELL population that we have. It would be great to have some teacher time to be able to talk about it, especially with you [Joan] knowing a lot about the practices and stuff even do just a five minute, this is something you could try or this is something you could try, not something that is overwhelming but just a something some information for people to try.
>
> **Cori:** I agree with the 5-10 minutes because I am not an expert at it but you have got so much knowledge that if you could just like 5-10 minutes.
>
> **Joan:** [laughs] I don't know.
>
> **Cori:** Well yeah you are more aware of some of the research and if you could share with some of the classroom teachers, cause I don't think that it's not that the classroom teachers don't want to do it I think it's just they have so much research on, that you have to do this, this, this, and this. OK, then it's like where do I even begin, you know where do I begin? So, by you sharing a 5- or 10-minute tidbit of something that you could right to maybe even grade level specific maybe not even

> as a whole grade a whole school because sometimes that's very overwhelming and you still have to bring it down to another level or bring it up, but maybe if you went around maybe to each grade level as a team and said here's something, try and see and let me know you know, or here's a couple things you can try, I don't know, but not more than just 5 minutes or 10 minutes just to share. (Audio transcript, 11/14/2016)

The group determined that it would be helpful for the EL teacher, Joan, to disseminate research and ideas to other teachers in the school. Then, the kindergarten teacher, Joy, shared that the condition that she felt was necessary, "Look not only at classrooms, but also at languages and outside social/educational settings for insights into students' performance" (Audio transcript, 11/14/16). As a classroom teacher, Joy felt that there was so much that she couldn't control, "How can I take what's happening out there and help them forget it, so that they can be successful in the room, I don't know how to do that, any ideas?" (Audio transcript, 11/14/16). The reading interventionist, Sharon, agreed and responded, "I would say that one of the things that we probably need more training on is poverty and how to work with kids in poverty, there's some really, really good information out there and we just have to get it and work with it" (Audio transcript, 11/14/16). The group agreed. Joan suggested that they may start a book club to tackle some of the issues they had a difficult time understanding, like what poverty is like,

> … how do I understand what it is like to live in a trailer park, how do we understand what it's like to have beans and tortillas and cheese all the time, um, I'm just like, what would it be like to be hearing English all day and then going home and hearing your first language the rest of the day. Those are things right off the top of my head that would be so specific, I don't want to get too far out there but I agree exactly, the poverty thing. (Audio transcript, 11/14/16)

Next, the two classroom teachers both chose: "Recognize the need for both appropriate ELL literacy instruction as well as academic language instruction across content areas."

Others in the group responded with agreement and the group talked about how beneficial this was for all students. Cori talked about a situation earlier that month where one native-English speaker in her 1st grade classroom did not know what a "pond" was. She was surprised by this and it made her think that she needed to talk a lot about what words meant, even ones that seemed simple. The others agreed and Joy talked about how necessary it was for students to be talking in her classroom, but having an interactive classroom was not always valued by others,

> You know there is so much that they can learn from each other by just talking to each other and you feel like if someone comes in your room and have them look at your kids talking they are going to say you know, like "you're not doing anything." You know well, yes we are, look at all this oral language that they are building, look at all the vocabulary that they are learning and how comfortable they are asking each other questions because they don't want to raise their hand and say "I don't know that" in front of everyone else, and so providing time to talk is so important but I get with those kids who don't know words that you assume that they should know, you know it could take all day, they could talk all day about these things.
>
> (Audio transcript, 11/14/2016)

Following the discussion, we reviewed language and reading data that had been collected over the course of the six-week intervention. We responded to these questions: "Does or how does looking at both pieces of data help make intervention decisions? How can the language data help us understand the reading data?" I asked these questions because reading and language data were some of the *tools* outlined in the conjecture map (see Chapter 3, Figure 5) that would encourage a *mediating process* of using each other's expertise to see if the intervention was working. Teachers looked at the focus students' data and dialogued about reading and language growth. Conversations didn't stay on data for very long because once we got talking, the conversation moved into what was

happening at home with one of the focus students, Gabriel. He was having a difficult time getting to school and that was certainly contributing to his slow growth, the teachers thought. While discussing another student, Alejandro, Sharon had noted that he had "come a long way in two years." Two years ago Sharon observed him at church, as they both attended the same church in town. She felt worried that he wouldn't be ready for school. Now, she was impressed with the way he was progressing.

They also noticed that students in the tailored intervention were making growth in reading and that the sentence repetition assessment gave them a data point that they had not considered before. Though some of the teachers had looked at the WIDA language levels before, Joan explained that she didn't feel that the language level scores from WIDA were precise enough to share to make any real decisions about student progress. Cori and Joan thought that at least the sentence repetition task instigated a conversation that could be useful and could be used along with looking at the reading data,

> **Joan:** It's good to look at it all together [reading and sentence repetition data]
>
> **Cori:** … and they each come together, if I were just to have gotten this [sentence repetition data] it would have felt like, you know, there is another piece here and they are all connected; it's good to have both of them."

In this phase, my intent was to engage in a *retrospective analysis* with the teachers in order to look back and discuss the specific implications for tailoring the intervention with vocabulary study and have a discussion about what participants had learned over the course of the intervention and study group sessions. Our conversation about the Necessary Conditions (WIDA Consortium, 2013) contributed to an understanding of what the teachers had learned over the course of creating and

implementing the intervention. However, there was still room for discussion about recommendations for using vocabulary study as a modification for the READ interventions. We discussed the intervention modifications and continued to discuss the teacher learning in the study group sessions during the interviews I conducted the following two weeks.

Post-assessment interviews. I met individually with Sharon, Joan, and Joy to conduct a standardized, open-ended interview (see Chapter 3 for interview questions) in order to discuss recommendations from them about intervention viability. Since Cori and Lana participated in the teacher study group sessions but not in the intervention implementation, they responded to several questions I posed via email correspondence.

There was general agreement that tailoring the intervention was beneficial for the students. Sharon and I discussed how the students had progressed over the course of the intervention in word reading, and she felt that they benefitted in comprehension as well, especially as they discussed multiple-meaning words,

> **Sharon:** I think their progress is good and I think that their comprehension of the story was better because we talked about them. It made me focus in more, which I think was good too, you know like the "pen" thing, you know I wouldn't have even focused in on the fact that maybe they didn't know what kind of "pen" we were talking about in the story. Once I focused in on it then I could ask them questions I could tell that you know they got it.
>
> **Annie:** Yeah, and I mean they like to talk.
>
> **Sharon:** Oh my goodness they like to talk!
>
> (Interview, 11/22/2016)

As far as continuing to tailor the intervention for the emergent bilinguals in her intervention groups, Sharon was willing to do the language practice with two or three

words each time. She also felt it would be a useful modification for the "poverty kids" (Interview, 11/22/2016). She noted that, in her intervention group, there was a native English speaker who appeared to struggle as much as the emergent bilinguals in vocabulary. Joan agreed that using the vocabulary study would be an important modification for learning how to read words. Joan had expressed a strong dislike for the part of the READ intervention where students only read a word list. She believed that when students had opportunities to talk they could make more sense of the word.

There was also general agreement within the group that using knowledge of students' language levels would be beneficial as teachers talked about their reading development. As we discussed how to use language levels to inform teachers about students' language and reading development, Joan cautioned against only looking at word reading data,

> **Joan:** We have to do something or otherwise it just translates into the READ data and it just becomes number data and not enough language.
>
> **Annie:** …And that's just not fair to who they are.
>
> **Joan**: Uh huh, it's not it's not.
>
> (Interview, 11/22/2016)

In Sharon's interview, she also explained that talking about the students' language levels could be a good idea, especially when the teachers problem solve about how and if students are making progress. Each week Sharon led student study team meetings where grade level teachers discussed how interventions were working. She stated that the language data we collected over the course of the study could be a good place for teachers to start talking about vocabulary.

Over the course of the interviews and the email correspondence from Cori and Lana, we discussed whether or not gathering a group of teachers to collaborate and learn about emergent bilinguals in reading intervention would be something that other schools could enact. The teachers were in agreement that they learned about emergent bilinguals through this process, especially as it pertained to learning about what language proficiency levels are. Joy thought "that those two discussion were really beneficial for all of us" (Interview, 11/22/2016). Lana and Cori both mentioned that, although they did not implement the tailored intervention, they learned strategies that could be helpful in their classroom instruction. Lana felt more aware of vocabulary in her classroom,

> Again, I think the vocabulary study and focusing in on certain words each week to build upon their oral vocabulary. I think it makes me more conscious as well to constantly be thinking how I can make sure my ELs are understanding what I'm saying because they aren't always going to ask for clarification.
>
> (Email correspondence, 12/8/2016)

In an effort to further make transparent the *retrospective analysis,* in each interview we discussed the conceptual framework we had used (see Chapter 2), "Factors Influencing Literacy Development in a Second Language" (Helman, 2009). During the interview I presented a copy of the framework and asked the teachers to comment on how we took into consideration the given factors over the course of the teacher study groups and intervention implementation. Participants commented briefly on each factor: linguistic, psychological, sociocultural, and educational. Upon reflection of this portion of the interview (Researcher journal, 11/23/2016), I regretted not giving this question more time in the interview. The three teachers simply looked at the framework, and said things like, "yeah, we talked about this, and we talked about that, and this one we didn't

talk too much about." Joy, Joan, and Sharon all noticed that this framework synthesized the conversation about emergent bilinguals. Joy suggested that other teachers could use the graphic in their data team meetings to discuss student progress.

In the next section, I share the results of the quantitative data analysis that focused on student reading and language outcomes. I also share a frequency count that I conducted to explicate the use of the vocabulary study.

Student Reading and Language Results

To further tell the story of how each intervention was delivered by individual teachers, I conducted a frequency count to highlight the extent to which teachers tailored the intervention. In the next section, I detail the findings from the frequency count. Then, I outline how the students increased in reading and language outcomes. In my study, I collected reading and language data in order to see how the students fared in the tailored intervention. In the conjecture map detailed for student outcomes (see Chapter 3, Figure 6), I surmised that students who received the READ phonics or phonemic awareness intervention + vocabulary study would increase on both word reading and language outcomes. I discuss these outcomes for each student in the section titled "Progress Monitoring Data."

Frequency Counts: Reading and Language

In order to determine the extent to which the teachers engaged in language development and reading tasks in the intervention, I conducted a frequency count on the intervention observations (10/24/2016) of Joan and Sharon. I observed Sharon deliver a

READ phonics CVC intervention with Alejandro, as well as a session she conducted with Gabriel and Juan. I observed Joan deliver the same intervention with Amalia.

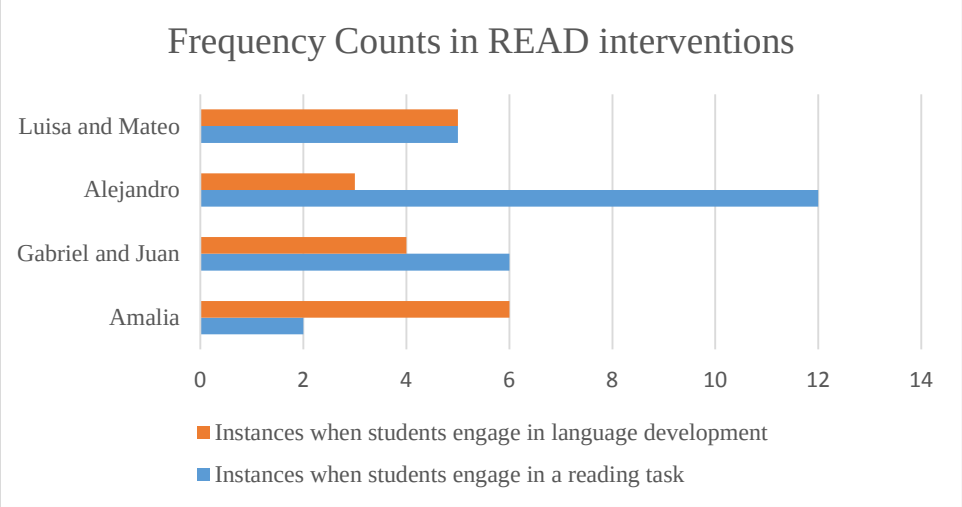

Figure 15. Language development and reading task episodes during intervention.

In terms of the frequency count, during the READ phonics CVC intervention Sharon prompted the students to read more words. This is indicated with the code "instances when students engage in a reading task." Over the course of one intervention session, Alejandro read twelve words and, of those twelve, engaged in the vocabulary study three times, which is indicated by the "instances when students engage in language development." Gabriel and Juan also read more words in one intervention session than the words they practiced using vocabulary study. On the other hand, in one READ phonics CVC intervention session, Amalia read two words and engaged in six instances of language development. In Joy's tailored intervention with Luisa and Mateo, her students engaged in the same balance of language development and a reading task, phonemic awareness.

Progress Monitoring Data

I identified eight students on whom to focus data collection. The teachers who delivered the interventions identified these students to be the focus students because of their status as emergent bilinguals participating in a phonics or phonemic awareness intervention. Though there were additional students who met these criteria in the classrooms, as a team we decided that choosing two students per teacher who was delivering an intervention would be sufficient to observe and collect additional data on over the course of the intervention iteration. The students were representative of grades kindergarten through fourth grade. Although an early phonics intervention focusing on CVC words is not typically an intervention suited for the third and fourth grades, María and Amalia were candidates for the intervention because they were relatively new to the country and were still learning letter-sound correspondence and word blending in English. The remaining focus students received either a READ phonemic awareness intervention or a READ phonics intervention over the course of intervention implementation. The decision to deliver these interventions was made by Sharon, the reading interventionist, and the classroom teachers based on the results of the FastBridge Learning universal screening score (see Table 14).

In an RtI Framework, a universal screening score that is below a student's grade level expectation is an indication to teachers that the student might benefit from a reading intervention. For example, Henry was a candidate for intervention because he read 22 words per minute in the FastBridge Learning universal screener and the grade level expectation was 59 words per minute. Once Sharon collected the universal screening data in the fall and identified students for intervention, she followed up with each student

using a diagnostic assessment that would indicate in what area of decoding or phonemic awareness the student might benefit from during an intervention.

Table 14

Language Levels and Universal Screening Scores of the Focus Students

Name	**Grade**	**WIDA language level* (overall**)**	**FastBridge Learning universal screening score** **letter sound fluency (LSF) or words per minute (WPM)**	**Grade level expectation** **letter sound fluency (LSF) or words per minute (WPM)**
Luisa	K	2	3 LSF	5 LSF
Mateo	K	1.5	10 LSF	5 LSF
Gabriel	1st	2.7	6 WPM	9 WPM
Juan	1st	3.4	8 WPM	9 WPM
Henry	2nd	2	22 WPM	59 WPM
Alejandro	2nd	2.4	5 WPM	59 WPM
María	3rd	N/A	N/A	91 WPM
Amalia	4th	2.5	N/A	116 WPM

* Language levels are on a 1-6 proficiency scale. 1 is the lowest, 6 is the highest
**Overall scores are calculated as follows: 35% reading + 35% writing + 15% listening + 15% speaking

In the next sections, I describe each focus student and share the results of the reading and language data collected over the course of the study. I describe their reading and language data in pairs when they were in the same intervention sessions. The reading data I present is the progress monitoring data for each student in the study. There are two types of progress monitoring data described for each student. First, I share the READ skill assessment data. As described in Chapter 3, a skill assessment is a type of formative assessment that measures how the student is progressing in the skill that is being taught in the intervention (sometimes called a sub-skill measure). The READ skill assessment varies depending on the focus of the intervention. The second type of data I present is the FastBridge Learning progress monitoring. This assessment, also described in greater

detail in Chapter 3, is a curriculum based measure (CBM) and is considered a general outcome measure. Specifically, it can provide information on the student's generalized advancement towards grade level benchmarks. The FastBridge Learning passages, which are read by students starting in 2nd grade, are normed assessments and have set criteria for grade level expectations. The READ skill assessments are not normed assessments and should not be used to indicate growth over time (National Center on Response to Intervention, 2017) but provide valuable information on students' progress on particular skills. It is recommended that when teachers review data collected for students identified as emergent bilinguals, they keep in mind additional considerations and data such as language proficiency and social contexts (Klingner et al., 2006). I describe the reading outcomes, language proficiency, and the social contexts that we discussed related to each focus student.

Luisa and Mateo. For the first three weeks of the first iteration, Luisa and Mateo's classroom teacher, Joy, delivered the READ phonemic awareness intervention that focused on isolating sounds and segmenting sounds. However, after three weeks of the intervention, Mateo qualified for special education services and began working with the special education teacher during the intervention block for kindergarten. Therefore, Sharon stopped collecting progress monitoring data for him.

Luisa and Mateo reading data. Each week the reading interventionist, Sharon, administered READ skill assessments (see Table 15) to see how Luisa was progressing in the intervention. The READ skill assessment in this case was a phoneme isolation task. In four weeks, Luisa increased in accurately isolating sounds within words from 50% to

90%. After four weeks of progress monitoring in isolating sounds, Luisa was assessed on a more complex phonemic awareness task, segmenting sounds. Progress monitoring data indicated that Luisa was still working on mastering segmenting sounds as she decreased in accuracy of the task from 20% to 0%. Meanwhile, it was during this three-week period

Table 15

Luisa's READ Skill Assessment Progress Monitoring

Week	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Initial sound isolation (sounds correct/ total)	5/10	7/10	10/10	9/10			
Accuracy	50%	70%	100%	90%			
Phoneme Segmentation (sounds correct/ Total)					2/10	1/10	0/10
Accuracy					20%	10%	0%

(Nov. 18-Dec. 8) that the EL teacher, Joan, began delivering Luisa's READ letter sound + vocabulary study intervention in the second iteration of the study. Results from the FastBridge Learning letter sound fluency progress monitoring indicated that in nine weeks Luisa's rate of sounds per minute progressed from 1 correct letter sound (Oct. 3) to 20 correct letter sounds (Dec. 8). Her accuracy improved from 4% to 71%.

Luisa language data. According to the WIDA assessment, Luisa's English proficiency levels were considered *Developing* (level 2). In the sentence repetition

Table 16

Luisa's FastBridge Learning Letter Sound Fluency Progress Monitoring

Week	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Letter Sound Fluency Correct/ total sounds read	1/23	1/18	4/17	5/16	4/15	4/14	10/21	11/23	20/28
Accuracy	4%	5%	23%	31%	26%	40%	47%	50%	71%

measure Luisa progressed from one sentence read correctly at baseline from the beginning of the study to two sentences read correctly at the end of the study. Moreover, at the post-assessment, Luisa could repeat more total words. For example, at baseline, Luisa was asked to repeat the sentence: "I saw the dog that ran away." She could only repeat the following words correctly: "I saw…..that…." In the post-assessment Luisa was asked to repeat the same sentence. She responded almost entirely correctly, "I saw the dog … ran away".

Gabriel and Juan. Gabriel and Juan were first graders in Cori's classroom and received intervention from Sharon. Each day at 1:45 p.m., during the first grade intervention block, Gabriel and Juan walked to Sharon's classroom for their twenty-minute intervention. This activity was the second time during the day that Gabriel and Juan left the classroom for support. During the morning, they walked together to Joan's room where she would teach a small group of students for her EL pullout class that focused on language development. In the first iteration of the intervention, Gabriel and Juan received the READ phonics CVC intervention + vocabulary study from Sharon. In

the second iteration, Joan also delivered the READ phonics CVC intervention + vocabulary study.

Gabriel and Juan reading data. The READ skill assessment results collected for Gabriel indicate that both his rate and accuracy increased in reading decodable words. In the READ skill assessment, teachers recorded both the sounds read in a CVC word as well as whether or not the total word was read correctly. For example, a student could sound out the word /p/ /i/ /t/ and then blend the word incorrectly, /pat/. In the previous example, each sound would be counted as correct, but the total word would not be counted as correct. This was the case for Gabriel. He knew the sounds in the words, but was unable to blend them correctly. This issue persisted over the course of the intervention. In week 7, Gabriel attempted 18 words and did not blend one correctly. In week 8, Sharon made the decision not to collect sounds read correctly because it

Table 17

Gabriel's READ Skill Assessment Results

Week	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
Decodable Word Fluency (sounds read correct/total words)	26/32	31/34	39/45	39/51	40/46	45/51	51/54				
Accuracy	81%	91%	86%	76%	86%	88%	94%				
Words read correct/ total words	0/11	0/11	0/15	0/17	0/16	0/17	0/18	22/30	*19/30*	*15/21*	*23/30*
Accuracy	0%	0%	0%	0%	0%	0%	0%	73%	*63%*	*71%*	*77%*

appeared that Gabriel was near mastery of letter sounds. Now, Sharon focused the data collection on the words read correctly. Week 8 also marked the first week of the second

iteration of the study. In this iteration, the intervention did not change, but the person delivering the intervention did change. Whereas Gabriel and Juan had been going to Sharon, the reading interventionist, for intervention, now they would be receiving the intervention from the EL teacher, Joan. This change occurred because the classroom teacher and interventionist did not think it was in the best interest of the students to be pulled out of class twice a day. Therefore, they would only be pulled out of class by Joan for language development, and she would also implement the READ phonics intervention + vocabulary study. At the close of the second iteration, which was week 11, Gabriel read at a rate of 23 words per minute and an accuracy of 77% (see Table 18). Similarly, Gabriel progressed in word reading as indicated by FastBridge Learning progress monitoring (Table 18). At week 11 he was reading 31 words per minute with 79% accuracy.

Table 18

Gabriel's FastBridge Learning Progress Monitoring

Week	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
Decodable Word Fluency (sounds read correct/total words)	6/23	10/26	18/25	18/28	19/29	17/30	32/40	18/29	31/39	18/29	31/39
Accuracy	26%	38%	72%	64%	65%	57%	80%	62%	79%	62%	79%

This progress was further evident in the winter universal screener. In the fall, the first grade universal screener is a decodable word fluency measure. By winter of first

grade, the measure changes and teachers administer a FastBridge Learning sentence reading passage. In the sentence reading assessment, Gabriel read 33 words per minute with an accuracy rate of 77%. This was a positive improvement from week 8 when Gabriel had a difficult time blending CVC words.

Juan was in the same intervention group and showed similar gains in comparison to Gabriel on letter-sound reading, but Juan's rate and accuracy of the total words read correctly varied. Over the course of the intervention Juan progressed from 9 words read per minute in the READ decodable word fluency check to 10 words in a minute. Like Gabriel, Juan made gains in sounding out the letters, but was not growing as quickly in blending the words together in the first several weeks (week 1-6) of the intervention.

Table 19

Juan's READ Skill Assessment Progress Monitoring

Week	*1*	*2*	*3*	*4*	*5*	*6*	*7*
Decodable Word Fluency (sounds read correct/total words)	43/48	40/41	38/39	50/51	64/66	53/54	51/54
Accuracy	89%	97%	94%	98%	96%	98%	94%
Words read correct/ total words	9/16	0/13	3/13	12/17	14/22	14/18	10/18
Accuracy	56%	0%	23%	70%	63%	77%	72%

However, these results were inconsistent with a different but related measure, the FastBridge Learning decodable word fluency measure. Over the course of 8 weeks, Juan progressed from reading 19 to 25 words per minute and increased his accuracy from 67%

to 78% (see Table 20). By the winter screener, Juan read 33 words per minute with 100% accuracy.

Table 20

Juan's FastBridgeLearning Progress Monitoring

Week	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Decodable Word Fluency (words read correct/total words)	19/28	19/29	25/30	19/26	25/30	29/34	28/32	25/32
Accuracy	67%	65%	83%	73%	83%	85%	85%	78%

Gabriel and Juan language data. Gabriel and Juan both improved on the sentence repetition measure. Based on WIDA proficiency levels, Gabriel's composite score was *Beginning* (level 2.7) and Juan's composite score was *Developing* (level 3.4). In the baseline assessment, Gabriel was able to repeat five of the twenty sentences with no errors. In the post-assessment he read ten of the twenty sentences correctly. Some of the syntactical errors Gabriel made were typical of a student learning English. For example, in one sentence he was asked to repeat, "If I eat this cake now, I won't be hungry later." Gabriel said, "If I eat this cake now, I *will not* be hungry later." Gabriel's replacement of "will not" for "won't" maintains the meaning of the sentence, and indicates that Gabriel understands conjunctions. In the post assessment, Gabriel read the sentence with no errors. In another sentence in the baseline assessment, Gabriel made a morphological error and dropped the ending "s" on a word. He was able to read it correctly in the post-assessment.

Over the course of the intervention Juan also improved in the number of sentences he was able to repeat correctly. In the baseline assessment he read nine out of twenty sentences correctly. Some of the errors were minor and the repeated sentence maintained its meaning. For example, I asked Juan to repeat, “There is a bee outside our window, isn’t there?” Juan said, “There is a bee outside *the* window, isn’t there?” Though many of the errors made in the baseline were not made in the post-assessment, Juan made this error again. The use of “our” to describe “window” is not as common as the article “the” and could explain why an emergent bilingual might make this mistake. Overall, there were several errors made by both Juan and Gabriel that were typical of emergent bilinguals.

Henry and Alejandro. Henry and Alejandro were in the same intervention group for the first iteration of the intervention. Henry and Alejandro’s FastBridge Learning fall universal screener scores were 22 WPM and 5 WPM, respectively. The fall criterion for the second grade universal screener was 59 WPM. Based on the universal screening results, Sharon administered a diagnostic placement assessment. It was determined that Henry and Alejandro would benefit from a READ phonics CVC + vocabulary study intervention. Henry’s READ progress monitoring data indicated that over the course of the intervention Henry increased in both rate and accuracy. Throughout the intervention, it was evident that Henry knew letter sounds. In week 1, Sharon recorded that he read 109 sounds correctly in the decodable word fluency assessment. He was also able to blend those sounds to make decodable words. Over the course of the intervention his scores

progressed continuously, as he read 17 WPM with 44% accuracy in week 1 to 34 WPM with 76% accuracy in week 7. Alejandro was in the same intervention and increased in rate and accuracy over the course of the intervention. In week 1, Alejandro was able to read 28 sounds per minute with 77% accuracy and by week 7 was able to read 41 sounds

Table 21

Henry's READ Skill Assessment Progress monitoring

Week	*1*	*2*	*3*	*4*	*5*	*6*	*7*
Decodable Word Fluency (sounds read correct/total words)	109/117	105/117	140/144	129/132	152/152	124/129	129/135
Accuracy	93%	89%	97%	98%	100%	96%	96%
Words read correct/ total words (WPM)	17/39	23/29	32/35	32/35	31/38	32/43`	34/45
Accuracy	44%	58%	91%	75%	82%	74%	76%

per minute with 85% accuracy. Though the number of sounds read correctly increased, Alejandro was not able to blend the words together successfully to make a word, as

Table 22

Alejandro's READ Skill Assessment Progress Monitoring

Week	*1*	*2*	*3*	*4*	*5*	*6*	*7*
Decodable Word Fluency (sounds read correct/total words)	28/36		31/39	54/72	47/57	50/60	41/48
Accuracy	77%		79%	75%	82%	83%	85%
Words read correct/ total words	0/12		0/13	0/24	0/19	0/19	0/20
Accuracy	0%		0%	0%	0%	0%	0%

indicated by the rate and accuracy (see Table 22) of WPM for Alejandro, which was zero over the course of the intervention.

Since Henry and Alejandro were second graders, each week Sharon administered a FastBridge Learning CBM passage at the second grade level to show if the students were making progress towards their grade level. Over the course of the intervention, Henry increased from 46 WPM with 91% accuracy to 61 WPM with 98% accuracy (see Table 23). By the time the second grade winter screener was administered around week 11, Henry read 83 WPM with 100% accuracy. Alejandro's rate and accuracy of word reading on the FastBridge Learning CBM did not show gains over the course of the

Table 23

Henry's FastBridge Learning Progress Monitoring

Week	*1*	*2*	*3*	*4*	*5*	*6*	*7*
Curriculum Based Measure-Reading (CBM) Words read per minute/ errors	46/51	44/32	45/52	57/59	59/63	60/64	62/63
Accuracy	91%	84%	86%	96%	93%	94%	98%

intervention. In week 1, Alejandro read 9 WPM with 56% accuracy. By week 8, he read 7 WPM with 50% accuracy. This lack of growth was consistent with the concerns that Sharon had regarding Alejandro's progress. In fact, Sharon started the special education referral process around week 5. Her decision was not based solely on this reading data, but also built on concerns from the previous year. Alejandro was retained in first grade and retention did not appear to help him catch up to where he needed to be as a second

grader. When Sharon emailed me in January, she informed me that he had qualified for special education services. Alejandro's winter screening indicated that he read 10 WPM with 50% accuracy.

Table 24

Alejandro's FastBridge Learning Progress Monitoring

Week	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***
Curriculum Based Measure-Reading (CBM) Words read per minute/ Errors	9/16	7/19	10/21	13/25	10/21	9/21	9/19	7/14
Accuracy	56%	36%	47%	52%	47%	43%	47%	50%

Henry and Alejandro language data. According to WIDA guidelines, Henry's composite language proficiency score was *Beginning* (level 2) and Alejandro's was *Beginning* (level 2.4). In the baseline assessment for sentence repetition Henry repeated eight out of twenty sentences correctly and ten out of twenty at the post-assessment. Though the WIDA language proficiency score was higher for Alejandro, he was able to repeat fewer sentences than Henry. At baseline he repeated three sentences correctly, and in the post-assessment he repeated five correctly.

Amalia and María. Amalia and María were the oldest of the focus students and, as mentioned earlier, received a READ phonics letter sound intervention + vocabulary study because they were relatively new to the U.S. Amalia was a fourth grader who arrived at Weston Elementary the previous year. She had gone to school in Mexico and could read and write in Spanish. Up to the point where we began the intervention, Amalia

had not been in a READ intervention group at all. Since her previous school year was third grade and she was new to the country, her primary support for learning how to read was in Joan's EL classroom. This was also the case for María. When the study began, María had just been in the U.S. for a few months and was also proficient in reading and writing in Spanish. Therefore, Joan determined that an intervention that focused on letter sounds in English would be a good fit.

Table 25

Amalia's READ skill assessment progress monitoring

Week	**1**	**2**	**3**	**4**	**5**	**6**
Letter Sound Fluency Correct/ total sounds read	21/23	25/37	20/28	26/33	39/41	34/40
Accuracy	91%	67%	71%	78%	92%	85%

Amalia and María reading data. Over the course of six weeks Amalia's rate increased (see Table 25) from 21 sounds per minute to 34 sounds per minute, and her accuracy fluctuated. In week 6, she knew the sounds more automatically, but made a few more errors. María also grew in letter-sound knowledge over the course of the intervention. Both her rate (16 sounds per minute to 22 sounds per minute) and accuracy increased (66% to 92%; see Table 26). One thing to note was that the READ skill assessment progress monitoring is intended to align with the intervention delivered. In this case, Amalia was administered a letter sound fluency assessment because her

intervention was to focus on learning letter sounds. However, this was not the case. After week 1 of intervention Joan changed the intervention. Though she originally intended to do a letter-sound intervention, she realized after a week that Amalia and María knew a lot of letter sounds and would benefit from an intervention where they blended words.

Table 26

María 's READ skill assessment progress monitoring

Week	**1**	**2**	**3**	**4**	**5**	**6**
Letter Sound Fluency Correct/ total sounds read	16/26	19/24	20/23	29/34	20/26	22/24
Accuracy	66%	80%	87%	85%	77%	92%

However, Sharon was the person responsible for progress monitoring all the students in intervention and she did not know that Joan had changed the intervention. Therefore, no progress monitoring data were collected in the area in which the students received intervention. Moreover, the FastBridge Learning grade level CBM progress monitoring probes were not collected for Amalia and María. Sharon and Joan decided that Amalia (4th) and María (3rd) did not have to attempt a CBM that was significantly harder than their instructional level. However, Amalia and María both participated in the winter FastBridge Learning universal screener. Amalia read 95 WPM with an accuracy rate of 98% on a fourth grade CBM. María read 39 WPM with an accuracy rate of 91% on a third grade CBM.

Amalia and María language data. Amalia's sentence repetition measure score did not change over the course of the intervention. She read seven out of twenty sentences correctly at baseline and seven out of twenty in the post-assessment. There were some errors that Amalia made at baseline that she corrected in the post-assessment, but there were also sentences that Amalia had repeated correctly at baseline, but made errors on during the post-assessment. For example, in the baseline she repeated correctly, "I saw the dog that ran away," but in the post-assessment she read, "I saw the dog ran away." I chose not to administer the sentence repetition measure for María because she knew very few words in English at the time of the baseline assessment and I did not think she could understand the directions of the assessment.

Summary

In this chapter I shared the results of the mixed-methods approach to data collection and analysis in my study. After reviewing the goals and research questions, I shared a vignette based on analysis of the qualitative data I collected. The vignette detailed the chronological order of how the teachers used each other's expertise to tailor and implement reading interventions. In the quantitative section, I shared the results of frequency counts I conducted in order to determine the extent to which specific teachers implemented the vocabulary study. Then, I shared the progress monitoring data collected for all focus students.

In the next chapter, I synthesize the findings from the qualitative and quantitative data and present three assertions. Then, I address four questions from the Reinking and

Bradley (2008) framework for a formative experiment. I close the chapter by providing recommendations for the classroom and concluding comments.

CHAPTER FIVE

DISCUSSION

In this chapter, I present the three assertions I made based on the interpretation of the qualitative and quantitative data analysis from Chapter 4. Then, I describe how the study goal was met, and address the final questions from the Reinking and Bradley (2009) formative experiment framework. The questions I address in this chapter are:

Question 3) What factors enhance or inhibit the effectiveness, efficiency, and appeal of the intervention in regard to achieving the set pedagogical goal?

Question 4) How can the intervention be modified to achieve the pedagogical goals more effectively and efficiently and in a way that is appealing and engaging to students?

Question 5) What unanticipated positive and negative effects does the intervention produce?

Question 6) Has the instructional environment changed as a result of the intervention? From there, I discuss limitations of the study, suggest future iterations, and finally, make recommendations for practice.

Assertions

In a formative experiment, a concluding step is to conduct retrospective analysis in order to understand the development of local instruction theory. As Gravemejier and Cobb (2006) state, “The purpose of design experiments is to develop theories about both the process of learning and the means designed to support that learning” (p. 18). In my study, in order to adhere to the retrospective analysis, I consulted the conjecture maps

(see Chapter 3) that outlined the theoretical conjectures I prepared as I planned the study. To reiterate what I outlined in the conjecture map related to teacher learning (see Figure 5) my study was grounded in practice based professional development (Ball& Cohen, 1999). I surmised that through purposeful planning of a teacher study group consisting of varied perspectives (i.e., those of an EL teacher, reading interventionist, and classroom teachers) teachers would learn from each other about how to best implement a linguistically-responsive reading intervention. In the conjecture map related to student learning, my conjecture was that students would develop word reading and language through a reading intervention that was grounded in language acquisition theories of input (Krashen, 1985) and output (Swain, 2005), while supported in a gradual release of responsibility (Pearson & Gallagher, 1983).

The graphic below (see Figure 14) details the data sources I used to synthesize the qualitative and quantitative findings for interpretation (Creswell & Plano Clark, 2012) and make three assertions. The three assertions tell the story of how the goal of the formative experiment was met. Assertion #1 substantiates the idea that the teachers called upon each other's expertise to learn about how to tailor an intervention to be linguistically-responsive. Assertion #2 states that the process of tailoring an intervention to be linguistically-responsive allowed teachers to discuss the factors that influence literacy development in another language. Assertion #3 defends the position that adding a linguistically-responsive approach, vocabulary study, to the phonemic awareness and phonics interventions is promising. Combined, these three assertions help to reinforce the position that the goal of the study was met.

In the following sections, I describe how the three assertions were verified based on data sources and analysis. I enhance the thick description of the voices, feelings, and actions (Denzin, 1989) in the case study of the teacher study group as I synthesize qualitative and quantitative data from the student outcomes.

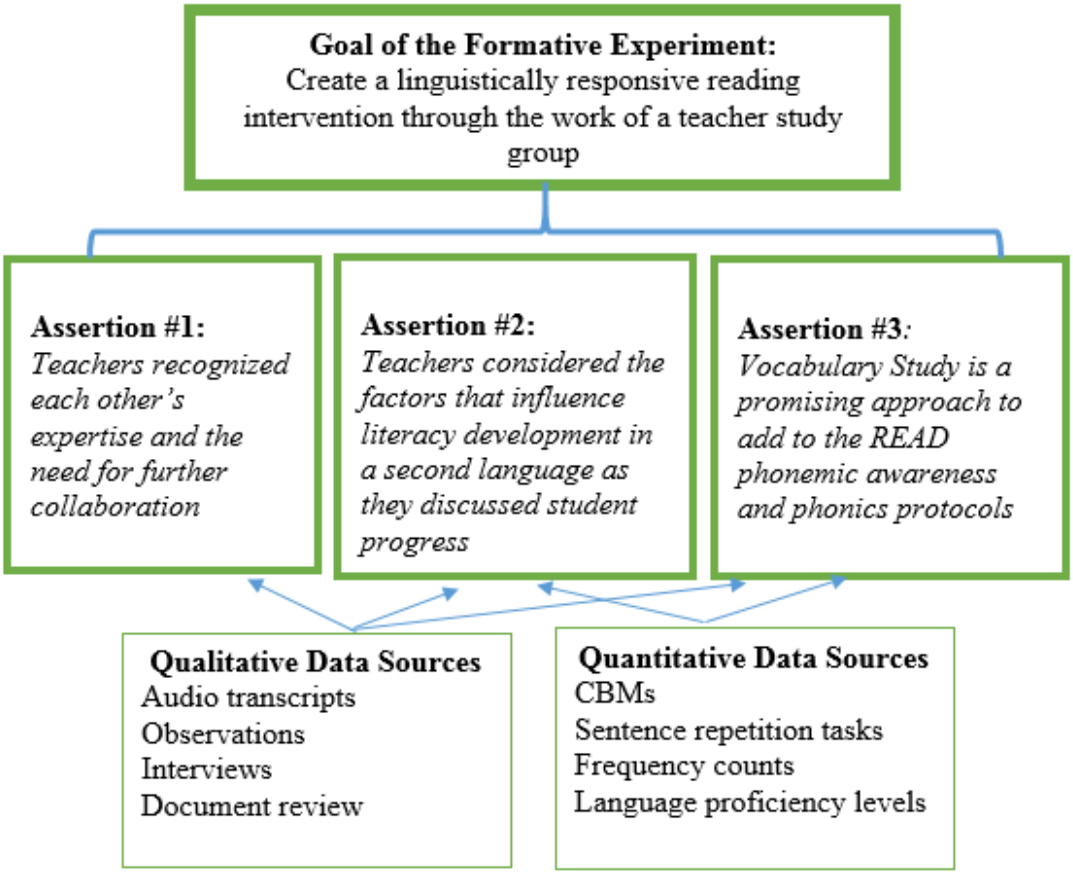

Figure 16. Assertions and their data sources.

Teacher Expertise

Assertion #1 stated that teachers recognized each other's expertise and the need for further collaboration. Over the course of four teacher study group sessions, teachers engaged in dialogue that drew on each other's unique perspectives of language and

literacy learning within the context of discussion about reading interventions. As described in Chapter 3, the teacher study group was established because of participants' unique perspectives on language and literacy instruction and intervention. I understood that if the goal of creating a linguistically-responsive reading intervention was to be realized, it would be advantageous to have reading development and language development experts, as well as classroom teachers who could share a classroom-based perspective. I planned purposeful opportunities in the teacher study group for teachers to assert their own approaches to intervention and interact in ways that led to further collaboration. As the teachers and I dialogued on what a tailored intervention for emergent bilinguals might look like, the teachers realized that they needed more support from each other as they refined their practices for working in their classrooms. For instance, in the final teacher study group session, Joan lamented her colleagues' lack of awareness regarding teaching strategies and approaches for teaching emergent bilinguals. Her teacher colleagues in the group agreed, and hoped they could work out a way to further learn from each other. This dialogue launched an action step towards building knowledge; Joy and Cori reached out to Joan to continue to share ideas about how to teach emergent bilinguals. When given the responsibility of delivering the READ interventions, Joan needed the support from the others who had been in the practice of delivering the interventions. Putnam and Borko (2002) state, "Professional knowledge is developed in context, stored together with characteristic features of the classroom and activities, organized around the tasks that teachers accomplish in classroom settings" (p. 13).

When the teachers in this study gathered to undertake the work of tailoring an intervention for emergent bilinguals, more was accomplished together than alone. This result is consistent with the suggestions from the WIDA Consortium (2013) that recommends that collaborative, multi-perspective teams convene for the purpose of "proactively supporting instruction, intervention, and assessment for ELLs" (p. 25). In my study, each teacher participated in the group with their unique expertise and perspectives. The EL teacher, Joan, used her knowledge of how students learn language to share ideas for how the students might have opportunities to interact and talk about the words that were being practiced during the intervention. She already had been tailoring her instructional practice with a focus on vocabulary. The reading specialist, Sharon, was knowledgeable about how students develop foundational reading skills such as phonemic awareness and phonics. She implemented reading interventions in a structured manner with a strong focus on the gradual release of responsibility. While the classroom teachers held perspectives in both language development and literacy development, their perspectives varied as to what teachers might do to ensure their students were benefitting from language development. Ball and Cohen (1999) theorize that this sort of practice based professional development extends and enhances teacher capabilities. The culmination of interaction among these varied experts was a sharing of ideas, explaining perspectives in teaching, building opportunities for future learning from each other, and ultimately working towards tailoring a reading intervention to be linguistically-responsive.

Factors that Influence Literacy Development in a Second Language

Assertion #2 claimed that teachers would consider the factors that influence literacy development in a second language as they discussed student progress within the RtI framework. In Chapter 2, I described how Helman's (2009) framework that explicates four factors and a variety of subcomponents that influence literacy development in a second language served as the starting point for my conceptual framework. Using this framework, I reworked the factors and subcomponents based on the context of my study. I understood that professional learning and development were the avenues that teachers in this study group would use to examine the factors that influence literacy development in a second language. In the teacher study group, the teachers and I discussed the educational factors, sociocultural factors, psychological factors, and linguistic factors that contributed to the literacy development of the students in the study. It was clear from the initial study group that the teachers saw the importance of understanding more about their students' home languages. The first grade teacher, Karen, noted that she hoped to learn more about the Spanish language, because even though she had been working with Spanish-speaking students for 19 years, she knew very little about the language. Villegas and Lucas (2002) contend that teachers must be intentional in the way that they draw on the cultural and linguistic diversity of their students. Karen's admittance that she did not know anything, but wanted to learn about the Spanish language signaled a first step. deJong, Harper, and Coady state (2013), "This linguistic and cultural knowledge of students entails learning about students' first languages(s) and literacy levels, language(s) spoken in the home and by different family members, literacy practice in the first language and in English, and their proficiency levels in oral and written English" (p. 91). Moreover, Karen was not

familiar with the WIDA language proficiency levels of her students, and therefore had not used them to inform her instruction. Though Karen eventually left the teacher study group because she did not have emergent bilinguals in her classroom, other teachers in the study group commented at the close of the study about the importance of discussing student language within a data meeting that focused on growth in reading interventions. Cori commented that the language proficiency levels and sentence repetition tasks were a "good place to start the conversation" (Audio transcript, 11/14/2016). If teachers are to work towards providing a "just right" amount of language exposure, so as to provide manageable chunks for growth (Krashen, 1985), they must have knowledge of students' current language proficiency in English.

Teachers understood that they needed more professional development in the area of teaching students experiencing poverty. As we discussed the language supports that emergent bilinguals needed, one teacher commented that the "poverty kids" needed that support as well. The teachers all agreed, and this launched a conversation about what they might do in order to learn about how they could best teach students experiencing poverty. One teacher suggested finding a text and organizing a book club that could help them understand how to teach students who experienced poverty, and others agreed. This conversation signaled a departure from the narrow focus of progress monitoring data to discuss reading development. Here, the teachers realized that they might be able to improve their teaching approaches if they had a deeper understanding of students' social, cultural, and economic experiences.

In addition to the language development instruction provided through the intervention, teachers also had opportunities to integrate oral language development assessments into their discussions of student progress. Prior to this study, teachers had never discussed language proficiency levels during their conversations about student reading data. The teacher study group gave the teachers an opportunity to learn about their students' language levels and discuss what they might mean for informing their instruction. The teachers commented in the final interviews that they hadn't considered language proficiency levels prior to the first session where Joan, the EL teacher, shared the levels. Lana said she had taken for granted what words students actually knew. During the final teacher study group session, we discussed how the students progressed in the sentence repetition tasks and we looked carefully at the types of errors the students made as they repeated sentences. Teachers were able to expand their approaches to discussing student data from curriculum-based measures to encompass information on language development.

Vocabulary Study

Assertion #3 was that vocabulary study is a promising approach to add to the READ phonemic awareness and phonics protocols. During intervention implementation, the teachers and I collected data that would give us an indication of how the students grew during the tailored reading intervention. In Chapter 4, I shared the individual progress monitoring data for each student in the study. Each student demonstrated growth in one or more areas in the progress monitoring data over the course of the intervention. At the end of the intervention implementation, all but one student (2nd grader, Alejandro)

who participated in the intervention showed growth on the weekly FastBridge Learning progress monitoring CBM measures (Christ, 2010, 2012). Moreover, all of the students, including Alejandro, showed growth in the READ skill assessments (see Chapter 4, Table 24). It is not unusual for a second grader such as Alejandro to show growth on the targeted skill assessments of the intervention, but not yet demonstrate this in the generalized practice of the CBM reading measure. For instance, Alejandro was working on decoding CVC words in his intervention. The READ skill assessments indicated that he was growing in this measure, but his reading did not yet generalize to the more comprehensive CMB reading measure- a second grade passage reading. Towards the end of the intervention implementation, the reading interventionist and Alejandro's classroom teacher began a process of referral for special education.

In all cases other than Alejandro the READ skills assessments and the FastBridge Learning progress monitoring data indicated clear growth for students in the study. Additionally, the universal screener, an assessment used in an RtI framework, was administered in the fall and the winter and indicated that students were progressing in their grade level performance. Table 27 indicates growth on the FastBridge Learning universal screener. The universal screener was given in the fall, before the intervention, and in the winter, approximately three weeks after the close of the intervention.

The addition of vocabulary study as a component of the interventions did not deter student progress on reading measures. Therefore, vocabulary study is a promising approach to tailor an intervention for students who are emergent bilinguals. In the next

section, I outline how the teachers and I met the goal intended for this formative experiment.

Table 27

Fall and Winter Universal Screening Data for Focus Students

Name	Grade	Measure	FastBridge Learning FALL universal screening score letter sound fluency (LSF) or words per minute (WPM)	Grade level expectation FALL letter sound fluency (LSF) or words per minute (WPM)	FastBridge Learning WINTER universal screening score letter sound fluency (LSF) or words per minute (WPM)	Grade level expectation WINTER letter sound fluency (LSF) or words per minute (WPM)
Luisa	K	Letter sound	3 LSF	5 LSF	44 LSF	29 LSF
Mateo	K	Letter sound	10 LSF	5 LSF	43 LSF	29 LSF
Gabriel	1st	Decodable Word	6 WPM	9 WPM	33 WPM*	43 WPM
Juan	1st	Decodable Word	8 WPM	9 WPM	35 WPM*	43 WPM
Henry	2nd	CBM Reading	22 WPM	58 WPM	83 WPM	87 WPM
Alejandro	2nd	CBM Reading	5 WPM	59 WPM	10 WPM	87 WPM
María	3rd	CBM Reading	N/A	90 WPM	39 WPM	116 WPM
Amalia	4th	CBM Reading	N/A	116 WPM	95 WPM	136 WPM

*The universal screener in winter CBM Reading

The Goal of the Formative Experiment

The goal of this formative experiment was to create a linguistically-responsive reading intervention through the work of a teacher study group. By the end the third teacher study group session, the reading interventionist, the EL teacher, the two classroom teachers, and I had tailored a READ intervention to be linguistically-responsive. Our perspectives and expertise culminated into what we called vocabulary study. Though each teacher agreed to implement vocabulary in the intervention they

conducted (phonemic awareness or phonics), there were four main components that teachers agreed to try involving a few words in each intervention session over the course of the intervention period: a) talk about the word, b) clarify the word in the first language(s), c) draw a picture of the word, or d) let students pull from their own experiences. The READ interventions that we tailored related to phonemic awareness and phonics, and included segmenting sounds, identifying initial sounds, or decoding simple words. While teachers adhered to the gradual release of responsibility in teaching students how to decode simple words, additional language practice extended the learning. In an interview with Sharon after the close of the intervention implementation, she noted that extended language practice gave her a chance to talk about multiple-meaning words, such as *pen*. She instigated a conversation with the students and drew a picture to illustrate the different kinds of *pens* (something to write with, one that a pig lives in). During a final interview with Sharon she expressed that when helping emergent bilingual students read for comprehension it was important to clarify multiple-meaning words such as this. Her conclusion is similar to other findings related to adding vocabulary to foundational skills in interventions. Vadasy and Sanders (2012) demonstrated in an intervention study of kindergarteners that adding a vocabulary component to a foundational skill supported comprehension later on. In their follow-up study two years later, the researchers found that the kindergarten students who received the reading intervention with the vocabulary component fared better in comprehension measures (Vadasy & Sanders, 2012).

Vocabulary study allowed students to draw on their previous experiences as they talked about the words they were learning in the intervention and/or clarified the words using their first language. For students who were newcomers, clarifying words in the first language helped highlight differences across the two languages. During one phonics intervention session, Joan had presented the word, *ham,* to sound out and blend to read. Joan drew a picture of a *ham*, and then María said, "Oh! Jamòn!" (*jamòn* is the Spanish word for *ham*). Then, María produced a written sentence writing the word as *jam*. Instead of using *h* as the first sound in *ham*, María used *j*. This gave Joan a chance to see how María had transferred her knowledge of Spanish to English and Joan could clear up a linguistic confusion. The use of a student's first language to clarify concepts in the second language is one strategy that is recommended (Goldenberg, 2008) as an instructional support when students are learning English. Vocabulary study provided the teachers a concrete way to enact the strategy of using the student's first language. This was significant because prior to this intervention none of the teachers, except for the EL teacher, had considered using the first language of emergent bilinguals during reading interventions.

In the following section, I address the four final questions I used to conduct and analyze this formative experiment.

Factors that Enhance or Inhibit the Effectiveness and Appeal of the Intervention

Reinking and Bradley (2008) suggest that the researcher outline the factors that enhance or inhibit the effectiveness and appeal of the intervention in regard to achieving the set pedagogical goal. In my study, based on Assertion #3 that vocabulary study is a

promising approach for tailoring the READ intervention, the appeal of this intervention was that it was effective for students. As I indicated in Chapter 4, students showed growth in both reading and sentence repetition tasks (language). On the other hand, one factor that may inhibit the effectiveness of the intervention is the variation of implementation used by the teachers in vocabulary study. The frequency counts that I conducted indicated that teachers maintained their unique teaching perspectives during intervention (see Figure 14). Despite the fact that during the teacher study group sessions teachers came to consensus on how to integrate language development into the reading skills, the amount of time spent on language and reading were unbalanced across the intervention groups. For example, the EL teacher provided many more opportunities for vocabulary and oral language development and the reading interventionist gave a lot more time for word-reading practice. The frequency counts I conducted indicate that María and Amalia received more opportunities for vocabulary and oral language development than other students. This could have been the case because their intervention teacher was the EL teacher and they were the students who required the most language development based on their WIDA scores. María was a newcomer, and Amalia had been in the country for under a year. Moreover, Amalia and María received the READ phonics intervention during the time that was originally designated for EL pullout. Trading language development time for reading intervention time, I would contend, was an unanticipated negative effect that the intervention produced (Question 5). Since the EL teacher had been part of the teacher study group it was assumed that she would add the READ interventions into her EL pullout time. Despite the fact that we worked hard to

build language development components into the interventions, it did take away precious other time from English language development.

I now address the final question on how the instructional environment changed based on the intervention. One way that instruction changed as a result of the intervention was that teachers had a tangible strategy that they could use when they implemented the READ interventions with emergent bilinguals. The classroom teachers reported that they began to translate the work of the vocabulary study into the other content areas of their day. The realization that giving students opportunities to talk about concepts and clarify vocabulary was something they saw themselves doing in a more extended fashion.

Limitations

The limitations of my study revolve primarily around sample size and time. The teacher study group consisted of only five teachers, from one rural school district. The conclusions that I came to were made from that single group of teachers and their experiences with response to intervention and teaching emergent bilinguals. The group's past teaching experiences were unique to them and contributed to the way they participated in the teacher study group sessions as well as their positions on students, families, and schooling. Therefore, the assertions I make cannot be generalized to other settings because they are based on the experiences of one set of teachers. Nevertheless, I contend that these assertions carry a degree of instructional transferability (Lincoln & Guba, 1985). Based on the descriptions of students, teachers, and the teacher study group I make, a reader might be able to make similar conclusions when considering similar settings.

The interventions in this study were implemented by a classroom teacher and the reading interventionist for six weeks, and the EL teacher for ten weeks. Though there is not a set time for iterations to occur within design research (Cobb et al., 2003), my study was limited to the time that was available to me based on the school schedule. It was my original intent to gather the three teachers in a study group session at the end of the six weeks to review what they had done in order to inform another iteration. However, I found out that the teachers who had implemented the first iteration would not be responsible for doing interventions for the emergent bilinguals because of staffing changes. Therefore, Joan, the EL teacher, was the only teacher who remained to implement a second iteration for four weeks.

Finally, my role as a researcher who also participated in the construction of knowledge in the teacher study group was a limitation of this study because I could have influenced the way that the teachers talked about their students and instructional practices. I understood that teaching emergent bilinguals in the response-to-intervention setting was a problem of practice. I reached out to a group of teachers who were asking similar questions. Nonetheless, without my study that instigated the teacher study group, I am not sure that the teachers would have worked together to tailor an intervention and study its implementation. Also, I played an integral role in facilitating the conversations about teaching emergent bilinguals in the teacher study group. I did this because I understood formative experiments to be an approach where practitioners and researchers collaborated to find practical solutions. Moreover, my role as a former EL teacher and a current READ literacy coordinator influenced the way that I interacted during discussions

in the teacher study group. Therefore, the assertions that I made were based on conversations in the teacher study group that I facilitated and influenced.

As I mentioned in Chapter 2, a gaping hole in the study of emergent bilinguals and response to intervention is the use of language measures to document student growth. Curriculum based measures (CBMs) still dominate the research in reading interventions. It was my hope to bring in an assessment measure that would stimulate conversation about language within a response-to-intervention setting. The sentence repetition task I used in the study (Arañas, under review) was the only data I had to make conclusions about students' language growth over the course of the study. Language is a complex construct and is by no means captured in a measure of syntactic repetition alone. The conclusions that I came to about language growth were not necessarily due to the fact that students have increased language practice during their intervention. I chose the sentence repetition task because of its ease of use and straightforwardness. Other language measures, such as oral language rubrics, are more subjective and based on professional observation. In this study, I hoped to capture language production by administering a measure in one setting. In future studies, I hope to find a language measure that captures more details of oral language production and be able to link growth to the intervention practice. However, these measures are not available at this time.

Finally, the purpose of a formative experiment is to create local, humble theory based in authentic contexts (Cobb et al., 2003). McKenney and Reeves (2012) argue that an essential feature of design research is to make a practical contribution. The avenue to arrive at this is one rooted in the classroom setting, working through the typical issues

that arise in a real classroom so as to create a more viable intervention. With ecological validity as the methodological imperative of a formative experiment, context is prioritized over generalizability (Reinking & Bradley, 2008).

Future Iterations and Recommendation for Practice

In the current study, teachers used their varied expertise to tailor a READ phonemic awareness and phonics intervention to be linguistically-responsive. We compiled four strategies that we surmised would contribute to student language development. A future iteration could involve using vocabulary study to tailor the READ fluency, vocabulary, and comprehension interventions, or gather another multi-perspective team in the form of a teacher study group, or something similar, to construct approaches that would maintain the READ intervention protocol while finding strategies to tailor the intervention to be linguistically-responsive. Moreover, in future iterations it would be appropriate to consider what it means to tailor the interventions to be both linguistically and culturally appropriate. In this study, I focused on language development. However, language is a part of culture, and many of the factors we discussed in the teacher study group were, in fact, integral to culture, such as family experiences. Though I made the decision to focus on linguistically-responsive practices within the READ interventions, I argue that additional steps need to be taken to investigate the addition of both linguistic and cultural approaches to the READ interventions and data-driven decision making protocols. For example, recommendations to integrate student cultural knowledge into reading interventions that focus on vocabulary and comprehension would be one way to be responsive as to what students

bring to the classroom. Teachers could purposefully choose reading passages or texts that are reflective of students' funds of knowledge (Moll, 1994).

In future studies it would be important to investigate the percentage or amount of time spent on vocabulary versus word reading for individuals with specific language levels as they participate in READ interventions. In the current study, I found that the EL teacher and the reading interventionist provided unequal opportunities for language and reading practice. However, students in both of their intervention groups showed growth over the course of the intervention. This begs the question, how much time exactly is needed for language and reading development in one intervention session, and for what type of language learner? To reiterate a sentiment from an earlier chapter, "What works? With whom? And under what contexts?" (Moore & Klingner, 2014). There is ample room for a future study to investigate this further.

Below I provide several recommendations for practice based on the work we did in the teacher study group and the intervention implementation.

1. Gather a multi-perspective team of teachers who are responsible for teaching emergent bilinguals. This team could include school personnel such as classroom teachers, EL teachers, reading interventionists, school psychologists, and cultural liaisons. Discuss the extent to which emergent bilinguals respond and benefit from the current RtI framework in place. Use the multiple perspectives of personnel in the group to deepen its ability to provide linguistically-responsive supports. For example, the group might take action steps to improve instructors' understanding of the languages

represented in their classrooms. Cultural liaisons could help teachers better understand the language and cultural experiences of their students.

2. Include multiple measures when discussing student growth in reading instruction and interventions. These measures could include, but are not limited to: formative assessments, oral language rubrics, language proficiency data, observations, sentence repetition tasks, and running records. When teachers gather in data meetings, include a systematic approach for reviewing these measures alongside CBMs. An approach could include questions such as those recommended by Leseaux and Marietta (2015) “A) Do our student assessment data show that most ELLs are making good progress in general education? B) Is the progress monitoring element of our RtI model one component of a comprehensive evaluation for ELLs who are struggling?” (p. 74). These questions can launch a conversation about how emergent bilinguals are progressing during core instruction and during interventions.
3. Tailor phonemic awareness and phonics interventions to include opportunities for language practice. Maintain a gradual release of responsibility for phonemic awareness and phonics activities to include modeling, guided practice, and independent practice. Then, systematically include strategies like the ones described in the vocabulary study conducted in this study. For example, in each intervention session engage in vocabulary study before modeling the activity or after independent practice.

Conclusion

Teachers who work together to accomplish tasks have the potential to use each other's expertise for the benefit of student language and reading development. In this study, teachers gathered in a study group to investigate their current approaches to reading intervention for emergent bilinguals and explore ways they could improve their practice. As they collaborated around that goal, the teachers considered a variety of factors that influence literacy development in a second language. Teachers pointed out areas for growth for themselves and they called upon each other to improve their practice. Teachers who had not yet been aware of the language proficiency levels of their emergent bilingual students had opportunities to discuss the components of language proficiency and what they meant for instruction. In this study, students benefitted from an explicit and systematic reading intervention that included opportunities for language practice. Students used their first language to clarify words, talked about the multiple meanings of words, and brought their experiences to word reading and phonemic awareness tasks. At the close of the intervention implementation, students showed growth on reading and language measures.

This study was an effort to push back on the lack of research that uses authentic contexts of reading interventions for emergent bilinguals. If teachers are responsible for making RtI policies work, they must have direction from research that includes how to make intervention effective for all students. None of the intervention studies that I reviewed included interventions that were delivered by EL teachers or included ongoing language measures that would help teachers make decisions about reading and language instruction. My study included the authentic context of one school's approach to tailor

their reading interventions for the emergent bilinguals in their classrooms. As educators work towards providing emergent bilinguals with inclusive instruction where all students have the opportunity to learn and succeed, we must find ways to advocate for teacher learning, culturally- and linguistically-responsive curriculum and instruction, and academic achievement for every student.

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APPENDIX A

Meeting One: 9/13/2016
Agenda and Objectives

- Introductions
- Describe purpose of study
    - What sparked your interest in participating? What are your questions about ELs and learning to read?
- Discuss current practices using PRESS interventions
    - What are some ways that you adjust your interventions (if you do) when there is a EL student? Does it matter depending on language level? Do you use the language levels to help?
    - What school structures are in place for reading interventions for ELs?
- Discuss student progress monitoring data from previous school year

- Look ahead to plan other meetings and intervention times

Thank You!

APPENDIX B

Designing Interventions for Emergent Bilinguals *Timeline*

Meeting One: 1 hour	9/13/2016	**All:** Introductions, describe study, discuss current practices
Meeting Two: *Sharing Our Knowledge* 45 minutes	9/19/2016	**All:** Share expertise. Develop common understandings about language and literacy development.
Meeting Three: *Proposing Strategies* 45 minutes	9/26/2016	**All:** Decide on enhancements to use during intervention sessions. Practice using enhancements and decide on procedures for implementation. Consider language proficiency levels.
Intervention Period 1	Beginning October - Mid November	**Teachers:** Implement & Make Notes Collect Progress Monitoring Data **Annie:** Language assessments for focus students Observe each intervention group. Interviews & Discussions
Meeting Four: *Proposing Strategies* 1 hour	Mid November	**All:** Discuss Period 1 and consider changes for period 2
Intervention Period 2	Mid-November- Mid December	**Teachers** Implement & Make Notes Collect Progress Monitoring Data **Annie:** Language assessments for focus students Observe each intervention group. Interviews & Discussions

Meeting Five: Conclusions	January	**Teachers** Discuss student reading and language growth. Hypothesize how instructional approaches contributed to growth. Suggest further iterations for study. Name strategies to include in READ Intervention Manual.

APPENDIX C

Data Profile for Focus Students

Student Name: _____ **Date:** _____ **Grade:** ____ **Classroom Teacher:** _____

Intervention Placement: _____

Language	Reading	Classroom	Personal
• **WIDA Language Levels** • Composite: • Reading: • Writing: • Speaking: • Listening: • **Other Language Assessments**	• **Universal Screener** • Fast Bridge • **Inventory** • **Other Reading Assessments:**	• **Engagement** • **Motivation** • **Self-Efficacy**	• **Family:** • **Interests:**

APPENDIX D

Sample READ Skill Assessment

Skill Monitoring: Initial Sound Isolation - (ISI 5)

Name: _____ # of Correct Items: _____ Date: _____

Directions

I am going to say a word and I will ask you to say the word and then tell me the sound you hear at the beginning of the word. For example, if I say the word "bed" I hear the /b/ sound at the beginning of the word. Now you try, say the word "sock." What is the beginning sound in "sock"?

Correct Response /s/	Incorrect Response
Yes, the /s/ sound is at the beginning of the word sock.	No, the beginning sound in the word sock is /s/. What sound do you hear at the beginning of the word sock? Yes, /s/ is the sound at the beginning of the word sock.

Okay. Now here is your first word.

Word	Sounds	Student Response	Correct
1. Say "well"	/w/		
2. Say "sun"	/s/		
3. Say "moon"	/m/		
4. Say "cow"	/c/		
5. Say "bird"	/b/		
6. Say "far"	/f/		
7. Say "red"	/r/		
8. Say "kite"	/k/		
9. Say "cup"	/c/		
10. Say "no"	/n/		

APPENDIX E

Sample from Sentence Repitition Task (Arañas, under review)

Student's Name or ID #: _____

ORAL REPETITION TEST ITEMS

Read ▶ "You will hear more sentences. Listen carefully. Remember to say exactly what I say."

1	Larry works at school.	0 1 2
2	The toys are great, aren't they?	0 1 2
3	If I eat this cake now, I won't be hungry later.	0 1 2
4	I saw the dog that ran away.	0 1 2
5	Aren't the boys hungry yet?	0 1 2
6	I know the man who teaches art.	0 1 2
7	Ann is at school, isn't she?	0 1 2
8	During the winter, there's ice on the streets.	0 1 2
9	The quiet girl was walking to the small school.	0 1 2

APPENDIX F

Sample READ Intervention Protocol

Interventionist:_____ Observer:_____

Date: _____ Group:_____ **Score:** _____/10_____ **%**

Tier 2
Intervention Fidelity Checklist
Phoneme Segmenting – Initial, Final, and Medial Sounds **(PA-3)**

Essential Component Reading Target: Phonemic Awareness

Yes ✓	Points	Intervention Procedure
	0.5	1. GATHER AND ORGANIZE MATERIALS: Choose 10-15 words from the phonemic segmenting word list. Have enough sound box cards and small objects so each student has their own card and three objects to use during independent practice.
	0.5	2. ARTICULATE OBJECTIVE: **"Today we are going to practice saying the sounds in words."**
	0.5	3. EXPLAIN GAME OR ACTIVITY: **"We're going to say the sounds in words. As we say each sound we will move one [object] into a box on our cards."**
	0.5	4. CHECK FOR STUDENT UNDERSTANDING: Hand out sound box cards to each student in the group. **"Let's point to the box where our first sound will go."** Teacher models and each student should point to the first sound box. Continue with each sound box.
	2.0	5. MODEL THE ACTIVITY OR GAME: **"In the word hay I hear two sounds, /h/, /ay/. I'm going to move one [object] into a box on my card for each sound I say. Watch: /h/** [as you say /h/, move an object into the first box on the sound box card], **/ay/** [as you say /ay/, move another disc into the second box on the card]. **HAY** [as you say HAY, sweep your finger from left to right beneath the boxes]."
	2.0	6. PROVIDE GUIDED PRACTICE: Hand out sound box cards and objects to each student in the group. **"Let's try one together. Say the sounds in the word day."** Allow student to answer; provide specific feedback as specified. **"Let's move one [object] into a box on our cards for each sound we say. Ready? /d/** [move an object into the first box on the sound box card], **/ay/** [move another object into the second box on the sound box card]. **DAY** [sweep your finger from left to right beneath the discs as you say DAY]." Prompt students to mimic your actions, as needed.
	2.0	7. GIVE SPECIFIC FEEDBACK: *A correct reply is followed with:* **"Good, there are two sounds in the word day: /d/, /ay/."** *If student replies incorrectly, supply a correct answer:* **"No, there are two sounds in the word day: /d/, /ay/. Say the sounds in the word day."** Do not move on until the student supplies the correct sounds.
	2.0	8. PROVIDE INDEPENDENT PRACTICE: **"Move one [object] into a box on your card for each sound you say. Ready?"** Using the next word on the word list, direct the student: **"Say the sounds in the word _____."** Allow student to answer; provide specific feedback as specified.
All items are necessary for fidelity. Items are weighted based on essential components for student learning.		

APPENDIX G

Codebook

Code (* indicates start list codes)	**Description**
EL teacher expertise*	Instances where the EL teacher shared perspectives in language development
Reading teacher expertise*	Instances where the reading interventionist (title 1 teacher) shared perspectives in reading development
General education knowledge*	Instances where classroom teachers shared knowledge that was specific to the classroom content
Sociocultural factors*	Teachers discuss student home life, community, cultural heritage, backgrounds
Psychological factors*	Teachers discuss cognitive and affective factors of learning
Educational factors*	Educational programing, opportunities to learn, RtI, MTSS
Linguistic factors*	Phonology, syntax, morphology, vocabulary
Distributed cognition*	Instances where I perceived that the teachers knowledge was being shared
Teacher learning*	Teachers specifically stated what they learned
Learning about assessment	Instances where teachers discuss language and reading assessments
Researcher role	Instances where the researcher plays a role that is crucial to the conversations
Funds of knowledge	Teachers specifically discuss what students bring to the classroom and the school

Deficit thinking	Instances where I perceived the teachers were demonstrating deficit thinking regarding students
School silos	Instances where it appeared that school programs or philosophies were pitted against each other, or did not communicate
EL teacher role	Instances where the role of the EL teacher was clarified, defined, or argued
Professional development	Instances where teachers discussed past or futire professional development opportunities that they had been engaged in
Intervention suggestions-assessments	Teachers gave specific suggestions for next steps in the intervention
Intervention modifications-reading	Instances where teachers discussed the reading tasks in the tailored intervention
Intervention modifications-language	instances where teachers discussed the language development tasks in the tailored intervention
Design related – intervention	Teachers spoke about the design or components of the intervention
Poverty kids	In vivo code: teachers spoke about a group of students who were experiencing poverty
Culturally relevant	Instances where teachers talked about culturally relevant perspectives and curriculum in the school

APPENDIX H

Sample of Coding

Joy : being able to provide time for them to talk about those things is , you know there is so much that they can learn from each other by just talking to each other and you feel like if someone comes in your room and have them look at your kids talking they are going to say you know, like "you're not doing anything", you know well, yes we are, look at all this oral language that they are building look at all the vocabulary that they are learning and how comfortable they are asking each other questions because they don't want to raise their hand and say I don't know that in front of everyone else, and so providing time to talk is so important but I get with those kids who don't know words that you assume that they should know, you know it could take all day, they could talk all day about these things

Codes (11735-12547)
Linguistic
school silos
Educational

Jill: and then throw on top of that the ones that leave the migrant kids, but not just the migrant ones but all of them

Joy: yeah, poverty families

Codes (12548-12888)
Sociocultural factors
poverty kids

Jill: the ones (inaudible a bit here) that look for jobs, you can't do anything about that, but I feel like when you said time, this is the piece that you know Annie and I talked about this you know, I'm doing the READ stuff and you have to let them talk. They have to talk about the pictures

Annie: it's such a fine line to put in with decoding words and how much to talk about the decoding of the words is it 50 50 or 40 60 I don't know, does it depend on the word or the student, it probably depends on the student that is why sometimes having those levels are helpful so you can kind of gauge depending on the language level how much extra time I have to send on vocabulary, yeah, there's not anything black and white at this point, and that is certainly not the focus of the study and that would be difficult. Sharon, do you want to go?

Codes (12888-12983)
Sociocultural factors
poverty kids
intervention modifications-language

Sharon: so I picked "differentiated all tiers of support" I feel like that's what we've been working on so at least in the tiers and I would assume that's what goes on in the classroom too, so

Codes (13528-13717)
General education knowledge
Reading teacher expertise