

**IMPLEMENTING AND EVALUATING
A PROFESSIONAL DEVELOPMENT PROGRAM ON
PHONOLOGICAL PROCESSING AND PHONEMIC AWARENESS
INSTRUCTION FOR TEACHERS OF K-2 ENGLISH LANGUAGE LEARNERS**

by

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Elizabeth S. Rangel, Ph.D.

University of Pittsburgh, 2013

The research in this dissertation describes a Grounded Theory approach to identifying critical knowledge components of Teacher Content Knowledge (TCK) and Teacher Pedagogical Knowledge (TPK) for ESL teachers who must teach reading to young English language learners, often with little literacy training. The research explored how professional development sessions with ESL teachers focusing on phonological processing and phonemic awareness might result in better preparation for teachers working with English language learners.

The research study implemented four PD sessions and evaluated teachers in a variety of settings. Data were collected through classroom observations, questionnaires, reflections, and informal interviews. The study involved approximately 20 hours of formal PD with six elementary ESL teachers. On-going support through the use of regular e-mails and one-on-one meetings provided additional interaction between the teachers and researcher.

The significance of this research is threefold: one, the findings indicate that teacher knowledge and skill to work with ELLs is highly differential, even in small populations of teachers, such as the one described here. Two, the core components and the framework developed in this work can serve as a foundation to evaluate teacher knowledge and skill to work with ELLs. Three, the findings can provide insight into how PD sessions can be structured to help in-service teachers develop the necessary knowledge and skill to support language learners' literacy development.

In this dissertation, I propose that the components identified in this research can be used as the foundation for in-service professional development that is responsive to individual teachers' needs, which I have termed "Responsive PD." The components discussed can be used to evaluate teachers on whether they possess the necessary TCK to work with ELLs. The components identified here can also be used to create PD tailored to teacher's variable knowledge and skill. This study is one step in addressing the critical need for educating teachers on ways to effectively address the growing number of ELLs in their classrooms and support the literacy development of ELL students.

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1.0 INTRODUCTION

The English Language Learner (ELL) population represents a challenging problem for public education in the United States for the foreseeable future. Not only is the population of ELLs growing, but teacher preparation to work with these students is not matching this growth, neither in numbers of teachers certified in ESL nor in Knowledge in the complex pedagogies teachers must practice to effectively teach students English simultaneously both in content areas and as the medium of instruction. Two distinguished panels of scholars and researchers have recently studied the issues related to ELLs and released these recommendations:

Schools and teachers would benefit from professional development research that is more specifically focused on what is perhaps the most pressing challenge for many teachers today: meeting the needs of English-language learners . . . (National Academy of Education, 2010, pg. 7).

Instruction that provides substantial coverage in the key components of reading – . . . phonemic awareness, phonics, fluency, vocabulary and text comprehension – has clear benefits for language-minority students (August & Shanahan, 2006).

These two quotes serve as an overture to the research I conducted with English as a second language (ESL) teachers in the Pittsburgh Public Schools (PPS). Young children must learn how to read to achieve academic success, and ESL teachers working with young ELLs must teach reading. Many of these teachers have ESL endorsements but few have received training in teaching reading as part of their preparation for the ESL endorsement. My dissertation research is centered on training teachers to enhance their literacy instruction for ELLs in the context of school-based

professional development (PD) sessions. The focus of the PD sessions was on the role of phonological processing and phonemic awareness in learning to read. The study took place during four in-service sessions provided by the school district. The study also included continued contact and support of the teachers beyond the four sessions through e-mail communication and one-on-one meetings.

The significance of this research is that it provides insight into how school-based PD sessions can be used to help teachers develop the necessary instructional strategies to support students' literacy development in ways that are more effective than their current teaching practices. Additionally, the research presents a model for other school districts to use PD to prepare teachers for effectively instructing ELLs while facing the constraints of time allotted for professional development by the school district's academic schedule.

The research described here is motivated by a questionnaire that I designed in the spring of 2009 for the ESL Curriculum Supervisor of the PPS, Timothy McKay. The questionnaire included two open-ended prompts to the teachers asking them what they felt was their most pressing classroom need. Their answers included:

- “Really could use shoring up in phonics, beginning reading.”
- “Any help with early literacy with students would be appreciated.”
- “Need more help matching reading texts and instruction to individual reading levels.”

In response to the teachers' perceived needs, four PD sessions were designed that incorporated literacy instruction specific to ELLs in grades K-2. This study assisted teachers with direct, targeted instruction in phonological processing and phonemic awareness skills that could be incorporated into their curriculum and instruction. To monitor and evaluate the effectiveness of the sessions, the study collected information on teacher changes in their teaching practice as a result of participation in the PD.

Because the prospect of learning a significant amount of new linguistic information can be intimidating to teachers and difficult to translate into practice, a recent approach to teacher education referred to as high leverage practices (HLPs) was incorporated into the study. HLPs are a limited set of instructional practices that can be “leveraged” in various instructional contexts. They can be modeled by more experienced teachers in training sessions or by video. These practices can be rehearsed with support and feedback and can be used in various instructional contexts. The HLPs that were used with teachers were *sound tapping procedures* and *sound boards*. Sound tapping procedures are exercises that engage students in how to “sound out words,” with the goal of making students aware of English phonology and sound segmentation through physical gestures. They can be applied to a variety of contexts and with a variety of texts. Sound boards are designed to teach students how to segment words into sounds and syllables.

Sound tapping and sound boards are techniques that are commonly associated with reading instruction for at-risk readers (Birsh, 2005; Foorman et al., 1997). It may be that these two techniques are useful to literacy instruction for ELLs because they make explicit some of the difficult aspects of English phonology. Both sound tapping and sound boards are pedagogies that draw young students’ attention to all the letters in a word and they emphasize patterns in words (Beck, 2006; Schmidt, 2001). Moreover, they can serve as formative assessments of student skill when teachers work with students one-on-one or in small groups.

In-service PD in how to use phonological processing and phonemic awareness to support student literacy acquisition represents an opportunity to integrate current knowledge from the fields of educational research, second language acquisition (SLA), and teacher preparation. It is important to note, though, that phonological and phonemic awareness are just two of the many skills ELL students need to succeed in English language classrooms. Students also need practice in

reading comprehension, in developing academic vocabulary, and oral language development. This study is one step in addressing the critical need for educating teachers on ways to effectively address the growing number of ELLs in their classrooms and support the literacy development of ELL students.

This dissertation proposal is organized in the following way. In Chapter 2, the theoretical and conceptual background for the study is presented. Chapter 3 contains the research methodology with design of the study (3.1), research questions and theoretical rationale (3.2), participants (3.3), and instruments and analysis (3.4). Chapter 4: Part I describes the data analysis process. Chapter 4: Part II presents findings from the study. The findings of the study illustrate the extent to which PD sessions in the use of HLPs that develop ELLs' phonological processing skills were effective for changing teacher practice. The findings also identify how specific components of teacher Knowledge and skill help or hinder effective literacy instruction for ELLs. In Chapter 5 a discussion of the implications of the findings for school-based professional development is presented. Chapter 5 also presents a theoretical model that identifies how the components of teacher Knowledge and skill are influential factors in ESL teachers' ability to work with ELLs and might be considered for effective school-based professional development for ESL teachers.

2.0 LITERATURE REVIEW

This dissertation examines how professional development and the use of specific HLPs affect teacher literacy practice with ELL students. Most teachers know their limitations and easily identify those areas in which they need more knowledge and skill. Yet, preparation programs continue to focus on broad conceptual issues, when teachers are in need of practice-based, classroom knowledge to work with language learners. The research described here evaluated how using HLPs to teach English phonology and phonemics might improve literacy instruction for ELLs.

What follows is a review of the literature that provides a rationale for the research. Section 2.2 begins with a discussion of the development of literacy and the role of phonological processing and phonemic awareness in literacy acquisition. This section also includes an overview of studies that have analyzed the role of these two competencies in literacy development. Section 2.3 presents information on second language literacy. This section details a small number of explicit, code-focused studies with English learners. Section 2.4 follows with an overview of teacher preparation programs, ESL endorsements (an alternative to certification), and the amount of literacy training received by ESL teachers. Section 2.5 presents information on the kind of training reading specialists receive and identifies those skills necessary for ESL teachers who are, de facto, reading teachers. Section 2.6 includes an overview on Teacher Content Knowledge (TCK) and Teacher

Pedagogical Knowledge (TPK) and includes a discussion of HLPs, in general, and sound tapping and sound boards, specifically.

2.1 DEVELOPING LITERACY

A good deal of research on the cognitive processes underlying reading (e.g., Adams, 1990; Chall, 1996) and on reading difficulties (e.g., Stanovich, 1990) has been conducted with native English speakers. Research from these scholars and others highlights that both phonological and phonemic awareness are essential to reading (Adam, Foorman, Lundberg, & Beeler, 1998; Beck, 1998; Juel, 1988; Juel, Griffith, & Gough, 1986; Perfetti, Beck, Bell, & Hughes, 1987; Stanovich, Cunningham, & Cramer, 1984). Phonological awareness refers to a “general appreciation of the sounds of speech, divorced of meaning. Phonemic awareness refers to an understanding that words can be divided into a sequence of phonemes, the smallest unit of sound (Pike, 1947). This finer-grained sensitivity is termed phonemic awareness (Snow, Burns & Griffin, 1998, p. 51). Phonological awareness is a predictor of beginning readers’ success in reading and spelling (Adams, 1990; Chall, 1983; Snow, Burns, & Griffin, 1998; Wagner, et al., 1987).

Children’s ability to distinguish words in a sentence, to rhyme words, to identify onset and rime, or to engage in play with language, such as producing tongue twisters, are indicators of early phonological awareness. The onset is the initial consonant in any syllable and the rime is the vowel and following consonants, as in “s-ee,” “s-eat,” “sw-eet,” “str-eet.” In the classroom, phonological awareness is developed by sounding out words and blending the individual sounds that make up words. Phonemic awareness is evident when children can successfully identify and produce sounds in isolation. For example, a child has developed phonemic awareness skills when he or she can

correctly answer questions such as “What is the first sound in mop?” or “What is the last sound in top?” (Adams, 1990).

A growing body of research has documented that explicit phonological and phonemic awareness instruction is beneficial for English-speaking students. Scholars with the National Reading Panel (NELP, 2008) examined 83 studies of interventions that taught children code-related skills such as the alphabetic principle (the knowledge that letters in words represent sounds) and the development of phonological awareness (Lonigan, Schatschneider, Westberg, with the National Early Literacy Panel, 2008). The majority of the studies involved students in kindergarten and first grade. In most of the studies, the children received 30 minutes of literacy instruction as part of the district curriculum, and then another 30 minutes of instruction as part of the code-focused intervention. These studies consistently showed explicit instruction to be effective with young children. The code-focused interventions had moderate to large effect sizes (ibid, Appendix 3.1, pp. 138-150). The largest impact was for phonological awareness, with an average effect size of 0.82, though in fact, most of the studies posted an effect size of greater than 1.0. The authors state that

Regardless, the results were generally consistent across outcome domains, indicating that interventions that include variations of phonological training affect not only phonological awareness skills but also measures of reading and spelling (ibid, p. 114).

These findings show that it is possible to affect the development of skills that are a precursor to learning to read, that phonological awareness can be taught, and that explicit code-focused instruction facilitates children’s development of literacy. The findings are pertinent to my study because I gave teachers practice in explicit phonology instruction to work with young ELLs. To date, little research has been conducted with ELLs. The paucity of research in this area represents one reason for investigating this topic.

2.2 SECOND LANGUAGE LITERACY

For ELLs, learning to read means they must become literate in English at the same time they are trying to learn English. “They must master literacy and learn academic content simultaneously, regardless of their age, and they must learn with great efficiency if they are to catch up with their English-speaking classmates” (Lesaux & Geva, 2006, pg. 53). Elementary-grade language learners, in particular, may need explicit, direct instruction in the fundamentals of reading, in addition to support in vocabulary and reading comprehension (IES, 2007; Kucer & Silva, 1999; NICHD, 2000; Perez, 1994).

Phonological awareness, or more accurately, the lack of it, underlies poor reading ability regardless of L1. In work that measured a wide range of cognitive abilities pertinent to reading, Butler and Hakuta (2006) found that Spanish-speaking L2 students who were strong readers in English had similar characteristics with strong L1 readers, and struggling L2 readers shared many characteristics with struggling L1 readers. Other work (Chiappe & Siegel, 1999) found the same result for Punjabi-speaking children learning English in Canada.

Conversely, children’s levels of literacy in their first languages can facilitate their ability to engage in English literacy tasks (Bialystok, 1997). The ability to apply literacy skills in more than one language is sometimes referred to as a “common underlying proficiency” (Riches & Genesee, 2006, p. 66).

Research on phonological awareness has shown that once a student has acquired these skills in his or her L1, that knowledge supports its development in English. In a number of studies in a wide range of languages, phonological instruction resulted in enhanced L2 literacy acquisition (Arab-Moghaddam & Senechal, 2001, Persian/English bilinguals; Chiappe & Siegel, 1999, Punjabi-speaking Canadian children; Comier & Kelson, 2000, French immersion students;

Durgunoglu, Nagy, & Hancin-Bhatt, 1993, Spanish; Giambo & McKinney, 2004, Spanish; Droop & Verhoeven, 2003, Dutch, Moroccan, Turkish; see also Juel, Griffith, & Gough, 1986; Terrasi, 2000).

Moreover, there is a developmental sequence of phonological awareness that is common across languages, particularly in languages with alphabetic scripts. Syllables, onsets and rimes are present prior to phonemes (Goswami, 2002). In French (Demont & Gombert, 1996), German (Wimmer, Landerl, Linortner, & Hummer, 1991), and Norwegian, (Høien, Lundberg, Stanovich, & Bjaalid, 1997), children identified syllable and onset-rimes before being able to engage in phonemic tasks such as segmenting sounds.

Despite promising results in international contexts, the National Literacy Panel on Language-Minority Children and Youth found only 17 studies that addressed the effects of explicitly teaching code-related skills to ELLs (i.e., phonemic awareness, phonics, oral reading fluency, vocabulary, reading comprehension and writing) (August & Shanahan, 2006). Of these, five focused on phonological awareness, and all five showed significant positive effects on children's development of these competencies and their ability to apply them in reading and writing. For example, Stuart et al. (1999) compared *Jolly Phonics*, a code-focused intervention, with a big books approach with 96 four- and five-year-old Sylheti speakers (from Bangladesh) in England. The researchers found significant positive effects of the *Jolly Phonics* program after 12 weeks of instruction. In a delayed posttest one year later, the students were still ahead of the Big Books group in phonological awareness and phonics.

In a similar study, Larson (1996) assigned 33 first-grade Puerto Rican five- to seven-year-olds to one of three treatment groups, two with segmentation training (one bilingual, one English-only) and one control group with no segmentation training. The study lasted for approximately five

weeks. Both intervention groups scored significantly higher on posttests and delayed posttests of segmenting, decoding, and spelling.

Two other studies, an original intervention (Gunn, Biglan, Smolkowski, & Ary, 2000) and a follow-up (Gunn, Smolkowski, Biglan, & Black, 2002), also found positive effects for explicit, code-focused instruction. Two hundred and fifty-six K-2 students were randomly assigned to an intervention group that received instruction, or a control group. After five months of 1/2 hour per day of instruction, a significant effect was found for the intervention group. After two years, results for the intervention group remained higher than the control group.

A study by Kramer, Schell, and Rubison (1983) was aimed specifically at auditory discrimination for first- to third-grade Mexican American students. Although the sample of 15 children was extremely small, the results showed a positive effect. The results of this study, in particular, lend support to the benefit of instruction in English phonemes that are not found in students' first or native languages (August & Shanahan, 2006).

Other research has established that phonological awareness can be developed through carefully planned instruction. Evidence comes from Roberts and Corbett (1997) and Terrasi (2000) who found that direct instruction in phonological awareness in English as a second language significantly enhanced phonological awareness in that language. In work by Lesaux and Siegel (2003), the authors examined patterns of reading development in Grade 2 native English-speaking (L1) children and children who spoke English as a second language (ESL). The children received phonological awareness instruction in kindergarten and phonics instruction in Grade 1. By the end of Grade 2, the ESL students' reading skills were comparable to those of L1 speakers. On some measures, ESL speakers outperformed L1 speakers.

Work with Spanish-speaking children in grades 1, 2, and 3 (Carlisle, Beeman, Davis, & Spharim, 1999) found that a large portion of reading comprehension skill was explained by the children's L1 vocabulary and by their L2 phonological awareness skill. Moreover, in this study, phonological awareness correlated with English vocabulary.

The results of these studies suggest that "explicit skills instruction is critical to a model of early reading acquisition for children from diverse linguistic backgrounds" (Lesaux & Siegel, 2003, pg. 1017) and lend support to the value of teaching children very explicitly about linguistic aspects of language, particularly English phonology.

It is also important that teachers know that the process of learning about phonemes may be either facilitated or inhibited by the nature of the orthography of the language the child is learning to read. Transparent orthographies such as Spanish and Italian, in which the sound of /f/ is always represented by the letter "f," are easier for children to learn to read. Opaque orthographies, such as English, in which the sound of /f/ can be "f" as in "fall," "ff" as in "fluff," "ph" as in "phone," or "gh" as in "laugh" are difficult for children to learn. The role of orthography is so strong that Geva et al. (1997) found that L1 English/L2 Hebrew bilingual children developed more accurate spelling skills in Hebrew due to the consistent orthography of that language. Here too, the role of the native language must be considered in instruction. Arab-Moghaddam and Senechal (2001) found that Persian/English bilingual children relied on similar phonological processing skills as their English-speaking L2 peers to sound words out but adopted different strategies for spelling and reading words. The authors hypothesize that the nature of the Persian orthography might influence children to adopt different strategies when reading and spelling words.

At the same time, teachers must be aware of the characteristics of their students' L1s even if the L1 is not used in instruction. These findings highlight the need for teacher knowledge in

specific linguistic domains. These studies are consistent with the findings of first-language research that has shown that focused instruction in code-related aspects of literacy benefit children learning to read (August & Shanahan, 2006).

The learning of English makes many, difficult demands on learners. Being aware of the different approaches children might take when learning to read English based on their L1 may give teachers insights into student L2 literacy acquisition. By making salient these demands to teachers, by pointing out how native languages may interact with the learning of English, and by giving students skills to master the English phonological and phonemic decoding necessary to read, it may be that the teaching of reading in ESL classrooms (and content classrooms) can be made more efficient. That is, by emphasizing the phonological process for students, students may be able to develop sufficient skill quickly enough to move on to reading, reading comprehension, and vocabulary studies, in a quicker fashion. Moreover, children's mastery of decoding in English may give them the skills, and possibly confidence, to participate more fully in classroom activities, including reading, discussion, and interactions with peers.

2.3 TEACHERS WHO WORK WITH ELLS

A growing body of research confirms that teacher quality affects student learning gains, maybe more than any other factor (Darling-Hammond & Youngs, 2002; Darling-Hammond, Berry, & Thorensen, 2001; Téllez & Waxman, 2005). Yet, only a fraction of pre-service teachers receive any instruction to work with ELLs. In 2001, researchers analyzed the pre-service preparation of teachers of ELLs (Menken & Antuñez, 2001). They found great variance in how states mandated requirements for teacher licensure, though state requirements did affect institutions' programming.

Once in classrooms, only 2.5% of teachers who instructed ELLs possessed a degree in ESL or bilingual education (BE), and only 30% of all teachers with ELLs in their classrooms received any kind of PD to work with this population. In California, with 40 percent of the ELL population of the country, researchers (Gándara, Rumberger, Maxwell-Jolly, & Callahan, 2003) found that only 29% of teachers were certified in ESL or bilingual education. In Texas, four courses are required for an ESL certification. However, any teacher with elementary certification can acquire an ESL endorsement by passing a single pencil-and-paper examination, a route the vast majority of teachers choose (Diaz, 2004).

The current move among many school districts to mainstream ELLs in content areas classrooms is an attempt to provide equal access to ELLs based on consent decrees from the early 1990s (Cochran, 2002). Inclusion refers to the full-time placement of ELLs in mainstream classes without the support of separate language classes taught by specialist teachers (Handscombe, 1989). Mainstream teachers are often expected to adapt curriculum and instruction for ELLs sometimes with very little preparation (Lucas, Villegas, & Freedson-Gonzalez, 2008).

In the next section, the kind of knowledge ESL teachers need to work with elementary level ELLs who bring a variety of literacy levels and literacy skills to the classroom is discussed. An overview of the studies that have provided professional development for teachers is also presented. Though few, the studies that have been conducted have resulted in positive gains in teacher knowledge and skill.

2.4 TEACHER PREPARATION TO WORK WITH ELLS

Teacher education to work with ELLs has recently received a good deal of attention, from research volumes to policy initiatives (August & Shanahan, 2006, 2008; CEP, 2010; Genessee, Lindholm-Leary, Saunders, & Christian, 2006; IES, 2007; NAE, 2010).

In the spring of 2006, the Institute of Education Sciences (IES) convened a panel of 13 experts in second-language development, cognitive development, curriculum and instruction, assessment, and methodology to review the research on language learners' literacy development (August & Shanahan, 2006).

The first of the Panel's six major findings was:

Instruction that provides substantial coverage in the key components of reading – identified by the National Reading Panel (National Institute of Child Health and Human Development, 2000) as phonemic awareness, phonics, fluency, vocabulary and text comprehension – has clear benefits for language-minority students.

Although a significant body of literature has given attention over the past 15 years to what teachers need to know and be able to do to teach ELLs, there is little evidence that teacher education programs have been able to incorporate this knowledge in a meaningful way (August & Hakuta, 1997). One reason may be the need for an extensive body of knowledge and skills for teaching ELLs, a daunting task for teacher educators given the tight constraints on credit hours in the professional education sequence. Another reason may be the increasing demands on the pre-service curriculum from state departments of education and accrediting agencies.

There is, of course, a specialized body of knowledge teachers must know to work with ELLs (Baca & Escamilla, 2002; Freeman & Johnson, 1998; Johnson & Paulston, 1976; Johnston & Goettsch, 2000; Montecel & Cortez, 2002). In addition to sociocultural variables (Donato, 2000; de Jong & Harper, 2005), teachers need a deep understanding of second language acquisition,

literacy development, and a firm grasp of foundational facets of English as well as the cross-linguistic interaction of the various native languages students speak and English. The concepts of Teacher Pedagogical Knowledge (TPK) and Teacher Concept Knowledge (TCK) are particularly critical to teaching ELLs because teachers must understand the structures and rules of English as well as have a broader understanding of languages and language development in general and second language acquisition (SLA) in particular (Ball, 2000; Ball & Forzani, 2009; Shulman, 1986; Téllez & Waxman, 2006).

The state of Pennsylvania now offers an ESL endorsement, currently available at 36 state universities and colleges. An ESL endorsement is not a state-sanctioned certification, rather, it is a program of study for teachers who already possess certification in one or more area(s), such as early elementary. Endorsements usually require five three-credit courses for completion. Yet, even as states are creating add-on ESL endorsements, a focus on theory, without clear connections to application, results in these endorsements having little practical value to teacher's everyday classroom experiences. In my analysis of the 36 Pennsylvania schools that offer the endorsement, only eight require a practicum. Whereas most schools offer a theory-based class in Second Language Acquisition (SLA) and Teaching to Linguistically and Culturally Diverse students, both required, only seven offer the Structure of English; and four offer Reading/Writing or Content Area Reading. As a result, the focus of much of the coursework for these endorsements tends to be too theoretical, especially for those teachers working with young ELLs.

Moreover, no program offers a course specifically aimed at teaching reading to ELLs. In an IES sponsored workshop that I attended on January 27, 2011, titled "Effective Literacy and English Language Instruction for English Learners in the Elementary Grades," I met teachers from across Allegheny County who work with language learners in grades K-2. I asked the teachers in

attendance how they address teaching reading to ELLs. Although many teachers first said, “Collaboration is key,” and “Collaboration with the reading specialist,” they then admitted that this “collaboration” more often than not consisted of hallway conversations or e-mail messages.

In their 2006 standards, the National Council of Teachers of English (NCTE) recommended that English teachers and reading specialists work closely with ESL teaching professionals who can offer instructional advice and classroom support in the content areas. In fact, the requirements for certification as a Reading Specialist in the state of Pennsylvania cover some of the exact areas of linguistic knowledge that teachers of ELLs need (Pennsylvania Department of Education, 2009):

I.B. Phonemic, morphemic, semantic, syntactic, and pragmatic systems of language and their relation to the reading and writing processes including:

- the interrelationship of reading, writing, speaking and listening,
- the role of metacognition in reading, writing, speaking and listening,
- linguistic differences and styles of language use as they relate to the sociocultural environment.

Despite the fact that reading specialists are trained in the linguistic knowledge teachers of ELLs need, they lack second language acquisition and sociocultural Knowledge necessary to work with diverse populations. It is ironic that reading specialists possess the very specific knowledge needed to teach reading yet they are rarely asked by school administrators to share this knowledge with the ESL teachers.

Although professional development research to address the teaching of literacy for teachers has been promising, there is very little research in this area for teachers of ELLs. The Report of the National Literacy Panel on Language-Minority Children and Youth (August & Shanahan, 2006) found four studies that included professional development in literacy acquisition (Calderón & Marsh, 1988; Haager & Windmueller, 2001; Hoffman, Roser & Farest, 1988; Saunders & Goldenberg, 1996). All these studies lasted at least a year, consisted of on-going meetings, specific strategies for improving instruction, and involved teachers in communities of learning.

Haager and Windmueller (2001) report on PD that consisted of instruction in teaching phonemic awareness, the alphabetic principle, oral reading fluency, and English-language development for 17 first- and second-grade teachers working in a urban elementary school with a 98% Hispanic student population. The results indicated that students progressed in all areas measured, and the authors concluded that the professional development approach was effective, given that all students made gains in reading achievement.

Saunders and Goldberg (1996) analyzed discussions among a group of K-2 teachers who implemented instructional conversations in English language arts classrooms in a predominantly Hispanic school. The authors concluded that as a result of the reading instruction, the teachers gained insights into reading instruction they did not have. The Hoffman, Roser, and Farest study (1988) looked at teaching strategies for reading aloud in classrooms. Teachers in this research sought out opportunities to practice the new instructional strategies with feedback. Calderón and Marsh (1988) studied PD institutes for teachers that focused on literacy development. The institutes were designed to integrate theory, introduce participants to the concept of coaching, provide time for practice, and encourage the use of new models of instruction in the classroom. The authors found that teachers sought out opportunities to practice the new models with feedback and support. In the above studies, teachers found PD to be the most helpful when it provided hands-on practice, in-class demonstrations, and mentors. Calderón and Marsh (1988) stress the importance of PD that builds on theory (TCK) and craft (TPK). Close collaboration between researchers, outside change agents such as universities, and teachers has also been a hallmark of much of this research.

Yet, there is also research that shows teacher education to sometimes be more lengthy and extensive than one would expect. In Carlo et al (2004) work, teachers required on-going

professional development to implement a vocabulary program that was designed for fifth-grade students, both native English speaking and English learners.

In summary, in this chapter information on literacy achievement for English language learners in U.S. schools has been presented. Details of programs of teacher training to work with ELLs have shown that the kind of specific literacy training teachers need is lacking in the current ESL endorsement programs. In-service PD for teachers working with ELLs may be well served by direct instruction in how to use linguistic knowledge to help improve student literacy acquisition. Teachers may feel underprepared and overwhelmed. Even those with some kind of ESL endorsement may still look for help with early literacy instruction. The research described here represents an attempt to provide training to teachers in specific areas of literacy acquisition for young ELLs.

2.5 THE USE OF HIGH LEVERAGE PRACTICES

High Leverage Practices (HLPs) are intended to give teachers tools to work in classrooms and to address a number of interrelated demands on the teacher preparation process. HLPs provide some recourse to time limitations on teacher training because they can be applied to various instructional contexts.

There are two overriding characteristics of HLPs:

One, HLPs can be used to analyze the work of teaching into smaller practices that

- Can be articulated, unpacked, studied, and rehearsed,
- Can be integrated into real-time teaching.

Two, HLPs are designed to be easily mastered by beginners because they:

- Occur with high frequency in teaching,
- Can be enacted in classrooms across different curricula or instructional approaches,

- Allow novices to learn more about students and about teaching,
- Preserve the integrity and complexity of teaching.

(Ball, Sleep, Boerst, & Bass, 2009; Hierbert, Morris, Berk, & Jansen, 2007; Kazemi, Franke, & Lampert, 2009).

The initial impetus for HLPs emerged from the mathematics community, yet their development is receiving critical attention in a number of disciplines. The Carnegie Foundation for the Advancement of Teaching has created a website (<http://gallery.carnegiefoundation.org/insideteaching>) dedicated to HLPs called “Inside Teaching.” A collection of videos at the site is intended to be used in teacher preparation programs. The videos can be viewed by novices to observe the practice of experienced teachers. For literacy, there are videos of experienced teachers leading classrooms in reading conferences, literature groups, and writer’s workshop. Although there are a number of videos geared toward English Language Development (ELD) on the website, to date, none is designed specifically for young students learning to read. However, promising news comes from the American Council for the Teaching of Foreign Languages (ACTFL) who has recently invited grant applicants to develop comprehensive reviews of areas considered to be of national importance, and HLPs is one of those areas.

The research described here is based on the use of two HLPs to merge aspects of literacy development, ESL teacher professional development, and HLPs common in L1 reading interventions: sound tapping and sound boards. Sound tapping and sound boards are two pedagogies that are loosely based on the Orton-Gillingham (OG) method, a multisensory literacy teaching approach that explicitly teaches phonological awareness, sound-symbol correspondence, syllables, morphology, syntax, and semantics (Gillingham & Stillman, 1960; Sparks, Ganschow, Kenneweg, & Miller, 1991). A key characteristic of the OG method is that it is multisensory, in that children use visual, auditory, and kinesthetic modalities to learn. Fairly well known

adaptations and extensions of the OG method include Alphabetic Phonics (Cox, 1985) and the Wilson Reading System (Wilson, 1996).

Since their development, OG methods and OG-based reading instruction have been commonly accepted and widely used (Cárdenas-Hagan, 2005; Ritchey & Goeke, 2006; Scheffel, Shaw, & Shaw, 2008; Sparks, Ganschow, Kenneweg, & Miller, 1991; Vickery, Reynolds, & Cochran, 1987). In a review of the literature (Ritchey & Goeke, 2006), 12 studies that use OG methods with elementary, middle, and college students were analyzed. Although the OG methods presented in this review produced mixed results — most of the studies reported OG methods as very effective or somewhat effective, but two studies reported the comparison measures as more effective than the OG method and one study reported no difference – there are two additional studies that are of particular interest for my research.

In one study, researchers (Scheffel, Shaw, & Shaw, 2008) reported on the use of the OG method with 224 treatment and 476 comparison group first-grade students in a “high needs” district. Both groups received the district-approved reading instruction for 90 minutes per day, and the treatment children received the OG reading program for an additional 30 minutes per day. The students were assessed using the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) phoneme segmentation fluency (PSF) assessment in the fall, winter, and spring of the academic year. The children in the treatment group made gains in the alphabetic principle and phonemic measures compared to the control group. Female Hispanics made the greatest gains in alphabetic principle skills. Although the empirical evidence in the article is scant, the authors report that at the time of the third student assessment in the spring, Hispanic females scored 76.42 on the DIBELS PSF, white males scored 75.22, white females scored 72.17, and Hispanic males scored 66.58. The authors say that “While there is insufficient data to explain this outcome based on data from this

study, it is compelling enough to be a possible avenue for future investigation to determine if a multisensory supplemental reading program is differentially beneficial to female Hispanic students” (Scheffel, Shaw, & Shaw, 2008, pg. 151).

In a study of a bilingual PD based on multisensory methods in a small town along the Texas-Mexico border (Cárdenas-Hagan, 2005), all K-3rd grade teachers received training, coaching, and mentoring sessions for a period of five years in multisensory pedagogies. At the start of each school year, the children in the bilingual classrooms received 90 minutes of instruction daily in the *Esperanza* literacy program (Cárdenas-Hagan, 1998). In January, the children continued with their bilingual instruction but also began to receive *Language Enrichment*, a multisensory, code-focused supplementary program (Carreker, 1992). Both of these multisensory instructional programs included training in phonological awareness, letter-sound correspondences, and decoding. The school district reported an 84% reduction in referrals for special education services such as dyslexia by Year 3 and a sharp decrease (from 26% to 13%) in the percentage of students who required remediation by the study’s end (Cárdenas-Hagan, 2005, pg. 316). In sum, there is evidence that multisensory methods work, though that evidence is scant and has not been collected in a systematic manner. It may be that these small, limited, studies can form the basis of new pedagogies for English language learners. My research contributes to that effort. The two sections that follow here are descriptions of the HLPs used: sound tapping and sound boards.

2.5.1 Sound Tapping Procedures

Sound tapping procedures have their origin in interventions developed for at-risk readers and students with dyslexia (Joshi, Dahlgren, & Boulware-Gooden, 2002). Some say their use dates back to Maria Montessori and the beginning of the Montessori Method as early as 1912 (Moats & Farrell, 2005). These procedures go by a variety of names, sound tapping and finger tapping are

two common ones. Their use in classrooms has become so commonplace with the teaching of blending that they are rarely referred to directly (Beck, 2006). They have been used in a number of studies with young children in English and in other languages (Cossu, Shankweiler, Liberman, Katz, & Tola, 1988). They are explicit, direct instructional practices with one-to-one matchings of sounds to letters or syllables. To teach the word “cat,” three letter-cards representing the three sounds in the word are placed in front of the student. The student is taught to say each sound while tapping a different finger to his or her thumb, a student would begin by tapping his or her index finger to the thumb and saying /k/, followed by tapping the middle finger to the thumb and saying /a/, and then tapping the ring finger to the thumb and saying /t/. Finally, the student says the entire word while dragging the thumb across the three fingers. Sound tapping lends itself particularly well to phonological awareness because it can be used to teach students to:

- identify onset and rime,
- produce sounds as separate units,
- practice sounding out words, and
- practice taking sounds in words apart.

2.5.2 Sound Boards

Sound boards are used to segment sounds within words. Sometimes called Elkonin boards (1971; 1973), they are simple squares, into which students place their finger, a disk, or a letter for each phoneme as they say a word (Clay, 1979; 1991). Ball and Blachman (1988) found that letters were more powerful aids to segmenting than blank disks when used in sound boxes, but this is dependent on the student’s literacy level. As with sound tapping, sound boards have a number of applications that lend themselves to phonemic awareness development. Sound boards can be used to:

- segment words into sounds,

- count the number of sounds in a word,
- segment and change sounds by manipulating phonemes,
- see patterns in words,
- help students understand the alphabetic principle in decoding.

Sound tapping and sound boards have many of the characteristics of HLPs: they can be taught to novices; they can be applied across many instructional settings, for example, sound boards can be used with young children to sound out words and they can be used with older children to show patterns in affixes, morphological manipulations, and even vocabulary in word-building activities. The use of multi-modalities for language learning is not new; Asher's Total Physical Response (TPR) (Asher, 1969) was a method of language learning that relied on commands. Most adults mastered commands such as "Jump" and "Sit" with amazing facility, but the limited application of this repertoire contributed to TPR falling out of fashion.

These HLPs lend themselves to phonological and phonemic awareness skills because they are ways to get inside words to identify sounds, to identify letters, to analyze syllables, to name just a few applications (Birsh, 2005). By drawing student attention to specific aspects of phonology, HLPs can be used to show children what letters sound like, what combinations of letters sound like, how patterns of letters sound, and how combinations of letters sound. Because HLPs focus students' attention on the letters and the sounds of English, they can be used to help students develop metalinguistic skill. Children's word decoding is facilitated by metalinguistic skills and the efficiency of their grapheme-phoneme matching (Koda, 2005; Schmidt, 2001; Verhoeven, 2000).

Moreover, the use of HLPs in one-on-one and small group settings can guide teachers in the practice of adaptive and formative instruction. That is, if the teacher becomes aware that a student is having difficulty producing certain English consonants, the teacher can focus instruction on that specific detail. Conversely, if a teacher is aware that a student has mastered consonant blends, the

student can progress to practice in phonemic awareness, such as focusing on prefixes. Bloom, Hastings, & Madaus (1971) advocate the use of HLPs for formative evaluation:

to provide feedback and correctives at each stage in the teaching-learning process. By formative evaluation we mean evaluation by brief tests used by teachers and students as aids in the learning process. While such tests may be graded and used as part of the judging and classificatory function of evaluation, we see much more effective use of formative evaluation if it is separated from the grading process and used primarily as an aid to teaching (p. 48).

There are a number of underlying beliefs about teaching and teacher learning on which this research is based. To begin, this study is primarily an “Effects of Teacher Education Research” as defined by Borko, Whitcomb, and Byrnes (2008). The authors state that “The fundamental purpose underlying effects of teacher education research is to examine relationships between teacher education experiences and student learning” (p. 1021). In this study, successful PD was instantiated by changes in teacher practice, which in turn was operationalized by increased use of HLPs. I observed classroom teaching and looked for increased use of HLPs inter alia.

2.6 PROFESSIONAL DEVELOPMENT FOR TEACHERS

Professional Development in this study was based on the framework for professional developed by Desimone (2009). Her framework posits that five core features of PD can contribute to increased teacher knowledge and skill:

- content focus,
- active learning,
- coherence,
- duration, and
- collective participation.

In the section that follows, definitions of the five core features are offered.

2.6.1 Content Focus

The content focus of teacher learning refers to “the link between activities that focus on subject matter content and . . . increases in teacher knowledge and skills, improvement in practice” (pg. 184). In this research, the teachers’ use of the curriculum along with an analysis of the language demands in their textbooks constituted the content focus.

2.6.2 Active Learning

Active learning can take a number of forms: teacher observations followed by feedback; observing expert teachers; reviewing student work in the topic areas being covered; or leading discussions. In the PD sessions that were designed, teachers learned how to use HLPs in their classrooms with ELLs and analyzed their textbook lessons looking for opportunities to apply HLPs. Teachers were observed in PD sessions as they practiced with HLPs. They received feedback from their teacher peers as they designed lessons, and from the researcher in one-on-one meetings.

2.6.3 Coherence

Coherence refers to “the extent to which teacher learning is consistent with teacher’s knowledge and beliefs.” A key to developing effective in-service PD is to create PD based on teacher input, finding out how prepared teachers are—or feel they are—to work with ELLs. Information about teacher preparedness was gathered in the teacher questionnaire.

2.6.4 Duration

Duration refers to time spent in PD. Although research has not specified an exact number of hours, PD should include at least 20 hours or more of contact time (Supowitz, 2006; Supowitz & Turner, 2000). In this research study, the formal PD meetings equaled approximately 20 hours; in addition, between sessions frequent electronic communication with the teachers and one-on-one

conferencing after school hours supplemented the PD sessions. In this way, teachers actual time extended beyond the 20 hours formally recommended for professional development.

2.6.5 Collective Participation

Collective participation means bringing teachers together in groups. In this study, teachers worked together across schools, grades and departments. Teachers from the same school who work with ELLs at different levels were brought together, for example, one teacher was responsible for grades K-2 and a second teacher was responsible for grades 3-5. ESL teacher training programs generally include very little phonology information, and teachers rarely receive the kind of specific, linguistic knowledge that can make the study of language more accessible to students. My research incorporated these concepts into PD sessions to one, train teachers how to use HLPs to teach phonology, and two, to ascertain how much teachers know about phonology. Although the intent of this study was not to make teachers experts in linguistics, I have proposed to give them enough specific linguistic information about English phonology, and the phonology of the students' native languages, to support their understanding of the role of phonological and phonemic awareness in literacy acquisition.

3.0 RATIONALE AND RESEARCH METHODOLOGY

The dissertation described here examined how professional development and the use of specific HLPs affected teacher literacy practice and ELL student performance. Teacher preparation programs continue to focus on broad conceptual issues, when teachers are in need of practice-based, classroom knowledge to work with language learners. The research evaluated how giving teachers practice in using HLPs with ELLs improved their literacy instruction.

3.1 DESIGN OF THE RESEARCH STUDY

For the research study, teacher understanding of the role of English phonology was evaluated, operationalized by the use of HLPs for teaching ELLs to read. A questionnaire was distributed to teachers asking them about HLPs. The teachers were observed in their classrooms, and PD on English phonology was delivered to them in four PD sessions. Teachers were then asked to reflect on their learning and the ease or difficulty of the PD process.

The research project involved approximately 20 hours of formal PD with six elementary ESL teachers. On-going support through the use of regular e-mails and one-on-one meetings provided additional interaction between the teachers and the researcher. The one-on-one consultations also provided opportunities to expand and elaborate on session content, and prompted teachers to think about what could be improved in the PD sessions.

Based on the number and types of data sources, this study is best described as a mixed-methods approach to research. Quantitative data was collected and analyzed through the use of Likert scales on the questionnaire and classroom observations. Qualitative data was collected from the questionnaire and teacher reflections.

3.2 RESEARCH QUESTIONS AND THEORETICAL RATIONALE

The first-language research that was discussed in the previous section has shown that focused instruction in code-related aspects of literacy, such as phonological awareness, benefits children learning to read. Phonological awareness instruction has been shown in a number of studies in a wide range of languages to support L2 literacy acquisition as well. Two HLPs: sound tapping and sound boards, have been used effectively with English L1 children learning to read but there is no evidence they have been used with ELLs. The research question that guided this section of the dissertation was:

3.2.1 Research Question One

Does in-service professional development (PD) in the use of HLPs that develop ELLs' phonological processing skills affect teacher literacy instruction for ELLs?

ESL teachers working with young learners may benefit from explicit instruction in how developing a child's phonological awareness contributes to literacy acquisition. HLPs proved beneficial in explicit, code-focused instruction because they are ways to identify sounds, to identify letters, to analyze syllables, to name just a few applications. Moreover, by drawing student attention to specific aspects of phonology, HLPs support students' development of metalinguistic skills for decoding. Metalinguistic skills facilitate decoding.

The significance of the research is that it provides insight into how school-based professional development sessions may be used to help teachers develop the necessary instructional strategies to support students' literacy development in ways that are more effective than their current teaching practices. Additionally, the research presents a model for school districts that need to prepare teachers for effectively instructing ELLs while facing the constraints of time allotted for professional development by the school district's academic schedule.

3.2.2 Research Question Two

What are the factors that help or hinder the development of literacy instruction to work effectively with ELLs?

The use of HLPs in one-on-one and small group settings can guide teachers in the teaching of the sounds of English. HLPs can also help teachers in the practice of adaptive and formative instruction. That is, if the teacher becomes aware that a student is having difficulty producing certain English consonants, the teacher can focus instruction on that specific detail. Yet, this is not easy for teachers to do, especially when they have to deal with instruction for students who are not native speakers of English. The PPS moved to a managed curriculum, meaning that key vocabulary had been extracted from the text units and compiled in lists. The PD sessions began with the managed curriculum vocabulary lists and the researcher showed the teachers where phonological features could make student learning difficult or easy. Much of the feedback was contingent on teacher knowledge and how teachers' incorporated HLPs into their lessons. For example, textbooks give a lesson objective as teaching "hard and soft C words" (Level C, Unit 5, *Avenues*, Phonological Awareness Skill, page T264a). But the list of vocabulary to emphasize this objective was:

Scared

Hungry
Enemy
Secret
Hide
Smart

The learning of English makes many, difficult demands on teachers and learners. Being aware of the different approaches children might take when learning to read English based on their L1 may give teachers insights into student L2 literacy acquisition. By making salient these demands to teachers, by pointing out how native languages may interact with the learning of English, and by giving students skills to master the English phonological and phonemic decoding necessary to read, the teaching of reading in ESL classrooms (and content classrooms) can be made more efficient. That is, by emphasizing the phonological process for students, students may be able to develop sufficient skill quickly enough to move on to reading, reading comprehension, and vocabulary studies, in a quicker fashion. Children's mastery of decoding in English may give them the skills, and possibly confidence, to participate more fully in classroom activities, including reading, discussion, and interactions with peers. Moreover, arming teachers with tools that may make the teaching of English more explicit is a useful step in improved teaching training.

3.3 PARTICIPANTS

3.3.1 Teachers

The participants in this proposed research are ESL teachers in the Pittsburgh Public Schools. There are currently 16 total ESL teachers, with six specific to ELLs in grades K-5. All ESL teachers met on a regular basis to participate in PD sessions. The ESL Curriculum Supervisor of the PPS Mr. Timothy McKay announced the PD study to all ESL teachers and informed them of the research

project. The six elementary ESL teachers were specifically encouraged to participate. Consent forms were mailed to those teachers who elected to participate. The teachers who did not participate in the research study attended the district's regularly scheduled PD.

3.3.2 Students

The PPS assigned specific schools in the city as the “ESL magnets” for language learners. On the elementary level, the “ESL magnets” reflected the make-up of the neighborhood where the school is located. For this study, ESL teachers at five elementary schools participated: Banksville and Beechwood, both on the city's southern end, and Colfax, Greenfield, and Minadeo, on the city's eastern end. Table 1 below shows the teachers, schools, and the demographic makeup of the ELL students at the schools in the study (these are the teachers who were specifically encouraged to participate in the research study):

	# Teacher	Total# Students	Total # of ELLs	Percentage of ELLs in the PPS units presented here
Banksville Elementary (PreK-5) 1001 Carnahan Road Pittsburgh, PA 15216 http://www.pps.k12.pa.us/1438201020123854240/site/default.asp	1 -K-5	269	41 16 19	Asian (15.24%) Hispanic (5.95%) Multi-Racial (7.06%)
Beechwood Elementary 810 Rockland Ave Pittsburgh, PA 15216 http://www.pps.k12.pa.us/1438201020123854240/site/default.asp	1- K-2 1 - 3-5	375	37 55 30	Asian (9.87%) Hispanic (14.67%) Multi-Racial (8.0%)
Colfax Elementary (K-8) 2332 Beechwood Blvd Pittsburgh, PA 15217 http://www.pps.k12.pa.us/1438201020123854240/site/default.asp	1- K-2	663	62 26 36	Asian (9.35%) Hispanic (3.92%) Multi-Racial (5.43%)
Greenfield Elementary (K-8) 1 Alger Street Pittsburgh, PA http://www.pps.k12.pa.us/greenfield/site/default.asp	1 K-8	362	25 14 27	Asian (6.91%) Hispanic (3.87%) Multi-racial (7.46%)
Minadeo Elementary (PreK-5) 6502 Lilac Street Pittsburgh, PA 15217 http://www.pps.k12.pa.us/1438201020123854240/site/default.asp	1-K-5	482	28 12 42	Asian (5.81%) Hispanic (2.49%) Multi-Racial (8.71%)

Table 1. PPS schools in the research study and their ELL student enrollment

3.4 INSTRUMENTS AND ANALYSIS

For this dissertation, teacher questionnaire responses and teacher reflections were analyzed.

Teachers were also observed in their classrooms two times.

3.4.1 Teacher Questionnaire

The first step in the research was administration of a questionnaire that asked teachers about their use of classroom techniques specific to literacy instruction (see Appendix A for Teacher Questionnaire) before the study began and when it was finished. The questionnaire asked teachers to rate the frequency they engaged in the practices. Questions were intended to evaluate literacy and language classroom activities, in general, and HLPs in particular. For example, teachers were asked to rate statements such as, “I provide explicit instruction in how sounds in words can be blended together.”

The results of the questionnaire (both before and after the professional development sessions) were used to operationalize teacher knowledge of activities that support the development of reading. T tests were performed on the Likert scale scores generated and analyzed for change in frequency of practices. This data provided information on how teachers integrated the PD session information and provided information to answer Research Question One: Does in-service professional development (PD) in the use of HLPs that develop ELLs’ phonological processing skills affect teacher literacy instruction for ELLs?

3.4.2 Pre- and Post-PD Classroom Observations

Classroom observations were conducted two times during the study: one, at the beginning of the study to establish baseline instructional practices; and two, at the end of the study to evaluate changes in instructional practice. The classroom observations were based on the linguistic-specific practices such as phonological production work with students that were included in the classroom

questionnaire. The observations also documented the specific high leverage literacy practices introduced in the PD sessions. (See Appendix B for a Classroom Observation Checklist.)

3.4.3 Design and Delivery of PD

PD modules based on phonological processing and phonemic awareness were presented to the teachers in four separate sessions (See Appendix C for Professional Development (PD) Session Overviews). The HLPs introduced, modeled, and rehearsed in the PD sessions were based on the curriculum. Practicing HLPs in PD sessions provided opportunities for teachers to develop skill in using the HLPs. Each PD session was geared toward bringing teachers together as a community of learners to share the knowledge they have, and, as a group, to identify those areas in which they wanted to increase their literacy knowledge. All sessions began with the rationale for focusing on phonology or phonemics and presented teachers with a research overview of the work in that area. Each session included a discussion of the key concepts to give the teachers a common language to facilitate discussion. Teachers were asked to bring the lessons they were currently teaching to the PD sessions. The teachers planned the next lesson(s) in their textbooks based on what was presented in the PD session and incorporating the HLPs that were introduced. Each session included a wrap-up of the topics covered in that session and a review of the activities covered. Finally each session was followed by a reflection. Results from these observations contributed to answering Research Question Two: What are the factors that help or hinder the development of literacy instruction to work effectively with ELLs?

3.4.4 Reflections

Each session ended with a reflection, which asked teachers for their input on the content and objectives of the PD session (See Appendix D a Reflection Example). Responses to the reflections at the end of each PD session gave an indication of the extent to which teachers benefited from the

session.

In-service PD in how to use HLPs to support student literacy acquisition represents an opportunity to integrate current knowledge from the fields of educational research, second language acquisition (SLA), and teacher preparation. It is important to note, though, that phonological and phonemic awareness are just two of the many skills ELL students need to succeed in English language classrooms. Students also need practice in reading comprehension, in developing academic vocabulary, and oral language development. This study is one step in addressing the critical need for educating teachers on ways to effectively address the growing number of ELLs in their classrooms and support the literacy development of ELL students.

3.5 CONCLUSION

Teacher education is under intense scrutiny. From the Gates Foundation to the University of Michigan, education professionals and researchers are trying to identify the best way to affect change in classroom practice. A number of theories of change are emerging, many of which share attributes, such as a focus on content or teacher involvement in communities of practice.

Although a significant body of literature has given attention over the past 15 years to what teachers need to know and be able to do to teach ELLs, teacher education programs have not been able to incorporate this knowledge in a meaningful way. Once in the classroom, it is difficult to reach teachers for training other than in PD sessions. Research into teacher training has revealed that teachers find PD to be the most helpful when it provides hands-on practice. Therefore, the PD that was offered combined hands-on practice using HLPs and phonological awareness.

The implications of the research findings in this dissertation provide information on teachers in classrooms in a way that information has not been collected before. We really do not know what teachers know, nor how they teach ELLs, and, therefore, we do not know how to help them improve. Answers to these questions are particularly important in an area such as Pittsburgh because teachers face students from a dizzying number of countries and languages. This is a daunting task for any teacher, but it may be especially difficult for Pittsburgh teachers, the majority of whom have received their teacher education in Pittsburgh and western Pennsylvania and have limited experience with cultures and languages as varied as the ones the language learners bring to the classroom.

“Children need to learn how to read and teachers need to learn how to teach them” seems a simple enough statement – but when the children are English language learners from a wide variety of language backgrounds and the teachers are not reading specialists nor do they receive much training in the teaching of reading, the scope of the problem becomes much larger. That is where the current research fits —to use two high leverage practices, sound tapping and sound boards, to teach phonological and phonemic awareness skills to teachers, who in turn use these practices to teach students. It seems that the combination of these elements and the application of them to ELLs represents a new and effective way to help non-English speaking students gain literacy. Documenting the process of the effectiveness of the PD contributes to an understanding of how these practices might support teacher learning.

4.0 PART I

A GROUNDED THEORY

APPROACH TO DATA ANALYSIS

Teachers' ability to incorporate HLPs that develop ELLs' phonological processing skills introduced in four professional development (PD) sessions was investigated in the study reported here. Data analysis, the creation of a framework for identifying critical components of teacher knowledge and skill, and the generation of findings were carried out using a mixed methods approach.

For Research Question One, quantitative data are presented about teacher use of HLPs based on self-report frequency ratings which were compared to classroom observations by the researcher. For Research Question Two, a framework was created based on Grounded Theory (GT) data analysis to investigate critical components of teacher knowledge and skill. Chapter 4: Part I describes the data analysis process. Chapter 4: Part II presents findings from the study.

In the sections that follow, a theoretical rationale for GT is presented along with a description of the six sources of data collected during the study, and the data coding processes and procedures that were employed to analyze the data. A framework follows that is used for data analysis and generation of the findings. The findings of the study illustrate the extent to which PD

sessions in the use of HLPs that focus on developing ELLs' phonological processing skills were effective for changing teacher practice. The findings also identify how specific components of teacher knowledge and skill seem to help or hinder effective literacy instruction for ELLs.

In Chapter 5 a discussion of the implications of the findings for school-based professional development is presented. Chapter 5 also presents a theoretical model that identifies how the components of teacher knowledge and skill are influential factors in ESL teachers' ability to work with ELLs and can be considered for effective school-based professional development for ESL teachers.

4.1 THEORETICAL RATIONALE

A mixed methods approach was conducted to address Research Question One, which sought to quantify frequency of teacher practice. Research Question Two sought to identify the kind of knowledge and skill that underlies specified kinds of teacher practice, and a qualitative approach provided the richest answer. A benefit of a qualitative approach as applied here is that it provides a window into what ESL teachers know and can do in the classroom, and the extent to which PD sessions can be effective in improving teacher practice. As stated in the literature review, much work and study has gone into identifying what kind of training ESL teachers need, but what may be missing is research into how much of that training teachers are actually putting into practice in their classrooms.

A Grounded theory (GT) approach was used to analyze the qualitative data presented here. GT is based on the work of two sociologists, Barney Glaser and Anselm Strauss (Glaser & Strauss, 1967). In GT, a theory is created from the data, as opposed to a more traditional research approach

in which a preconceived theory is applied to the data. According to theorists Bryant and Charmaz (2007), GT is an inductive and comparative approach that is designed to encourage researchers' persistent interaction with their data, while remaining constantly involved with the emerging analyses.

In GT, the researcher analyzes the data collected during the study seeking to identify overarching categories of information that are integral parts of the phenomenon being studied. Data analysis occurs in successive stages. With each iterative analysis of the data, the researcher refines the overarching categories by identifying components of the data that seem to be critical to explaining the phenomenon. The critical components become a framework for further data analysis. These components are continually compared to the data as the analysis proceeds. Constant comparison of the new data to the framework is a hallmark of GT, originally called the Constant Comparative Method (Creswell, 2003).

The researcher then generates a theoretical model, using the components from the framework to contribute to an understanding of the phenomenon. The theoretical model that is presented in Chapter 5 is a visual representation of the critical components that are described in the following sections. In the context of this study, the theoretical model seeks to explain how the identified components helped or hindered teachers' use of effective literacy practices for ELLs.

Theoretical sensitivity is a term frequently associated with GT, which refers to the researcher's ability to give meaning to the data, the capacity to understand the patterns that emerge, and the capability to separate the pertinent from that which is not (Strauss & Corbin, 1990). Professional experience is a source of theoretical sensitivity because the more professional experience the researcher has, the richer the knowledge base and insight available to the researcher in the data analysis and theory creation steps.

4.1.1 The Steps in Grounded Theory

GT involves multiple steps of data collection and refinement. Each step involves categorizing the data and searching for interrelationships among the categories of information (Strauss & Corbin, 1990; 1998). The researcher begins by reading and reflecting on the data and organizing it into overarching categories. He or she then identifies specific components of the overarching categories. Inductive and deductive reasoning is a critical step in the data analysis. Refining the components takes place by adding detail and looking for relationships among the components. All data are continually analyzed and compared to the components to identify further details as well as alignment with the components. Next, codes are assigned to the components, and then the codes are applied to the data. Once the coding of the data is completed, the researcher selects the most important components to create a framework for further data analysis. The framework becomes the foundation upon which findings are generated. Finally, a theory is created based on the findings (Strauss & Corbin, 1998).

In the context of this study, the data collected took the form of fieldnotes, observations, interviews, and questionnaires. The coding procedures entailed an iterative process of identifying components of categories and refining them, reducing the data with each refinement. The framework was established and applied to the data so that comparisons across the six teachers in the study could be made in a consistent fashion.

In the sections that follow, the research questions are reiterated, the sources of data are listed, and the steps in the data analysis are explained. In Chapter 4, Part II, the findings of the study are presented.

4.2 RESEARCH QUESTIONS

4.2.1 Research Question One

Does in-service professional development (PD) in the use of HLPs that develop ELLs' phonological processing skills affect teacher literacy instruction for ELLs?

4.2.2 Research Question Two

What are the factors that help or hinder the development of literacy instruction to work effectively with ELLs?

The significance of this research is threefold: one, the findings indicate that teacher knowledge and skill to work with ELLs is highly differential, even in small populations of teachers, such as the one described here. Two, the core components and the framework developed in this work can serve as a foundation to evaluate teacher knowledge and skill to work with ELLs. Three, the findings can provide insight into how PD sessions can be structured to help in-service teachers develop the necessary knowledge and skill to support language learners' literacy development.

4.3 SOURCES OF DATA

Six ESL teachers participated in the study, which spanned an eight-month period (August 2011 to April 2012). The length of the study created an environment in which teachers became increasingly engaged with the research, which resulted in open and frank communications. Data was collected in four professional development (PD) sessions, two classroom observations of each teacher, and

on-going electronic interactions via e-mail. The instruments used to collect the data are described in Chapter 3, but they are reviewed briefly here with an abbreviation for each. The abbreviations for these data sources are used when discussing the findings in Chapter 4, Part II, and when discussing the implications of the findings in Chapter

4.3.1 Questionnaire (QU)

The first step in the research was the administration of a questionnaire that asked teachers about their use of classroom techniques specific to literacy instruction (see Appendix A for Teacher Questionnaire). On the questionnaire, teachers were asked to rate the frequency with which they engaged in a specific set of literacy practices and HLPs. The results of the questionnaire were used to operationalize teacher knowledge and skill that supported the development of reading. The questionnaire was a self-report measure, as such, validation of teachers' reported use of classroom practices was an important step in the research process. Validation of teachers' self-report ratings occurred through two classroom observations. Teachers' self-report ratings were compared to the actual practices in the teachers' classroom instruction which were observed by the researcher.

4.3.2 Observations (OB)

Classroom observations of the six teachers were conducted two times during the study, once at the beginning of the study and once at the end of the study, for a total of 12 observations. A Research Associate¹ from the University of Pittsburgh's Learning Research and Development Center (LRDC) accompanied the researcher on the first school visit to establish inter-rater reliability for the observation process (Appendix B contains a copy of the Classroom Observation Checklist). An

¹ The Research Associate has a Ed.D. from Harvard University in Language and Literacy (2010). The title of her dissertation is "Pinpointing the Challenging Aspects of Academic Language for English Language Learners and English Only Students in Early Adolescence." At LRDC, the researcher works on an academic vocabulary development project for middle-school students.

inter-rater reliability analysis using the Kappa statistic was performed at the beginning of the study to determine consistency between the two raters. The inter-rater reliability for the raters was found to be $Kappa = 0.503$ ($p < 0.001$), 95% CI (0.283, 0.723). This indicates moderate agreement among the raters. The six initial observations took place within two weeks of the first PD session in late August. The final observations took place after the PD sessions had ended in February. The final observations were slightly delayed due to demands on teachers' time at that point in the school year (March and April 2012). In the spring, the state and school district testing had begun, and teacher evaluations were in process. This seeming setback in the research became an advantage because it allowed for more time to interact with the teachers in e-mails messages, which may have contributed to teachers' increasing trust in sharing important information about their instruction. All final observations were completed by the mid-April 2012.

4.3.3 Four Professional Development Sessions (PD)

PD modules with the goal of increasing teachers' knowledge of phonological processing and phonemic awareness for improving ELL reading performance were presented to the teachers in four separate sessions (Appendix C contains the Professional Development (PD) Session Overviews). Each PD session had as a goal to bring teachers together as a community of learners to share their knowledge, and, to identify those areas in which they would like to strengthen their skill and knowledge. An interesting addition to the PD sessions was the presence and participation of ESL Coordinator Mark McClinchie. Timothy McKay left the PPS in August 2011 shortly before the beginning of this study. His responsibilities were distributed across two people: Jonathan Covell became the ESL Director and Mark McClinchie became ESL Coordinator. During the PD sessions, Jonathan Covell worked with the middle- and high-school ESL teachers while Mark McClinchie attended the elementary-school teachers' ESL sessions where the PD was

presented. Mark McClinchie's presence at each of the four PD sessions had two effects on the teacher population. First, his physical presence at every PD session may have contributed to the teachers' impression that, as a representative of the PPS, he was interested in what they had to say and had the authority to make changes. Second, his participating in the sessions served as a disciplinary presence. Having conducted two PD sessions during the winter of 2011, I had witnessed firsthand how some of the teachers write text messages, eat, read, do paperwork, and talk with others with little regard to presenters.

4.3.4 Interviews (IT)

Informal interviews, although not a part of the formal research plan, were conducted following each classroom observation. For the first observations, when time permitted, the teachers were invited to ask questions about the research or to discuss the day's lesson that had been the focus of the observation. For the second observations, four of the six teachers requested an observation directly before a free period to allow time for one-on-one conversation with the researcher.

The interviews became a rich source of data for analysis. As Creswell (2003, pg. 14) points out, qualitative research requires the researcher to "Rely as much as possible on the participants' views of the situation being studied." The informal teacher interviews provided an opportunity for the teachers to talk freely about issues that affect their instructional practice. They also provided insight into some of the challenges that teachers face while teaching. During the informal interviews, issues emerged about the control of variables that affect teachers' ability to teach, such as access to materials, job security and stability, and the degree of responsibility and accountability teachers have to their students beyond the classroom. These factors are of much importance to teachers but are factors over which they have no control.

4.3.5 Reflections (RF)

After each PD session, teachers were sent a reflection by e-mail that they completed and returned. A total of four reflections for each of the six teachers in the study totaled 24 reflections (Appendix D contains a reflection example). The reflections contained prompts that were specific to each PD session so that teachers addressed specific aspects of that day's PD session in the reflection. Teachers' answers to the reflections revealed teacher knowledge and skill in indirect ways, such as teachers' concerns that mainstream classroom teachers did not know how to modify content materials, for example, in mathematics or science, for the ELL students.

4.3.6 Work Completed in PD Sessions (WC)

In each PD session, teachers worked on various exercises that were focused on the content presented in the session. Each exercise was tied to a brief reading completed in the session. To keep track of the various data collection activities, teacher logs were created for each of the six participants in the study with a tally of the observation dates, materials collected, fieldnotes created, and classroom artifacts from the observations (See Appendix E for a Teacher Log).

4.4 DATA ORGANIZATION

The first step was to organize and prepare the data for analysis. The preparation of the data entailed typing up fieldnotes from the observations (OB), typing and organizing notes collected during the four PD sessions (PD), and elaborating on notes taken during the informal interviews (IT). Answers to questions that were asked on the questionnaire (QU), the reflections (RF), and during work completed (WC) in the PD sessions were also compiled. Table 2. below shows the sources and frequency of the data collection.

Data Source	Abbreviation	Frequency	Data Collection Tool	Data Type	Data Analysis Tool	Total
Questionnaire	(QU)	1	Survey Questions	Numeric Text	SPSS Excel Word	6 Questionnaires
Professional Development Sessions	(PD)	4	Fieldnotes	Text	Excel	4 Professional Development (PD) sessions
Observations	(OB)	2	Fieldnotes	Numeric Text	SPSS Word	12 Observations
Informal Interviews	(IT)	2	Interviews	Text	Excel Word	10 Informal Interviews
Reflections	(RF)	4 Reflections 4 Questions on each Reflection	Questions	Text	Excel Word	24 Reflections
Work Completed in PD Sessions	(WC)	6-8	In-class activities	Text	Word	6-8

Table 2. Sources and Frequency of Data Collection

4.5 DATA ANALYSIS

A mixed methods approach was used to analyze the data. For Research Question One, quantitative data about classroom use of HLPs based on teacher self-report and compared with classroom observations by the researcher are presented. For Research Question Two, a framework was created based on the critical components of teacher knowledge and skill that emerged from the GT analysis. The framework was used to examine teacher practice across the components of knowledge and skill identified in the GT analysis process for each of the six teachers in the study. The framework was applied to all data sources so that comparisons among the teachers could be made.

GT provides a process for categorizing data, identifying components of the categories, and applying codes to the components. The purpose of categorizing and coding the data is to identify important conceptual elements that can be used as a framework for analysis with the ultimate goal of building a theory to explain the phenomenon being researched. According to Bryant and Charmaz, “The iterative process of moving back and forth between empirical data and emerging analysis makes the collected data progressively more focused and the analysis successively more theoretical” (Bryant & Charmaz, 2007, p. 1).

In the context of this study, categorizing and coding the data entailed compiling all the information and then reading and reflecting on it. As each document was reviewed for the first time, a check mark was placed next to a sentence or phrase that reflected teacher knowledge or teacher use of an instructional technique. When the data was reviewed a second time, specific phrases were underlined. For the most part, the unit of analysis was the phrase, but occasionally a complete sentence or an entire paragraph was considered as a data point.

After reading across several documents, overarching themes began to emerge. At first, the themes were very broad, such as Teacher Content Knowledge (TCK) and Teacher Pedagogical Knowledge (TPK). The themes were written on index cards along with teacher comments pertinent to TCK. Some comments revealed a finer-grained understanding, or lack of understanding, of a particular concept. For example, in Question 3 of Reflection 1, teachers were asked: “Is there a particular area for which you are interested in receiving professional development. If yes, please describe.” One teacher answered, “Rhyming, why is that so hard?” On the first round of data collection, the teacher’s response was identified as TCK, because the response seemed to be related to the issue of rhyming as an indicator of reading readiness. Upon further examination, it became apparent that the teacher’s comment also referenced reading readiness in cross-linguistic contexts. Rhyming is important in the literacy acquisition process (Dunst, Meter, & Hamby, 2011), but for students exposed to a second language at a time when their first language is not fully formed, something as simple of rhyming does not come easily. For this particular statement, L2 literacy acquisition processes (LAP) seemed to be a more descriptive of this component, and, therefore, the three-letter code LAP was assigned to this particular teacher’s response.

The data was reviewed and compared to the critical components of the overarching categories. Then, the three-letter codes were assigned to the teacher comments. The codes were broadly construed, such as TCK, when refinement was not possible. When the information reflected in the comment was concrete enough to warrant a specific code, a specific code was assigned, such as LAP. A plus sign (+) was used to indicate a component that represented teacher knowledge and skill that was positive, such as when teachers used phonological processing and phonemic awareness activities. A minus sign (-) was used when the component reflected teacher

knowledge and skill that was negative, such as when teachers did not seem able to modify their instructional practice for ELLs.

As data compilation progressed, two questions were foremost in the data analysis steps: (a) what do the data reveal about the teacher's use of HLPs; and (b) what do the data reveal about teacher knowledge and skill necessary for teaching ELLs.

4.6 CATEGORIES AND CODING OF DATA

An important element of GT is the reflective reading of texts to identify categories of information and to group categories together. The researcher begins by reflecting on the data and forming general impressions. In the context of this study, general impressions were developed by reading all the data and looking for evidence of teacher practice that reflected specific knowledge and skill for working with ELLs. The general impressions formed the basis for the overarching categories described in the sections that follow. After generating a list of general impressions, the data were organized into overarching categories. Once categories were identified, the GT coding procedures of open coding, axial coding, and selective coding were initiated. In the selective coding stage, the data were reduced to a few core concepts, upon which a framework was created.

4.6.1 Open Coding

The first coding procedure is termed open coding and is named thusly because the researcher is “open” to the data, that is, he or she has no preconceived ideas about what the data reveal. Open coding is aimed at developing general overarching categories based on general impressions gathered from reading all the data (See Appendix F for General Impressions.) Based on these general impressions, a number of patterns emerged, many of which were pertinent to Teacher

Content Knowledge (TCK) and Teacher Pedagogical Knowledge (TPK) (Ball, 2000; Ball & Forzani, 2009; Shulman, 1986, see also Chapter 2, Section 2.5), which became the first two overarching categories from the open coding stage. As the categorizing became more refined, other factors that affect a teacher's ability to be effective became evident. Factors that are beyond a teacher's immediate control, such as access to resources, were labeled External Factors(ExF).

In sum, during the open coding stage of data analysis, three overarching categories of information were identified: Teacher Content Knowledge (TCK), Teacher Pedagogical Knowledge (TPK), and External Factors (ExF). (See Appendix G for Overarching Categories.)

4.6.2 Axial Coding

“Axial coding” is the stage at which the researcher identifies components of the overarching categories, relating and connecting information along specific axes. In the context of this study, axial coding entailed identifying specific components of Teacher Content Knowledge (TCK), Teacher Pedagogical Knowledge (TPK), and External Factors (ExF). As was stated in Chapter 2, the Literature Review, Teacher Content Knowledge (TCK) for working with ELLs is extensive because English is both the content and vehicle of instruction. ESL teachers must understand the structures and rules of English. They must understand the role of interaction and practice in learning a new language and must be sensitive to the language(s) spoken in the home. They must also have a broad understanding of language development in general and, at least, a basic understanding that structural differences exist across languages. Finally, ESL teachers must have extensive knowledge about appropriate practices, and modifying practices, for their ELL students. Appropriate practices encompass strategies to make instructional content explicit and comprehensible for ELLs, and include not only basic skills but also opportunities for higher level thinking.

Therefore, TCK for ESL teachers must contain, at a minimum, knowledge about the phonological processes necessary for literacy development, an understanding of second language acquisition, knowledge about factors related to literacy development for language learners, such as the role of oral language development in learning to read, the ability to modify classroom instruction and materials for ELLs, and the ability to identify and explain instructional practices in enough detail to convey knowledge of the appropriate practice. Teachers need to possess accurate and deep knowledge of the concepts associated with second language and literacy development. They must also understand what kinds of home supports exist to help students learn English. Evidence the teacher knowledge and skill to work with ELLs, as described above, formed the basis for the components in the axial coding stage. Aspects of phonological processing and phonemic awareness and use of HLPs was given the axial code PPA. Knowledge of L2 Literacy Acquisition Processes and sensitivity to the language spoken in the home received the axial code LAP. The role of oral language development in literacy development was given the axial code OLD. The ability to modify classroom practices for ELLs received the axial code MOD. Knowledge of appropriate practices for ELLs was named KAP. These areas became components, or axes, of TCK.

The codes were validated by a colleague² from the University of Pittsburgh's School of Education Department of Instruction and Learning in an exercise.

Table 3 below shows components of TCK with their respective axial codes. Included in each cell is the general impression(s) that informed the overarching categories.

Open Coding: Teacher Content Knowledge (TCK)
Axial Code: Phonological and Phonemic Awareness (PPA)

² The colleague is an associate professor in the School of Education. She has a Ph.D. from the University of Pittsburgh (2011). The title of her dissertation is "An Investigation of ELL Instruction and Learning in an Urban School District in Transition."

Impression: Some teachers used HLPs based on phonological processing and phonemic awareness correctly with their students.
Axial Coding: L2 Literacy Acquisition Processes (LAP) Impression: Some teachers seemed to have a naïve understanding or a misunderstanding of the L2 literacy acquisition processes (LAP) for non-English speakers.
Axial Coding: Oral Language Development (OLD) Impression: Teachers did not stress the use of oral language in their literacy classrooms and there was very little spontaneous student speech in any of the classrooms.
Axial Coding: Modification (MOD) Impression: Some teachers seemed to make little distinction between English speakers and English learners. Other teachers modified content but in a way that decreased effectiveness.
Axial Code: Knowledge of Appropriate Practice (KAP) Impression: Some teachers seem to fall back on naming classroom instructional practices rather than explaining the use of the practice.

Table 3. Components of Teacher Content Knowledge (TCK) with Axial Codes

The same process was conducted for Pedagogical Knowledge (TPK), identifying a number of features of Teacher Pedagogical Knowledge. In some cases, the TPK factors identified pertain specifically to the education of ELLs, and in some cases, the TPK was generalizable to elementary students regardless of native language. The use of HLPs that incorporate phonological and phonemic awareness is an example of a concept that reflects both content knowledge and pedagogical knowledge because the teacher must use an HLP that focuses on the current content and execute the HLP correctly. Because the correct use of HLPs can have some aspects of TPK and TCK components, HLPs are repeated in both the TCK and the TPK tables. From the general impressions, teachers' knowledge of assessments (ASM) was identified as TPK.

Table 4 below shows components of TPK with their respective axial codes. Included in each cell is the general impression(s) that informed the overarching categories from which the components were identified.

Open Coding: Teacher Pedagogical Knowledge (TPK)
Axial Coding: Phonological and Phonemic Awareness (PPA) Impression: Some teachers used HLPs based on phonological processing and phonemic awareness.
Axial Coding: Assessment (ASM) Impression: Teachers seemed to have an in-depth understanding of the kinds of assessments to use.

Table 4. Components of Teacher Pedagogical Knowledge (TPK) with Axial Codes

Finally, this process was repeated for External Factors (ExF), those factors that can affect teacher practice but which teachers cannot control. Mixed Proficiency Levels (MPL) refers to students with different levels of language proficiency in the same classroom. Other Programs (OP) refers to teachers' belief that students receive instruction in other settings, either after school programs or summer programs. Access to Resources refers to access to materials as well as access to experienced support personnel (ATR).

Table 5 below shows Axial Codes for the components of ExF.

Open Coding: External Factors (ExF)
Axial Code: Mixed Proficiency Levels (MPL) Impression: Teachers mentioned the Mixed Proficiency Levels of students as a challenge for them.
Axial Coding: Other Programs (OP) Impression: Teachers made faulty assumptions about the kinds of supports ELLs receive in other settings.
Axial Coding: Access to Resources (ATR) Impression: Teachers repeatedly mentioned the lack of leveled readers as a real issue The quality of paraprofessionals in the classrooms needs to be evaluated.

Table 5. Components of External Factors (ExF) with Axial Codes

4.7 APPLYING THE CODES

The Axial Codes created in the coding process were then applied to specific examples in the data that reflected teacher knowledge and skill in areas which were identified as components of the overarching categories. Analysis centered on phrases and sentences, although occasionally an entire paragraph was given one specific code.

For every passage that had an Axial code attached to it, the passage was entered into an Excel file along with a data numerical identifier for the source of the data, and a teacher numerical identifier for the teacher who produced the data. The data numerical identifier indicated the source of the data itself and the item number from that source. For example, there were four Reflections; each reflection was numbered and numbers were also assigned to the specific questions on that Reflection. Reflection 1, Question 1, became RF 1.1. The Excel file of the coded data included comments teachers wrote on the questionnaires; all comments in response to the six reflections;

answers to questions that appeared on the worked examples, and comments made in informal interviews. If a particular phrase could pertain to more than one category, it was given more than one code and entered into the Excel file more than once.

To summarize, in GT analysis of data, the researcher first compiles a list of general impressions after reading and reflecting on all the data. Second, the researcher refines the general impressions, mindful to be open to patterns that emerge. The organization of data into overarching categories during this phase is called Open Coding. In the context of this study, three overarching categories that emerged from the data were Teacher Content Knowledge (TCK), Teacher Pedagogical Knowledge (TPK), and External Factors (ExF).

Next, the researcher undertakes a process of data refinement, identifying components along the axes of the open coding categories. This stage is referred to as Axial Coding. Eleven categories of components were identified during the Axial coding stage. For TCK, six components were identified, for TPK, two components were identified, for ExF, three components were identified. All the components that resulted from the Axial Coding process are displayed in the Table 6 below.

Open Code	Teacher Content Knowledge (TCK)	Teacher Pedagogical Knowledge (TPK)	External Factors (ExF)
Axial Codes	Phonological and Phonemic Awareness (PPA)	Phonological and Phonemic Awareness (PPA)	Mixed Proficiency Levels (MPL)
	L2 Literacy Acquisition Processes (LAP)	Assessment (ASM)	Other Programs (OP)
	Oral Language Development (OLD)		Access to Resources (ATR)
	Sensitivity to Home Language (SHL)		
	Modifications for Content (MOD)		
	Knowledge of Appropriate Practice (KAP)		

Table 6. Components from the Axial Coding Process

The codes are then applied to the specific data sources once no further new categories, and hence new codes, are identified. Two steps remain, Selective coding, and the creation of a framework with which to present the findings and construct a theory of PD as a means to teacher development of knowledge and skill to work with ELLs. In the section that follows, selective coding is explained and the theoretical framework is introduced. In Chapter 4, Part II, the framework used to analyze the findings is presented.

4.7.1 Selective Coding

Selective coding is the stage in which the researcher “selects” the most important components that have been identified from the categories thus far in the research process. It is a procedure for building a story that connects the categories. The components are then used to create a framework for further data analysis. In the context of this study, the components of the category TCK provided data pertinent to Research Questions One and Two, and so I have selected to focus on the components of Teacher Content Knowledge only in the creation of the framework. Five axial codes were assigned to the components of TCK as described above; they are Aspects of phonological processing and phonemic awareness (PPA); an understanding of L2 literacy acquisition processes (LAP); the role of oral language development in literacy development (OLD); modifications that adapt instruction for an ELL audience (MOD); and knowledge of how a particular instructional practice is appropriate for language learners (KAP).

4.8 FRAMEWORK FOR ANALYSIS

The framework was based on five key components of effective teacher practice: Phonological and Phonemic Awareness (PPA), L2 Literacy Acquisition Processes (LAP), Oral Language Development (OLD), Modifications for Content (MOD), and Knowledge of Appropriate Practice (KAP). Although other features were present in the data, I believe these five features represent a set of core knowledge components that teachers who used HLPs correctly possessed. Conversely, those teachers who did not use HLPs correctly, did not seem to have mastered the knowledge underlying the above components.

In Chapter 4, Part II, brief descriptions of the teachers are presented. Research Question One is addressed using quantitative data. Research Question Two is addressed using the framework that was developed to analyze teacher Knowledge and skill across various data sources in comparable ways.

In Chapter 5 a discussion of the implications of the findings for school-based PD is presented. Chapter 5 also contains a theoretical model that seeks to incorporate the findings reported here about TCK and other components of the data analysis that appear to be influential factors in ESL teachers' ability to work effectively with ELLs. The model is an attempt to explain the features of TCK that are necessary for effective school-based professional development for ESL teachers.

PART II

4.9 FINDINGS

In the sections that follow, the results of the data analysis are presented to address the overarching Research Questions of this study, “Does in-service professional development (PD) in the use of HLPs that develop ELLs’ phonological processing skills affect literacy instruction for ELLs? What are the factors that help or hinder the development of teacher knowledge and skill to work effectively with ELLs.” The findings reported here illustrate the extent to which PD in the use of HLPs was effective. The findings also identify how specific components of teacher knowledge and skill can help or hinder effective literacy instruction for ELLs.

To answer these questions, data were gathered specific to teachers’ use of HLPs in their classroom practice. Data analysis and the creation of a framework for presenting the findings were carried out using a mixed methods approach. The findings take two forms, in response to the two Research Questions. For Research Question One, quantitative data were collected based on a Teacher Questionnaire (Appendix A) and Classroom Observations (OB). On the questionnaire, teachers were asked to rate the frequency of their use of HLPs in literacy instruction with ELLs. The self-report questionnaire data were contrasted with data collected during classroom observations by the researcher. An observation checklist was created specifically for this purpose (Appendix B). The results of the comparisons are presented below in section 4.11 “Teacher Use of HLPs.”

For Research Question Two, qualitative analysis using Grounded Theory (GT) methodology was conducted to identify components of effective teacher knowledge and skill to work with ELLs. A framework based on the components was developed and employed to analyze evidence of teacher knowledge among the six teachers and across the six sources of data collected throughout the study.

In the sections that follow, brief descriptions of the teachers are presented. In Section 4.11, quantitative data analysis is presented in response to Research Question One. In section 4.12, Research Question Two is addressed using the framework that was developed based on GT methodology.

4.10 DESCRIPTION OF TEACHERS

For research purposes and to protect each teacher's anonymity, the teachers were assigned codes and pseudonyms. In the short descriptions below, and in discussions that follow, the teacher pseudonyms are used exclusively. Appendix H contains details on the teachers' experience, certifications, and the degree-granting institutions where they studied.

4.10.1 Kate

Kate earned a Master's degree in education from the University of Pittsburgh. She is certified in Elementary Education and undertook ESL endorsement coursework at LaRoche College. Kate indicated on the professional experience section of the questionnaire administered at the beginning of the research study that she had completed 13 credits in ESL work at LaRoche. Kate has worked a total of 15 years as a full-time elementary teacher and has worked three years at the current

school. When asked on the background and career section of the questionnaire to identify how many courses specific to literacy instruction she had completed, Kate answered, “I can’t remember.” Although born in the United States, Kate identifies strongly with her native heritage; she speaks her heritage language and visits her extended family in her country of heritage on a regular basis.

4.10.2 Bea

Bea earned a Bachelor’s degree in elementary education from the University of Pittsburgh. She is certified in Elementary Education and received an ESL endorsement from the Allegheny Intermediate Unit (AIU). Bea has worked a total of ten years as a full-time elementary teacher and has worked four years at the current school. When asked on the background and career section of the questionnaire to identify how many courses specific to literacy instruction she had completed, Bea did not answer the question. Bea is monolingual in English. She is the younger sister of Minnie (described below), though the two sisters do not work in the same school.

4.10.3 Veri

Veri is the only teacher of the six who is certified in Bilingual Education. She is a native speaker of Spanish, is bilingual in English and Spanish, and is one of two teachers in the sample who is not a native of Pittsburgh. Veri earned a Bachelor’s degree in elementary education from Sam Houston State University in Texas. She is certified in Elementary Education, Bilingual Education, ESL, and Reading. Veri has worked a total of 20 years as a full-time elementary teacher and has worked three years at the current school. When asked on the background and career section of the questionnaire to identify how many courses specific to literacy instruction she had completed, Veri answered, “Lots.”

4.10.4 Collette

Collette is a native speaker of Spanish, and, like Veri, is bilingual in English and Spanish. She is not a native of Pittsburgh. She earned a Master's degree in elementary education from the University of Pittsburgh. She is certified in Elementary Education, and received an ESL endorsement from the Allegheny Intermediate Unit (AIU). Collette has worked a total of 22 years as a full-time elementary teacher and has worked three years at the current school. When asked on the background and career section of the questionnaire to identify how many courses specific to literacy instruction she had completed, Collette answered, "Enough for certification."

4.10.5 Geraldine

Geraldine earned a Master's degree in elementary education from the University of Pennsylvania. She is certified in Elementary Education and has an endorsement in ESL. Geraldine is the only teacher in the sample who is National Teacher Standard Board (NTSB) certified. She has worked a total of 18 years as a full-time elementary teacher and has worked three years at the current school. When asked on the background and career section of the questionnaire to identify how many courses specific to literacy instruction she had completed, Geraldine answered "Three." In addition to teaching, Geraldine played a key role in the Pittsburgh Public School District's Managed Curriculum initiative, developing detailed classroom teaching plans for all the units in the ESL department-approved *Avenidas* textbook series.

4.10.6 Minnie

Minnie earned a Bachelor's degree in elementary education and a Master's degree in Special Education from Duquesne University. She is certified in Elementary Education and Special Education. She completed her ESL endorsement at Duquesne University. Minnie has worked a total of 12 years as a full-time elementary teacher and has worked nine years at the current school.

When asked on the background and career section of the questionnaire to identify how many courses specific to literacy instruction she had completed, Minnie answered, “Don’t know.” As mentioned above, Minnie is the older sister of Bea, though the two sisters do not work in the same school.

4.11 TEACHER USE OF HLPS

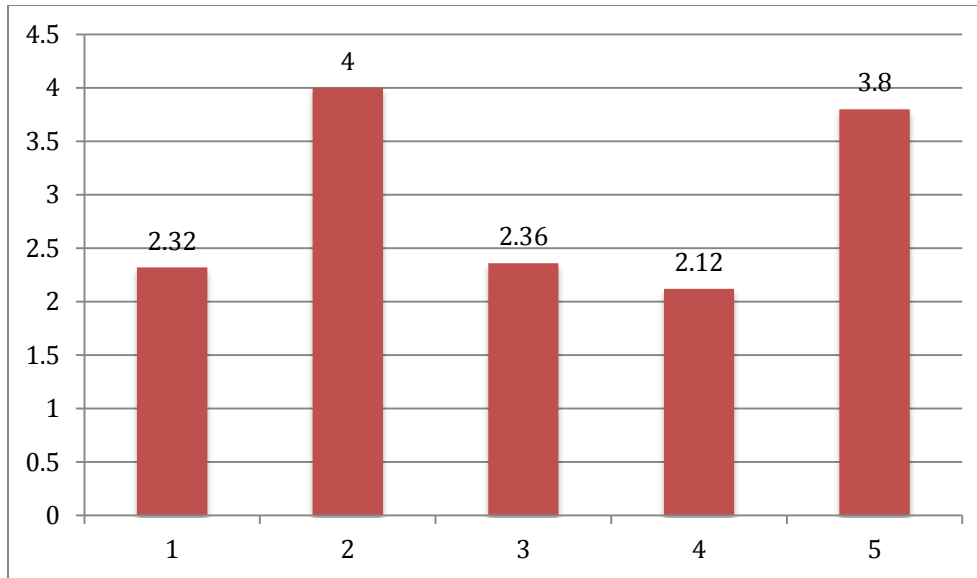
To examine the use of HLPs in teachers’ classroom instruction, the researcher collected quantitative data on three separate occasions using two instruments.

The first instrument was a questionnaire, which was administered to the six teachers in the sample at the beginning of the study. The questionnaire contained 25 items on which teachers reported the frequency with which they incorporated literacy practices into their classroom instruction. The items were specific to literacy development, such as, “I give phonics instruction to teach letter-sound relations.” The items also asked teachers to rate themselves on the use of HLPs, such as, “I provide explicit instruction in how sounds in words can be pulled apart” and “I provide explicit instruction via sound tapping in how sounds in words can be blended together.”

The teachers were asked to rate their frequency of use of literacy specific practices on a scale of 1 to 4, with the following indicators: 1. “Not at any time during the lesson;” 2. “Once or twice during the lesson but not consistently;” 3. “A number of times (more than once or twice) during the lesson but not consistently with all students;” and 4. “Consistently throughout the lesson with all students in the classroom.”

The second and third rounds of quantitative data collection occurred via observations conducted by the researcher two times during the study: one at the beginning of the study and one at the end of the study. The six initial observations took place within two weeks of the first PD session in late August. To compare teachers' self-reported use of HLPs with the researcher's observations of the teachers' use of HLPs in their classroom instruction, an observation measure was created that was identical to the items on the questionnaire with a slight change in wording. On the questionnaire, for example, an item for the teacher was, "I provide explicit instruction in how sounds in words can be pulled apart." On the observation measure, the same item was worded, "Teacher provides explicit instruction in how sounds in words can be pulled apart." As reported in Chapter IV, Part I, an inter-rater reliability analysis using the Kappa statistic was performed to determine consistency between two raters. The inter-rater reliability for the raters was found to be $Kappa = 0.503$ ($p < 0.001$), 95% CI (0.283, 0.723). The final observations took place at the end of the study after the PD sessions had ended. Teachers' self-report ratings appear below; the order of the teachers is Kate, Bea, Collette, Geraldine, and Minnie.³ The range of frequency for the self-report measures was 2.12 to 4.00, with a mean of 2.928 ($SD = 0.153$). The greatest frequency was reported by Bea ($M = 4.0$, $SD = .000$) and the lowest frequency was reported by Geraldine ($M = 2.12$, $SD = .440$). Table 7 below displays teachers' self-report ratings for use of HLPs.

³ One teacher, Veri, did very little explicit reading instruction because she taught a very large class of students in grades 3, 4, and 5. Veri was included in the sample because literacy practices in her instruction with the grade 3 students in her classroom were expected to be present, but there was not any explicit literacy instruction in her classroom during the two observations. Veri's ratings of her use of HLPs are not reported here. However, descriptions of her classroom practices will be included in the findings and in discussion of her classroom practice the implications.



Kate Bea Collette Geraldine Minnie

Table 7. HLP Mean Frequency Ratings from Data Source One: Questionnaire

The second source of data was classroom observations conducted by the researcher. Classroom observations of the six teachers were conducted two times during the study, once at the beginning of the study as a pre-intervention measure and once at the end of the study as a post-intervention measure. Teachers were rated on the same classroom practices as those which were included in the frequency ratings in the questionnaire. The range of frequencies for the researcher's observation spanned a low M of 1.08 ($SD = .400$) to a high M of 3.68 ($SD = .476$). Of the first set of observation frequencies, the highest rating was for Collette ($M = 3.86$, $SD = .476$). The lowest rating was for Kate ($M = 1.08$, $SD = .400$). Independent samples t -tests using Levene's Test for Equality of Variances were conducted for all five teachers. Of the five, one was significant. The researcher rated Kate ($M = 1.08$, $SD = .40$) significantly lower than Kate rated herself ($M = 2.32$, $SD = .627$); $t(40.75) = 8.34$, $p < .001$, two-tails, equal variances not assumed.

Table 8 below displays the researcher's ratings that were generated in Observation 1.

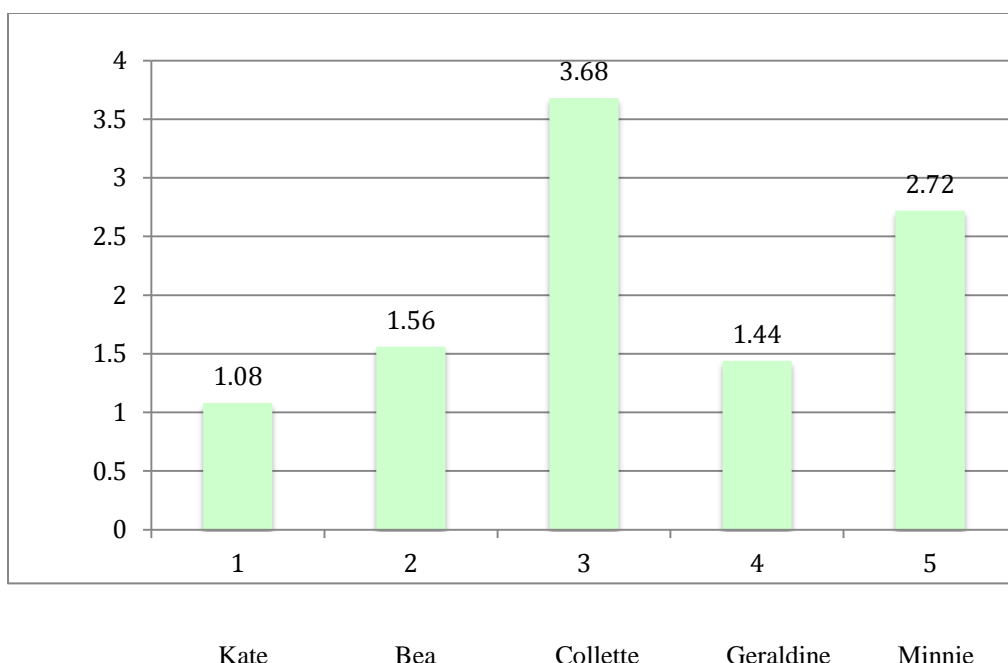


Table 8. HLP Mean Frequency Ratings from Data Source Two: Observation One
 Note: The ratings ranged from 1. “Not at any time during the lesson,” to 4. “Consistently throughout the lesson with all students in the classroom.”

The third source of data was classroom observations conducted by the researcher at the conclusion of the study after the four PD sessions had been completed, as a post-intervention measure. The researcher rated the teachers on the same classroom practices as those which were rated in observation one. The range of frequencies for the researcher’s second observation spanned a low M of 1.04 ($SD = .200$) to a high M of 3.84 ($SD = .374$). Of the second set of observation frequencies, the highest rating was for Collette ($M = 3.84$, $SD = .374$). The lowest rating was for Kate ($M = 1.04$, $SD = .200$). The high and low frequencies for the second observation mimicked the first observation, that is Kate was rated as using the fewest HLPs in her classroom instruction; Collette was rated as using the greatest number of HLPs in her classroom instruction.

In Table 9 below, the questionnaire self-report data, ratings from observation 1, and ratings from observation 2 are presented for each of the five teachers, showing the change in teacher use of literacy specific practices from the beginning of the study to the end of the study.

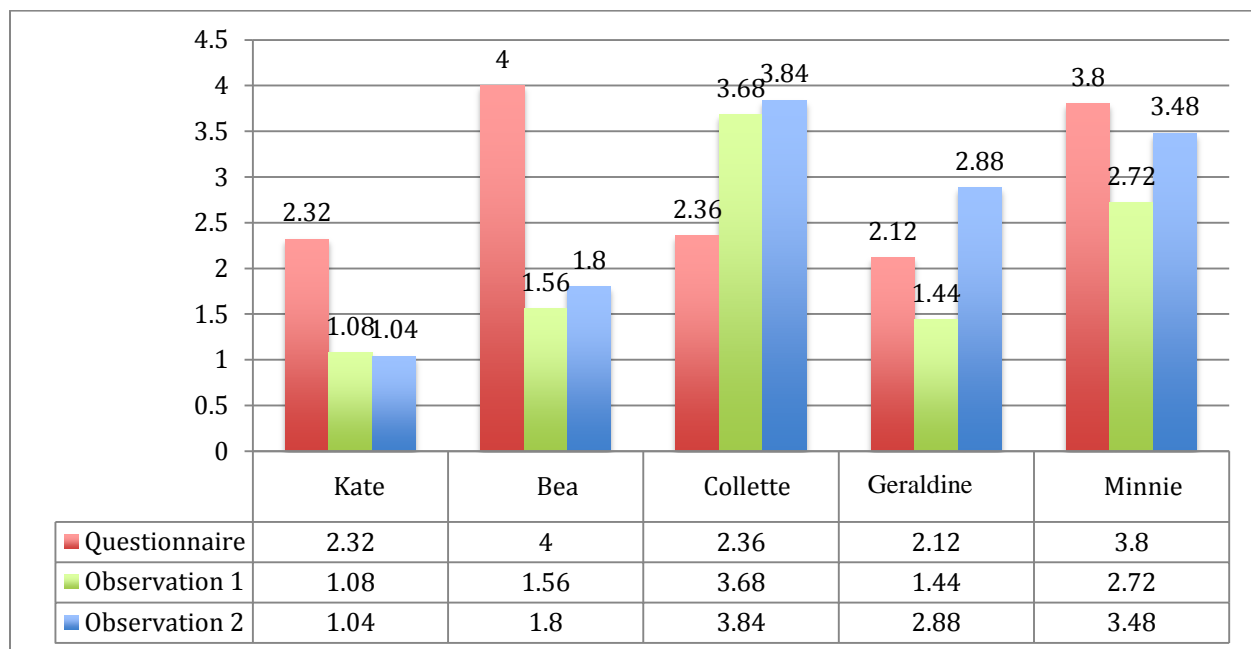


Table 9. HLP Mean Frequency Ratings from Three Data Sources
 Note: The ratings ranged from 1. “Not at any time during the lesson,” to 4. “Consistently throughout the lesson with all students in the classroom.”

4.11.1 Analysis of Teacher Use of HLPs

Classroom observation data of teacher use of HLPs supports the finding to Research Question One in the affirmative. In-service PD in the use of HLPs that develop ELLs’ phonological processing skills seemed to affect teacher classroom literacy instruction in a positive manner for four of the five teachers. The amount of improvement varied greatly based on individual teacher differences. Variability in teacher Knowledge and skill is explored in Section 4.12 “Teacher Knowledge and Skill.”

Two teachers, Collette and Minnie, used HLPs correctly at the beginning of the study and at the end of the study. Moreover, in Minnie’s classroom, in addition to her own use of HLPs, she had

trained a full-time paraprofessional to use HLPs in her classroom. The paraprofessional worked with one small group of students while Minnie worked with a second small group of students. The researcher did not rate the paraprofessional in Minnie's classroom because the paraprofessional did not have the opportunity to participate in the PD sessions.

It is worth exploring what factors contributed to teacher Knowledge and paraprofessional skill in this particular classroom. Was Minnie's knowledge of the practice so robust she could teach another to use it? Was her commitment to the practice such that she wanted to ensure that all practitioners in her classroom used the practice with her students? Had Minnie seen students' literacy abilities improve because of her use of HLPs? In Chapter 5, teacher variability in Knowledge and skill is discussed and implications for responsive professional development (PD) are presented.

Geraldine, on the other hand, did not use HLPs at the beginning of the study but was observed to be using them more frequently at the end of the study. In fact, at the conclusion of the study, Geraldine was the teacher who had made the greatest gain in her use of HLPs. Geraldine's adoption of HLPs in her classroom instruction is particularly noteworthy because she had explicitly proclaimed that she was "Not a phonics person" during the first classroom observation conducted at her school.

Bea, on the other hand, used HLPs in her classroom but made modifications to the practice that diminished the power of the HLP. Bea's incorrect use of the HLPs in her classroom is described below in the section Modification to Practice (MOD). With further PD, or possible intensive one-on-one coaching, Bea may be able to refine her practice and carry out HLPs correctly and effectively on a consistent basis.

Only one teacher, Kate, showed little evidence of use of HLPs in her classroom instruction either before or after the PD sessions.

In sum, close examination of the self-report data revealed that all six teachers rated themselves as using HLPs, whereas the observations did not support their self-assessment. Some teachers rated themselves as using a practice when they did not. Some teachers underestimated their use of HLPs. Other teachers rated themselves as using a practice but did so incorrectly. Teachers' self-reported ratings for use of HLPs were validated in order to ensure the teachers were using the practice correctly.

The findings here are noteworthy because the ELL population continues to grow and become more diverse. In-service PD that is effective in giving teachers the kinds of skills they need to work with new populations may be a viable alternative to undifferentiated PD sessions that do not take into account individual teacher Knowledge and skill. Variability in teacher Knowledge calls for PD that is tailored to individual teacher needs. With limited time and limited budgets, school districts may want to investigate PD that is responsive to the specific needs of individual teachers. The issue of teacher variability is discussed in the implications in Chapter 5. The framework developed from this study and model that is presented in Chapter 5 represent tools that may lay the foundation for responsive PD.

As was stated in the Literature Review in Chapter 2, researchers citing accumulating evidence, scholars in various fields, and expert practitioners and policymakers all call for instructional practices based on phonological processing and phonemic awareness skills for literacy development. HLPs that develop phonological processing skills can be used effectively with ELLs to teach reading. Effective ESL teachers possess a rich repertoire of classroom instructional practices that include HLPs for their ELL students. PD sessions that focus on the development of

specific literacy skills can be effective in helping teachers expand their classroom repertoires. In the sections that follow, Research Question Two, “What are the factors that help or hinder the development of literacy instruction to work effectively with ELLs?” is addressed. In addition to frequency of use of HLPs, the six data sources provided evidence of factors that may affect good literacy practice. As stated earlier, a framework was created to analyze teacher knowledge and skill. The framework serves as the basis for the findings that follow.

4.12 TEACHER KNOWLEDGE AND SKILL

In order to answer Research Question Two, “What are the factors that help or hinder the development of literacy instruction to work effectively with ELLs?” a framework developed during the GT analysis was created based on critical components of teacher knowledge and skill. Three overarching categories emerged from the data analysis: Teacher Content Knowledge (TCK), Teacher Pedagogical Knowledge (TPK), and External Factors (ExF). Detailed components of the categories were identified as aspects or “axes” of TCK, TPK, and ExF. The axial codes were then applied to the data. The framework was created based on the components of teacher Knowledge and skill that emerged from the analysis. The framework was used to examine teacher Knowledge and skill across all teachers and all data sources. The five key components of the framework are: Phonological and Phonemic Awareness (PPA), L2 Literacy Acquisition Processes (LAP), Oral Language Development (OLD), Modifications to Practice (MOD), and Knowledge of Appropriate Practice (KAP). Phonological and Phonemic Awareness (PPA) has been addressed in Research Question One in the preceding section.

Figure 1 below is a visual representation of the framework.

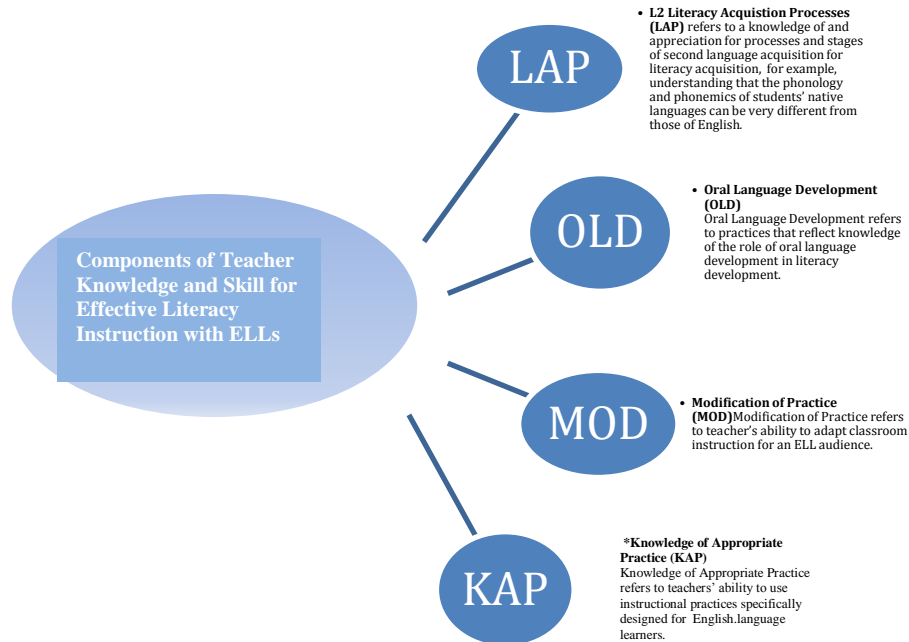


Figure 1. Representation of Teacher Knowledge and Skill Framework

4.13 TEACHER KNOWLEDGE AND SKILL FRAMEWORK

Although other features were present in the data, the framework components included here (along with Phonological and Phonemic Awareness, addressed in Research Question One) represent specific components of teacher knowledge and skill necessary to support the literacy development of English learners. As was stated in the Literature Review in Chapter 2, pre-service teacher preparation to work with ELLs has recently received a good deal of attention, from research volumes to policy initiatives (August & Shanahan, 2006, 2008; CEP, 2010; Genessee, Lindholm-Leary, Saunders, & Christian, 2006; IES, 2007; NAE, 2010). Policymakers citing accumulating evidence, researchers in various fields, and expert practitioners all call for instructional practices based on phonological processing and phonemic awareness skills for literacy development. One

finding of the study reported here indicates that in addition to an understanding of phonological processing skills for early readers, teacher knowledge and skill needs to include a number of other components. One component of knowledge and skill that teachers need is an understanding of L2 literacy acquisition processes as well as an understanding of the relationship between oral language and literacy. Another component that ESL teachers need is a repertoire of appropriate ESL instructional practices, including how to modify content materials, such as science and mathematics. Finally, a noteworthy finding of the study reported here indicates that teachers need in-depth and wide-ranging knowledge and skill in appropriate instructional practices for English learners.

For these reasons, the components that emerged that form the core of the framework used to analyze teacher Knowledge and skill are L2 Literacy Acquisition Processes (LAP), Oral Language Development (OLD), Modifications to Practice (MOD), and Knowledge of Appropriate Practice (KAP). Examples of teacher knowledge in the framework components described below are included to provide a basis for key components of PD for ESL teachers. Teacher knowledge and skill in the framework components vary widely from one teacher to the next, which was made evident by the data accumulated throughout this study.

With the framework as a guide, each data source was analyzed for illustrative examples of teacher knowledge and skill in the identified components. At this stage, the analysis had a dual focus. The first focus was centered on evidence of teacher Knowledge and skill as operationalized in specific classroom practices during the classroom observations. The second focus was the extent to which teacher knowledge and skill was made explicit by teacher comments on the questionnaire, in informal interviews, in the PD sessions, and in answers to reflections.

Beginning with the first component in the framework, L2 Literacy Acquisition Processes (LAP), the researcher read through all the data sources for evidence of teacher skill that displayed knowledge, or lack of knowledge, about LAP.

The examples were then rated with a (+) or a (-). A plus sign (+) was used to indicate a component that represented teacher Knowledge and skill that was positive, such as when teachers used phonological processing and phonemic awareness activities. A minus sign (-) was used when a component reflected teacher knowledge and skill that was negative, such as when teachers did not modify their practice for ELLs, the component skill was missing completely, or the skill was not sufficiently developed to be effective. The data sources for the examples are indicated with the following abbreviations: Questionnaire (QU), Professional Development sessions (PD), Observations (OB), Informal Interviews (IT), Reflections (RF), and Work Completed in PD Sessions (WC).

Once these examples were viewed in the aggregate, patterns of knowledge identified in the framework components for each teacher began to emerge. One finding of this analysis indicates that teacher Knowledge and skill in the core components of the framework vary considerably for each teacher.

Table 10 below displays the levels of knowledge for each teacher for each component of the framework.

		Kate	Bea	Collette	Geraldine	Minnie
Axial	Phonological and Phonemic Awareness (PPA)	-	-	+	+	+
	L2 Literacy Acquisition Processes (LAP)	-	-	+	-	+
	Oral Language Development (OLD)	-	-	-	-	-
	Modification of Practice (MOD)	-	-	+	+	+
	Knowledge of Appropriate Practice (KAP)	-	-	+	+	+

Table 10. Framework for Analysis of Teacher Content Knowledge

The table above illustrates the wide variety of skill ESL teachers possess. As is visible by the plus (+) and minus (-) signs, no teacher possessed a full repertoire of skills necessary to effectively support the literacy development of English learners. The variability in teacher knowledge is discussed and implications for responsive PD is explored in Chapter 5.

In the sections that follow, illustrative examples of teacher Knowledge and skill for each component of the framework are presented. The examples that are included are representative illustrations of the level of Knowledge and skill that the individual teacher displayed. The examples are meant to convey a picture of the teacher and her classroom environment or to provide insight into the teacher's orientation toward the literacy education of the English learning students in her classroom. For each report of a teacher's practice described here, the researcher looked across all the data sources, found at least two, and sometimes three, instances of the component

being reported on, and included the most representative example as illustrative of the individual teachers' level of skill.

The sections that follow present the examples in the order they are presented in the framework, that is, LAP, OLD, MOD, and KAP. Within each framework component, the teacher examples are presented in the order used throughout the study, that is, Kate, Bea, Collette, Geraldine, and Minnie.

Each section begins with a general description of the knowledge and skill characteristic of the component. Next, the examples presented are introduced. Following the description of the examples is a table that encapsulates the information presented. On the first table, the title of the component corresponds to the axial code (See Section 4.6.2), "L2 Literacy Acquisition Processes (LAP)." The first row of the table indicates the open code, in this case, Teacher Content Knowledge (TCK). Row two of the table lists the teachers' names in the aforementioned order: Kate, Bea, Collette, Geraldine, and Minnie. Row three of the table lists the axial code for the table. In the table below, the axial code is L2 Literacy Acquisition Processes (LAP). Row three contains plus (+) or minus (-) signs to indicate the type of example that is included. A plus sign (+) was used to indicate a component that represented teacher Knowledge and skill that was positive. A minus sign (-) was used when the component reflected teacher Knowledge and skill that was negative, such as when teachers did not modify their practice for ELLs, the component skill was missing completely, or the skill was not sufficiently developed to be effective. The last row in each table indicates the data source from which the example is taken. The abbreviations for the Data Sources are Questionnaire (QU), Professional Development Sessions (PD), Observations (OB), Informal Interviews (IT) Reflections (RF), and Work Completed in PD Sessions (WC).

4.13.1 Teacher Knowledge and Skill in the Area of L2 Literacy Acquisition Processes (LAP)

Many facets of LAP are necessary for young ELLs to make progress in the literacy acquisition process. Facets such as an explicit focus on phonological processing, an understanding that ELLs may need instructional approaches specific to their levels of L1 literacy, insight into the interaction between L1 knowledge and L2 literacy, and sensitivity to the language development of ELLs, in both the student's L1 and L2 are required of teachers. Moreover, teachers need to know that literacy instruction for English learners is not the same as literacy instruction for English speakers. To meet all the needs above, ESL teachers need mastery of a repertoire of instructional approaches specific to the needs of ELLs.

In the sample of teachers studied and reported here, understanding of L2 Literacy Acquisition Processes (LAP) spanned a continuum of “demonstrates little competence” to “demonstrates competence.” In the first example taken from the Teacher Questionnaire, Kate's answer illuminates a misconception and “demonstrates little competence” about the use of HLPs with ELLs in early reading instruction. In the next example, Bea's misuse of an instructional strategy, like Kate's, indicates a lack of understanding about the needs of English learners, once again, “demonstrates little competence.” The example that follows comes from Geraldine and displays a mismatch between reading knowledge for English learners and English speakers.

By contrast, Collette's seamless integration of a student's comment about her native language, the next example based on a classroom observation, shows what a teacher who “demonstrates competence” in L2 Literacy Acquisition Processes (LAP) looks like in classroom practice. Finally the example from an observation of Minnie's classroom is one of a practitioner who “demonstrates competence” in the use of an HLP practice.

The illustrative examples presented below serve to highlight the extent to which teachers did, in fact, understand some of the important concepts of L2 Literacy Acquisition Processes (LAP) for their students and displayed that knowledge and skill. For each report of a teacher's practice described here, the researcher looked across all the data sources, found at least two, and often three, instances of the component being reported on, and included the most representative examples as illustrative of the individual teachers' level of skill. Data that support this theme come from four data sources and are indicated in the "Data Source" row in Table 11. Framework for Analysis of L2 Literacy Acquisition Processes (LAP) below.

L2 Literacy Acquisition Processes (LAP)

Open	Teacher Content Knowledge (TCK)					
		Kate	Bea	Collette	Geraldine	Minnie
Axial	L2 Literacy Acquisition Processes (LAP)	-	-	+	-	+
Data Source		QU	RF	OB	RF	OB

Table 11. Framework for Analysis of L2 Literacy Acquisition Processes (LAP)

Note: A plus sign (+) was used to indicate a component that represented teacher Knowledge and skill that was positive. A minus sign (-) was used when the component reflected teacher Knowledge and skill that was negative. The abbreviations for the Data Sources are Questionnaire (QU), Reflection (RF), Observation (OB).

LAP Teacher Knowledge, Kate (-), Teacher Questionnaire

In Kate's answer to the questionnaire item described below, she revealed that she engaged in a number of HLPs but with students in kindergarten. Kate's answer to the question and her classroom practice observed by the researcher on a number of occasions are noteworthy because they indicated a lack of awareness of the importance of making a distinction in her practice between ELLs and English language speakers.

At the beginning of the research study, a questionnaire was presented to the teachers about classroom practices that focused on phonological processing. The questionnaire was designed in the form of statements and contained cells where teachers indicated the frequency with which they engaged their students in phonological processing practices. For example, three statements on the questionnaire were:

10. I draw student attention to syllables in words.

13. I provide sufficient time for students to use sound tapping, sound boards or other manipulative activities to practice segmenting syllables in words.

19. I provide explicit instruction via sound tapping or sound boards in how words can be pulled apart.

For each of these statements, Kate answered "Once or twice during the lesson but not consistently with all students," she also penciled in "more for kindergarten" beside each answer. She did not indicate that the practices described could be used with language learners throughout the early grades to support literacy acquisition. Kate's specifying that she would use HLPs for kindergarten may reflect sound thinking for English speaking students but reflects a lack of knowledge about the appropriateness of phonological processing practice for English learners, in particular, and may indicate a lack of knowledge about L2 Literacy Acquisition Processes (LAP), such as developing sound-letter correspondences, for English learners, in general.

Moreover, not modifying classroom instruction for ELLs was observed in Kate's classroom on a number of occasions. In many classroom interactions with her ELL students, Kate read lists of words aloud that students were to spell without any contextualization of the vocabulary, wrote lists of words with phonemes in free variation, such as "mice" and "taste" without sensitivity to the fact that explicit instruction in the phonology of English is necessary for many English learners, and relied on sayings such as "Remember magic 'e,' " as aids to spelling instruction rather explanations of spelling patterns in English.

LAP Teacher Knowledge, Bea (-), Reflection

Like Kate's answer above, Bea's answer to a reflection question "displays little competence" about instructional practices specific to ELLs. Bea's response is noteworthy because, like Kate's response, it indicated that she considered instructional practices that may be appropriate for English speakers as equally appropriate for English learners.

Bea's answer contains insight into her level of skill and knowledge that pertains to LAP in two ways: one, drilling in the same practices that are not effective the first time may be ineffective the second time (double-dosing), and two, sending home practice drills for parents to work on with children illuminates an insensitivity to the possibility that English is not spoken at home. This finding is noteworthy because Bea displayed misconceptions about LAP in other settings.

LAP Teacher Knowledge, Collette (+), Observation

In contrast to Kate and Bea above, in the description of Collette's classroom below, Collette's actions displayed a level of insight that the less experienced teachers did not possess. In the illustrative example below, Collette's seamless incorporation of students' recognition of letters as symbols in her classroom instruction is indicative of the generally high level of competence in L2 Literacy Acquisition Processes (LAP) she possessed. Moreover, in a number of classroom

observations and in her answers to reflection questions, Collette consistently displayed a level of knowledge and skill that approached “demonstrates competence.”

Collette’s ESL class was comprised of five students, one from Japan, two from China, one from Vietnam, and one from Turkey. The classroom was set up with the students sitting at a rectangular table low to the ground. The five students were on one side all facing Collette, and Collette sat directly across from her students. Each student had a binder opened in front of them and wrote the lesson’s words on sheets of paper with the day’s lesson and exercises. Collette employed the use of HLPs with her students in the manner described below:

Collette: “Write s-a-t.”

Students wrote the word.

Collette: “Say the word slowly.”

Students said the word slowly drawing out each letter as they pronounced the letter.

Collette: “Now say the word quickly.”

Students said the word quickly, pronouncing it as one would in normal speech.

Collette: “Now say the word slowly again.”

Students repeated the word slowly.

Collette: “Now erase the ‘s.’ What do you have?”

Students read “at.”

Collette: “Now add an ‘h.’ Make the sound of ‘h.’ ”

Students all made “h” sound.

The process of writing a word, saying the word slowly, and saying the word quickly, was repeated a number of times with a small list of words that all contained “at” in the rime. As Collette

worked with the students, one girl said, “The sounds are the same in Vietnamese.” Collette responded, “That’s right, the sounds are the same in Vietnamese, but the letters are not.”

This short exchange in Collette’s classroom is noteworthy because it shows students’ development of sound-letter correspondences and Collette’s understanding of that developing ability. The student is developing an ability to view letters as symbols of sounds. Collette acknowledged the students’ comments and validated the observation at the same time she brought the students’ attention back to the letters in English.

LAP Teacher Knowledge, Geraldine (-), Reflection

Whereas Collette clearly possesses competence in L2 Literacy Acquisition Processes (LAP), and Kate and Bea seem not to, the description below is noteworthy because it represents an example of evolving LAP knowledge and comes from Geraldine. At the beginning of the study Geraldine did not use HLPs but did incorporate HLPs in phonological processing in her classroom instruction by the end of the study. Geraldine’s answer reported below from the first reflection administered to the teachers reflects a lack of understanding about LAP. Her use of HLPs and increasingly sophisticated responses to other reflection questions, however, illustrates that her competence in L2 Literacy Acquisition Processes (LAP), in general, and the use of HLPs, in particular, developed as the professional development sessions continued.

On Reflection 1, teachers were asked, “Is there a particular area for which you are interested in receiving professional development. If yes, please describe”

Geraldine answered,

“Rhyming, why is that so hard?”

Geraldine is a teacher with 18 years' experience as a full-time elementary teacher though only three years with ELLs. A question such as this from an experienced teacher indicates Knowledge and skill for English language speakers, but insufficient Knowledge for ELLs. Rhyming is important in the literacy acquisition process (Dunst, Meter, & Hamby, 2011), but for students exposed to a second language at a time when their first language is not fully formed, something as simple as rhyming may not come easily. This same answer also underscores teachers' lack of knowledge about different languages. Teaching teachers why is there a distinction between learning to rhyme in one language and learning to rhyme in a second language could be incorporated into training programs.

Geraldine is unlike Kate and Bea in that she developed competence from her participation in the PD sessions and incorporated HLPs effectively in her classroom instruction, whereas Kate and Bea did not.

LAP Teacher Knowledge, Minnie (+), Observation

Finally, like Collette, Minnie is a teacher who demonstrated competence in L2 Literacy Acquisition Processes (LAP) and displayed the knowledge in her classroom activities. In the example below, based on an observation of Minnie's classroom, it is evident how a teacher with knowledge in LAP can structure classroom instruction to meet her ELL students' needs.

In her classroom, Minnie had students work on letter boards. The boards were simple 12 x 12 inch white magnetic boards with a set of brightly colored plastic alphabet letters. There were duplicate letters for high-frequency consonants, such as "s," and "t," and duplicate vowels.

Much like Collette did with her students described above, Minnie used the letter boards to provide practice to her students in separating sounds and blending sounds. When asked where she got these boards, Minnie answered that they were included in the instructional materials that

accompanied the prior textbook series used for ELLs. Although the Pittsburgh Public Schools District has a strict policy of switching to new instructional materials when a new publisher or series of texts is adopted, Minnie disregarded the policy and continued to use the letter boards with her students.

Minnie's use of letter boards with her students is noteworthy for a number of reasons. To begin, the use of letter boards is an HLP that focuses on sound-letter correspondences. Rather than have students blend words by running the index finger of one hand across the palm of the other hand as they sound out letters, the letter boards allowed the students to manipulate the magnetic letters and to sound the words out by touching or moving the plastic letters. The letter boards are multi-modal learning tools and serve as visual aides to the students as they are learning the sound-symbol correspondences of the English alphabet. The magnetic boards represent a learning tool that provide visual support to the learner, are multi-modal in that student see, sound out, and hear the sounds as the sounds are produced. Moreover, the letter boards are a kinesthetic learning device as students must physically move the letters as they sound out the words, or remove the first letter of words and add new letters to create new words. The practices Minnie engaged in with the ELLs in her classroom demonstrates competence in the L2 Literacy Acquisition Processes (LAP).

4.13.1.1 Analysis of Teacher Knowledge and Skill in the Area of L2 Literacy Acquisition Processes (LAP)

In the illustrative examples above, and in many more instances observed in the teachers' classroom instruction, the teachers' knowledge and skill in the framework components varied to a great degree. In the summary of the descriptions that follow, it becomes apparent that teacher knowledge and skill in L2 Literacy Acquisition Processes (LAP) spans a wide continuum from "demonstrates

little competence” to “demonstrates competence.” The implications of responsive PD to address teacher variability in this skill is discussed in Chapter 5.

Two teachers, Kate and Bea, seemed to make little distinction between instructional practices for English learners and English speakers, and “demonstrated little competence” in L2 Literacy Acquisition Processes (LAP).

In the middle of the continuum was Geraldine, who held misconceptions about L2 Literacy Acquisition Processes (LAP) at the beginning of the study, such as considering rhyming to be the same for English speakers as for English learners. Yet, by the end of the study, Geraldine had developed a level of competence in the use of HLPs that outpaced any other teacher in the study. Finally, on the “demonstrates competence” end of the continuum were two teachers: Collette and Minnie. Collette acknowledged and validated her students’ background knowledge of their native language into the classroom work with phonological processing HLPs. Collette allowed her students to make connections between the letters and sounds of English and those of the student’s native language. Minnie incorporated the use of multi-modal learning aides into her classroom instruction, providing a kinesthetic learning approach and contextualization of English phonology into her classroom practice.

4.13.2 Teacher Knowledge and Skill in the Area of Oral Language Development (OLD)

Oral Language Development (OLD) refers to classroom activities that explicitly help students develop their oral language abilities. Accumulating evidence in the role of oral language in literacy development points to children’s exposure and engagement in classroom talk as a predictor of reading development (Resnick, 2010; Geva & Yaghoub Zadeh, 2006; Wright, 2010). ELLs require instruction to improve their content area knowledge as well as instruction that affords them the

occasion to develop their language abilities, both basic competencies such as individual word reading and fluency in reading strings of words. Academic use of oral language includes activities such as developing vocabulary and displaying listening comprehension. Studies on vocabulary development indicate that ELLS are better able to define words as they become more proficient in oral English (Lesaux, 2012). For ELLs, the classroom setting is an opportunity to speak English and develop oral language skills.

In the context of this study, student engagement in academic talk or text-based discussions was absent from every classroom the researcher observed. At no time during any of the observations, was any student in the sample observed to be engaged in OLD activities. The limited student oral language production observed was centered on repeating words the teacher called out or reading from booklets that resembled handouts. This finding is noteworthy because, as researchers Wong Fillmore and Snow (2000) have pointed out, many teachers know much less about oral language than they need to know. It is also noteworthy because for some students, school is the only setting where they have the opportunity to speak English.

Because oral language was absent from the classrooms, there are no examples of OLD to present. Rather, the examples presented in this section represent missed opportunities to build on student oral language. The first example comes from an observation of Kate's classroom and is noteworthy because it touches on the concept of formulaic language use. The second example, from Bea's classroom, conveys how students' memorization of short texts is a poor substitute for reading practice, in general, and oral language development for English learners, specifically. Data that support this theme come from observations and are indicated in the "Data Source" row in Table 12. Framework for Analysis of Oral Language Development (OLD) below.

Open	Teacher Content Knowledge (TCK)					
		Kate	Bea	Collette	Geraldine	Minnie
Axial	Oral Language Development (OLD)	-	-	-	-	-
Data Sources		OB	OB			

Table 12. Framework for Analysis of Oral Language Development (OLD)

Note: No teacher exhibited Knowledge in OLD in the classroom. Presented here are examples of two teachers' missed opportunities to engage students in OLD. The abbreviations for the Data Sources are Observation (OB).

OLD Knowledge, Kate (-), Observation

The example that follows based on an observation of Kate's classroom is noteworthy because it touches upon the concept of formulaic language use in second language speech production and fluency. Formulaic language is multi-word strings of words. The relationship between formulaic language and second language speech production is of great interest to linguists and scholars (Wood, 2010). Researchers hypothesize that the use of formulaic language may help with fluency as it frees up student's memory to focus on other vocabulary. Although one would not expect all ESL teachers to have an understanding of the research behind formulaic language use, teachers can be expected to respond to a student's attempt at student-teacher oral interaction. Kate could have asked the student to elaborate on the statements she made, and fostered oral language development in her classroom.

In the illustrative example below, Kate called out words for the students to spell, and then wrote the words on the blackboard as the students spelled them. Kate's classroom environment was

more boisterous than other classes, and the students were free to call out letter names and spelled words at any time during the exercise. One third-grade student repeatedly said, “Oh my God. Oh my God” aloud as Kate wrote words on the blackboard with her back to the class. Kate did not turn around, did not stop her writing, nor did she acknowledge the student had spoken. Kate neither questioned the student’s meaning nor asked the student for a different exclamatory phrase. At no time did Kate even ask the student what she was reacting to.

OLD Knowledge, Bea (-), Observation

Like Kate’s classroom, students in Bea’s classroom had limited opportunities to interact verbally to develop oral language ability. In Bea’s classroom, students’ apparent memorization of their reading materials meant that students had limited opportunities to interact with their texts as well.

In an observation of Bea’s class, students took turns reading to each other in a paired reading exercise. In this classroom, in lieu of reading texts, the students made small booklets, about eight pages long, cut from photocopied sheets, which they colored and read from. The booklets appeared to be used repeatedly because some of the students had well-worn copies of the booklets. Students used the booklets in paired reading, where two students take turns reading the same text aloud to each other. A number of times as students read, they committed errors that indicated the students had simply memorized the book they were reading. One student repeatedly read, “sun shined” when the words were “sun shimmered.” The partner did not seem to notice the problem, and Bea was working with another student and did not correct the error. Reading the same small book, another student said “when” for “then.” The partner did not correct the student, nor did Bea, who was on the other side of the room. When another student made the same mistake, substituting “when” for “then” again uncorrected by the teacher, I wondered if the students had recently been

learning question words. In Bea's reading instruction, the use of paired reading with early learners of reading seemed to be a common pedagogical strategy, yet the use of paired reading with early readers represents a missed opportunity to develop oral language skills.

4.13.2.1 Analysis of Teacher Knowledge and Skill in the Area of Oral Language Development (OLD)

Teachers did not make time in the instructional period for children to practice oral language skills. The development of academic oral language cannot take place without the opportunity to practice oral language skills in academic settings. Teachers who do not understand the importance of oral language development may not focus on developing this skill in their students.

In the example from Kate's classroom, one student's use of formulaic language could have been used as an opportunity to engage the student in language development. Researchers hypothesize that the use of formulaic language may help with fluency because it frees up student's memory to focus on other vocabulary. In the context of this classroom, Kate could have been expected to respond to the student, possibly asking her to elaborate on her statements, thereby fostering oral language development in her classroom.

A reliance on partner reading, where two students take turns reading to each other, as occurred in Bea's classroom, does not encourage oral language development without higher levels of student competency and direct teacher involvement in the process. Unless teachers design reading sessions with student-partners who are matched in skill ability and language proficiency, or with one partner slightly more advanced in reading ability, students do not have many opportunities to improve OLD through partner reading.

In the context of this study, students in the classroom observation did not correct each other when words were mispronounced. Some students seemed to have memorized the words from the

book or relied on memorized words that looked similar to words in their books, such as “sun shined” for “sun shimmered.” If the teacher had structured text-based discussions for the students about the text they read, students could have practiced question formation, identification of important text details, and summarizing events by retelling the story. All of these practices would help students develop literacy skill and give students an opportunity to speak in English in a structured environment. Instead, what appeared to be happening was the recitation of rote memorization of short booklets.

4.13.3 Teacher Knowledge and Skill in the Area of Modification of Practice (MOD)

Modification of Practice refers to teacher’s ability to adapt instruction for an ELL audience to address learner needs and to engage students in classroom work. To engage students, teachers need an understanding of their students’ backgrounds, both academic and linguistic, to modify classroom materials and classroom instruction. Teachers need to design instruction and dialogue that promotes ELLs’ language use and active participation in classroom activities. Many modifications can be made for ELLs in classroom instruction. Teachers can use technology, visual aids, graphic organizers, focused vocabulary and cognates when possible, manipulatives, gestures, and small group and individualized instruction. In the sample of teachers studied in this research and reported on here, the understanding that modifications to practice are necessary and the ability to make modifications spanned a continuum of “demonstrates little competence” to “demonstrates competence.”

In the first example, Kate’s list of words with phonemes in free variation does not display a sensitivity to the need to modify her practice. Grouping the words based on phonemes would have been an easy modification to make. On many occasions, Kate displayed “demonstrates little

competence” in the use of appropriate practice, relying on naming instruction rather than explaining how she would use it. One example is given above in the MOD section, on other occasions when asked to explain what practices she used, Kate would answer with vague terms such as “I differentiate instruction,” or “I incorporate all the learning styles.”

In the example from Bea, the modification she made reduced the impact of the HLP. Moreover, the step that Bea left out of her exercise, blending sounds to make words, is a critical skill for students to develop. Yet, whereas Kate’s example is one of “demonstrates little competence,” Bea’s Knowledge and skill in the ability to modify instruction could be characterized as “developing competence” and could be improved with some training.

In the next example, in a question that Collette posed on an exercise completed in a PD session (WC), she displayed a consideration for modifying her classroom instruction. Collette wondered which was the better approach to teaching ELL students to read: modify the mainstream reading curriculum or use a separate curriculum? Collette’s question is noteworthy because it illuminate her reflection on which is the best practice.

The examples from Geraldine and Minnie are noteworthy because they indicate an understanding of the use of assessments to modify instruction based on students’ strengths and weaknesses. The ability to modify materials based on an assessment of student ability and need is an example of “demonstrates competence” skill for ESL teachers, and the examples from Geraldine and Minnie displayed a “demonstrates competence” level.

The illustrative examples presented below serve to highlight the extent to which teachers did, in fact, understand some of the important concepts of MOD for their students and displayed that Knowledge and skill. For each report of a teacher’s practice described here, the researcher looked across all the data sources, found at least two, and often three, instances of the component

being reported on, and included the most representative examples as illustrative of the individual teachers' level of skill. Data that support this theme come from four data sources and are indicated in the "Data Source" row in Table 13. Framework for Analysis of Modification of Practice (MOD) below.

Framework for Data Analysis

Open	Teacher Content Knowledge (TCK)					
		Kate	Bea	Collette	Geraldine	Minnie
Axial	Modification of Practice (MOD)	-	-	+	+	+
Data Sources		OB	OB	WC	RF	RF

Table 13. Framework for Analysis of Modification of Practice (MOD)

Modification of Practice (MOD), Kate (-), Observation

In an observation of Kate's class, the students were to write down words that Kate wrote on the board. Kate wrote words and then would give students tips to remember their pronunciation.

Kate wrote the words "nice" "soil" "see saw" on the board.

Kate: "There are two ways to write "s," "s" and soft /s/ like nice."

Students wrote the words on a sheet of paper.

Kate wrote other words on the board to illustrate the /s/, such as

Nice Race

Soil Mice

See Saw Place

Bruce

The students wrote the words on their papers as Kate wrote them on the board. Kate said the words and the students repeated after her.

As the student struggled to pronounce the words, Kate said, “Remember the Magic E.”

This example is noteworthy because it shows how too many instructional activities in the same classroom may be diluting the lesson. Students are expected to write the words, recognize and remember free variation, remember how a final “e” affects the pronunciation of the word, all in a decontextualized setting. Rather than introduce the conceptual units of the lesson separately, Kate presented many new concepts to the students without explanation of any of the concepts in much depth.

Modification of Practice (MOD), Bea (-), Observation

The example below is taken from Bea’s class during the initial observation. The example is noteworthy because it shows how the teacher used a practice that requires sound blending but the teacher’s modification of the task eliminates the opportunity for students to practice phonemic awareness, an important precursor to reading. Bea’s incorrect modification of the exercise invalidated any positive practice her students may have garnered from the instruction.

In an observation of Bea’s classroom, she worked from a pre-specified exercise on an index card. The exercise required students to “clap the words,” then “clap the syllables,” then “sound the word out.” Bea directed students to work in pairs and to listen to her read words from a prepared list. Students were required to clap for each syllable in the word that they heard. For example, for the word “breakfast” the students would clap once for /brek/ and once for /fist/ indicating the word had two syllables. The class was comprised of students from three levels. She had a mixed

language proficiency group, from a newcomer in first grade to two second-grade students, both of whom had been in the school three years. Bea used the same exercises with all students. For the next step of the exercise, the students should have sounded the word out, blending the consonants and vowels to say the word, but Bea stopped the exercise at “clap the syllables.” This instructional sequence would have been very beneficial for the second graders as it is supportive of decoding skills. Moreover, an exercise that requires students to blend sounds, constitutes a High Leverage Practice (HLP).

Bea’s lack of understanding that the second-grade students needed to move onto blending words to practice their literacy skills reveals a lack of knowledge about appropriate modification of practice.

Modification of Practice (MOD), Collette (+), Work Completed in PD Session

During the October 26, 2011, Professional Development sessions, the teachers read the Center for Applied Linguistics (CAL) digest “What Elementary Teachers Need to Know about Language,” (2000) written by Lily Wong Fillmore and Catherine Snow. After reading the digest, they answered a number of questions the researcher had prepared as an exercise to be completed in the session, which is termed work completed (WC) in the data collection efforts. One question asked the teachers, “If you were going to rewrite this Digest, what point would you add?” Collette’s answer was, “Is it better to modify the mainstream reading curriculum or to use a separate curriculum with this population?” Collette’s consideration of the best way to modify materials for her language learners “demonstrates competence” in the area of KAP. Collette’s answer is noteworthy because the issue of how to teach reading to English learners who are not literate in their native languages continues to be a question for the early second language reading scholarly community (Lesaux, 20012).

Modification of Practice (MOD), Geraldine (+), Reflection

In the answer below, Geraldine presents a clear plan for modifying her practice to address student difficulties. In response to a question from Reflection 3, “What specific instructional strategies do you use to help students who do not seem to be mastering the sounds of English?”

“This is the exact situation I face with one class. Two of my students, who are newcomers to the country, have learned the sounds and use this knowledge to read and spell decodable words. The third student, who is in his third year at the school, has not mastered the sounds. His knowledge of letter names and sounds is inconsistent despite extensive teaching. Additionally, when he can say the letter sounds as in /c/ /a/ /t/, he is unable to blend these sounds together to form the word “cat.” One way I adapt his work is by having him fill in initial letter sounds of words while the other students are writing complete words and sentences. In this case, we are investigating the cause of his learning difficulty.”

Geraldine’s answer displayed insight into the needs of her students on a very detailed level. She is aware of how to modify her practice to meet her students’ needs and is able to articulate her modifications very clearly.

Modification of Practice (MOD), Minnie (+), Reflection 3

Minnie’s answer to the same question, “What specific instructional strategies do you use to help students who do not seem to be mastering the sounds of English?,” displays an understanding of the need to tailor instruction to individual student needs. Minnie answered, “Knowing my students and using data I am able to group them according to specific levels and work from there. It’s always beneficial to build from the students’ base, teach and challenge them beyond their own realization of expectations.”

Like Geraldine, Minnie carefully assessed her students’ needs and modified her materials based on her assessments. One noteworthy finding in Minnie’s practice and displayed here is that

she indicated that the individual learner's needs are foremost in her planning and material modification processes. Moreover, on many occasions, Minnie specifically mentioned using assessments to determine the level of skill of her students, in order to modify her practice.

4.13.3.1 Analysis of Teacher Knowledge and Skill in the Area of Modification of Practice (MOD)

The ability to modify classroom instruction correctly for a given content area and classroom population seems to be intertwined with teacher Knowledge and skill. The examples presented here once again span the continuum for “demonstrates little competence” to “demonstrates competence.”

Kate's admonition to her students to “Remember the Magic E,” may have been useful to English speakers but is little more than an empty heuristic to English learners and is an example of “demonstrates little competence.” Bea's incorrect modification of the HLPs diminished its impact as a useful literacy practice for her older students. Bea can be considered a teacher with “developing competence” because on many occasions in her comments and in her classroom practice, Bea displayed a level of skill that necessitated further development.

Whereas Kate and Bea may “demonstrate little competence” or be “developing competence,” the answers from Collette, Geraldine, and Minnie convey a level of skill that “demonstrates competence.” Collette's question in response to a question on modifying practice displays a sophisticated insight into the pedagogical issues facing ESL teachers. Geraldine's answer displayed insight into the needs of her students and her ability to modify her practice to meet her students' needs. Minnie, in the example here and others throughout the study, displays her use of assessments to understand the kinds of modifications she can make to her practice.

Many concrete modifications can be made for ELLs in classroom instruction. They can attempt to make instruction more comprehensible by simplifying oral language and written texts. Teachers can also specify language objectives with modifications in mind, and work at increasing comprehensible input. In the examples displayed here, it is apparent that an individual teacher's competence plays an important role in the teacher's ability to modify materials for the English learners in her classroom.

4.13.4 Teacher Knowledge and Skill in the Area of Knowledge of Appropriate Content (KAP)

Knowledge of Appropriate Practice refers to teachers' understanding of what a particular instructional practice is or how its use is pertinent for language learners. Teachers with Knowledge and skill in the area of KAP can identify and explain the kinds of instructional practices they use with their students. In addition, teachers with knowledge and skill in KAP can often illustrate how a particular practice is pertinent and beneficial for language learners. As with the other components in the framework, teacher knowledge and skill in KAP fell along a continuum of "demonstrates little competence" to "demonstrates competence."

In the examples below, an example of "demonstrates little competence" was taken from a reflection question that Kate answered. Kate's answer to the question, "How would you describe the most successful way for language learners to acquire English-sound letter correspondences?," relies on naming an instructional practice rather than explaining what that practice is for. Similar to Kate's answer, Bea's answer to the same reflection question does little to provide insight into how she uses the practice she names. Although Bea may have skill in the practice, her answer does not provide insight into her level of competence. Moreover, based on other answers from Bea and the classroom observations conducted by the researcher, it was apparent that Bea often displayed a

“developing competence” level of skill to work with English learner (see above in “Modifications to Practice”).

In contrast, Geraldine, Collette, and Minnie’s “demonstrate competence.” Geraldine’s answer is specific and includes information about concrete instructional practices she uses in her classroom. Like Geraldine, Collette’s answer, though succinct, reveals her use of various appropriate instructional practices with her students. Finally, as with examples from Minnie on other occasions, she displays her use of assessment to identify the most appropriate practice with her students.

The illustrative examples presented below serve to highlight the extent to which teachers did, in fact, understand some of the important concepts of KAP for their students and displayed competence. For each report of a teacher’s practice described here, the researcher looked across all the data sources, found at least two, and often three, instances of the component being reported on, and included the most representative examples as illustrative of the individual teachers’ level of skill. Data that support this theme come from four data sources and are indicated in the “Data Source” row in Table 14. Framework for Analysis of Knowledge of Appropriate Practice (KAP) below.

Framework for Data Analysis

Open	Teacher Content Knowledge (TCK)					
		Kate	Bea	Collette	Geraldine	Minnie
Axial	Knowledge of Appropriate Practice (KAP)	-	-	+	+	+
Data Sources		RF	RF	RF	RF	RF

Table 14. Framework for Analysis of Knowledge of Appropriate Practice (KAP)

Knowledge of Appropriate Practice, Kate (-), Reflection

On Reflection 3, teachers were asked, “How would you describe the most successful way for language learners to acquire English sound-letter correspondences?” To this question, Kate answered “The Write Tools Writing Process.” The answer Kate supplied to this question relied on naming an instructional practice rather than explaining how the practice is used. “What is meant by the “The Write Tools”? To anyone outside the elementary school classroom at PPS, this statement has little meaning. Paper and pencil are “write tools” but hardly enough to teach writing. This may be an example of a teacher not understanding the underlying processes of writing in a second language.

Another noteworthy example of KAP from Kate appears below. In response to a question from Reflection 1, “What do you find most effective in teaching reading with your ELL students?”, Kate answered, “Incorporating all the learning styles to accommodate all learners.” Without further elaboration from Kate, it is difficult to discern what Kate means by learning styles. In a

third example from Kate, in response to a question from Reflection 3, “What specific instructional strategies do you use to help students who do not seem to be mastering the sounds of English?,” Kate answered, “Sometimes they go to another intervention group that fits their needs.” However, there is no other group at PPS to whom Kate can send her students, other than a reading class that is conducted by a teacher with no ESL training. The answers from Kate included in the section on KAP here, and in other sections of the study, reveal a teacher who “demonstrates little competence” to work with English language learners.

Knowledge of Appropriate Practice, Bea (-), Reflection

Similar to Kate above, a noteworthy example of how a teacher’s response reflects lack of KAP comes from one of Bea’s answers to a question which appeared on Reflection 3. In response to the question, “How would you describe the most successful way for language learners to acquire English sound-letter correspondences?,” Bea answered, “By using a variety of phonemic awareness/phonics activities.” It is not clear whether Bea was describing classroom instructional practice or simply repeating what she may have thought the researcher was looking for her to say. It could be that Bea understood phonemic awareness in developing English sound-letter correspondence, but her answer to the above question did not give any insight into what she really does in the classroom. It may be that Bea, with a primary certification in Elementary Education, did not understand how practices for literacy instruction can be specifically modified for ELL students.

Knowledge of Appropriate Practice, Geraldine (+), Reflection

Contrast the response above with the answer to the question, “How would you describe the most successful way for language learners to acquire English sound-letter correspondences?”

from Geraldine below, who is able to describe exactly what she does. Geraldine's detailed, albeit short, response does indicate a level of competence to work with ELLs.

Geraldine's answer to the reflection question "How would you describe the most successful way for language learners to acquire English sound-letter correspondences?" was, "I think explicit teaching of letter-sound correspondence is important, but with ELLs it is also important to put it in context. In other words, it is important to teach the meaning of the decodable words and to use visuals. Chants and songs (as in the Phonics Street and Alphachant curricula) also help ELLs to acquire letter sound correspondences."

Knowledge of Appropriate Practice, Collette (+), Reflection

Also noteworthy is Collette's answer below to the question, "How would you describe the most successful way for language learners to acquire English sound-letter correspondences?" Collette answered, "Modeling sounds and words. Giving students an opportunity to manipulate letter cards and build words. Small group instruction works well."

As with Geraldine's answer above, Collette's answer is short, but she manages to reveal an understanding of how best to work with students learning English at the same time that they must learn to read in English. Collette's suggestion to model sounds and words is excellent practice for language learners. Manipulating letter cards to build words is a type of HLP and a multi-modal exercise for students. Finally, insight into the usefulness of small group instruction displays knowledge of appropriate practice in a very direct way. In sum, Collette is able to display her competence with the recommendation of three practices in three short sentences.

Knowledge of Appropriate Practice, Minnie (+), Reflection

The examples below from Minnie based on more than one reflection display a teacher who “demonstrates competence.” In response to a question on Reflection 1, “What do you find most effective in teaching reading with your ELL students?,” Minnie answered, “The most effective practice I find in reading is Assessment, knowing where my students stand within skill concepts. Therefore, assessing is a huge part of my practice and getting to know my students and their needs.” Minnie’s answer is noteworthy because it illustrates her reliance on understanding the skill level of each individual student in the class. As was illustrated in the section on LAP, Minnie puts that knowledge to use with HLPs in her reading instruction. In a comment that Minnie included on the Questionnaire, she displays her understanding of student needs again when she says, “The greatest challenges I face teaching reading to ELLs would be time to meet with teachers regarding my students and their needs within that teachers classroom setting. I believe other subjects, specifically Math, need additional attention for some students and with the amount of students and levels that can be challenging.”

4.13.4.1 Analysis of Teacher Knowledge and Skill in the Area of KAP

The examples included above and throughout the framework components section of this study illustrate the wide range of competence the ESL teachers possess. This point is especially noteworthy in the study reported here because the sample size is extremely small. Of the five teachers who participated in the research, the five fall on different points of a continuum from “demonstrates little competence” to “developing competence” to “demonstrates competence.” The implications of teacher variable Knowledge and skill are discussed in Chapter 5.

The impact of the variability of teacher skill is of considerable concern. Education for ELLs must include expert knowledge of how classroom practices can be effective for ELLs. Yet,

Harutunian (2007) found that optimal education for ELLs cannot occur because of the lack of trained teachers who have a limited or no understanding of the needs of English language learners and who do not utilize effective instructional strategies that are geared toward improving ELLs' content knowledge and academic language development.

Simplistic approaches (such as ESL strategies and scripted literacy instruction) are proposed as a 'magic bullet' solution to complex linguistic, cultural and educational issues. Bartolome (1994) referred to this reductionist approach as the "methods fetish."

4.14 CONCLUSION

Although the field needs a theory of second language teaching, equally pressing is an understanding of how suggested courses of study are implemented in classroom practice. Current research examining the quality of teacher preparation for ELLs is minimal (Pass & Mantero, 2009, p. 287).

Harper (p. 144) asserts that "ELLs will continue to find themselves in classrooms with teachers who are unprepared to meet their linguistic and cultural needs or who are not willing or motivated to alter their instruction significantly because they believe that good teaching for fluent English speakers is good teaching for all students."

The implications of the findings reported here are discussed in Chapter 5.

5.0 CHAPTER 5: IMPLICATIONS

5.1 INTRODUCTION

The research presented in this dissertation reports on teacher professional development in phonological processing exercises to support young English language learners' (ELL) literacy development. The eight-month project endeavored to train early elementary ESL teachers in the use of linguistics-based High Leverage Practices (HLPs) for literacy instruction. The training program was presented to six ESL teachers in the Pittsburgh Public Schools (PPS) in four professional development (PD) sessions. The effectiveness of the PD intervention was evaluated by analyzing data collected via a questionnaire, classroom observations, informal interviews, reflections, and on-going electronic interactions via e-mail. Although six teachers participated in the research study, data is presented on five teachers only as the sixth teacher's classroom population did not lend itself to analysis.

Findings of the study indicated that the PD intervention resulted in all teachers, but one, increasing in their use of High Leverage Practices (HLPs). There were, however, notable

differences among the teachers. Some teachers displayed competence in the use of HLPs consistently throughout the study. Some teachers displayed a developing competence in the use of HLPs. One teacher used no HLPs at all.

A Grounded Theory (GT) methodology was used to identify which factors contributed to the success of the intervention. In the analysis, particular attention was paid to those components of teacher content knowledge (TCK) that indicated teachers' orientation toward literacy instruction. Attention was also paid to factors that were instrumental to the teachers' effective use of HLPs or that hindered the uptake and correct use of HLPs.

Four components of Teacher Content Knowledge (TCK) for literacy instruction emerged as instrumental to the effective use of HLPs. The components were Second Language Literacy Acquisition Processes (LAP), Oral Language Development (OLD), Modification of Practice (MOD), and Knowledge of Appropriate Practice (KAP) (see Chapter 4, Part II, for details on the components). The four components formed the basis of a framework to analyze TCK in a consistent fashion across the five teachers in the study. Once the data were analyzed, it became apparent that teacher knowledge and skill varied considerably for each of the critical components.

The significance of this research is threefold: one, the findings indicate that teacher knowledge and skill to work with ELLs is highly differential, even in small populations of teachers, such as the one described in this dissertation. Two, the core components and the framework developed in this work can serve as a foundation to evaluate teacher knowledge and skill to work with ELLs. Three, the findings can provide insight into how PD sessions can be structured to help in-service teachers develop the necessary knowledge and skill to support language learners' literacy development.

In sum, a PD intervention was created and its implementation by five Pittsburgh Public Schools ESL teachers was evaluated. The implementation of the intervention varied considerably across the five teachers. A GT analysis of the teachers' orientation toward literacy instruction for ELLs was then conducted. Four critical components of effective instruction for ELLs were identified.

In this concluding dissertation chapter, I propose that the components identified in this research can be used as the foundation for in-service professional development that is responsive to individual teachers' needs, which I have termed "Responsive PD." The components discussed can also be used to evaluate teachers on whether they possess the necessary TCK to work with ELLs. Finally, the four components identified here can also be used to create PD tailored to teacher's variable knowledge and skill.

In Section 5.2 below, a discussion of the research is presented. A framework that was developed and used in Chapter 4 is reviewed. In Section 5.3, a definition of Responsive PD is offered. In Sections 5.4 through 5.6, implications of the study's three main findings are discussed, along with warrants for the significance of the findings. In Section 5.7, a Theoretical Model of Responsive PD is presented, and a discussion of how the model can be implemented is offered. In Section 5.8, limitations of the study are considered. Section 5.9 presents generalizability of the research and implementation of the model. Section 5.10 concludes the chapter.

5.2 GENERAL DISCUSSION

Two specific Research Questions guided this dissertation: “Does in-service professional development (PD) in the use of HLPs that develop English language learners’ phonological processing skills affect literacy instruction for ELLs?” and “What are the factors that help or hinder the development of teacher knowledge and skill to work effectively with ELLs?”

For Research Question One, quantitative data were collected which revealed that teachers’ use of HLPs to develop ELLs’ phonological processing increased in the classroom instruction of four of the five teachers. Yet, although the intervention produced positive results, the amount of improvement varied based on individual teacher differences. To answer Research Question Two, “What are the factors that help or hinder the development of literacy instruction to work effectively with ELLs?,” a framework was created based on components of teacher knowledge that were identified in the teachers’ classroom practice.

The components that emerged from the teachers’ instruction have been cited in the literature as instrumental to high quality classroom instruction for ELLs (August & Hakuta, 1997; August & Shanahan, 2008; Butler & Hakuta, 2006; Clay, 1991; Lesaux & Geva, 2006; Wong Fillmore & Snow, 2000; Wood, 2010). The first component is Second Language Literacy Acquisition Processes (LAP) because ESL teachers need an understanding of literacy acquisition, in general, and language learners, in particular. The second component is Oral Language Development (OLD) because ESL teachers need knowledge about the relationship between oral language proficiency and the development of literacy. The third component is Modification of Practice (MOD) because ESL teachers need a repertoire of appropriate ESL instructional practices, including an understanding of why materials are modified in the manner they are. Finally, the

fourth component is Knowledge of Appropriate Practice (KAP) because ESL teachers need in-depth and wide-ranging knowledge of, and skill in, appropriate instructional practices for English learners. The four components that make up the framework imply knowledge of students, learning processes, content, and curriculum. In Figure 1 below, the framework that was developed to evaluate the teachers on the four critical components is presented.

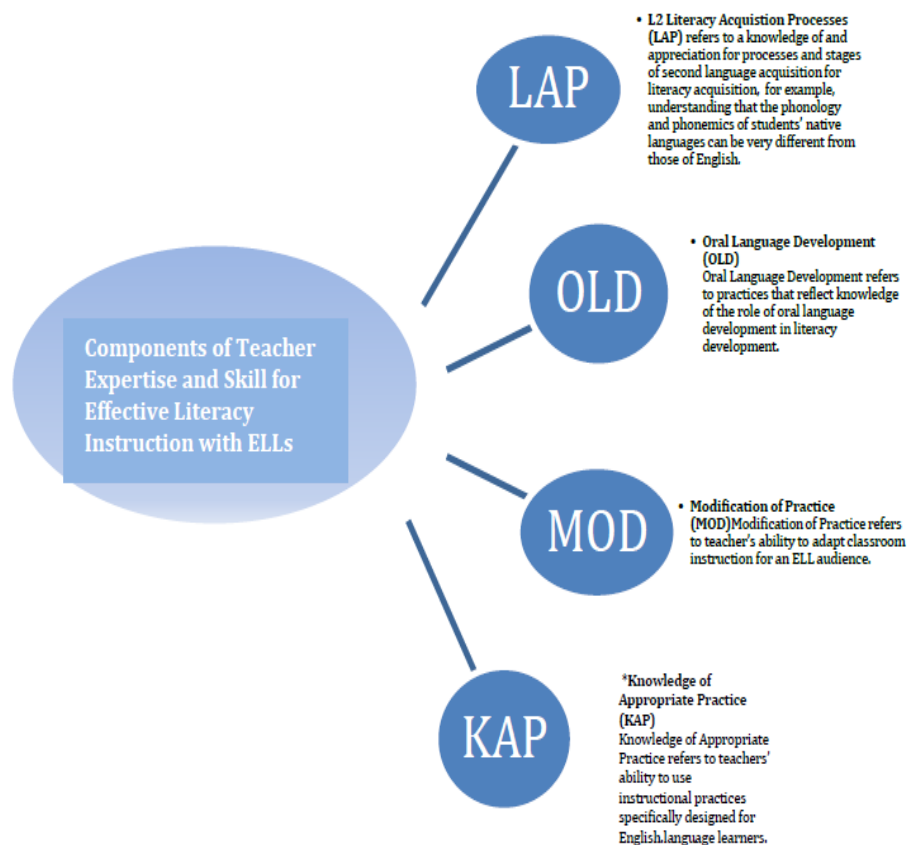


Figure 1. Representation of Teacher Knowledge and Skill Framework

The framework was used to examine examples of teacher knowledge and skill across all data sources in the study. For a detailed discussion of the components, please refer to Chapter 4, Part II. Once these examples were viewed in the aggregate, patterns of teacher's orientation toward

literacy instruction began to emerge. Similar to the variability identified in the teachers' use of HLPs, teachers' orientation toward literacy instruction was also highly variable. Teacher training and background would need to be analyzed to ascertain why this relationship exists. Moreover, it is vitally important to understand why some teachers change and some teachers did not. For example, Geraldine, who proclaimed herself "Not a phonics person" at the beginning of the study made considerable improvement by the end of the study, incorporating HLPs into her classroom practice. Geraldine is the only teacher in the study who has received the NTSB certification.

In Section 5.3 below, I present a definition of Responsive PD. In Sections 5.4, 5.5, and 5.6, I present the three main findings of the study along with warrants for the significance of the findings. In these sections, I situate the implications of the findings in efforts to evaluate teachers and to develop TCK to work with language learners, considering the challenges the burgeoning growth of the young ELL population presents for teachers and school districts both in Pittsburgh and across the nation.

5.3 DEFINING RESPONSIVE PD

As the findings indicated, an analysis of TCK to work with ELLs as instantiated in the components of the framework illustrated that teacher knowledge and skill varied considerably across the teachers in the study. The variable nature of teacher TCK highlights the need for training in the components of literacy instruction. As I propose in this concluding chapter, differential TCK requires differential PD, particularly in instructional elements specific to linguistic knowledge to work with ELLs. Responsive PD represents a way to identify necessary TCK in a teacher's practice and focus on the specific aspects of the teacher's practice that are in need of development.

There are a number of characteristics of responsive PD that differentiate it from current practice. Responsive PD is designed for in-service teachers who may be ill-prepared to face the challenges of classrooms characterized by new populations. Responsive PD is offered in small increments of knowledge that make second language acquisition research accessible to teachers. In this way, teachers can acquire linguistic knowledge that is the foundation of effective instructional practices. It is offered to teachers in iterative cycles that allow teachers to acquire and implement the knowledge in a short period of time. Responsive PD is offered in short sessions on a regular basis. Most important, Responsive PD connects theory and practice together.

Responsive PD may be a viable alternative to undifferentiated PD sessions that do not take into account individual teacher Knowledge and skill. With limited time and limited budgets, school districts may find that PD that is responsive to the specific needs of individual teachers and the specific needs of the ELL populations in their classrooms may be a more effective way to prepare teachers for the ever-changing needs of the linguistically diverse school population today.

5.4 DISCUSSION OF FINDING 1 VARIABLE TEACHER KNOWLEDGE AND SKILL

For a number of the teachers in this study, the PD intervention resulted in teachers' increased use of HLPs in their classroom instruction. One factor that may underlie the success of the intervention is that the information was presented to the teachers incrementally and was reviewed in each session. The presentation and review of the information in this manner may have made second language acquisition research accessible to the teachers. A glossary was prepared for teachers in order to master the technical terms, and exercises in the sessions, as well as reflections the teachers completed after the sessions, always included the linguistic terminology. Tellez and Waxman

(2006) have reported that teacher preparation programs and school districts have begun to focus on culturally relevant pedagogy for diverse students. However, the linguistics component is often overlooked. August & Hakuta (1997), have asserted that the extensive body of knowledge and skills necessary for teaching ELLs may make acquiring this knowledge a daunting task for teachers.

A second aspect of the PD intervention that may have contributed to its success for some of the teachers was the collaborative nature of the lesson study work that characterized the PD sessions. In this study, teachers worked in grade-level pairs, where possible, to identify how to integrate the HLPs into their lessons. Teachers were asked to investigate their own practice in light of the linguistic knowledge they were learning in the PD sessions. Self-evaluation and self-reflection became important aspects of the intervention, enlisting the teachers themselves as collaborators in the development of their own TCK. The PD presented teachers with the opportunity to engage in informal learning sessions, which may have contributed to the teachers' engagement with the research (Desimone, 2009; Melser & Spillane, 2009; Putnam & Borko, 2009). The success of the intervention for some of the teachers may have been directly attributable to the informal learning sessions and the lesson study groups. At the end of the study, one of the teachers wrote to me and said, " Thank you for giving us the opportunity to reflect on our practice.

The increased use of HLPs notwithstanding, the teachers in this study exhibited a considerable amount of variability in TCK in the framework components identified in the GT analysis. There are three reasons the variability in teacher TCK to work with ELLs is a matter of concern. One, the teachers in this study are ESL teachers, teachers who have received training specifically to work with language learners. Two, the teachers in this research study are responsible for teaching the young ELLs in their classrooms to read. Three, ELLs with the lowest levels of

English proficiency spend the most instructional time with the ESL teacher; some students spend three 40-minute periods each day with the ESL teacher.

The first reason that considerable variability in TCK among ESL teachers is cause for concern is that teacher quality is important to student academic success. Although many factors are important to a student's academic success, being taught by an effective teacher is one of the most critical. As such, the lack of classroom TCK is also a lack of school-wide TCK. The ESL teacher is considered the expert in the school on issues related to language learners, and as such, is often consulted by the content-area teachers on the modification of materials for ELLs in classes such as science or mathematics. When the ESL teacher cannot offer knowledge for problems related to English language learners, the school is bereft of critical content and pedagogical knowledge.

Although one single factor cannot explain the variability in TCK, teacher education and certification must be factored into any discussion of teacher quality. In this study, all five teachers had received ESL training at Pennsylvania colleges and universities. ESL certification requirements vary from state to state, but Pennsylvania is the only state in the country that does not offer a full certification in ESL. In response to a 2000 complaint to the Office of Civil Rights on behalf of ELL students in Pennsylvania concerning the limited proficiency of ESL teachers, the state created the ESL Program Specialist in 2002. It was not until 2004, however, that all ESL teachers employed throughout the state were required to comply with the course requirements to become an ESL Program Specialist (Pennsylvania Department of Education, 2004).

The ESL Program Specialist endorsement, currently available at 36 state universities and colleges, is a program of study for teachers who already possess certification in one or more area(s), such as early elementary. Endorsements usually require five three-credit courses for completion. Yet, even as states are creating add-on ESL endorsements, a focus on theory, without

clear connections to application, results in these endorsements having little practical application to teachers' everyday classroom experiences. In my analysis of the 36 Pennsylvania schools that offer the endorsement, only eight schools require teachers to complete a practicum. Whereas most schools offer a theory-based class in Second Language Acquisition (SLA) and Teaching to Linguistically and Culturally Diverse students, only seven schools offer the Structure of English; and only four schools offer Reading/Writing or Content Area Reading. As a result, the focus of much of the coursework for these endorsements tends to be too theoretical, especially for those teachers working with young ELLs. The variability in TCK found in this study may be a result of teachers completing theoretical course requirements with little practice in real-world classroom issues.

The second reason variability in TCK among ESL teachers is problematic is that the teachers in this research study are responsible for teaching ELLs to read. If the teacher whose primary responsibility is to teach reading does not have enough TCK in literacy acquisition to perform her or his job, there is little chance that the ELL students in the teacher's charge are going to learn to read. As discussed earlier, of the Pennsylvania colleges and universities that offer the ESL Program Specialist endorsement, only four offer Reading/Writing or Content Area Reading. Moreover, no program offers a course specifically aimed at teaching reading to ELLs.

In an-IES sponsored session that I attended on January 27, 2011, titled "Effective Literacy and English Language Instruction for English Learners in the Elementary Grades," I met teachers from across Allegheny County who work with language learners in grades K-2. I asked the teachers in attendance how they address teaching reading to ELLs. Although many teachers first said, "Collaboration is key," and "Collaboration with the reading specialist," they then admitted that this "collaboration" more often than not consisted of hallway conversations or e-mail

messages. I offer this anecdote as an indication of the void in TCK that exists in schools. There are very few reading specialists in most school districts, and the ones that do exist are often overburdened. In some school districts, reading specialists are not part of the permanent staff but are itinerant Title I teachers. Even when an ESL teacher does seek out a reading specialist, the knowledge the ESL teacher is able to gain from the reading specialist is rushed (hallway conversations) or minimal (e-mail messages) at best because of these reading specialists are also not aware of the needs of ELLs and teaching second language reading is not part of their training.

The third reason for concern in the variability in TCK is that ELLs with the lowest levels of English proficiency spend the most instructional time with the ESL teacher. Some students spend three 40-minute periods each day with the ESL teacher. As was stated in the Literature Review, a growing body of research confirms that teacher quality affects student learning gains, maybe more than any other factor (Darling-Hammond & Youngs, 2002; Darling-Hammond, Berry, & Thorensen, 2001; Téllez & Waxman, 2006). If an ESL student spends a large portion of the instructional day with a teacher with insufficient TCK, that student would have a difficult time developing into a proficient reader. In addition, in some public school systems, such as the PPS, ESL teachers work with blocks of students, for example, one ESL teacher may work with students in grades 3, 4, and 5. If that particular ESL teacher is not proficient in teaching reading, the student is at considerable risk of failure for a succession of years. Students who spend a large portion of the instructional day with other language learners are also penalized because they are not exposed to English spoken by native speakers. Little opportunity to interact with native English speakers also affects the acquisition of English literacy.

Harutunian (2007) found that optimal education for ELLs cannot occur because of the lack of trained teachers. Teachers who are not properly trained have a limited or no understanding of the

needs of English language learners. They may not use or understand effective instructional strategies that are geared toward improving ELLs' content knowledge and academic language development. Too few teachers understand the challenges that students face when trying to learn to read and write in English. Although teacher preparation to work with ELLs has recently received a good deal of attention, current research examining the quality of teacher preparation for ELLs is minimal (Pass & Mantero, 2009). The results of the dissertation described here directly address teacher preparation to work with ELLs and represent a balance between theoretical knowledge and classroom practice.

To address the need for a wide variety of skills in the ESL teaching workforce, a model of responsive PD as a means to improve individual teacher knowledge and skill is proposed here. While some teacher preparation experts are arguing whether one begins with theory or one begins with practice, I am calling for PD that is responsive to the needs of the teacher that combines both theory and practice. Variability in teacher Knowledge calls for PD that is tailored to individual teacher needs. As theory is developed, practices change, as new practices are introduced, theory is defined, illustrated, and deepened.

In Section 5.7.3, "Implementing Responsive PD," a description of Responsive PD is offered.

In the section below, Evaluating Teacher Knowledge and Skill, a proposal for using the components of the framework that emerged in the GT analysis is posited as a way of evaluating teacher TCK.

5.5 DISCUSSION OF FINDING 2

EVALUATING TEACHER KNOWLEDGE AND SKILL

The findings of this study, and the framework that emerged from the data analysis, can serve as a foundation to evaluate teacher knowledge and skill to work with ELLs. Responsive PD can contribute to the nationwide push for teacher quality and teacher evaluation measures by presenting a framework of components that teachers must master. The framework can then be used to identify specific shortcomings in a teacher's practice. Responsive PD sessions can be designed to address specific teachers' needs in collaborative, small group settings. One size does not fit all because teachers have varying degrees of experience, Knowledge, and openness to acquire new knowledge.

Quantifying good teaching is a challenge, but the framework components presented here represent core competencies for ESL teachers working with young ELLs. The framework components and an evaluative rubric built on them can be used to identify specific shortcomings in a teacher's practice. Just as there are standards for student performance, evaluation systems need standards for teacher performance. For the evaluation process, a rubric that is based on a continuum of progress can be created with indicators, or milestones, of progress. The framework can also be used to identify teachers who are struggling and whose TCK can be fostered through PD. For those teachers who possess sufficient knowledge in a component, responsive PD can be used to help teachers develop a deeper understanding of the theory behind a particular instructional practice. Accomplished teachers can also be peer evaluators and mentors, working as coaches for new teachers while observing and evaluating other teachers in a particular school district.

Based on the above mentioned evaluation system, Responsive PD sessions can be designed to address specific teachers' needs in collaborative, small group settings. Collaborative settings allow teachers with more knowledge to impart that to teachers with less knowledge in a non-

threatening atmosphere. Involving teachers in meaningful ways in the design of an evaluation system is important. Responsive PD can help teachers improve by fostering an understanding of the necessary components of instruction. The success of the intervention described here is an indication of the power of lesson study and collaborative work to bring about teacher change and improvement.

Responsive PD can also address the need for continual assessment of teachers by offering sessions on a regular basis (Ross & Bruce, 2007). Self-evaluation and self-reflection are important aspects of any Responsive PD program. Using the framework components, teachers can become active participants in evaluating themselves and their TCK to work with students. Teachers can be asked to investigate their own practice in light of instructional goals, enlisting teachers themselves as collaborators in the development of their own TCK. Unlike annual summative evaluations, Responsive PD can be used as a formative assessment as teachers identify needs, receive instruction in those needs, implement the new knowledge in their classrooms, and then reflect on their own progress.

No single evaluation system will ever capture all the intricacies of good teaching, but an evaluation rubric based on the framework components here could be one part of a multiple-measure teacher assessment system.

5.6 DISCUSSION OF FINDING 3

DEVELOPING TEACHER KNOWLEDGE AND SKILL

The findings can provide insight into how Responsive PD sessions may be used to help teachers develop the necessary instructional strategies to support students' literacy development. They can

also be used inform models for school districts that need to prepare teachers for effectively instructing ELLs while facing the ever-growing numbers of ELLs.

Responsive PD can be used to develop tailored and specific teacher competencies to meet the needs of ELLs in their classrooms. By identifying the populations of students in ESL classrooms, teachers can receive PD in instructional practices based on students' literacy levels. PD can be designed that includes information specific to the linguistic interaction of literacy in students' L1s and English.

In-service PD that is effective in giving teachers the kinds of skills they need to work with ELLs may be a viable route to preparing teachers to meet the demands of their increasingly diverse student populations. Responsive PD sessions can also be designed for principals and administrators based on the unique characteristics of student populations in their districts.

The research presented in this dissertation represents a viable approach to directed professional development that is responsive to the individual needs of teachers working with ELLs. Responsive PD can be used to develop tailored, specific teacher competencies to meet the needs of ELLs in their classrooms. Professional development sessions linked to individual teachers' knowledge and skill represents one way of improving the ESL teaching workforce.

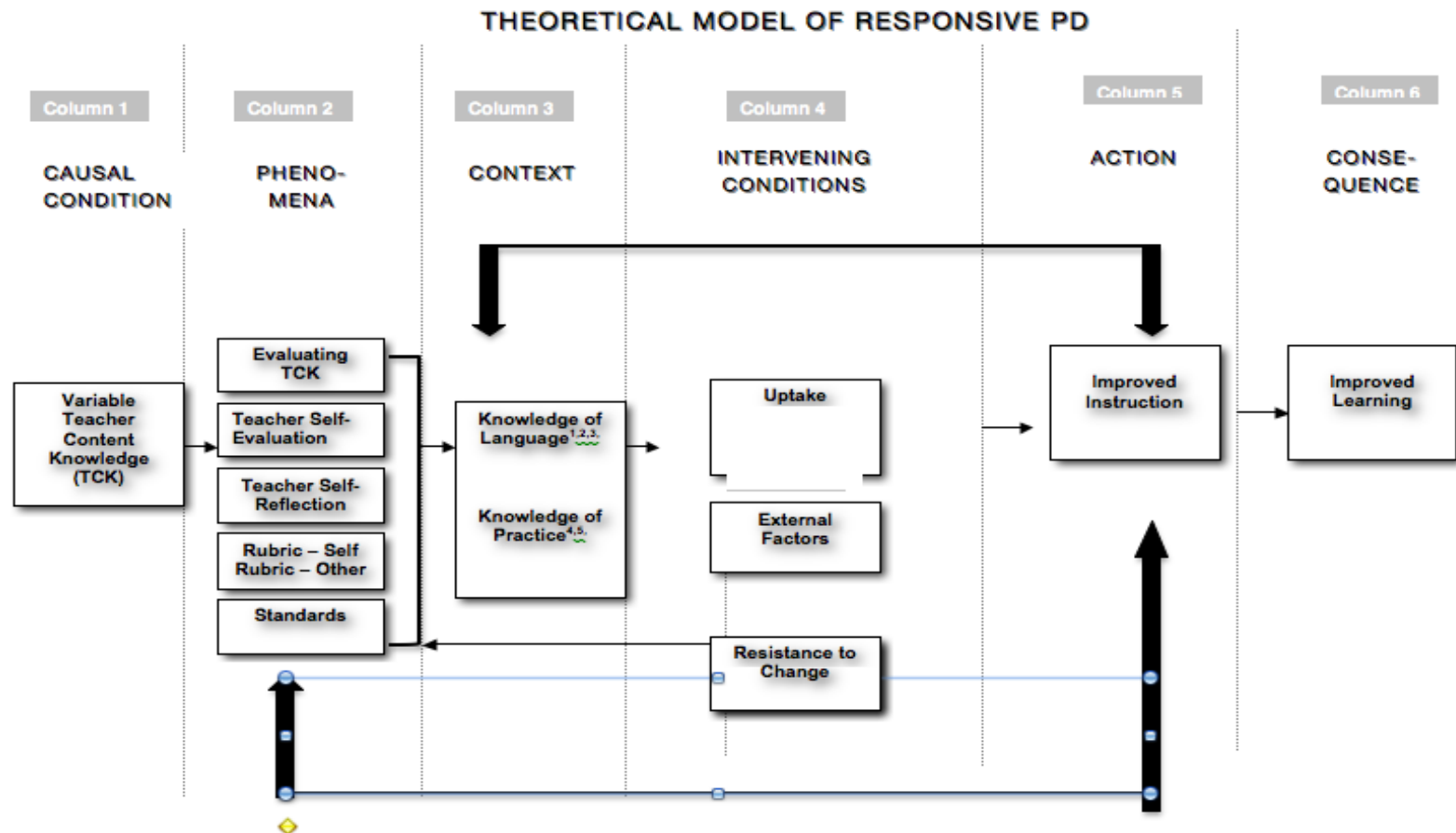
In Section 5.7 below, I present a model for how Responsive PD can be implemented.

5.7 A THEORETICAL MODEL FOR RESPONSIVE PD

To address the need for a wide variety of skills in the ESL teaching workforce, a model of responsive PD as a means to improve individual teacher knowledge and skill is proposed here. The model is designed to explain how the research described in this dissertation can address the issue of

variability in the ESL workforce and how to provide training that takes this variability into account. Figure 2 below shows the Theoretical Model for Responsive Professional Development.

In the Theoretical model, the information is linked in a set of relationships denoting causal conditions, phenomenon, context, intervening conditions, action, and consequences. The “Causal Condition” for a model of Responsive PD is the wide variability in TCK to work with ELLs. The “Phenomena” is how to evaluate teacher competence. The “Context” is the divided into Knowledge of Language and Knowledge of Practice with the specific components of Responsive PD that detailed in the sections that follow. The “Intervening Conditions” are uptake, external factors, and teacher resistance to change. The “Action” is improved instruction and teachers’ deeper understanding of the needs of ELLs. The “Consequence” is improved learning for students.



^{1, 2, 3} See Section 5.7.4. The Context of Context for definitions of the components of Knowledge of Language.

^{4,5} See Section 5.7.4. The Context of Context for definitions of the components of Knowledge of Practice.

Figure 2. Theoretical Model for Responsive Professional Development

5.7.1 Causal Condition: Variable TCK

Responsive PD is tailored to a teacher's extant TCK. Not all teachers need the same kind and same amount of PD. For a number of the teachers in the study, the PD session on phonological processing and phonemic awareness activities resulted in an increased use of these activities in their instructional practice. Yet, no teacher was proficient in all the framework components. Teachers' variable knowledge could be made more consistent through responsive PD by helping teachers develop Knowledge in the four component skills of the framework. The need to make teachers aware of the link between oral language and developing literacy and the role of participation, for example, or the need to learn how to differentiate instructional materials through modification of materials and how this differentiation can be structured to meet learners' needs are two examples of components of teacher knowledge that are necessary to work with young ELLs and that could be provided in sessions that are made available to teachers on a regular basis.

5.7.2 Phenomena: Evaluating TCK

The PD components presented here represent core competencies for ESL teachers working with young ELLs. The components of TCK could form the basis of a formative evaluation system to both identify TCK needs and to evaluate teacher mastery of that TCK. The first step would be to create a rubric based on the framework components and a continuum for indicating teacher competence. The system could be as simple as the three terms I used to evaluate teachers: "Demonstrates Little Competence," "Demonstrates Developing Competence" and "Demonstrates

Competence.” Teachers could be observed in their classrooms on a regular basis beginning with the start of the school year. If observations by administrative personnel prove too difficult for a school district, teachers, or the school’s AV staff, could create videotapes of a teacher presenting a lesson that includes a number of the core components listed here. The videotapes would be viewed and evaluated and recommendations for responsive PD could be offered by the school district ESL director or an ESL coach using the rubric discussed above. As an evaluative tool, responsive PD can encourage teachers to develop a deeper understanding of their practice and reflect on the instructional choices they make in their classrooms.

An alternative way to conduct evaluations could be accomplished by having teachers perform self-assessments, reflecting on their own instructional practice or working in small groups to assess each other. Individually, teachers could be encouraged to explore and reflect on the goals of the PD, and the exercises created for the PD session to develop the TCK, adding depth of understanding to their TCK. As discussed in Chap IV, Part I, some of the most revealing information about teachers’ orientation to literacy instruction emerged from the Teacher Reflections that followed each of the PD sessions. Teachers could work in small groups with expert teachers as sources of information. As discussed above, the success of the intervention is a testament to the importance of lesson study groups and the power of those collaborative explorations in transforming practice (Lewis, C., Perry, R., & Hurd, J., 2004; Stigler, J. 2002).

For those teachers who possess sufficient knowledge in a component, responsive PD can be used to help them develop a deeper understanding of the theory behind a particular instructional practice. Experienced teachers might be used to co-teach and work with others.

5.7.3 Context: Implementing Responsive PD

A fundamental characteristic of Responsive PD is the explicit focus on linguistic knowledge for teachers of ELLs. In her review of the PPS Strategic Plan to increase overall teacher effectiveness in response to the \$40 million Bill and Melina Gates grant, Guerrero (2011) found that no plan exists in PPS documents for the effective instruction of ELLs and linguistically appropriate teaching practices. Guerrero found very little PD specific to the instruction of ELLs, instead a great deal of PD focused on compliance issues.

Implementation of Responsive PD as proposed here would include:

- A baseline assessment of teacher capacity (See Section 5.7.2 for details of Evaluating TCK).
- PD sessions that emphasize linguistic knowledge for all ESL teachers would be mandatory.
- PD sessions that contain a rubric for progress as an indicator of teacher proficiency in the knowledge presented would be included in every session.
- PD sessions are offered in short one-hour blocks, not all-day sessions.
- PD sessions are offered frequently to teachers, possibly weekly or bi-weekly.
- A number of different PD sessions would be offered in iterative cycles so that teachers could review materials and refresh their knowledge on a regular basis.
- Post PD performance would be assessed using evaluative measures based on the definitions of the responsive PD session.
- For those teachers who possess sufficient knowledge in a component, responsive PD can be used to help teachers develop a deeper understanding of the theory behind a particular instructional practice.

In the sections below, discussion of the kinds of contextual variables to consider in a Responsive PD is offered. Following the discussion of context variables are examples of the kind of information that can be included in the components of the model. Finally, an example of how the model would operate in a real school setting is described.

The Context of Context

A Responsive PD model of teacher training must also be responsive to the local conditions of the school district in which it is implemented. Local conditions include, at a minimum, learner variables, teacher variables, subject matter variables, and mode of implementation.

Learner variables refer to specific aspects of the student population that would be considered in creating Responsive PD modules. The PD training can, and should be, tailored to the local populations. That is, if the majority of the ELLs are from one native language group, the PD can include linguistic information on the L1 of the dominant populations for the teacher as well as activities that could provide insight into the sociocultural backgrounds of the ELLs. In my study, PD Session #4 included information sheets I created called “LinguisTips.” Having identified Spanish, Arabic, Chinese, and Burmese, as the four predominant L1s in the PPS sample, I prepared information for the teachers on linguistic characteristics of those four L1s as well as a very broad contrastive analysis of the features of the L1 and English. I also included information on the students’ cultural backgrounds. Finally, I found local newspaper articles that described the specific populations and their integration into the neighborhoods in Pittsburgh where they had settled. These practices could be easily adopted for other districts and implemented in a Responsive PD program.

Teacher variables refer to type of certification, years of experience, background knowledge about various ESL methodologies, and ability or resistance to change. Responsive PD that is

effective in identifying teacher competencies and areas in need of training may be an effective way to address variability in teacher skills. Teacher variables will be specific to the populations of teachers in the district in which Responsive PD is implemented.

Subject matter variables refer to Responsive PD sessions that can be tailored to specific content and academic language targets. For example, a Responsive PD session could be tailored for grade specific groupings, such as K-2, 3-6, 9-12. Sessions could be developed with specific academic vocabulary in mind, based on the content lessons the students are working on. For example, a sixth-grade science Responsive PD session could include vocabulary for the science unit, such as pollination, nectar, and stamen. For high school students, the Responsive PD session could include academic vocabulary from their history class or from a literature class.

Mode of implementation refers to how the PD would be administered. The Responsive PD model could be carried out by a teacher educator or a school district's ESL coordinator. As the PD modules present information in increments to the teachers, the same modules could be used to train a teacher educator or ESL coordinator in how to deliver the information.

Knowledge of Language

5.7.3.1 Phonological and Phonemic Awareness (PPA)¹: Phonological awareness refers to a “general appreciation of the sounds of speech, divorced of meaning.” In the context of this study, PPA refers to a teacher's ability to develop PPS skills in their students. Children's ability to distinguish words in a sentence, to rhyme words, to identify onset and rime, or to engage in play with language, such as producing tongue twisters, are indicators of early phonological awareness. Teachers must possess an arsenal of appropriate practices and methodologies to impart these skills to their students. The HLPs that were introduced in the PD sessions, sound tapping and sound

boards, are practices that can be used in a variety of settings to teach students phonological and phonemic awareness.

5.7.3.2 L2 Literacy Acquisition Processes (LAP)²: Many facets of TCK are necessary for young ELLs to make progress in the literacy acquisition process. Facets such as an explicit focus on phonological processing, insight into the interaction between L1 and L2 literacy, and knowledge about the link between oral language development and literacy development, are just a few examples. Teachers also need to understand the roles of participation in the classroom and they must receive training in how differentiated instruction can be structured to meet learners' needs. PD sessions on topics such as these could be created for teachers who work with young ELLs.

5.7.3.3 Oral Language Development (OLD)³: Every teacher observed in this study needed PD that specifically emphasizes oral language development. A PD session that focuses on OLD could encourage teachers to build participation into their lessons and to identify ways to differentiate lessons based on students' oral language proficiency. An OLD session could be designed for the entire PPS workforce. An OLD session could also be tailored for grade specific groupings, such as K-2, 3-6, 9-12. As teachers' learn to incorporate OLD activities into their classroom instruction, the session could be further developed with specific academic vocabulary, based on the content lessons the students are working on. For example, a sixth-grade science OLD session could include vocabulary for the science unit, such as pollination, nectar, and stamen. For high school students, the OLD session could include academic vocabulary from their history class or from a literature class. Responsive PD sessions could be tailored to every grade level and content area.

Knowledge of Practice

5.7.3.4 Modification of Practice (MOD)⁴: Teachers need an understanding of their students' backgrounds, both academic and linguistic, to modify classroom materials and classroom

instruction. Many concrete modifications can be made for ELLs in classroom instruction. Teachers can attempt to make instruction more comprehensible by simplifying oral language and written texts. Teachers can also specify language objectives with modifications in mind, and work at increasing comprehensible input. In a PD session that focused on MOD, teachers would receive information on how to design instruction that promotes ELLs' language use and active participation in classroom activities. Teachers would receive explicit instruction on the many modifications that can be made for ELLs in classroom instruction, such as the use of technology, visual aids, graphic organizers, focused vocabulary and cognates, when applicable, manipulatives, gestures, and small group and individualized instruction.

Teachers could learn how to modify materials based on an assessment of student ability and need. In an observation of Kate's classroom described in Chapter IV, Part 2, grouping words based on phonemes would have been an easy modification to make. Including instruction on grouping would be the kind of information to include in a PD session on Modification of materials. Similarly, in an observation of Bea's classroom, she modified an instructional practice in a way that diminished the effectiveness of the exercise, a session on the "hows" and "whys" of modifications could prove useful to teachers.

5.7.3.5 Knowledge of Appropriate Practice (KAP)⁵: Teachers need an understanding of what a particular instructional practice is or how its use is pertinent for language learners. A PD session in KAP could identify and explain the kinds of instructional practices that teachers can use with their ELLs. A PD session in KAP could illustrate how a particular practice is pertinent and beneficial for language learners and point out how the practice is different from one for an English-speaking student. In a KAP PD session, teachers would learn the reasons for particular practices and become

familiar the theory behind them, rather than resorting to “naming” practices without a deeper understanding of the “why” of a particular practice (Donato, 2009).

5.7.3.6 Responsive PD in a School Setting: In this section, a vignette of how Responsive PD could be implemented in response to one teacher’s needs for training is offered. In an observation of a teacher’s classroom, a district ESL coordinator might evaluate a teacher on her use of exercises to teacher phonological awareness. The teacher being observed may display competence in some aspects of classroom activities that focus on phonological awareness through the use of sound tapping. The teacher might direct students to work in pairs and to listen to her read words from a prepared list. Students are required to tap for each syllable in the word that they heard. For example, for the word “breakfast” the students would tap once for /brek/ and once for /fist/ indicating the word had two syllables. For the next step of the exercise, the students would be directed to sound the word out, blending the consonants and vowels to say the word. However, the ESL director might observe that the teacher does not have the students sound the words out. Instead, the teacher ends the instruction with students tapping out words only. The teacher’s lack of understanding that the instructional sequence must include both tapping and sounding out words if the students are to make progress developing both phonological awareness and phonemic awareness skills would indicate the need for Responsive PD work in both PPA and MOD. The district ESL coordinator would make sessions in PPA and MOD available to the teacher, some of which could be available on-line. The teacher would be required to complete the sessions along with exercises and readings. Depending on the teacher’s level of knowledge and skill, the sessions could be completed in iterative cycles with opportunities for practice and implementation. Once the PD sessions were completed, the ESL coordinator would observe the teacher again.

5.7.4 Intervening Conditions: Uptake, External Factors, and Resistance to Change

ESL teachers should have a specified set of competencies to work with English language learners. ESL teachers must master the components and continually evaluate their mastery, particularly in the face of changing and challenging ELL populations. The uptake, or adoption, of these practices can be explicitly described and included in rubrics for evaluation. The iterative nature of Responsive PD would allow teachers to review and repeat sessions for which they felt they needed for practice. In fact, the Evaluation stage of Responsive PD is designed specifically for this purpose.

External factors specific to the local conditions of the school district may need to be considered in evaluating the success of a Responsive PD session. External factors refer to conditions or constraints that can affect teacher practice but which teachers cannot control (Fullan, 1999). In the context of this study, three types of External factors were identified. The factors were Mixed Proficiency Levels, Other Programs, and Access to Resources. Mixed Proficiency Levels refers to students with different levels of language proficiency in the same classroom. Teachers in this study mentioned that Mixed Proficiency Levels of students represented a challenge as teachers found it difficult to prepare materials that were appropriate for two or three different levels of student proficiency in their classrooms. Other Programs refers to teachers' belief that students receive instruction in other settings, such as afterschool programs or summer programs. Teachers made faulty assumptions about the kinds of supports ELLs might receive in other settings. Access to resources refers to access to materials as well as access to experienced support personnel. External factors such as these could have a negative affect on a Responsive PD program and should be considered.

It may be that some ESL teachers do not see the value in explicit, linguistic-based content knowledge to work with ELLs. As Woods has pointed out (2007, pg. 190), “A teacher’s priorities in structuring the classroom teaching will therefore depend crucially on that teacher’s own assumptions about language learning and teaching.” Teachers may believe that teaching ESL students is not different than teaching English speaking students. Some teachers in this study did not seem to implement information specific to ELLs in their instruction. Shavelson and Stern (1981) have distinguished between knowledge and beliefs by saying that when information (i.e., knowledge) is not available, teachers will rely on beliefs to guide them. For those teachers unable or unwilling to make changes to their instructional practice, identify routes for exit from the ESL classroom. Although there is an acute need for trained ESL teachers, those teachers who cannot or will not modify their instruction to meet the needs of their students are not effective teachers. In addition, in the PPS, ESL teachers work with blocks of students, for example, one ESL teacher may work with students in grades 3, 4, and 5. If that particular ESL teacher is not proficient in ESL methodology, the student is at considerable risk of failure.

5.7.5 Action: Improved Instruction

In “Teachers Matter: Understanding Teachers’ Impact on Student Achievement,” a policy brief released in September 2012 by the RAND Corporation, the authors assert “When it comes to student performance on reading and math tests, a teacher is estimated to have two to three times the impact of any other school factor.” If the achievement gap between ELLs and their English speaker peers is to lessen, linguistic knowledge and an understanding of SLA is fundamental. There is an urgent need to build teacher capacity for teachers who instruct ELLs. Schools of education and teacher preparation programs may not be able to respond to this need as nimbly as school districts can. One way to assess teachers’ effectiveness is their on-the-job performance.

Making increased learning available via “Responsive PD” may be the a route to improved teacher TCK, which will result in improved teacher classroom performance.

5.7.6 Consequence: Improved Learning

Possibly the greatest challenge for ELL students comes from being placed in classrooms with teachers who lack sufficient knowledge and preparation to instruct them. As discussed above, those students with the greatest need may be spending the greatest portion of the instructional day with teachers ill-prepared to instruct them. As Harper (2009, p. 144) asserts, “ELLs will continue to find themselves in classrooms with teachers who are unprepared to meet their linguistic and cultural needs or who are not willing or motivated to alter their instruction significantly because they believe that good teaching for fluent English speakers is good teaching for all students.”

5.8 LIMITATIONS

There are a number of limitations to this study, first of which is the small sample size. The research study reported here was based on six teachers who participated in the study, but data is presented on five teachers only. The sixth teacher’s classroom did not lend itself to analysis because the students were in grades 3, 4, and 5 did not receive instruction in reading. A larger sample size would have allowed for a broader range of instructional practices to be included in the analysis. More instructional practices may have resulted in more components for the literacy framework. A larger sample size would have also allowed for more corroboration of the findings reported here.

Access to a wider population of students is another limitation of this study. The PPS made changes to the education of ELLs sending large groups of Bhutanese and Burmese students from Greenfield Elementary to Concord Elementary during the summer of 2011, months before the

beginning of this research study. Concord Elementary was not part of the original study, and, as such, did not undergo the University of Pittsburgh IRB, nor the PPS IRB processes. When I requested that Concord Elementary be one of the research schools, the PPS declined. Moreover, the youngest and least experienced of the ESL teachers was assigned to Concord Elementary. This particular teacher received support and coaching from one of the senior ESL teachers in the district. Including the young teacher in the PD sessions could have provided valuable information.

5.9 GENERALIZABILITY

In addition to the growth in the ELL population in the Pittsburgh Public Schools (PPS), there are areas in the country that are experiencing growth in the ELL population that far outpaces the national average. The school districts located in these regions are called “districts in transition” (Zehler, et al., 2008). Characterizing districts in transition is the age of the new population, with concentrated number of ELLs in grades K-2 (REL report, 2011). Grades K-2 are the prime grades for learning to read. The research described in this dissertation could be replicated in any of the “districts in transition,” many of which are geographically close to Pennsylvania. West Virginia, Virginia, and Kentucky are three nearby states that have experienced a rapid growth in young English language learners in their schools. The teacher populations in schools in those states is likely to be similar to the teachers in the PPS.

Responsive PD is particularly well suited to the needs of school districts in transition, whose teachers may find it difficult to keep pace with the rapidly changing demographic of their classroom populations. Implementation of the Responsive PD model can be carried out by a teacher educator or a school district’s ESL coordinator. As the PD modules present information in

increments to the teachers, the same modules could be used to train a teacher educator or ESL coordinator in how to deliver the information. Desimone's framework (2009) for PD serves as an important resource for structuring the PD presented here. A school district ESL coordinator could implement aspects of Desimone's framework, such as a focus on content or collective participation by the teachers, into a PD training plan.

As was discussed in Section 5.7.4, "The Context of Context," the PD training can, and should be, tailored to the local populations. If the majority of the ELLs are from one native language group, the PD can include linguistic information specific to the L1 for the teacher as well as activities that can provide insight into the sociocultural backgrounds of the ELLs. Moreover, Responsive PD sessions can be tailored to every grade level and content area.

5.10 CONCLUSION

Many facets of SLA are necessary for young ELLs to make progress in the literacy acquisition process. Facets such as an explicit focus on phonological processing and an understanding that ELLs may need instructional approaches specific to their levels of L1 literacy. Moreover, teachers need to know that literacy instruction for English learners is not the same as literacy instruction for English speakers. Considering the challenges, the burgeoning growth of the young ELL population presents for teachers and school districts both in Pittsburgh and across the nation, the PD model presented in this dissertation represents a viable way to train teachers to work with this growing population.

Future research could apply the model to mainstream teachers, who also need special knowledge to work with ELLs. Although changes in Pennsylvania state law now require all pre-

service teachers to take a course in linguistically and culturally diverse student populations, one course may not offer enough time nor practice for most teachers.

In addition to the reflections that were part of the research described here, future studies might include teacher think-aloud protocols to gain insight into the “hows” and “whys” of teacher practice. As was evident in the teacher self-report questionnaires that were administered at the beginning of the intervention, teachers did not accurately rate their use of HLPs. Some teachers overrated their use while other teachers underrated their use. Think-aloud protocols would allow a researcher to investigate what the nature of the mis-representation of skill is, and could possibly help explain the variability in teacher knowledge and skill described in the research here.

Responsive PD represents a way to give teachers the kind of training they need, and to help experienced teachers deepen their understanding of the classroom practices they may not use. With the growing populations of ELLs in classrooms across the country, it is necessary to offer teacher training to meet the challenges of English language learners.

APPENDIX A.
TEACHER QUESTIONNAIRE

ABOUT THE QUESTIONNAIRE

This questionnaire is focused on early literacy instructional practices for English Language Learners (ELLs) in grades K-2. Time needed to complete the questionnaire is 10-15 minutes. If you cannot complete the questionnaire, please do as much as you can in the time allotted.

When finished, please place the questionnaire in the envelope included, seal the envelope, and return to Elizabeth Rangel. All questionnaire results will be reported only in statistical summaries so that **no individuals can be identified.**

Please do put your name, school, and grade you teach on the top of the questionnaire. The researcher will assign a number to you and your name will no longer appear on any documents.

The researcher will be preparing a report of findings if you would like a copy of that report.

Thank you for contributing your time to this questionnaire.

Name: _____
E-mail: _____
Code: _____

I. BACKGROUND AND CAREER

1. What grades do you currently teach (Circle all that apply)? _____
2. How many years have you worked full-time as a teacher in an elementary school (Including this school year)? _____
3. How many years have you worked full-time as a teacher in a secondary school (Including this school year)? _____
4. How many years have you worked full-time as a teacher in this school (Include this school year)? _____
5. Highest degree: BA/BS MA/MS PhD EdD
6. What are you certified in? _____
7. Where did you receive teaching preparation?
Undergraduate: _____
Graduate: _____
8. Where did you receive literacy teaching preparation?
Undergraduate: _____
Graduate: _____
9. How many courses in literacy instruction have you taken?
Undergraduate: _____
Graduate: _____
10. How many courses in ESL instruction have you taken?
Undergraduate: _____
Graduate: _____

CLASSROOM PRACTICES

SECTION II.

Please note in Section II. below the statements measure how frequently you use the following activities in your classroom. In this section please check the column for how often you use that activity.

	Not at any time during the lesson	Once or twice during the lesson but not consistently with all students	A number of times (more than once or twice) during the lesson but not consistently with all students	Consistently throughout the lesson with all students in the classroom
1. I attempt to check student comprehension by making eye contact throughout the lesson.				
2. I draw attention to the mechanics of English sound production by clearly enunciating, even making exaggerated movements with his/her mouth, tongue, and lips to show students how to produce the sounds of English.				
3. I draws students attention to the sounds of language with activities such as rhyming words .				
4. I checks students' comprehension of the concept of rhyming words and ensures that students are able to rhyme words.				
5. I provides sufficient time for students to practice rhyming words.				
6. I draws student attention to words in sentences .				
7. I provides explicit instruction to students via sound tapping or sound boards in segmenting words in sentences.				
8. I checks students' comprehension of the concept of words in sentences and ensures that students are able to segment words in sentences.				
9. I provides sufficient time for students to use sound tapping, sound boards or other manipulative activities to practice segmenting words in sentences.				
10. I draws student attention syllables in words .				

11. I provides explicit instruction to students via sound tapping or sound boards in segmenting syllables in words.				
12. I checks students' comprehension of the concept of words in sentences and ensures that students are able to segment words in sentences.				
13. I provides sufficient time for students to use sound tapping, sound boards or other manipulative activities to practice segmenting syllables in words.				
14. I draws student attention to onset and rime .				
15. I provides explicit instruction to students via sound tapping or sound boards in segmenting onset and rime.				
16. I checks students' comprehension of the concept of onset and rime and ensures that students are able to segment onset and rime.				
17. I provides sufficient time for students to use sound tapping, sound boards or other manipulative activities to practice segmenting onset and rime.				
18. I draws student attention to how sounds in words can be pulled apart .				
19. I provides explicit instruction via sound tapping or sound boards in how sounds in words can be pulled apart.				
20. I checks students' comprehension of the concept of how sounds in words can be pulled apart and ensures that students are able to pull sounds in words apart.				
21. I provides sufficient time for students to use sound tapping, sound boards or other manipulative activities to practice pulling sounds in words apart.				
22. I draws student attention to how sounds in words can be blended together .				
23. I provides explicit instruction via sound tapping or sound boards in how sounds in words can be blended together.				
24. I checks students' comprehension of the concept of how sounds in words can be blended together and ensures that students are able to blend sounds together				
25. I provides sufficient time for students to use sound tapping, sound boards or other manipulative activities to practice segmenting sounds in words can be blended together.				

PERCEPTIONS

SECTION III.

Please note in Section III. below the five statements ask for your opinion on the I training you received. Please check the column that represents how you feel about statements that follow.

Activity	S trongly Disagree	D isagree	gree	S trongly Agree
1. I was adequately prepared by my pre-service coursework to teach early reading to native English speaking students.				
2. I was adequately prepared by my pre-service coursework to teach reading to early English Language Learners (ELL).				
3. I was adequately prepared by my pre-service coursework to teach English as a Second Language (ESL) literacy practices.				
4. I have time and access to meet with other school personnel, such as reading specialists, when I need help or advice with ELL students.				
5. I have opportunities to exchange ideas about ELL instruction and collaborate with my colleagues.				

Is there a particular area for which you are interested in receiving professional development.

_____ If yes, please describe _____.

Is there a particular instructional practice or practices that you have found to be effective when working with ELLs?

_____ If yes, please describe _____.

Would you be willing to share these practices with colleagues? _____.

Please feel free to use the back of this sheet to describe specific challenges or concerns you may have with the teaching of

ELLs in your school. *Thank you.*

APPENDIX B.

CLASSROOM OBSERVATION CHECKLIST

Teacher ID:

1. _____

Student ID:

1. _____

2. _____

3. _____

	Not at any time during the lesson	Once or twice during the lesson but not consistently with all students	A number of times (more than once or twice) during the lesson but not consistently with all students	Consistently throughout the lesson with all students in the classroom
1. Teacher attempts to check student comprehension by making eye contact throughout the lesson.				
2. Teacher draws attention to the mechanics of English sound production by clearly enunciating, even making exaggerated movements with his/her mouth, tongue, and lips to show students how to produce the sounds of English.				
3. Teacher draws students attention to the sounds of language with activities such as rhyming				

words.				
4. Teacher checks students' comprehension of the concept of rhyming words and ensures that students are able to rhyme words.				
5. Teacher provides sufficient time for students to practice rhyming words.				
6. Teacher draws student attention to words in sentences .				
7. Teacher provides explicit instruction to students via sound tapping or sound boards in segmenting words in sentences.				
8. Teacher checks students' comprehension of the concept of words in sentences and ensures that students are able to segment words in sentences.				
9. Teacher provides sufficient time for students to use sound tapping, sound boards or other manipulative activities to practice segmenting words in sentences.				
10. Teacher draws student attention syllables in words .				
11. Teacher provides explicit instruction to students via sound tapping or sound boards in segmenting syllables in words.				
12. Teacher checks students' comprehension of the concept of words in sentences and ensures that students are able to segment words in sentences.				
13. Teacher provides sufficient time for students to use sound tapping, sound boards or other manipulative activities to practice segmenting syllables in words.				
14. Teacher draws student attention to onset and rime .				
15. Teacher provides explicit instruction to students via sound tapping or sound boards in segmenting onset and rime.				
16. Teacher checks students' comprehension of the concept of onset and rime and ensures that students are able to segment onset and rime.				
17. Teacher provides sufficient time for students to use sound tapping, sound boards or other manipulative activities to practice segmenting onset and rime.				
18. Teacher draws student attention to how sounds in words can be pulled apart .				
19. Teacher provides explicit instruction via sound tapping or sound boards in how sounds in words can be pulled apart.				
20. Teacher checks students' comprehension of the concept of how sounds in words can be pulled apart and ensures that students are able to pull sounds in words apart.				
21. Teacher provides sufficient time for students to use sound tapping, sound boards or other manipulative activities to practice pulling sounds in words apart.				
22. Teacher draws student attention to how sounds in words can be blended together .				

23. Teacher provides explicit instruction via sound tapping or sound boards in how sounds in words can be blended together.				
24. Teacher checks students' comprehension of the concept of how sounds in words can be blended together and ensures that students are able to blend sounds together				
25. Teacher provides sufficient time for students to use sound tapping, sound boards or other manipulative activities to practice segmenting sounds in words can be blended together.				

APPENDIX C.

PROFESSIONAL DEVELOPMENT SESSION OVERVIEWS

Session Overview

Each professional development (PD) session is geared toward bringing teachers together as a community of learners to share the Knowledge they have, and, as a group, identify those areas in which they would like to strengthen their knowledge.

1. Each session will begin with a short reading that highlights some of the issues teachers might encounter in their classrooms. The reading list to date is:
Institute for Education Sciences. (2007). *Effective Literacy and English language instruction for English learners in the elementary grades*. Washington, DC: Author.
Coltrane, B. (2003). *Working with Young English Language Learners: Some Considerations*. Washington, DC: Center for Applied Linguistics.
National Academy of Education. (2009). *Reading and Literacy Education Policy Briefing Sheet*. Washington, DC: Author.
American Educational Research Association. Research Points. (2009). *Ensuring Early Literacy Success*. Washington, DC: Author.
2. After the reading is completed, the teachers will form groups to participate in a Jigsaw activity based on the reading. The first PD session will allow teachers to sit in the order they choose. For the second through fourth sessions, teachers will sit with their grade level peers from other schools within the district.
3. An overview of cross-linguistic aspects of literacy learning will be presented in each session. Discussion will follow with teacher insight into how these cross-linguistic aspects of the learners become manifest in classrooms.
4. Teachers will work in grade-level groups. PPS teachers come from many different schools and do not often have the opportunity to work with others at their grade level. Working in same-grade groups such as these will give the teachers the opportunity to plan lessons together, allowing them to share their insight and Knowledge.
5. Teachers will preview the chapters and categorize words into high frequency lists, academic word lists, and lists of vocabulary that may pose a challenge for the students. that may be and will analyze how the knowledge from the PD session might be applied to the textbook materials for that grade.

6. The sessions will include practice in incorporating the of high leverage practices (HLPs) to the lessons the teachers create.
7. Each session will include a reflection of the PD session.

	Session #1 – Phonological Production - PPS PD Center, Greenway Professional Building, Crucible Street, Pittsburgh
Welcome	PPS ESL Director of Curriculum Timothy McKay
Session Objective	Discuss recommendations for classroom best literacy practices. Create language learner chart for teachers to document characteristics of different language group and how they are manifest in classrooms.
Research Reading	Institute for Education Sciences. (2007). Effective Literacy and English Language Instruction for English Learners in the Elementary Grades. Washington, DC: Author. Center for Applied Linguistics. (2000). What Elementary Teachers Need to Know about language. Washington, DC: Author.
Group Activity	Jigsaw Activity: 5 Groups of Teachers will Answer questions on the five recommendations made in the IES report. Jigsaw Activities Formative Assessment (Recommendation #1) Formative assessment, What does it mean? Why is it so important? Describe the kinds of formative assessment currently in use in your classroom. If you could make changes to those assessments, what kinds of changes would you make? Small Group Interventions (Recommendation #2) Why is small-group instruction so highly recommended? For which kinds of students is small-group instruction particularly effective? What are some of the benefits of small group instruction for ELLs? Extensive and Varied Vocabulary (Recommendation #3) What is meant by an evidence-based approach to vocabulary? What are some of the characteristics of effective vocabulary instruction? What is your opinion of a district-wide core vocabulary list for ELLs? How do you teach vocabulary in your classroom? Develop Academic Vocabulary (Recommendation #4)

	<p>What is meant by academic vocabulary?</p> <p>How is it different from other vocabulary?</p> <p>Why is it important?</p> <p>Are there instructional activities that can be used to help students learn it faster?</p> <p>Peer-assisted Learning (Recommendation #5)</p> <p>What is peer-assisted learning?</p> <p>What is the evidence to support it?</p> <p>What are some of the benefits?</p>
Cross Linguistic	<p>Present Information on student literacy levels, native language literacy, and role of L1 in literacy activities.</p> <p>Distribute language chart and have teachers fill in the number of languages spoken in their classrooms and specific reading challenges of speakers of those languages teachers have noticed. See Language Chart Below</p>
High Leverage Practice	<p>Discovering opportunities in the curriculum to engage students in rhymes and songs that feature rhyming as a phonological processing skill and that include on student oral language production.</p>
Lesson Planning	<p>Teachers will work together with others at their grade level in small groups to plan lessons and incorporate HLPs into their instruction.</p> <p>Teachers will preview vocabulary and categorize into high frequency words and academic vocabulary.</p>
Wrap Up and Reflection	<p>Participants will complete PD Session Reflection (Appendix D).</p>
Suggestions for readings to reinforce phonological production with students	<p>RHYMING and ALLITERATION Books</p> <p>Ahlberg, Janet and Allan. <i>Each Peach Pear Plum</i></p> <p>Berenstain, Stan and Jan. <i>B Book</i></p> <p>Florian, Douglas. <i>Insectopedia</i></p> <p>Silverstein, Shel. <i>Where the Sidewalk Ends</i></p> <p>Shelby, Anne. <i>Potluck</i></p> <p><i>Rosie's Roses</i></p> <p><i>Thank you for the Thistle</i></p>

Student Native Language Literacy Chart

Overview of Student L1s

What are the L1s of your students?

Are there any patterns among the students who share L1?

What are the literacy levels of your students?

L1s of Students	How Many	Literacy practices these students engage in, for example	Literacy Level of Student
Spanish	#	Students seem to insert a vowel before certain consonants such as s.	Student is able to pronounce words with little trouble but doesn't know the meanings of words

	Session #2 – Phonological Discrimination - PPS PD Center, Greenway Professional Building, Crucible Street, Pittsburgh
Welcome	PPS ESL Director of Curriculum Tim McKay
Session Objective	Introduction to Phonological Production Identifying opportunities for student practice in identifying words in sentences, syllables in words, blending real words, creating and identifying nonsense words, which exposes students to the phonotactics of English
Research Rationale	Coltrane, B. (2003). Working with Young English Language Learners: Some Considerations. Washington, DC: Center for Applied Linguistics.
Group Activity	Concept Web In small groups, teachers fill concept webs with most important information they have taken away from the CAL reading.
Cross Linguistic	Discussion of L1 language chart from first session with information provided by the researcher.
High Leverage Practice	<p><i>Sound Tapping Activity: Clap to Tap</i> Have children segment sentences into individual words. Identify familiar short poems such as "I scream you scream we all scream for ice cream!" Have children clap their hands with each word.</p> <p><i>Sound Tapping Activity: Name Tapping</i> Have children segment their names into syllables: e.g., Ra-chel, Al-ex-ander, and Rod-ney. Tap for each syllable.</p> <p><i>Sound Tapping Activity. Guess-the-word game</i> Instructional activity that teaches synthesis of phonemes into words. Students will be able to blend and identify a word that is stretched out into its component sounds.</p> <p><i>Sound Board Activity. Change-a-name game</i> Instructional activity that teaches phoneme deletion and substitution. Students will be able to recognize words when the teacher says the word with the first sound removed.</p>
Lesson Planning	<p>Teachers will work together with others at their grade level in small groups to plan lessons and incorporate HLPs into their instruction.</p> <p>Teachers will preview vocabulary and categorize into high frequency words and academic vocabulary.</p>
Wrap Up and Reflection	Participants will complete PD Session Reflection (Appendix D).

	Session #3 – Phonemic Discrimination - PPS PD Center, Greenway Professional Building, Crucible Street, Pittsburgh
Welcome	PPS ESL Director of Curriculum Tim McKay
Session Objective	<p>Introduction to Phonemic Discrimination</p> <p>Identifying opportunities for student practice identifying words in sentences, syllables in words, blending real words, creating and identifying nonsense words, which exposes students to the phonotactics of English</p>
Research/ Policy Reading	National Academy of Education. (2009). Reading and Literacy Education Policy Briefing Sheet. Washington, DC: Author.
Group Activity	Phonological challenges. Based on characteristics of L1s described in PD session #2, teachers will work together to predict what kinds of difficulties children from varying L1s might encounter.
Cross Linguistic	Continuum of phonological skills, work with teachers to identify what kinds of student competencies align with the continuum of phonological skills.
High Leverage Practice	Word Building, adapted from Beck, I. Beck, I. (2006). <i>Making Sense of Phonics</i> . New York: The Guildford Press.
Lesson Planning	<p>Teachers will work together with others at their grade level in small groups to plan lessons and incorporate HLPs into their instruction.</p> <p>Teachers will preview vocabulary and categorize into high frequency words and academic vocabulary.</p>
Activities	<p>What's My Word</p> <p>Phoneme Counting Sort</p> <p>The Phoneme Game</p> <p>Phoneme Challenge</p> <p>Phoneme Split and Say</p> <p>Break and Make</p>
Wrap Up and Reflection	Participants will complete PD Session Reflection (Appendix D).

	Session #4 – Phonemic Manipulation - PPS PD Center, Greenway Professional Building, Crucible Street, Pittsburgh
Welcome	PPS ESL Director of Curriculum Tim McKay
Session Objective	Introduction to Phonemic Manipulation
Research Rationale	American Educational Research Association. Research Points. (2004). English Language Learners: Boosting Academic Success. Washington, DC: Author.
Group Activity	American Educational Research Association. Research Points. (2009). Ensuring Early Literacy Success. Washington, DC: Author.
Cross Linguistic	Affect of native language orthographies on phonemic discrimination. Using language chart, identify areas of difficulty for students based on L1s.
High Leverage Practices	Work with teachers to identify most challenging vocabulary in lessons, identify what makes it challenging, and then develop sound board practices to use in the classroom.
Lesson Planning	Teachers will work together with others at their grade level in small groups to plan lessons and incorporate HLPs into their instruction. Teachers will preview vocabulary and categorize into high frequency words and academic vocabulary.
Activities	What's Left? Final Phoneme Pie Make It , Find It, Keep It Phoneme Position Sort Phoneme Swap Work Change Sound Changes
Wrap Up and Reflection	Participants will complete PD Session Reflection (Appendix D).

APPENDIX D.
REFLECTION EXAMPLE

1. What is your biggest insight into student learning? Why was that significant?
2. What structures or activities are most relevant? Why?
3. What do you find most effective in teaching reading with your students?
4. What challenges do you encounter in classroom implementation?
5. How do you work with the various language levels of the students in your class?
6. How do you monitor students' learning?
7. What do you want to learn more about?
8. Questions, comments, suggestions_____

APPENDIX E.

COPY OF TEACHER LOG

	C	Name/Date Created and/or Collected	Codes			
School	<input checked="" type="checkbox"/>					
Teacher	<input checked="" type="checkbox"/>					
Grades	<input checked="" type="checkbox"/>					
Principal Letter	<input checked="" type="checkbox"/>					
T Consent	<input checked="" type="checkbox"/>					
T Pop Letter	<input checked="" type="checkbox"/>					
S Consent Letters	<input checked="" type="checkbox"/>					
S Roster	<input checked="" type="checkbox"/>					
Observation 1	<input checked="" type="checkbox"/>					
Observation 2	<input checked="" type="checkbox"/>					
Notes	<input checked="" type="checkbox"/>					
Seating Chart	<input checked="" type="checkbox"/>					
		DATA TABULATED - EXCEL				
Teacher Questionnaire						
Observation #1						
Observation #2						
		DATA COMPILED - WORD				
Reflection #1						
Reflection #2						
Reflection #3						
Reflection #4						

APPENDIX F.

GENERAL IMPRESSIONS

Some teachers used HLPs with their students.

Some teachers did not seem to understand L2 literacy acquisition processes (LAP).

Some teachers did not seem to be able to modify exercises for ELL students.

Some teachers modified content but in a way that decreased the effectiveness of the activity.

Some teachers did not understand why certain activities might be difficult for ELLs.

Some teachers held wrong assumptions about LAP and did not understand the process of language development.

Some teachers made faulty assumption about English language support in the home.

Some teachers made faulty assumptions about support ELLs receive in other settings.

Some teachers made little distinction between English learners and English speakers.

Some teachers seemed to think “more of the same practice” was all that was needed

Some teachers did not consider the use of different instructional approaches for ELLs.

There was very little student spontaneous speech in any of the classrooms I observed.

When there was the occasional spontaneous speech, teachers did not seem to be able to make use of that speech.

In reading exercises, students were not called on to discuss the texts they read.

In more than one classroom, students seemed to have memorized the book they used.

Teachers repeatedly mentioned the lack of reading materials.

The use of choral reading with early learners of reading seemed to be a common pedagogical strategy

The use of paraprofessionals in the classrooms must be evaluated.

Some teachers seem to fall back on naming classroom instructional practices rather than naming what the practice does or is used for.

Teachers repeatedly mentioned the Mixed Proficiency Levels of student language ability as a challenge for them.

Teachers seemed to have an in-depth understanding of the kinds of assessments to use as well as when to use them.

APPENDIX G.

OVERARCHING CATEGORIES

Teacher Content Knowledge

- + Three Ts used HLPs based on phonological processing and phonemic awareness
- Some Ts seemed to have a naïve understanding of the second language acquisition
- Some Ts did not understand why certain activities might be difficult for ELLs
- Some Ts held wrong assumptions about LAP (BICS and CALP)
- Ts made faulty assumption about the kinds of language supports in the home
- Some T seemed to make little distinction between English speakers and English learners
- There was very little student spontaneous speech in any of the classrooms I observed
- When there was the occasional spontaneous speech, teachers did not seem to be able to make use of that speech.
- In reading exercises, students were not called on to discuss the texts they read.
- Some Ts did not seem to be able to modify exercises
- Some teachers modified content but in a way that decreased effectiveness
- Some Ts seemed to make little distinction between English speakers and English learners
- Some Ts seemed to think “more of the same practice” would be effective - Some teachers seem to fall back on naming classroom instructional packages rather than naming what the practice does or is used for

Teacher Pedagogical Knowledge

- + Three Ts used phonological processing and phonemic awareness
- + Ts seemed to have an in-depth understanding of the kinds of assessments to use as well as when to use them
- Some Ts did not consider that the use of a different instructional approach
- In more than one classroom, Ss seemed to have memorized the book they were reading
- The use of choral reading with early learners of reading seemed to be a common pedagogical strategy

External Factors

- Ts made faulty assumptions about the kinds of supports ELLs receive in other settings
- Ts mentioned the Mixed Proficiency Levels of Ss as a challenge for them
- Ts repeatedly mentioned the lack of leveled readers as a real issue
- The quality of paraprofessionals in the classrooms needs to be evaluated

Open Coding: Overarching Categories Identified from General Impressions

Abbreviations: Teacher (T); Student (S)

Note: A plus sign (+) indicates a positive teacher practice, such as using phonological processing and phonemic awareness activities. A minus sign (-) indicates a negative teacher practice, such as when teachers did not seem able to modify their instructional practice for English learners.

APPENDIX H.

TEACHER EXPERIENCE

Teacher Code	Fictitious Name	Teacher Experience
T010301	Kate	School – C010301 15 years as a full-time elementary teacher 3 years at C010301 Highest Degree: MA/MS Elementary Education Certification University of Pittsburgh Literacy preparation: Pitt Literacy courses: Can't remember ESL courses: 13 credits at LaRoche
T020101	Bea	School – C020101 10 years as a full-time elementary teacher 4 years at C020101 Highest Degree: BA/BS Elementary Education and ESL University of Pittsburgh/AIU Literacy preparation: Pitt/AIU Literacy courses: ? ESL courses: 8 courses
T020302	Veri	School – C020101 Teacher's native language is Spanish 20 years as a full-time elementary teacher 3 years at C020101 Highest Degree: BA/BS Elementary Education, Bilingual Education, ESL Reading Sam Houston State University Literacy preparation: Sam Houston Literacy courses: lots ESL courses: 8plus
T030101	Collette	School – C030101 Teachers' native language is Spanish 22 years as a full-time elementary teacher 3 years at C030101 Highest Degree: MS/MS Elementary Education, ESL Endorsement University of Pittsburgh Literacy preparation: Pitt, PPS workshops, IU Literacy courses: enough for certification ESL courses: 180 hours, 8 classes through the IU

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