

**A STUDY OF THE CHARACTERISTICS OF UNIVERSITY READING SPECIALIST
CANDIDATES: INDIVIDUAL AND PROGRAMMATIC DIMENSIONS AND THEIR
CORRELATES TO SCORES ON THE PRAXIS AND OTHER OUTCOME MEASURES**

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Submitted to the Graduate Faculty of
The School of Education in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

University of Pittsburgh

2006

UNIVERSITY OF PITTSBURGH
SCHOOL OF EDUCATION

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University of Pittsburgh, 2006

The purpose of this exploratory study was to determine which dimensions of teacher preparation contribute to creating effective reading specialists. These dimensions include educational factors, such as certification (Darling-Hammond, 1999), educational experience which points to teacher quality (Ferguson, 1991) and demographic factors such as age, type of teacher preparation program—four year, five year, or Master of Arts in Teaching. Participants were the reading specialist candidates during the 2002-2003 school year at a metropolitan university.

This study used reading specialist candidates' Grade Point Average, Praxis test scores, teaching experience, class performance rating, and performance rating in the field to examine what background, characteristics, and instruction contribute to the preparation of effective reading specialists.

Analyses of data showed that teaching experience, age of candidate, and Praxis certification tests correlated with the outcome measures of coursework, performance rating, and Praxis reading specialist scores. Interviews of reading specialist candidates provided in-depth understanding of how candidates viewed the program.

Results of the study contribute to a better understanding of the individual dimensions of the reading specialist candidate. This understanding, in turn, provides further information for the improvement and evaluation of the program, and adds to research about the preparation of reading specialists.

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ACKNOWLEDGEMENTS

Grateful appreciation is extended:

... to the members of my committee, Dr. Douglas Hartman, Dr. Margaret Kimmel, Dr. Gregory Morris, and Dr. Louis Pingel, for their guidance throughout this study.

... to my advisor, Dr. Rita Bean, for her steady guidance, feedback, gentle nudges, and continued kindness. Dr. Bean has been my teacher, my role model, and my guide throughout this educational experience.

...to my first advisor, Dr. Douglas Hartman, for his help and friendship.

...to my friends for their continued encouragement, hugs, listening, and sharing.

...to my family, my daughter Becky for her help and support to complete this study, my daughter Jennifer, husband Keith and their family for their love and support, and my sisters Phyllis and Gail for their encouragement.

... to my strongest supporter, my husband Robert, for his steadfast love, help, encouragement, and patience.

1.0 INTRODUCTION

In the early part of the twentieth century, the focus of education was on the acquisition of basic literacy skills (Allington, 1994a; Allington and Johnson, 2002).

It was not the general rule for educational systems to train people to think and read critically....Now, ...these aspects of high literacy are required of almost everyone in order to successfully negotiate the complexities of contemporary life (Bransford, Brown, & Cocking, 1999, p.4). <http://fermat.nap.edu/html/howpeople1/ch1.html>

For all students to perform these “high literacies,” a number of reforms have been called for and initiated (Bransford, et al; Snow Burns and Griffin, 1998). Among the most prominent of these calls is for better prepared teachers, especially in the area of reading. Teacher effectiveness has long been regarded as critical to the development of student’s highest academic progress (e.g. Darling-Hammond, 2000). However, large-scale efforts to study and improve teacher effectiveness so that all students can achieve high literacy have begun only recently. Projects to study and improve teacher effectiveness for reading specialists who are the focus of this study are almost non-existent. Further, under No Child Left Behind (NCLB) all teachers must be highly qualified, but there is no national requirement for the certification of reading teachers and in some states no certification requirement for reading teachers, specialists, or coaches. In most states, reading teachers, specialists, and coaches must only demonstrate the same qualifications as elementary teachers (Allington, 2006).

There has, however, been some systematic study of the general certification and preparation of teachers in the United States, which indicates extensive variation in programs across the United States (Darling-Hammond, 1999). The certification of teachers is based on the completion of specific courses, along with accumulating credit hours (Strickland, 2001).

In 2003, in Pennsylvania, the setting for this study, one had only to pass the reading specialist Praxis examination in order to add a reading specialist certification to an initial

certificate. Certification for Reading Specialists now consists (as of March 1, 2006) of completing a reading specialist program at a Pennsylvania college or university, passing the required Pennsylvania reading specialist assessment, the Praxis tests (Educational Testing Service) and being recommended to the state for certification by the college or university (Persistence Pays, 2006).

Across the United States there has been a general lack of satisfaction with the current processes for certifying teachers. Among the reports calling for reform of current course and credit hour certification requirements are those of the National Research Council's Preventing Reading Difficulties in Young Children (Snow et al., 1998) and the National Reading Panel (NRP) (2000). The National Reading Panel, for instance, examined the research on how teachers are taught to teach reading, which approaches are most effective, and how research can be applied to improve teacher development (NRP). Based on their review, they concluded that "appropriate teacher education does produce higher achievement in students" (p.5-2). Similarly, the National Assessment of Educational Progress (NAEP) findings showed a close connection between students' reading success and instructional practice (Ruddell, 1999). Darling-Hammond (1999) found a strong relationship between teacher certification and student outcomes.

Student outcomes also depend on continuous teacher growth. Yet, Anders, Hoffman and Duffy (2000) in a review of the available research literature, report that "little empirical evidence is available to inform teacher educators about how certain educative experiences affect teachers' long-term development" (p.726).

The reports and syntheses do indicate a general direction for reform, but more refined study is needed in specific content and practice areas, like reading. For this study, general teacher preparation studies were utilized that lend themselves to a study of the professional preparation of reading specialists.

1.1 CONCEPTUAL FRAMEWORK

Conceptually, three dimensions in general teacher preparation suggest promising starting points for the study and preparation of reading specialists. The first dimension includes those *educational factors* that shape how a teacher comes to be an effective teacher. From a general

standpoint, fully prepared and certified teachers (those with baccalaureate degrees and credentials from their state) are rated better and do better with students than those teachers who lack subject matter or teaching knowledge. Students taught by certified teachers score higher on reading measures (Pearson, 2001; Darling-Hammond, 1999).

The second dimension incorporates *educational experience* as a factor in successful teaching. Most states like Pennsylvania require that a professional education program provide field experiences and student teaching for teachers in training. (PA General Standards, Whitebook, nd.). In other words, observation and direct teaching experiences in the classroom, and collaboration with excellent teachers were seen as foundational to long-term instructional effectiveness. Darling-Hammond (2000) provided evidence for this view: successful teacher preparation programs provided “supervised, extended clinical experiences” (p. x). In general educational studies, Ferguson (1991), Ferguson and Ladd (1995), and Hanushek, Kain, and Rivkin (1998), again point to teacher quality measured by experience.

The third dimension, *demographic factors*, include factors such as age, gender, and type of teacher preparation program—undergraduate, 5 year, or Master of Arts in Teaching (MAT). These dimensions provide a 3-pronged focus on variables salient to the preparation of reading specialists and how they relate to the outcome measures (educational factors, experience, and demographic factors) of coursework, teaching performance and reading specialist Praxis results. These outcome measures are identified as important metrics which indicate successful completion of the reading specialist program.

1.2 PURPOSE

The purpose of this study is to examine the extent to which these dimensions of teacher effectiveness—educational, experiential, and demographic—are factors associated with the successful preparation of reading specialists. More specifically, the educational, experiential, and demographic dimensions of reading specialist candidates were investigated to determine how these related to outcome measures. Wilson, Floden, and Ferrini-Mundy (2001) studied these dimensions in preparing teachers in general education to determine if they had an effect on teacher outcomes. This study examined how these same dimensions related to reading specialist

candidates' performance in the University of Pittsburgh's Reading Specialist Program. By examining what reading specialist candidates bring to the program, we may determine what makes an effective candidate for reading specialist programs and what is needed in programs to produce an effective reading specialist.

“A reading specialist is a professional with advanced preparation and experience in reading who has responsibility for the literacy performance of readers in general and of struggling readers in particular” (IRA, 2000). The reading specialist position may be defined in several categories:

- **A reading intervention teacher** is a reading specialist who provides intensive instruction to struggling readers. Such instruction may be provided either within or outside the students' classrooms.
- **A reading coach or a literacy coach** is a reading specialist who focuses on providing professional development for teachers by providing them with the additional support needed to implement various instructional programs and practices. They provide essential leadership for the school's entire literacy program by helping create and supervise a long-term staff development process that supports both the development and implementation of the literacy program over months and years. These individuals need to have experiences that enable them to provide effective professional development for the teachers in their schools.
- **A reading supervisor or reading coordinator** is a reading specialist who is responsible for developing, leading, and evaluating a school reading program, from kindergarten through grade 12. They may assume some of the same responsibilities as the literacy coach, but in addition have responsibilities that require them to work more with systematic change at the school level. These individuals need to have experiences that enable them to work effectively as an administrator and to be able to develop and lead effective professional development programs. (IRA Style Guide, 2006) Copyright 2006 by the International Reading Association. Reprinted with permission.
http://www.reading.org/styleguide/standards_reading_profes.html

The International Reading Association recommends that the reading specialist will have had teaching experience, and hold a Master's degree with concentration in reading education (IRA, Standards—Revised 2003).

The Reading Specialist Program at the University of Pittsburgh offers several features that make it an outstanding reading specialist program to study. The University has several well-known reading professors, who are involved in the reading specialist program. This enables the reading specialist program to be up-to-date and on the cutting edge of current practices in

reading specialist education. The University Education Department is rated highly by U. S. News magazine as being one of the top 31 graduate schools of education in the U.S.

Second, the program has several unique features. One of these features is the variety of clinical experiences for demonstrating knowledge of teaching techniques and strategies. The University has a clinic on-campus, and satellite schools where reading specialist candidates can work with children to model and demonstrate their knowledge of strategies, assessments, and instruction techniques. An intern program is also available that allows reading specialist candidates to provide these strategies to children in area schools. Interns work the entire school year in public or private schools while taking classes at the University. They receive a stipend for their work.

Third, about 40 reading specialist candidates a year are receiving their reading specialist certification at the University. This provides a number of people to study, as well as allowing study of the reading specialist program itself.

The University of Pittsburgh, therefore, has an exemplary, well-established reading specialist program. The reading program is situated in a large research-orientated university which provides research in reading and develops strategies and teaching techniques to improve the teaching of reading. Therefore, it is possible to research the reading specialist candidates to discover what attributes candidates may bring to the program that makes an effective reading specialist, and what candidates think would improve the program.

1.3 RESEARCH QUESTIONS

The research questions that were examined are these:

1. How do educational factors such as entry GPA and initial elementary/secondary teacher Praxis score in elementary/secondary teacher certification relate to outcome measures: Coursework Composite score, the Reading Specialist Praxis test, and the Intern/Practicum Performance rating?

2. How do years of teaching experience relate to the outcome measures, Coursework Composite score, the Reading Specialist Praxis test, and the Intern/Practicum Performance rating, identified as important for successful completion of the program?

3. How do demographic factors such as age, type of degree—4 year, 5 year or MAT—number of previous courses in reading, race and gender relate to the outcome measures: Coursework Composite score, the Reading Specialist Praxis test, and the Intern/Practicum Performance rating, identified as important for successful completion of the program?
4. How did reading specialist candidates perceive the effectiveness of the program?

1.4 DELIMITATIONS

There are three delimitations to this study:

Multiple Instructors Across Sections.

1. While for the most part courses contain the same material, instructors are not the same for all courses. Therefore, courses and instruction varied to a certain degree.

Length of Study.

2. Time is a factor. Only reading specialist candidates from one year were studied.

Small Sample Size.

3. The small sample size reduced the ability to generalize the results. In addition, because most of the sample was Caucasian, generalizations to other ethnic groups should be made cautiously.

1.5 DEFINITION OF TERMS

GRADE POINT AVERAGE (GPA). The average grade achieved by the candidate in his/her four year undergraduate program. This is usually computed using a 4-point scale.

PRAXIS- A series of tests by the Educational Testing Service that may be required by states to determine licensing. Colleges and universities may use these test scores for entry into or exit from teacher education programs.

The PRAXIS Curriculum, Instruction, and Assessment is required of all prospective elementary teachers in the state of Pennsylvania. It is administered by the Educational Testing Service.

The PRAXIS Reading Specialist Test is a knowledge test of reading strategies, teaching methods, and diagnosis and instruction for those wishing to be certified as Reading Specialists in the state of Pennsylvania.

PULL-OUT PROGRAM. Students are removed from their regular classroom to work with a special teacher on reading.

READING COACH- “Someone who works directly with teachers as a coach and mentor, ... and provides theory, demonstration, practice, feedback and in-class coaching” (Dole, 2004). A person who provides professional development for teachers in schools. (IRA, 2004.)

READING SPECIALIST- “A specially prepared professional who has responsibility (e.g. providing instruction, serving as a resource to teachers) for the literacy performance of readers in general or struggling readers in particular” (Quatroche, Bean, & Hamilton, 2001). A reading specialist may serve as a coach.

READING SPECIALIST CANDIDATE - A graduate student who is seeking reading specialist certification.

SCIENTIFICALLY BASED READING RESEARCH (SBRR) – Research that applies empirical methods and data analysis, and is accepted by peer-reviewed journals. Results are statistically significant.

2.0 REVIEW OF THE LITERATURE

A history of the changing role of the reading specialist is described in this chapter. Additionally, reports, government legislation, and studies and standards are examined to determine how they impact the shape of the reading specialist's role. Research on teacher quality and reading studies are reviewed because there is little research specifically on the reading specialist (Hoffman et al., 2005). Altogether, this body of knowledge illuminates what reading specialists should know and be able to do.

2.1 HISTORY OF THE READING SPECIALIST'S ROLE

Reading supervisors who worked with teachers to improve the reading program were in existence as early as the 1930's where they functioned as supervisors. (Bean & Wilson, 1981) After World War II, remedial reading teachers became more prominent. At this time, they worked with struggling readers individually or in small groups (Bean, 2004). When the Soviets launched Sputnik in 1957, one of the many U.S. responses was to allocate more funding to schools to improve American education. With the passing of Title I of the Elementary and Secondary Education Act (ESEA) in 1965, special reading teachers appeared in elementary schools (Allington, 1994b). Title I is funded by the U.S. federal government to improve the literacy and math performance in schools where there are a large percentage of low income families (Quatroche, Bean, & Hamilton, 2001).

Title I programs for improving reading, Title II for improving library resources, and Title III of the Elementary and Secondary Education Act for fostering relationships between educational and community organizations all had some degree of impact on the teaching of reading (Vogt & Shearer, 2003, p. 21).

Reading Specialists during the 1960's and 1970's worked with children identified as disabled readers. These specialists had a variety of roles, and continued to be funded by Title I. Their primary focus was on providing small group instruction and remediation in a pull-out program (Bean, 2004).

However, there were still some children who were not learning to read proficiently. These children were often part of Title I remedial reading classes. Children in this program made gains, but were not able to raise test scores to the level of their more advantaged peers (Jaeger, 1996). Large scale evaluations showed Title I was not accomplishing the goal of closing the achievement gap. Other concerns were that there was little alignment between strategies taught in Title 1 and those used in the regular classroom (Allington & Shake, 1986). Often students spent most of their time doing workbook type activities rather than having opportunity to read (Bean, Cooley, Eichelberger, Lazar, & Zigmond, 1991). Recommendations were evident in the literature and in the new legislation of 1988 that reading specialists should work in collaboration with classroom teachers in the classrooms (Bean, 2004). This call for collaboration occurred because of the large number of students to be helped, the stigma attached to students in the remediation program, and the concept of reading as a special subject, instead of part of content area teaching (Bean & Wilson, 1981). Thus, this brought another change in the role of the reading specialist to that of a resource person.

During the 1980's and 1990's, lack of funding and other issues resulted in down-sizing some of the reading specialist positions (Vogt & Shearer, 2003). School districts, because of rising costs and desiring to serve as many children as possible, were hiring paraprofessionals instead of full-time reading specialists (Wepner & Quatroche, 2002). Struggling readers who needed extensive help in reading were being referred to special education services (Vogt & Shearer, 2003). The number of children identified as learning disabled was 1.8 million by 1986, and 2.2 million by 1990 (Walmsley & Allington, 1995). Thus, there was an additional strain on special services to meet the needs of these struggling students.

With concern about the achievement of students, especially in high-poverty areas, the Executive Board of the International Reading Association appointed a Commission on the Role of the Reading Specialist to investigate the roles, responsibilities, and working conditions of reading teachers identified as Title I reading teacher, reading specialist, and reading supervisor/coordinator (Quatroche et al., 2001). The Commission defined the reading specialist

as a “specially prepared professional who has responsibility (providing instruction, serving as a resource to teachers) for the literacy performance of readers in general or struggling readers in particular” (p.282). They determined that the role the specialist plays depends on the context and setting and that the role was complex and diverse. Because of changes in Title I, schools were moving toward an in-class model of instruction. (Quatroche et al.) The Commission found little research on whether there was a relationship between the work of the reading specialist and school reading achievement. However, some studies found a relationship between programs which used highly prepared teachers and student reading achievement, which was greater than those programs which used paraprofessionals to teach students. It was the knowledge and experience of the specialists that provided for student achievement.

2.2 RESEARCH ON READING SPECIALISTS’ ROLE

The role of the reading specialist today is multi-faceted and requires many skills. The limited research that exists indicates that the reading specialist may be called on to handle many tasks, such as: resource person, coordinator for professional development, gate-keeper of district and state standards, and adviser for new teachers. Along with these tasks, the specialist helps assess performance of various students, supports classroom teachers, leads workshops, models strategies, and communicates with teachers, parents, and administration (IRA, 2000a; Bean, Swan, & Knaub, 2003). Furthermore, the roles of a reading specialist have come to be seen as ranging along a continuum, where some specialists work entirely with students, while others work primarily on professional development supporting the work of the classroom teacher (IRA, 2000b). Until recently, there has been little empirical research which relates to reading specialists’ work. Two major studies, however, have contributed substantially to our current understanding of the reading specialist’s many roles. One was a survey study by the International Reading Association on the role of the reading specialist (Bean, Cassidy, Grumet, Shelton, & Wallis, 2002). The other was a study that investigated the importance of reading specialists who work in exemplary schools (Bean, Knaub, & Swan, 2000; Bean et al., 2003).

2.3 STUDIES ON CHANGING ROLES

The International Reading Association survey studied the role of the reading specialist (Bean et al., 2002). It contained 34 multiple choice items and one open-ended question regarding changes in the work environment. The instrument was sent to 4,452 people across the United States who identified themselves as reading teachers when renewing yearly membership in the International Reading Association. The Commission received 1,517 completed surveys for a return rate of thirty-eight percent. The specialists who responded were white (97%), female (98%) and worked full time (91%) as reading specialists. The majority were experienced (76%) and had worked for over five years in education. Many (39%) worked in schools where student's eligibility for free and reduced lunch was above 40 per cent indicating Title I schools. More of the specialists who responded worked in suburban schools (47%), than in urban (27%) or rural schools (26%).

The reading specialists had roles in four major areas: instruction, assessment, administration, and resource to teachers and the school. Over 90% of the respondents indicated that they instructed daily, with 44% working in the classroom and 37% using only a pull-out model. Ninety-nine percent of the specialists indicated they were involved in assessment some of the time or daily. Many specialists worked as a resource to classroom teachers and to the school as a whole. They worked with allied professionals (89%), and with parents (88%). Reading specialists indicated that they performed administrative duties some of the time or daily (90%) completing compliance papers or documenting their work as Reading Recovery teachers.

Specialists indicated that instructional and assessment roles were very important; they also attributed importance to their role as a resource person. Changes in the role and responsibilities were documented as: increased amount of paperwork (68%), increase in the resource role (62%), need to plan with teachers (59%), involvement with special education students (45%) and involvement with parents (44%).

This study suggests four important points. First, knowing the roles a reading specialist fills provides an existential description of current practice; based on the description, the reading community can better assess the ways to change teacher preparation and more carefully guide preparation for prospective reading specialists. Second, it is important to know who the reading specialists are, and the contexts in which they are located (suburban, urban, or rural areas). Third,

seventy-six percent of the reading specialists in the study were experienced teachers. This indicates that they were veteran teachers who have had time to develop their skill in teaching. Fourth, the fact that many reading specialists worked collaboratively with other teachers should be addressed, because this indicates that the role of the reading specialist has changed. Specialists believed that they had responsibility for improving literacy of all the students in the school while still being responsible for supporting struggling readers (Bean et al., 2002).

The second study investigated the importance of reading specialists who work in exemplary schools (Bean et al., 2000; Bean et al., 2003). This study was conducted in a questionnaire sent to principals from 29 states and 111 schools identified as having exemplary reading programs. Schools were identified as exemplary through the IRA (1994-94, through Title I (1994-98) or as schools that had “beat the odds” by performing at levels higher than expected. The questionnaire, with a return rate of 52%, probed principals’ perceptions of the importance of reading specialists to the success of their program.

Principals rated how often the various responsibilities of the reading specialist occurred, with the following being among the first five: (a) instruction, (b) resource to teachers, (c) assessment, (d) school and community liaison, and (e) coordinator of the reading program. Principals also identified traits that were important to the success of the reading specialist as follows: (a) teaching ability, (b) knowledge of reading instruction, (c) sensitivity to children with reading difficulties, (d) knowledge of reading assessment, (e) advocate for children, and (f) ability to work with other adults. Principals believed that reading specialists contributed to the success of the reading program. They perceived the specialists as fulfilling tasks from instruction to leadership, and having excellent leadership and communication skills (Bean et al., 2000).

The researchers of the study also interviewed specialists to gain a rich description as to how they fulfilled their role. The majority of the reading specialists were teachers whose experience ranged from 10-39 years. All had taught in the classroom. All had postgraduate work in the reading area (Bean et al., 2003). “All specialists were enthusiastic about their roles and passionate about the importance of effective literacy instruction for students” (p.14).

In telephone interviews with twelve reading specialists, five roles were described as being most frequent: (a) resource to teachers, (b) school and community liaisons, (c) coordinator of the reading program, (d) assessment; and (e) instruction. Specialists served in both an

instructional and a leadership role. In many places, the specialist provided leadership, assessment, resources, and instruction. The instructional role gave credibility to the role of leadership. Some specialists were responsible for professional development.

The study suggests several important points. First, all reading specialists were experienced teachers, and all had postgraduate work in the area of reading. Second, all were enthusiastic, and fervent about the importance of effective literacy instruction. Third, all valued the instructional role, while at the same time acknowledging the importance of the leadership role. Specialists fulfilled the leadership and instructional role in a variety of ways depending on the way their position was structured. Because of the leadership requirements that are emerging for the reading specialist, it would be worthwhile for state certification offices and universities which prepare reading specialists to look at their standards and programs to provide for these leadership needs (Bean et al., 2003).

From this study, three categories of responsibilities for the reading specialist emerge: leadership, assessment, and instruction. These three roles are further explained in light of the ideas of education and experience.

2.3.1 The Leadership Role

Bean et al. (2002) indicated that the reading specialist was a resource not only to teachers, but also to the school as a whole. Specialists provided teachers with support, ideas and materials. Many worked with other professionals and parents. Reading specialists influenced the overall reading program in the school through these relationships. In particular, as they assumed the leadership role they became “change agents who work with teachers to create total school reform” (IRA, 2000b, p.3). Specialists play a key role as leaders of successful reading programs (Bean et al., 2003).

Leadership involves many skills and tasks that are different from those used in a pull out remedial program. Specific competencies needed for the role as a resource were designated as follows: communicating ideas, relating to the educational context, interpersonal skills awareness, leadership, using decision-making processes, knowledge of legal rights of children and teachers, and knowledge of how to promote children’s growth in speaking, listening, reading and writing (Bean & Wilson, 1981).

Providing a leadership role within the school requires the reading specialist to lead as a resource person, coach, mentor (Bean et al., 2002; Dole, 2004), and coordinator. In other words, the reading specialist's role has expanded to include providing on-going professional development via support and training for classroom teachers. Providing professional development may involve providing in-house workshops on new teaching strategies, or it can involve "planning, implementing and evaluating professional development efforts at the grade, school, state and/or district level" (IRA, 2003). For teacher education to be effective it must change both teacher and student behavior (National Reading Panel, 2000). The studies of the National Reading Panel indicated that teachers can learn to improve their teaching, which will have direct effects on student learning. Therefore, improving and updating teachers' knowledge is an important aspect of the reading specialists' role. Being up to date on reading research and translating this research into actual teacher practice is part of the responsibility of reading specialists in the schools, as they seek to present and improve professional development. (Snow, Burns, & Griffin, 1998; IRA, 2000b). Many reading specialists have incorporated the leadership role into their role as reading specialists.

2.3.2 The Assessment Role

"Assessment is a vital part of successful teaching because instruction needs to be calibrated according to students' knowledge, skills, and interests" (Paris, Paris, & Carpenter, 2002, p.141). In other words, assessment needs to guide instruction (Bean, 2002). Most contemporary reading specialists' coursework includes instruction on various reading assessments. From the national survey, reading specialists reported being involved in the assessment of students to a great extent, with assessments including informal observations, running records, or other assessments where the student was actively engaged in the reading and writing process (Bean et al., 2002).

Excellent reading teachers are familiar with standardized reading achievement tests and informal reading assessments. Observations, conferences with children, analysis of children's writing and reading inform them of student progress. Reading teachers use this information to plan instruction for their children (IRA, 2000a). *Teaching All Children to Read* (IRA, 2000b) states that the reading specialist's knowledge of assessment and diagnosis is vital for the literacy program in general, and in helping plan instruction for individual students. The specialist can

assess the strengths and weaknesses of students and communicate those to parents, teachers and other concerned school personnel. IRA Standard 3, Assessment, Diagnosis, and Evaluation (IRA, 2003) states that reading specialists should be able to train classroom teachers to administer and interpret standardized tests and informal assessments. Reading specialists should also be able to use, interpret and recommend various assessment tools and practices.

In order to do this, reading specialists should demonstrate proficiency in using observations, running records, administering informal reading and writing inventories, and be able to administer and interpret more formal standardized instruments (Snow et al., 1998). In order to accomplish these competencies, they need coursework and on-site training in assessment and diagnosis. This coursework and onsite training will build knowledge and proficiency in selecting and administering these assessments.

2.3.3 The Instruction Role

Finally, the contemporary reading specialist's role involves that of being a dynamic instructor—able to demonstrate instructional competence to teachers and students who will come to believe and accept the guidance of the reading specialist. The reading specialist's instruction needs to support and supplement classroom teaching. The specialist and classroom teacher should align instruction so that teaching is complimentary and congruent. To this end, the specialist may instruct in-class, or if there are more individualized needs, a pull-out situation may be utilized (IRA, 2000b). Regardless of the form instruction takes, classroom or pull-out, collaboration between the classroom teacher and the reading specialist is essential to maintain congruent instruction (Bean, 2002).

2.4 RESEARCH, STUDIES, AND LEGISLATION WHICH IMPACTED THE READING SPECIALIST'S ROLE

The role of the Reading Specialist has been shaped by various authorities: federal and state legislation, professional standards, research studies and research syntheses. Remotely, each

shaped the Reading Specialist role with its own claims to authority and power of persuasion. But, they pointed to two evidence-based conclusions regarding the essential elements that make a Reading Specialist effective in the various roles they assumed: (a) knowledge and (b) experience. The following reports identified both knowledge and experience as important for reading teachers and reading specialists.

2.4.1 Preventing Reading Difficulties in Young Children

Two early reviews of the literature were undertaken to reveal research results in reading education. Snow et al. (1998) in *Preventing Reading Difficulties in Young Children*, described what teachers need to know and do, and by extension, what reading specialist must have as background knowledge. Snow, et al. cited the California State Board of Education as describing explicitly what teachers needed to know: “phoneme awareness; systematic explicit phonics instruction; spelling; diagnosis; research; structure of the English language; relationships between reading, writing, and spelling; improving reading comprehension; and independent reading of good books” (p.296).

Snow et al. (1998) indicated that teachers needed a knowledge base in linguistic and psycholinguistic studies, and in child development, including knowing what children are capable of doing. Teachers also needed the ability to assess children’s strengths and weaknesses along with a variety of instructional strategies. Repeatedly, the Snow commission cited the need for pre-service teachers to have “supervised, relevant, clinical experience” in which they received “ongoing guidance and feedback” (p.290). Snow et al. cited the Orton Dyslexia Society on what effective teachers of reading needed to know as follows: “Knowledge of the structure of language, including knowledge of the English speech sound system and its production, the structure of English orthography and its relationship to sounds and meaning, and grammatical structure; and supervised practice in teaching reading” (p. 298). Further, reading specialists needed to be able to assess strengths and weaknesses in reading performance, plus know strategies to remediate the needs of children with reading disabilities. Teachers of special services needed continuing professional development in the following areas: “knowledge of ways to access and evaluate ongoing research regarding typical development and the prevention of reading difficulties; knowledge and techniques for helping other professionals; knowledge and

techniques for promoting home support” (p. 297). This synthesis highlighted both knowledge and experience as important for reading teachers and by extension for reading specialists.

2.4.2 National Reading Panel

In the second salient report, the National Institute of Child Health and Human Development (NICHD) and the Secretary of Education, in response to Congress, was charged with providing a report to “assess the status of research-based knowledge, including the effectiveness of various approaches to teaching children to read” (National Reading Panel [NRP], 2000, p.1-1). The appointed panel focused on experimental research exclusively, which dealt with children’s reading development from preschool to 12th grade. They reviewed five areas: phonemic awareness, phonics, fluency, vocabulary and comprehension. While the panel limited their study, and acknowledged other areas as important, teachers became attentive to these five areas, because they were elements of the Reading First requirements (www.ed.gov/programs/readingfirst/). The panel reviewed empirical studies in teacher education and comprehension strategies with the conclusion that teachers can be taught to teach comprehension strategies effectively, i.e. student achievement increased (NRP). Other legislation propelled schools into changing school policies on coaching, professional development, and standards.

2.4.3 No Child Left Behind

The No Child Left Behind Act (NCLB) of 2001 has provided an impetus for improving the performance of America’s elementary and secondary schools, K-12. According to the website, <http://www.ed.gov/nclb/overview/intro/execsumm.html>, this act, which reauthorized the Elementary and Secondary Act of 1965, was based on strong accountability, choice for parents and students, local control and flexibility and stronger emphasis on reading. In order to strengthen Title I accountability, states must develop standards in reading and mathematics and submit applications which are reviewed by a panel.

Reading First, a part of the NCLB legislation, provided grants to states with approved proposals. Reading First was designed to improve reading of K-3 students so that they all read

well at grade level, no later than grade three, using methods that are approved by scientifically based reading research (SBRR). All students are tested in grades 3-8, and all groups—English as a second language, minorities, and learning disabilities—must achieve adequate yearly progress (AYP). Schools that do not make AYP will be held accountable, i.e., will be subject to corrective action (<http://www.ed.gov/programs/readingfirst>).

Reading First schools across the country are required to have reading coaches. Coaches function in their role modeling lessons, observing and supporting teachers, assessing students, evaluating data, and providing materials and strategies to teachers to support student achievement. (National Center for Reading First Technical Assistance, 2005). Reading specialists may function in the role of coach. However, there are others who work in this capacity who do not have reading specialist credentials. *The role and Qualifications of the Reading Coach* (IRA, 2004) suggested four primary requirements for the reading coach, as follows: be excellent classroom teachers; have in-depth knowledge of the reading processes—acquisition, assessment, and instruction; have experience working with teachers to improve their practices; and be excellent presenters of reading research and strategies. In other words, coaches should have knowledge of the reading processes, and teaching experience.

Since NCLB directly or indirectly affect all public schools, reading specialists/coaches must be familiar with the act and its implications. Coaches must keep up with reading research and report to the teachers they support in order to foster the development and growth of teaching skills (Bean, 2004). Helping teachers learn strategies that are scientifically based on reading research is imperative. Coaches have to improve teacher quality through best practices in education.

Snow, Burns, and Griffin's Preventing Reading Difficulties in Young Children (1998), The National Reading Panel Report (2000), No Child Left Behind and the Reading First Legislation (2001) have influenced the reading specialist's role. Reading specialists/literacy coaches are coaching teachers to improve the teaching of reading. Teachers learn and implement scientifically based reading research (SBRR) strategies to improve the reading scores of students (National Center for Reading First Technical Assistance, 2005). Teachers are supported by coaches who collaborate with them to improve research-based practice (Dole, 2004). Being a coach and a professional developer is a major shift in the role of the reading specialist.

The No Child Left Behind Act has impacted reading education in grades K-12. Teachers

and schools are held accountable for students' achievement. The impact of the Panel and other legislation has been that teachers and reading specialists use strategies and materials that have been identified as scientifically-based (Bean, 2004). Teachers may need additional instruction in SBRR strategies, and newly hired reading specialists/coaches are expected to provide the professional development and support schools and teachers need. These new coaches may need additional education in coaching and collaboration with teachers. However, the main thrust of all the legislation is that all teachers are to be highly qualified (NCLB, 2001).

2.5 HIGHLY QUALIFIED TEACHER STUDIES

What constitutes a highly qualified teacher? How does an institution prepare teachers who are highly qualified? It is important to know what makes an excellent teacher, so that we can determine what makes an excellent reading teacher, and further, an excellent reading specialist. Research on excellent reading teachers provided a basis to understand the characteristics of effective reading specialists who must first be effective reading teachers (IRA, 2000a). Several studies examined teacher preparation programs and teacher characteristics that make excellent teachers. These studies include the following:

- reviews of work by Pressley on effective first grade teachers
- studies of excellence in teacher preparation by Darling-Hammond
- a report from the International Reading Association's National Commission on Excellence in Elementary Teacher Preparation for Reading Instruction
- the Darling-Hammond study on teacher qualities
- general teacher studies that indicate teacher quality.

Highly qualified reading teachers know many instructional strategies and teaching methods. They demonstrate these strategies in the classroom in order to meet the needs of children (IRA, 2000a). Since most of first grade is focused on teaching reading, research of first grade teachers was examined to develop a picture of an excellent reading specialist. These characteristics outlined in the following sections are the building blocks for all reading teachers, and are essential for reading specialists.

2.5.1 Characteristics of Effective First Grade Teachers

Pressley, Rankin, and Yokoi (1996); Wharton-McDonald, Pressley, and Hampton, (1998), Pressley, Wharton-McDonald, Allington, Block, and Morrow (2001); and Pressley, Raphael, Bogner, and Roehrig, (2002) studied the instructional practices effective first grade teachers used to promote literacy. Teachers identified modeling, a literate environment, teaching students the writing process, a variety of student grouping for different needs, individualized instruction, and teaching basic skills in the context of authentic reading and writing as essential for helping children learn to read and write. Teachers created a literate environment by using text and trade books to stimulate interest, reading for authentic purposes, modeling, and discussing reading and writing as lifelong activities.

Pressley et al. (2001) extensively studied five effective teachers from across the United States and five less effective teachers from a group of 30 teachers to delineate teaching behaviors and characteristics typifying the most effective first grade teachers. These characteristics were organized under the following headings: (a) excellent classroom management, (b) positive encouraging environment, (c) balanced instruction, (d) literature emphasis, (e) teaching with scaffolding, (f) explicit teaching of skills, (g) encouragement of independence and self-regulation, and (h) teaching across the curriculum. Children in these classrooms were actively engaged in actual reading and actual writing 90% of the time.

2.5.2 Effective Teacher Preparation Programs

All teachers need to attain this high quality reading instruction. To do this teacher preparation needs to be re-examined. In a case study approach, Darling-Hammond (2000) examined teacher preparation programs that are so exceptional that principals looked for graduates from these colleges. Darling-Hammond delineated some common features of effective teacher preparation as follows: (a) uniform vision of good teaching that guides the faculty, (b) well-defined standards of performance, (c) broad-based curriculum grounded in knowledge, (d) extended clinical experiences supporting coursework, (e) strong collaboration between university and school faculty, and (f) a variety of assessments to ensure learning is applied to real problems of practice. (Darling-Hammond, 2000).

A case study of the Banks Street College of Education, as part of *Studies of Excellence in Teacher Education*, indicated that extensive field experience was required as a part of each course in order to connect theory and practice (Darling-Hammond & MacDonald, 2000). These programs emphasized preparation to meet the needs of diverse learners. Coursework was tightly connected to the graduate students' work in the schools. The Banks Street program involved graduate students in fieldwork to help them apply what they were learning in college classes.

Anders et al.(2000), in their reviews of the research, highlighted the fact that some field based programs required only 22 hours in field and practicum settings while others required 1,000 hours. This disparity across colleges made a vast difference in the experiences of pre-service teachers. Snow et al. (1998) indicated that the “critical component in the preparation of pre-service teachers is supervised, relevant, clinical experience in which pre-service teachers receive on-going guidance and feedback” (p.290). Developing uniform standards for teacher preparation across the country might provide more consistent teacher education and practice (Darling-Hammond, 1996).

2.5.3 Reading Teacher Preparation Programs

In 1999, a study of teacher preparation was convened by The International Reading Association (IRA). They directed the National Commission on Excellence in Elementary Teacher Preparation for Reading Instruction to study teacher preparation and provide leadership for change in reading preparation programs. The commission had a three part charge: conduct a national survey of teacher educators to determine current practices in reading teacher education; identify the common characteristics of excellent reading teacher preparation programs; and conduct a major study of the effectiveness of the graduates of excellent reading teacher preparation programs in terms of student achievement and classroom practices.

For the first part of the study, a questionnaire was compiled identifying factors of importance in reading teacher education. This questionnaire was sent to 1,590 reading teacher educators who were members of the International Reading Association. Findings with a 60% return rate, indicated that reading preparation programs grew compared to other decades, and the variety of program formats included 5-year, masters degree, alternative, and/or on-line programs (Hoffman & Roller, 2001).

In the second part of the study, the National Commission and Sites of Excellence in Reading Teacher Education (SERTE) was established by the IRA to focus on reading teacher preparation and to identify factors that lead to excellent reading instruction and achievement. Harmon et al. (2001) looked for common features among exemplary reading teacher preparation programs that indicated effective programs. They identified eight excellent programs that showed emphasis on reading instruction and field experiences. Students in these programs had 150 hours or more of field experience prior to student teaching. The programs had different features, but the study identified eight common features of excellence: mission, vision, content, community, standards, personalized teaching, apprenticeship, and autonomy (Harmon et al., 2001).

The clearly stated mission of each teacher preparation program provided the structure for the goals of the program. Common elements were as follows: careful planning of literacy coursework and field experiences based on standards, fieldwork that allows pre-service teachers to meet the needs of children from diverse communities, and encouragement of inquiry and reflective teaching. Providing knowledge of what to teach, and how to teach it were evident, as well as the opportunity to experience teaching.

The third part of the study followed 101 recent graduates into the classroom through their first years of teaching. These graduates had different types of reading teacher preparation. Some graduate teachers came from universities with reading embedded programs— “all graduates received the same intensive focus on reading instruction during their preparation,” (Hoffman et al., 2005, p. 271) while others graduated from universities with a reading specialist concentration. A comparison group of beginning teachers had a general education program.

Those teachers who came from Reading specialist programs and reading embedded programs demonstrated an extensive knowledge of the reading process, assessments, and strategies. From three interviews across the school year, themes emerged that pointed out differences in the programs: instructional decision making, negotiations, and community. Teachers responded to the needs of their students in ways that might diverge from the school curriculum but were, nonetheless, appropriate and timely. They had a sense of negotiating their place in the school culture, knowing that they had to position themselves to respond to their students’ needs. These reading teachers often assumed leadership roles. They sought out

communities to support continued learning, either within the school or using on-line web sources from their undergraduate days to communicate with other teachers.

In contrast, the interviews with students from the general education program depended on the selected curriculum and finished the assigned books. In short, these students were categorized by the researchers as task-oriented rather than student oriented. This study suggests first year reading teachers utilized the knowledge and insights gained in quality reading teacher preparation programs surpassing teachers from general education programs who did not (Maloch et al., 2003).

Continuing with this study, the Commission followed teachers through their second and third year of teaching with the intent of discovering qualities of effective teacher preparation. Using both qualitative and quantitative methods they compared the achievement of children in exemplary program teachers' classrooms with children's achievement in experienced teachers' classrooms and in classrooms where teachers had the same number of year's experience. The TEX-IN3 observation instrument, a battery which assesses the classroom literacy environment, was used to obtain a comprehensive rating of all teachers. This instrument used rubrics to assess texts, interviews with teachers and students, and an evaluation of teacher and student engagement with text. Exemplary program teachers in year 2 created rich literary classroom environments, had high engagement with texts and high levels of valuing those texts. Year 3 results substantiated those of year 2. "...graduates of high-quality preparation programs continued to maintain their advantage over the same-year's comparison teachers" (Hoffman et al., 2005, p. 280).

The teacher preparation programs of the above teachers centered on eight key ideas. Critical features of content included early literacy— oral language, phonemic awareness, phonics, and word identification; fluency, vocabulary, and comprehension; assessing all aspects of literacy learning; and organizing and managing literacy instruction across grade levels. Pre-service teachers participated in field experiences that highlighted the various aspects of literacy that they studied. They used this knowledge to meet the needs of their students. Providing direction for the pre-service teachers in the sequencing of the topics covered was very important. University faculty worked on developing matrices that delineated the content in each course. Beyond this, the faculty communicated and collaborated over the content in an ongoing way (Hoffman, Roller, Maloch, Sailors, & Brevet, 2003).

The findings indicated that teachers prepared in quality reading programs were more successful and confident than other beginning teachers. These teachers had a strong vision of literacy in their classrooms. They were comfortable in diverging from the set plan, adding and deleting from the program to aid struggling readers. Teachers prepared in quality preparation programs were “more effective in creating a rich literacy environment, and engaging their students in reading” (Hoffman et al., 2003, p. 8).

The Hoffman Report was an important, intensive study of reading teachers that illuminated how excellent preparation programs produced effective reading teachers. It provided research that documents “the specific qualities of effective teacher preparation programs . . . and the impact of quality preparation on teaching effectiveness” (Hoffman et al., 2003, p. 2). Again, both content knowledge and field experience were emphasized in these exemplary programs.

In a similar study of the impact of a reading-specialization program on first year teachers, Keehn, Harmon, Hedrick, Martinez, and Perez (2001) found that reading specialization programs with courses and coordinated fieldwork provided beginning teachers with a rich knowledge base with which to make thoughtful instructional decisions. These teachers made more articulate responses, were able to discuss purposes of activities, and felt comfortable changing existing programs as needed. The implications drawn by Keehn et al. are that colleges need to move beyond the one to two courses in literacy instruction offered to a combination of courses in literacy instruction and supervised fieldwork. Colleges need to offer a broad based specialization program with field service to prepare excellent reading teachers.

2.5.4 Studies of teacher quality

Generally, teacher quality is measured by specific teacher characteristics. These characteristics include teacher experience, education, degrees, certification, and teachers’ test scores (Rice, 2003). These characteristics are general and do not focus on the more distinct qualities of what is happening in the reading classroom. However, a highly qualified teacher is defined as one who has completed a degree program, and has state certification or licensure (NCLB).

2.5.5 Teacher Qualifications

Using quantitative and qualitative analysis, and data from a 50 state survey of policies, case-study analyses, the 1993-94 Schools and Staffing Surveys (SASS), and the National Assessment of Educational Progress (NAEP), Darling-Hammond (1999) examined how teacher qualifications and other school factors are related to student achievement. She highlighted vast differences across states in standards, requirements for licensure, and funding for teacher education. Darling-Hammond indicated that at the state level teacher quality is a predictor of student achievement. “Full certification and a major in the field is a more powerful predictor of student achievement than teachers’ education levels (e.g. master’s degrees)” (p. 38). The percentage of teachers certified by the state are also correlates of student achievement. Teachers with more professional training were more likely to use teacher practices—use of trade books and integration of reading and writing—which are practices associated with higher student reading achievement on NAEP tests. Implications from this study are that states should attend to providing high quality teacher education programs and improved professional development for employed teachers.

2.5.6 Teacher Education and Experience

Several variables emerge from the literature as being significant to student achievement: teacher education (holding a Master’s degree), teaching in one’s major area, and teacher experience. In the area of teacher education, Ferguson (1991) studied the connection between teachers’ scores on the Texas Examination of Current Administrators and Teachers (TECAT) and student outcomes test for 1985-86, 1987-88, and 1989-90 checking for progress from year to year and factoring out community effects.

Other measures of school quality included teacher experience, number of teachers with master’s degrees, average school size and number of students per teacher in the district. Ferguson studied the schools and teachers at the district level, and used average primary and secondary teacher scores for each grade. Outcomes showed that teachers’ language skill (verbal ability) indicated by the TECAT was the most important indicator of school input. Teachers with more experience produced higher student test scores; and those with master’s degrees produced

moderately higher scores in grades 1-7. Also, in grades 1-7, larger classes lead to lower scores. Optimal class size was 18 students per teacher. Ferguson concludes by pointing out that teacher quality, expressed by verbal ability, education and experience, matters.

A second study by Ferguson produced similar results. Ferguson capitalized on Alabama personnel records, some of which contained teachers' ACT College entrance examination test scores. Ferguson and Ladd (1996) used composite ACT pre-college scores and Master's degrees as proxies of teacher knowledge. Their initial analysis showed that student reading score gains from third grade to fourth grade were positively related to teacher knowledge as represented by ACT scores, and related to education as represented by Master's degrees. Ferguson (1991) and Ferguson and Ladd (1996) concluded that the education of teachers played a large part in the academic achievement of students.

In a study of the effectiveness of a secondary teacher education program at Arkansas Tech University, Ferguson and Wolmack (1993) followed teachers into their first year of teaching. The variables were coursework in education, National Teacher Exam (NTE) specialty scores, and Quality Point Average. Data analysis and multiple regressions revealed that QPA in the major field and National Teacher Examination specialty score accounted for less than 4% of the variance in teaching performance. Coursework in education accounted for 48% of the variance in teaching performance. Of the three variables, therefore, coursework in education was the strongest predictor of teaching performance. The Ferguson and Wolmack study emphasized that amount of educational coursework was a stronger indicator of teacher performance than QPA or specialty area score on the National Teacher Exam. Zumwalt and Craig (2005b) confirmed that there is no relationship for teacher test scores or QPA of teachers that predicts student achievement or teacher performance.

In a somewhat contrasting view, Hanushek et al. (1998) from the National Bureau of Economic Research, using the Harvard/University of Texas Dallas Texas School Project examined the role of teacher differences and other aspects of schools that influenced student achievement. Hanushek et al. used the data base of student achievement in the state of Texas, with over 3,000 schools and half a million third, fourth, fifth, and sixth grade students during the years 1993-1995. They compared academic performance in two different grades, thus, isolating the influence of teachers. Hanushek et al. found that teacher quality significantly improves during the first and second years of experience but not after the second year. They also found no

evidence that having a master's degree was systematically related to student achievement. Differences between schools appeared to filter down to "variations in teacher quality." Other factors identified initial years of teaching as a negative effect and smaller class size for lower SES children as a positive effect. However, these effects were small compared to overall teacher quality differences. Hanushek et al. concluded that school quality mattered a great deal as to student achievement, and variations in teacher quality dominated school quality differences. Therefore, teacher quality was more important than class size or other variables.

Grover J. Whitehurst, Assistant Secretary of Education Research and Improvement, in many of his speeches, summarized his research on teacher quality, teacher education, certification and knowledge, also, in a somewhat contrasting view. His findings were that children's academic achievement was related to teacher influence. Indeed, "the effect of teacher quality on academic achievement is quite high" (Whitehurst, 2002, p. 5). In Whitehurst's view, the most important teacher characteristics affecting student achievement were in descending order as follows: cognitive ability, focused training, experience, content knowledge, certification, master's degrees, and workshops (Whitehurst, n.d.). His review of the research indicated that the strongest finding was between the teacher's verbal or cognitive ability and student's achievement. Teachers with higher scores on ACT or SAT tests had students with higher achievement scores. Teacher experience, as reviewed by Whitehurst, mattered in elementary school. Subject matter knowledge of teachers was important in the achievement of high school students, but this did not carry over to the elementary classroom. Neither certification nor having a Master's degree was related to student achievement. Thus, these reviews by Whitehurst did not find relationships in the amount of education a teacher had with students' academic achievement, but did find a relationship with teacher experience.

These studies give credibility to teacher quality (education and experience) as a factor in improving student achievement. The amount of teacher education and the kind of teacher preparation for the position of reading specialist are factors to be considered as characteristics that contribute to the production of quality reading educators. Research and other investigations are emphasizing the idea that applying the knowledge base in actual teaching experiences is an important part of a teacher's education. To summarize, Greenwald, Hedges, and Laine (1996), in their meta-analysis of education production function studies concluded that teacher quality

(teacher ability, teacher education and teacher experience) was strongly related to student achievement.

2.6 STANDARDS FOR READING SPECIALISTS

The Standards for Reading Professionals—Revised 2003 (IRA) are important in terms of determining quality: what should a new reading professional know and be able to do? In Standards—Revised 2003, the reading specialist/literacy coach is described as a person who provides special reading and writing instruction, assessment and diagnosis to students from pre-school to adult learners. The Standards highlight each area of what effective reading teachers and reading specialists need to know and be able to do. Reading specialists/literacy coaches act as a resource person for teachers, administrators, and community, and plan collaboratively with other professionals to meet the needs of all learners. They provide professional development at local or state levels. To do this, Reading specialists' knowledge and expertise needs to be current and cutting-edge.

2.6.1 Purpose of Standards

In creating the Standards, the International Reading Association sought to ensure that all students have access to high-quality reading instruction through highly accomplished, credentialed teachers. Allington (2006) highlights Bean's study of credentialed reading specialists, noting that it was the reading specialist's "expertise that supported the high quality reading instruction in these schools" (p.17). Although states seem to have adopted the standards many states have failed to require their schools to hire credentialed reading specialists (Allington, 2006). Therefore, the IRA encourages states to require credentialed reading specialists in every school in order to provide quality instruction for all students; especially for students who are struggling readers in need of expert reading instruction.

To promote this expert instruction, the Standards provide the structure and framework for many universities and colleges to develop and evaluate preparation programs for reading

teachers, reading specialists, and reading coaches. Standards—Revised 2003 presents the criteria to assess competence of reading educators (<http://www.reading.org/resources/>).

The Standards focus on candidate performance, and emphasize the knowledge and skills of candidates as they complete their preparation programs (IRA, 2003). The standards cover what new paraprofessionals, classroom teachers, reading specialist/literacy coach, teacher educator, and administrator candidates should know and be able to do in the following areas: foundational knowledge; instructional strategies and curriculum materials; professional development; creating a literate environment; and assessment, diagnosis, and evaluation. For each of the standards, a matrix follows that explicitly describes the performance of candidates. The main stem of each standard is as follows:

1. Candidates have knowledge of the foundations of reading and writing processes and instruction.
2. Candidates use a wide range of instructional practices, approaches, methods and curriculum materials to support reading and writing instruction.
3. Candidates use a variety of assessment tools and practices to plan and evaluate effective reading instruction.
4. Candidates create a literate environment that fosters reading and writing by integrating foundational knowledge, use of instructional practices, approaches and methods, curriculum materials, and the appropriate use of assessments.
5. Candidates view professional development as a career-long effort and responsibility (IRA, 2003, p. 8) (<http://www.reading.org>).

The Standards for Reading Professionals— Revised 2003 (IRA) emphasize that new reading specialists/coaches should have previous teaching experience, hold a master’s degree in reading education, and give attention to cultural and linguistic backgrounds of students. They emphasize use of technology for teaching children and preparing teachers.

Included in the Standards for Reading Professionals—Revised 2003 is the research base that supports each standard. Finally, the standards booklet includes a matrix allowing colleges and universities, teachers and paraprofessionals to evaluate where they are in the quest for academic and professional excellence, insuring that each reading specialist/literacy coach demonstrates their knowledge and experience. Criteria for the reading specialist, literacy coach,

and teacher educator category are used in decisions regarding accreditation of postsecondary programs (NCATE, 2006; IRA, 2003).

2.7 CONCLUSION

The reading specialist role has evolved into a leadership and resource role in addition to the previously well-established roles of assessment and instruction. Reading specialist candidates need to be aware of the changes in the role and be ready to assume the more comprehensive duties (Bean et al., 2003). Therefore, pre-service reading specialists need preparation in leadership and communication skills (Bean et al., 2000). They also need experiences in developing their interpersonal and collaborative skills (Bean, Trovato, & Hamilton, 1995).

In summary, the research synthesized here indicates the need for university and college programs for reading teachers and specialists to include experiences in leadership, collaboration, and providing staff development. There is also a need for development of increased knowledge and performance of reading strategies, assessment, and instruction. Rowan, Correnti, and Miller, 2004, conclude that “teacher effects on elementary school students’ growth in reading and mathematics achievement are substantial” (p. 1). If teacher effects are important, as the research indicates, then the effects of reading specialists’ background, experience, and education are equally important.

This review of the policy and professional literature on the reading specialist clearly shows the need for further research. It would be helpful to know exactly what coursework is essential for a reading specialist to become an effective contributor to the literacy program of a school, what knowledge bases provide the most help for future reading specialists, and what factors, such as: education, experience, age, enthusiasm, or type of undergraduate program that reading specialist candidates brought to the program, influence the performance of an effective reading specialist/literacy coach candidate. It is to this last measure of education and experience in the reading specialist program at the University of Pittsburgh that I devote my attention.

3.0 METHODOLOGY

The research questions that were examined are these:

1. How do educational factors such as entry GPA and initial elementary/secondary teacher Praxis score in elementary/secondary teacher certification relate to outcome measures: Coursework Composite score, the Reading Specialist Praxis test, and the Intern/Practicum Performance rating?

2. How do years of teaching experience relate to the outcome measures, Coursework Composite score, the Reading Specialist Praxis test, and the Intern/Practicum Performance rating, identified as important for successful completion of the program?

3. How do demographic factors such as age, type of degree—4 year, 5 year or MAT—number of previous courses in reading, race and gender relate to the outcome measures: Coursework Composite score, the Reading Specialist Praxis test, and the Intern/Practicum Performance rating, identified as important for successful completion of the program?

4. How did reading specialist candidates perceive the effectiveness of the program?

A mixed quantitative and qualitative design was implemented to answer the research questions. This combined, complementary approach provided the best means for fully addressing the research questions. Educational researchers accept the use of both qualitative and quantitative methods because they complement each other in supportive ways (Worthen, Sanders, & Fitzpatrick, 1997). This chapter presents the research methodologies used. It includes information regarding the purpose, setting, participants, materials, and data collection procedures.

3.1 PURPOSE

The purpose of this study was to identify factors—educational, experiential or demographic—that influenced or showed relationship to outcome measures important for identifying effective reading specialists. Because teachers of reading were receiving so much public attention (NRP, 2000; No Child Left Behind, 2001; Snow et al., 1998), this was an important question. The government was calling for highly qualified teachers, and especially highly qualified teachers of reading. This study investigated the following three variables: years of experience teaching, educational factors, and demographic data. This was done in order to see how they related to the outcome measures identified as important for successful completion of the Reading Specialist program: coursework, performance, and the Praxis reading specialist test.

3.2 SETTING

The setting was the University of Pittsburgh located in the city of Pittsburgh (pop: 350,000). The University of Pittsburgh School of Education is primarily a graduate school that offers degrees in education, administration, and research. The School offers programs in such areas as elementary and secondary education, reading education, movement science research and testing, child development and child care, social and educational analysis, and health promotion education. All of the programs prepare students for education and education-related careers in schools, agencies and organizations (<http://www.education.pitt.edu/aboutus/>). In 2005, there were 1,372 students in the graduate school of education.

The Reading Program of the University of Pittsburgh, School of Education has been in existence for over 40 years. A reading clinic where teachers work with struggling readers is associated with the reading program. Students seeking a master's degree are required to have a 3.0 grade point average. The Reading Specialist certification program does not have an entry grade point average requirement, but an initial teaching certificate and two years experience is required. Additional coursework is required if students do not meet the experience requirement, or students could complete an entire year of work as a reading specialist intern in lieu of experience. Reading specialist candidates are required to take 24 credits in reading and related

courses. Coursework at the University is focused on preparation of reading specialists to address the needs of struggling readers, K-12. Assignments and readings address a range of grade levels and various reading problems. These courses include Language and the Reading Process, Content Area Reading, Diagnosis and Instruction I & II, Methods and Materials, a Language Arts elective, and the Practicum. (See Appendix B for course descriptions.)

Reading specialist candidates are offered three options for their practicum experience. These options include working in a local school district in a summer reading program, serving as a full-time reading specialist intern in a local school (Bean, 2001), or completing the practicum requirement in a traditional on campus reading center where teachers work with students from the community to improve reading performance.

3.3 PARTICIPANTS

Participants in the study were reading specialist candidates for the years 2003-2004, both interns and traditional candidates. Potential candidates for the study included 58 students who were asked for their help in doing the study. Fifty reading specialist candidates participated in the study; others did not give permission, or there were insufficient data. These participants were certified teachers pursuing further certification in reading. The reading specialist candidates had experience that ranged from student teaching only, to substitute teaching, to thirty years classroom experience. There were sixteen interns and thirty-four traditional reading certification or master's candidates who participated in the study.

The intern program began in 1993. Interns are placed in schools for three purposes: 1) to provide a better teacher-child ratio, 2) to provide experience for interns, and 3) to provide teachers with information and ideas from the university (Bean, Grumet, & Bulazo, 1999). There are approximately 15-20 interns each year. Interns receive a stipend for their work and some receive tuition remission. Others are paid a tuition scholarship from which they pay their own tuition.

Traditional candidates typically take longer to finish their course work as they usually are working full-time while attending classes. These graduate students took Applied Principles of Remediation 2215 (Practicum) as one of their final courses before finishing the program.

Students in the intern track did not take 2215 because of their field work experience. All students are required by the state of Pennsylvania to take the Praxis reading specialist exam as part of their certification requirement (see Table 1).

The researcher recruited candidates for the study by outlining the study for potential candidates during a few of their classes. Purposes and procedures of the study were delineated and questions were answered. These graduate students agreed to provide their scores on the Praxis examinations, allow Grade Point Average (GPA) to be accessed, and to provide a demographic information sheet. Confidentiality of the documents and protection of identities was assured. (See Appendix C for the participation letter.) The study was reviewed by the Institutional Review Board of the university and was given approval.

Table 1. Intern and Traditional “Tracks”

	Traditional Track	Intern Track
Experience	2 years/ or 2 courses	Year long internship in schools
Education Coursework	I & L 2210 Language and the Reading Process	I & L 2210 Language and the Reading Process
	I & L 2212 Methods and Materials in Reading	I & L 2212 Methods and Materials in Reading
	I & L 2213 Diagnosis and Instruction I	I & L 2213 Diagnosis and Instruction I
	I & L 2214 Diagnosis and Instruction II	I & L 2214 Diagnosis and Instruction II
	I & L 2220 Reading in the Content Areas	I & L 2220 Reading in the Content Areas
	I & L 2281 Leadership School Literacy Program	I & L 2281 Leadership School Literacy Program
	Language Arts Elective	Language Arts Elective
	I & L 2215 Applied Principles in Remediation	Waived because of Fieldwork
Examinations	Praxis II Reading Specialist	Praxis II Reading Specialist
Time	Varies, can take several years.	Summer, Fall, Winter, and Summer Terms.

Note: This table compares the requirements for graduate students who take the practicum and graduate students who are reading specialist interns.

3.4 DATA SOURCES

Data included information from initial certification Praxis scores, numerical data from tests, results from a survey, and information from an interview. The students' application files were used to collect Grade Point Averages (GPA) from their undergraduate transcripts.

3.4.1 Praxis Tests

The Praxis, Curriculum, Instruction and Assessment test score was used as an independent variable. (See Table 2 for a listing of these variables.) The Curriculum, Instruction and Assessment test is required of all prospective teachers in the state of Pennsylvania for certification. The elementary education test covers curriculum, instruction, and assessment; the secondary test also covers the content field in which the student is seeking certification.

Principles of Learning and Teaching (PLT) was another Praxis examination required for initial licensure in the state of Pennsylvania at the time of the study. It was used as an indicator of knowledge about the teaching field. This, too, was used as an independent variable. Principles of Learning and Teaching is no longer required in Pennsylvania, and has been replaced by the form: Pennsylvania Statewide Evaluation Form for Student Professional Knowledge and Practice. This form is completed by the university supervisor.

3.4.2 Praxis Reading Specialist Test

The Praxis II Reading Specialist Test is a knowledge test of reading strategies, teaching methods, and diagnosis and instruction for those wishing to be certified as Reading Specialists in the state of Pennsylvania. This test served as a dependent variable.

Table 2. Independent and Dependent Variables

Independent Variables	Dependent Variables
Educational Factors Undergraduate Grade Point Average (GPA)	Ratings by professors and course grades were combined into a composite score. (Coursework)
PRAXIS: Principles of Learning and Teaching PRAXIS: Curriculum/instruction/assessment Score	PRAXIS: Reading Specialist Test (Content Knowledge) Rating by Practicum Instructor or Liaison (Performance)
Experiential Factors Number of years teaching experience Demographic Factors Number of Undergraduate Reading Courses Age Group Type of Undergraduate Degree, 4 year, 5 year, or Masters of Arts in Teaching	

The passing score was 570 of a possible 900 points. This examination by the Educational Testing Service is required by the state of Pennsylvania to obtain Reading specialist certification. Presently it is the only test requirement for that certification.

3.4.3 Survey

Demographic factors were obtained through the survey administered after participants signed the consent form. This survey was constructed to obtain information about teaching experience, age group, and courses taken (see Appendix D). The survey accessed the type of undergraduate degree the candidates had—degree in education, 5 year program in education, or a MAT

program. The number of undergraduate reading courses completed prior to matriculation at the University of Pittsburgh, was also used as an independent variable.

3.4.4 Coursework Composite

The three dependent variables were the Coursework Composite score, the Reading Specialist Praxis test, and the Intern/Practicum Performance rating. The Coursework Composite score was composed of the Diagnosis I course composite grade, Diagnosis II course composite grade, and Leadership course composite grade. Course composites were averaged to create an overall Course Grades Composite. These courses with the addition of the practicum were the core courses for the reading specialist program. A Coursework Composite score was created because it allowed us to look at coursework as a whole. In some cases grades were not available for every subject, so a composite provided an overall picture of student's performance. Creating a composite also allowed us to view the whole picture rather than each individual class. Since classes have some variability by instructor, using a composite gave us a better picture of coursework as a whole.

Composite scores were computed in a two-step process. First, scores for each assessment within a course were converted to z-scores; a common scale of measurement was needed for assessments based on different scoring systems. A z-score expresses the difference between a raw score and the mean in standard deviation units. Scores above the mean have positive z-scores, whereas scores below the mean have negative z-scores. For example, a z-score of 1.5 indicates that the raw score is 1.5 standard deviations above the mean. Second, the z-scores for individual assessments within a course were averaged to create a composite for that course. As a final step, all the course composites were averaged to create an overall Course Grades Composite (Rubenstein, Personal communication, April 27, 2005).

3.4.4.1 Diagnosis I

The Diagnosis I course illustrates the process. The scores used from the Diagnosis I class were the case study, the Qualitative Reading Inventory (QRI), and the final examination. These scores were converted to a percent because each was worth a different total number of points in different classes.

If we consider the Diagnosis I course to illustrate the process, scores for the case study (as a percentage), Qualitative Reading Inventory (as a percentage), and final examination were converted to z-scores. Z-scores for the case study, QRI, and final exam were averaged to obtain the Diagnosis I Composite score. (Rubenstein, Personal communication, April 27, 2005).

For example in Diagnosis I, Student A had a score of 95 on the case study as a percentage, and this converted to .53 as a z-score. The QRI score was 85.2%, which was -.57 as a z-score and the final exam was .83 as a z-score. These were averaged to obtain the Diagnosis I Composite score, $[\text{.53} + (-\text{.57}) + \text{.83}] / 3 = \text{.26}$ (E. Rubenstein, personal communication, July 14, 2005) (see Table 3).

3.4.4.2 Diagnosis II

A professor in Diagnosis and Instruction II provided a ranking of reading specialist candidates according to their performance in class, class activities, and assignments. The Professor Rating consisted of awarding points on a scale of 0-4 (see Appendix E). There were eight questions totaling 32 points. Various assignments were used as criteria for ranking. The Professor's rating of students' scores ranged from 1.65 to 4.0 with a mean of 3.526. The Diagnosis II class scores, the case study and the final exam and professor rating were converted to percentages. These scores were converted to z-scores and the z-scores were averaged to calculate a composite Diagnosis II class score.

Table 3. Example of Computation of Diagnosis I Composite Score

	Case Study as Pct.	QRI as Pct.	Final Exam
Mean	89.8	87.5	40.865
Std. Dev.	09.8	08.9	4.413
Student's raw score	95.0	82.5	44.500
Student's z-score	$\frac{(95.0 - 89.8)}{09.8}$	$\frac{(82.5 - 87.5)}{08.9}$	$\frac{(44.5 - 40.865)}{4.413}$
	= .53	= -.57	= .83
Diagnosis I Composite	$= [.53 + (-.57) + .83]/3 = .26$		

Note: The above table illustrates the procedure for computing the Diagnosis I Composite score. Moving from top to bottom, descriptive statistics on the three assessments in the Diagnosis I course are displayed, followed by one student's raw scores on these assessments. Next, the computation of that student's z scores for the three assessments is demonstrated. Finally, the three z scores are averaged to form the composite score.

3.4.5 Leadership Class

The final grade for the Leadership class was used as another indicator of the work performed in class. Because there were different total points for the several Leadership classes, this score was converted to a percentage by dividing the total possible points into the points each student had correct. The professors for the Leadership class rated students as well (see Appendix F). The Leadership rating awarded points on a scale of 1-5, with 5 as the highest rating. There were eight questions for a possible total of 40 points. The Leadership rating scores ranged from 1.67 to 4.00, with a mean of 2.80 on a five point scale. Questions covered interpersonal relationships, ability to present professional development workshops, and leadership ability. Professors who taught this course completed these rating sheets so that performance in classes could be determined. These ratings were based on classroom performance and were combined with Leadership final course grade for the Leadership class composite score. The professor who rated

students in the Leadership class also taught the Diagnosis I class, therefore, a rating of the students for Diagnosis I was not used.

3.4.6 Intern/Practicum Performance Rating

The Intern/Practicum Performance rating was compiled using a modified Observation check list (Grumet, 1999). Areas included evaluation of instruction, materials, classroom management, and teacher knowledge. Graduate students were rated with a Likert scale of 0-4. The total rating score assessed performance in the field or while tutoring during the course Applied Principles of Remediation 2215 (see Appendix G).

3.4.7 Interviews

Eight of the reading specialist candidates randomly chosen from the Diagnosis II class list, spring 2004, were interviewed to gain more elaborate and in-depth knowledge of what students valued in the various activities and coursework in the Reading Specialist program.

The reading specialist graduate students who were interviewed varied in several ways. There were two older students age 35-40, one student in the 30-34 age range, three in the 25-29 age bracket, and two students in the 20-24 age range. Six of these students had attended a public university, and two had attended a non-public undergraduate university or college. Four students had a psychology or Special Education undergraduate major. Four reading specialist candidates were interns, three were teachers seeking a reading specialist certification, one was a graduate student who had two years teaching experience, and one had not yet been formally employed as a teacher. All were female. No minority students were interviewed. Six of these graduate students were employed in the fall after the study interview, another did substitute teaching and one student pursued a doctoral degree (see Table 4).

3.5 DATA COLLECTION

3.5.1 Quantitative

The following data were collected on entering reading specialist candidates: scores on the Praxis- Curriculum, Instruction and Assessment test, undergraduate QPA, and years of teaching experience (which ranged from 0-30 years). The demographic survey identified type of degree— undergraduate education degree, 5 year program in education, or MAT in education, and number of reading courses completed before matriculation in the reading specialist program.

Data about performance of students in the program were collected and used as the outcome measures. These included: performance on case studies, examinations, and ratings from the instructor about the students and their ability to handle reading specialist tasks. This composed the Coursework Composite score. Ratings from the instructors of the field work or practicum were also collected forming the Performance rating.

Table 4. Demographics for Interviewed Graduate Student

Student*	Teaching Experience	Sub Experience	Age Group	Undergrad Major	Public/Private College	Type Undergrad Program	Number of Pitt Reading Courses	Employed
April	0	1	20-24	El. Ed.	Public	4 year	4	No
Brianna	10	1	30-34	El. Ed.	Public	4 year	8	Yes
Cari	2	0	25-29	El.Ed./Psych Special Needs	Public	5 year	2	No
Dominique	0	0	25-29	El. Ed.	Public	4 year	8	Yes
Emma	1	0	25-29	Sp. Ed.	Public	4 year	6	Yes
Felicity	0	6	35-40	El. Ed.	Public	4 year	5	Yes
Gail	3.5	2	35-40	Psych./El.Ed. certification	Private	4 year	4	Yes
Hadassa	1	0	20-24	El.Ed./Special Ed.	Private	4 year	4	Yes

*Students' names have been changed

3.5.2 Qualitative

An interview protocol was developed to talk with a sample of students to ascertain what they valued from the program. Eight candidates were randomly chosen from the Diagnosis II class, Spring 2004, to determine what they valued in the program in terms of their education and experiences. All interviews were held during the summer or early fall of 2004 (see Appendix H).

3.6 DATA ANALYSIS

3.6.1 Quantitative

The study employed quantitative research methods, in particular, the correlation between the independent and the dependent variables. Bivariate correlations of all predictor variables with all outcome variables were examined. According to Glass and Hopkins (1996), correlations “describe the relationship between two variables” (p.103). The correlations provided statistical summaries of the relationship between variables.

3.6.2 Qualitative

The study employed qualitative research methods in the interview process to determine what the reading specialist candidates valued from the program in terms of their education and experiences. For the qualitative analysis, comments were analyzed to determine similarities and differences among interviewed reading specialist candidates. Analyzing the data involved reading transcripts, sorting ideas, and exploring perceptions of those in the reading specialist program toward coursework and field experience. Secondly, data reduction was performed by selecting and focusing the raw data into categories. Matrices were compiled to determine which areas were most important to the interns. Conclusions were made based on analysis of the matrices as to what was most helpful to the interns in their reflections on coursework.

Two graduate student researchers examined 25% of the data to determine inter-rater reliability. They concurred at 76% with the first researcher by using the Miles and Huberman (1994) formula-- number of agreements/ number of agreements plus number of disagreements. After meeting and discussing the data further, the two student researchers easily came to agreement with the first researcher.

Worthen et al. (1997), citing Green, described mixed methods design as complementarity and expansion. The purpose of the interviews was to augment the quantitative data on the program and to provide a rich and thick description. This process provided additional insights about what was valued in the program in terms of education and experiences as well as some needs and expectations.

The next chapter presents the data from this study. Charts and diagrams allow an analytical view of the data to help determine the relationship between education and experience on the one hand and the test scores and ratings of the reading specialist students on the other (Miles & Huberman, 1984).

4.0 DATA ANALYSIS

The purpose of this study was to determine whether differences in educational factors, experience, or demographics that the graduate students brought to the reading specialist program were related to how they performed in the program (coursework), their scores on the Praxis, and their performance as teachers. A separate set of correlations for each dependent variable was run. First, a pair wise deletion was run (n's vary based on cases for whom there are data for each pair of variables). Second, a list wise deletion was run (constant n, only included cases with data on all variables). There was little difference in the results, regardless of method of running the correlations, (i.e., the relationships exhibited for list wise deletion were similar to those for pair wise deletion). Data reported were from the pair wise deletions.

Lack of complete information on each student created some limitations to the study. Grades for every class were not available for every student, nor were scores on Praxis tests. Some reading specialist candidates were not required to take the various Praxis tests used as an independent variable because these tests did not exist when they received their certification. Others had taken as long as 6 years to complete the program and thus, scores were not available for individual assignments in coursework. Therefore, this study is viewed as exploratory, using as much data as were available.

4.1 STUDENT DEMOGRAPHICS

There were fifty reading specialist candidates who were willing to participate in the study. Of these, two were male. One of these was the only African American. All others in the study were female and Caucasian. The majority of these students had undergraduate majors in

Elementary Education (25) or an Elementary/Special Education combination (8). Other candidates' majors ranged from interior decoration to family consumer science.

Reading specialist candidates attended various undergraduate universities and colleges with most students attending colleges and universities in Pennsylvania (see Figure 1). About half came from local universities such as Indiana University of Pennsylvania, University of Pittsburgh, and Pennsylvania State University; thirty-five attended public colleges or universities, while fifteen attended private universities or colleges. Forty-two candidates attended in-state schools, and eight attended out-of state schools.

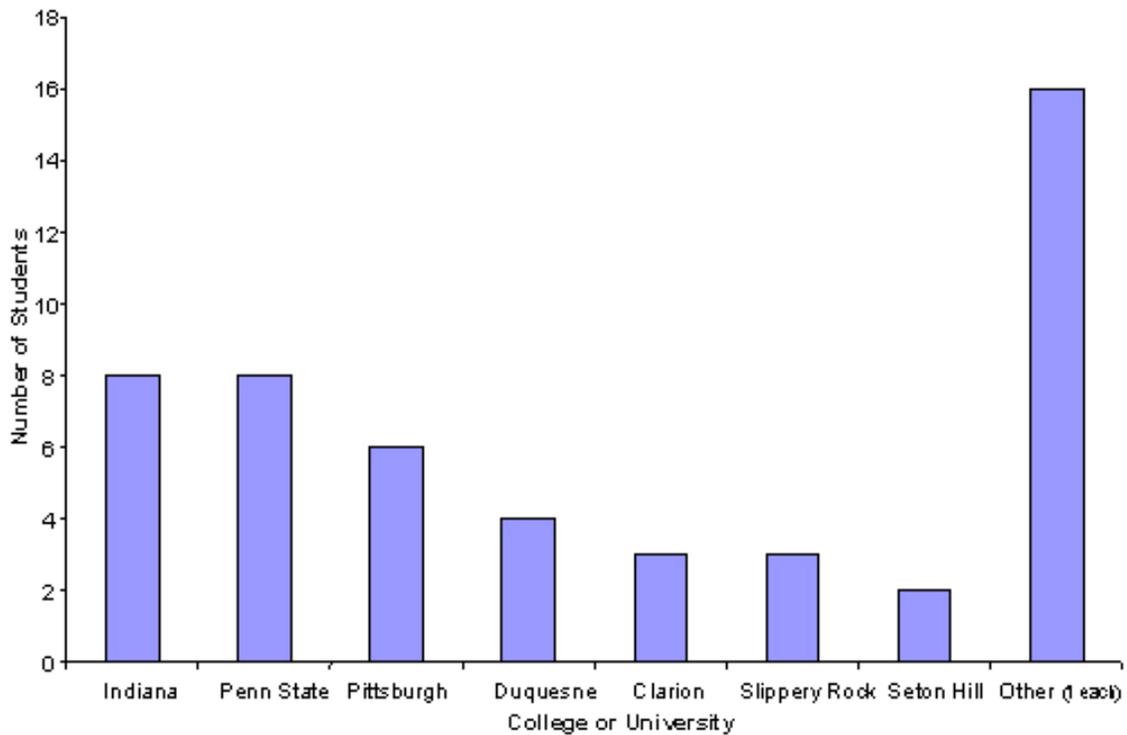


Figure 1. Undergraduate schools attended by students in the reading specialist program

4.2 ANALYSIS OF QUANTITATIVE FACTORS

The independent variables were age group, undergraduate Grade Point Average (GPA), 4 or 5 year or Master's of Arts in Teaching program (MAT), years teaching experience, number of undergraduate reading courses, and the two Praxis exams: Curriculum, Instruction and Assessment, and Principles of Learning and Teaching.

4.2.1 Age Group

Thirteen candidates were in the youngest age category of 20-24. The majority of Reading Specialist candidates were between 25-29 years of age (n=24). Three candidates were in the 30-34 age bracket and five candidates were in the 35-40 age group. There were 5 reading specialist candidates in the 41+ age group (see Figure 2).

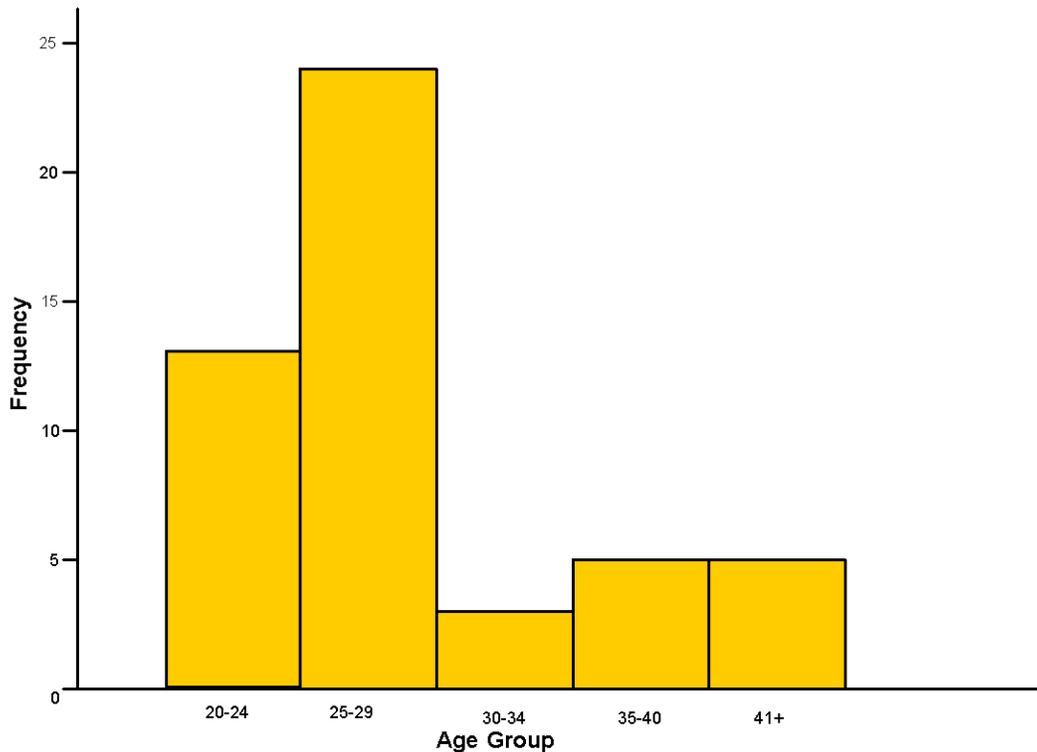


Figure 2. Age of Graduate Reading Specialist Candidates

4.2.2 Quality Point Average

Although the undergraduate Quality Point Average (QPA) required for all students entering the Master's Reading Specialist Program is 3.0, there is some variability permitted for admission to the Reading Specialist certification program. For these candidates, the faculty take into consideration other variables such as experience or strong references. The Grade Point Average scores were analyzed on a continuum. The mean Grade Point Average for all reading specialist candidates in this study ($n = 49$) was 3.36. Grade Point average was not accessible for one student. Range of scores was 2.33-4.00 ($n = 49$) (see Figure 3).

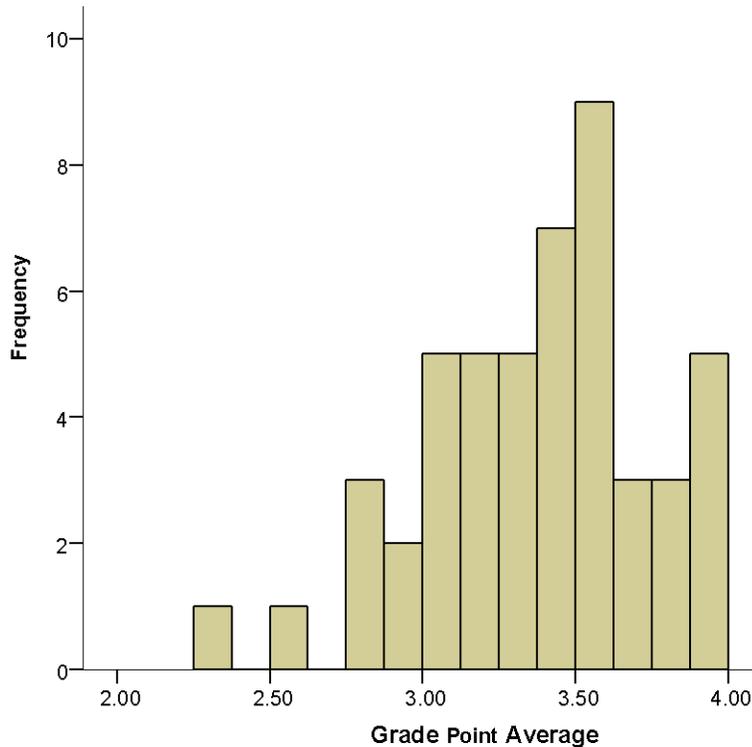


Figure 3. Undergraduate Grade Point Average, $n = 49$

4.2.3 Type of Undergraduate Program

Reading specialist candidates entered the Reading Specialist Program from various undergraduate programs of study. There were 40 candidates who came from the traditional 4 year programs, 5 attended a five year program, and 5 came from a Master's of Arts in Teaching (MAT) program.

4.2.4 Teaching Experience

There was a wide range of teaching experience, with a range of 0-30 years. The mean was 3.68 years. Many students had little experience with 12 students having none. Most teaching experience was between 0-10 years with 25 and 30 years occurring as outliers (see Figure 4).

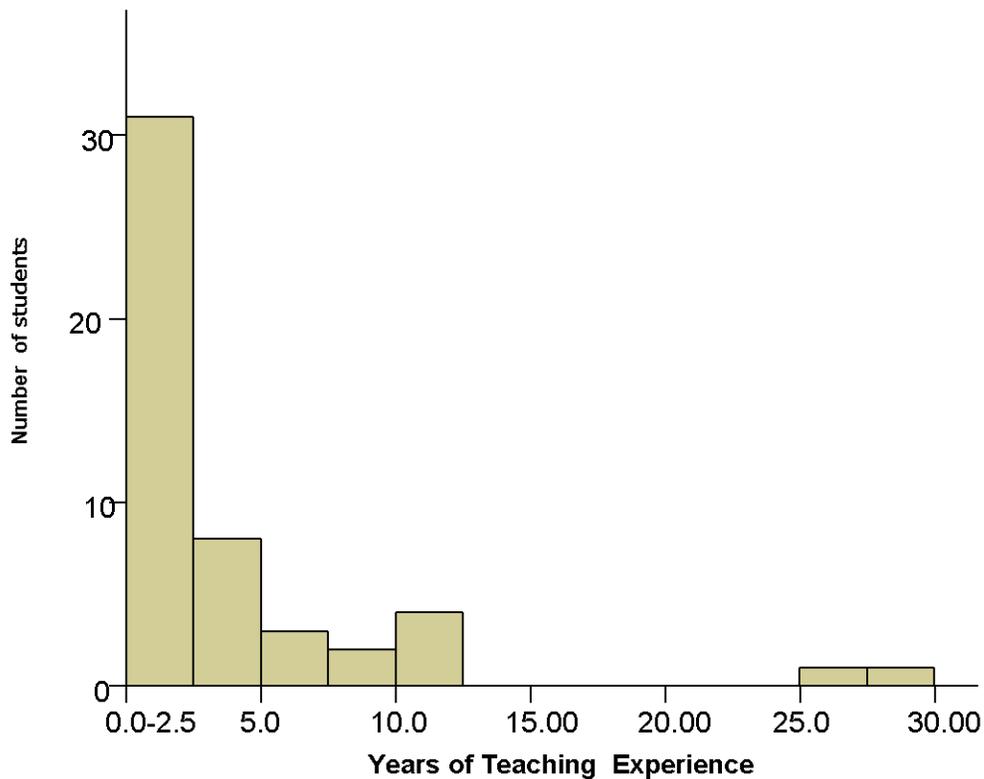


Figure 4. Years of Teaching Experience.

4.2.5 Number of Reading Courses Completed

There was little range in the number of undergraduate reading courses completed. Eight students had four or five courses in reading and language arts, including children's literature. The preponderance of the group had three courses. There was no statistical difference in any of the outcome variables with respect to number of undergraduate courses taken.

4.2.6 Entry Level Certifications

The two certification level Praxis examination scores— Curriculum, Instruction and Assessment, and Principles of Learning and Teaching— provided a picture of the entering reading specialist candidate. Curriculum, Instruction and Assessment scores ranged from 164 to 199, with a mean of 180 ($n = 29$). There were twenty-eight passing scores. Passing score for Pennsylvania is 168. All students have to pass this Praxis test in order to receive their initial elementary teaching certificate (see Figure 5).

All undergraduate students had to pass the Principles of Learning and Teaching Praxis and the Curriculum, Instruction and Assessment Praxis to receive their elementary teaching certificate in Pennsylvania. Since not all students had their elementary certificate they could take coursework but not work in the schools as a teacher until receiving a passing grade on the initial tests or passing the reading specialist Praxis examination.

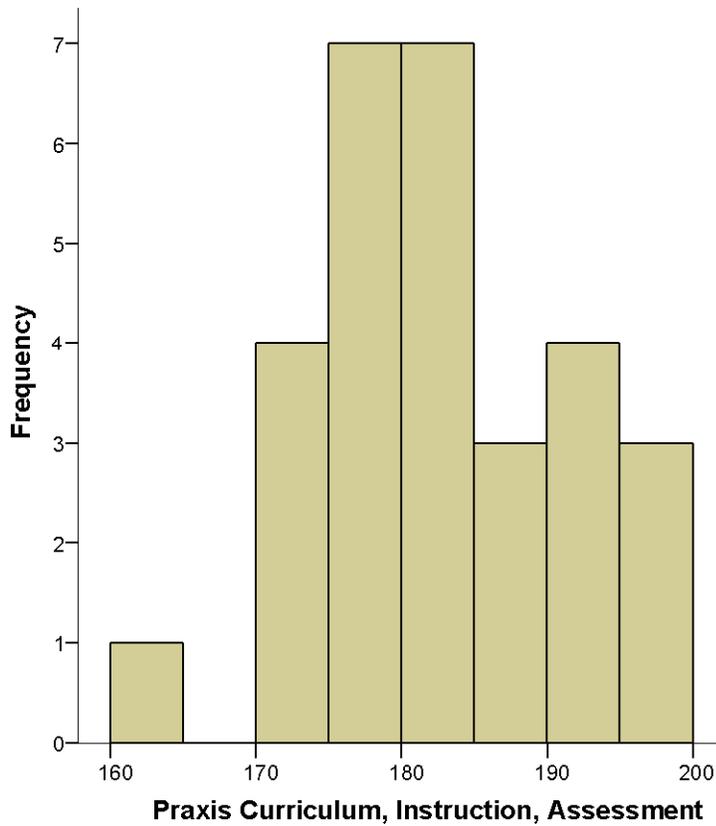


Figure 5. Praxis Curriculum, Instruction, and Assessment Scores.

Another Praxis Test formerly required for entry level teachers was Principles of Learning and Teaching (see Figure 6). Results from the 29 reported scores ranged from 166 to 197 with a mean of 180.79 and a median of 182. Passing score was 167 in the state of Pennsylvania. Twenty-eight reading specialist candidates reported passing scores.

4.3 DEPENDENT VARIABLES

The three dependent variables were the Coursework Composite score, the Reading Specialist Praxis test, and the Intern/Practicum Performance rating.

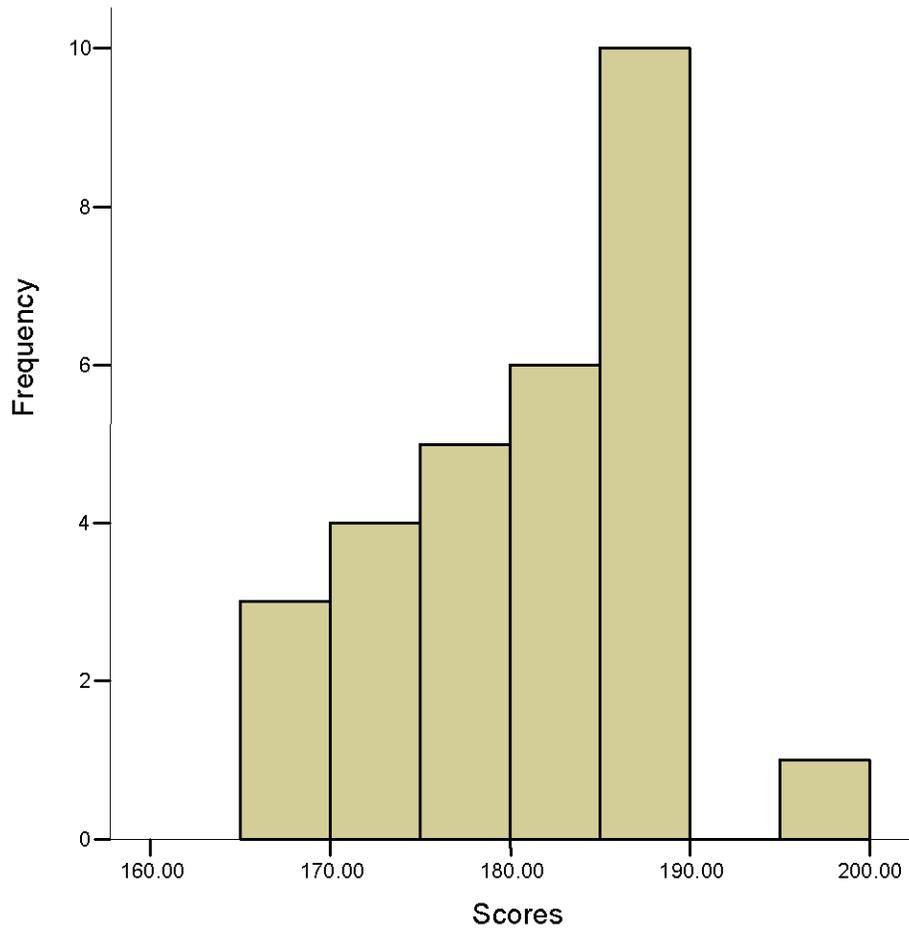


Figure 6. Praxis: Principles of Learning and Teaching Scores

4.3.1 Coursework Composite

The Coursework Composite score was described in Chapter 3. It consisted of the Diagnosis I class grades, Diagnosis II class grades with the Professor's rating of performance in class, and the Leadership class grade along with the performance rating in leadership classes. The Coursework composite mean was .04, with a range from -2.43 to .95 (see Figure 7).

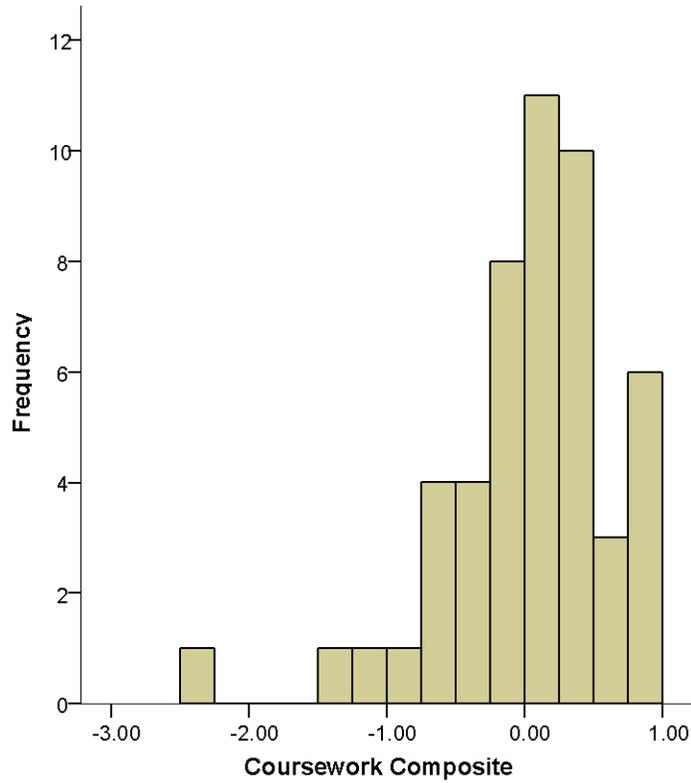


Figure 7. Coursework Composite.

4.3.2 Performance Rating

The Intern/Practicum Performance rating was compiled using a modified Observation check list (Grumet, 1999) (See Appendix F). Areas observed and rated were instruction, materials, teacher knowledge, and management. Scores ranged on this performance checklist from 1.85 to 4.0, with a mean of 3.20 (n = 37) (see Figure 8).

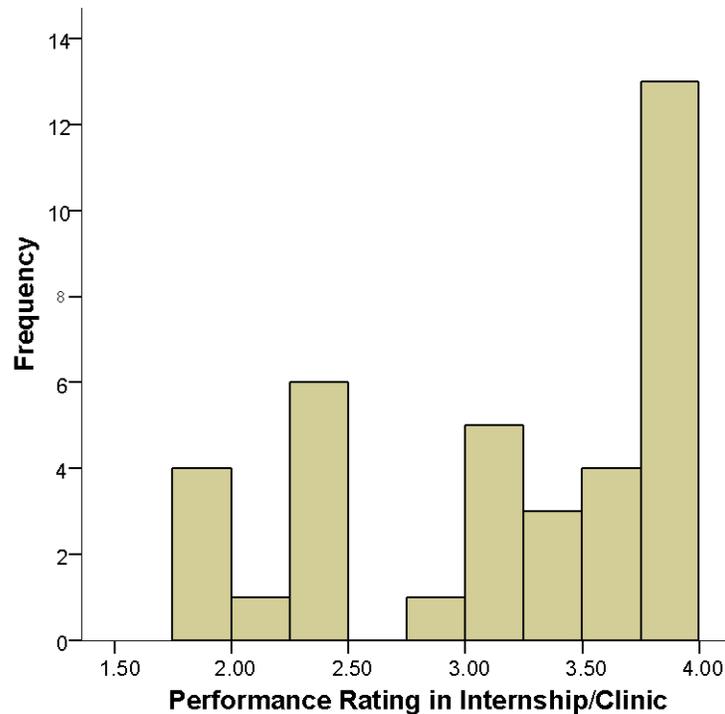


Figure 8. Performance Rating in Internship/Clinic

4.3.3 Reading Specialist Praxis Test

The Reading Specialist Praxis test was an outcome measure or dependent variable (see Figure 9). The 35 scores reported ranged from 510 to 730 with a mean of 620, and the mode of 670. There were 5 students who scored below 570, the passing score for Pennsylvania. This gave the reading specialist candidates a pass rate of 90% for this particular year and group. Scores on the Praxis did not follow the normal curve which is logical because the reading specialist candidates were graduate students and therefore should have performed at the high end of any examination.

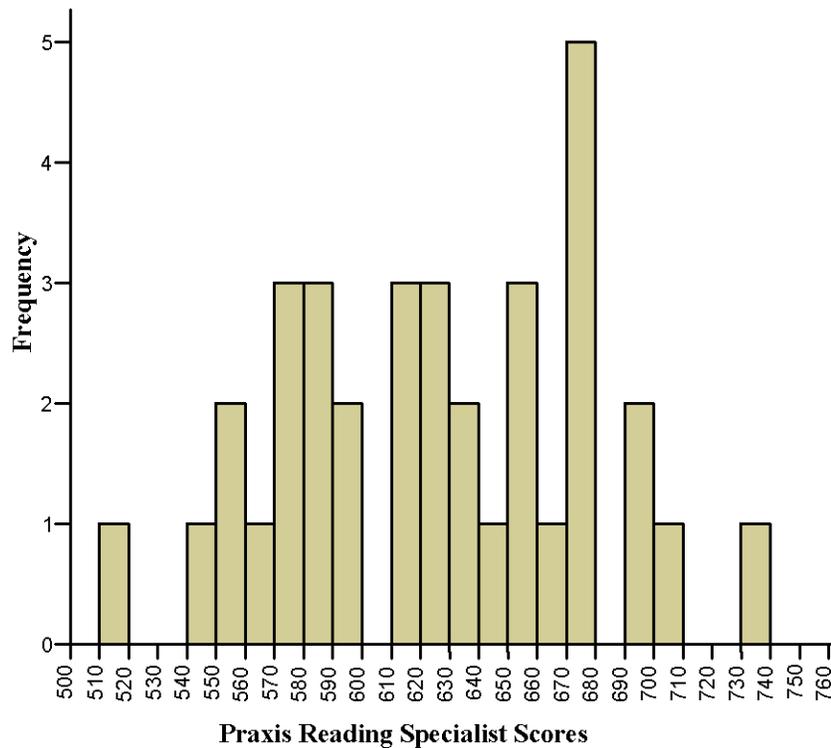


Figure 9. Praxis Reading Specialist Scores.

4.4 RELATIONSHIPS BETWEEN RESEARCH QUESTIONS AND OUTCOME MEASURES

In this section each research question is examined and results of research related to the research questions. Analysis of reading specialist candidates interviews are discussed.

4.4.1 Research Question One

How do educational factors, GPA and initial Praxis score in elementary/ secondary teacher certification, relate to outcome measures— Coursework, Performance, and Praxis test— identified as important for successful completion of the reading specialist program?

The entry level Grade Point Average did not relate significantly to the Coursework Composite, $r(49) = .197$, $p=.176$, Performance measure $r(36)=.086$, $p=.617$, or the Reading Specialist Praxis test $r(35) = .181$, $p = .297$ (see Table 5). Even though there was a wide range, 2.33-4.0, there was not a significant relationship between GPA and outcome measures. This is discussed further in chapter 5.

The initial certification Praxis score, Curriculum, Instruction and Assessment correlated with two outcome measures: Coursework composite $r(29) =.451$, $p = .014$, and the reading specialist certification Praxis score $r(24) =.586$, $p=.003$.

Using one-tailed p-values, Principles of Learning and Teaching (PLT) correlated significantly at the .05 level with the Coursework composite, $r(29) = .324$, $p = .043$, the Performance rating, $r(23) = .450$, $p = .016$, and with the reading specialist certification Praxis score, $r(23) = .417$, $p = .024$. The sample was not very diversified academically since most of the reading specialist candidates were at the higher end of the normal curve for grades. Because there is little variability across students possible variations are affected.

4.4.2 Research Question Two

How do years of teaching experience relate to outcome measures— Coursework, Performance, and Praxis test— identified as important for successful completion of the program?

Years of teaching experience in this study correlated significantly with the Intern/Practicum Performance rating, $r(37) = .436$, $p =.007$, and with the Reading Specialist Praxis test, $r(35) = .434$, $p = .009$. It did not correlate significantly with the Coursework composite.

4.4.3 Research Question Three

How do demographic variables of age, and type of degree—4 year, 5 year, or MAT— number of reading courses, race, and gender relate to the outcome measures— Coursework, Performance, and Praxis test— identified as important for successful completion of the program?

Age as an independent or predictor variable correlated positively with all three of the outcome variables. Age correlated with the coursework composite, $r(50) = .434$, $p =.002$, with

performance, $r(37) = .417$, $p = .010$, and with the reading specialist Praxis, $r(35) = .514$, $p = .002$.

Type of program, the Master's of Arts in Teaching (MAT) program and the 5 year program, did not relate significantly to the outcome variables. Since there were only five students who came from each of these programs no conclusions can be drawn.

Number of undergraduate reading courses did not relate to any outcome measures. Using a one-tailed test, the total number of graduate reading courses related to the Performance rating, $r(37) = .306$, $p = .032$. Students with a higher number of courses scored higher on their performance rating. Total number of graduate courses did not relate significantly with the Coursework Composite, or the Praxis Reading Specialist Test.

Race and gender were not represented adequately in the sample to reveal any relationships. There was one African-American in the study, and only 2 males. Thus, our sample was almost totally female and Caucasian.

In sum, age and years teaching experience proved to be an important factor as evidenced in the performance ratings of reading specialist candidates. Likewise, the initial Praxis certification assessment Principles of Learning and Teaching indicated greater success in the program with respect to performance, and the Praxis reading specialist assessment. Curriculum, Instruction, and Assessment indicated greater success with respect to coursework and the Praxis reading specialist assessment.

Table 5. Correlations of Independent and Dependent Variables

		Educational Factors			Experiential Factors	Demographic Factors					
		GPA	Praxis Curriculum Instruction Assessment	Praxis Principles of Learning and Teaching	Teaching Experience	Age Group	Number Undergrad Reading Lang. Arts Courses	Total Number Graduate Reading Courses	Undergrad. Degree in Education	Completed 5 Year Program	Completed MAT Program
Coursework Composite	Pearson Correlation	.197	.451*	.324	.195	.434**	.018	-.198	.239	.015	.200
	Sig.(2-tailed)	.176	.014	.086	.175	.002	.905	.169	.095	.920	.168
	N	49	29	29	50	50	48	50	50	49	49
Intern/Clinic Performance Rating	Pearson Correlation	.086	.168	.450*	.436**	.417*	-.173	.306	-.196	-.192	.272
	Sig.(2-tailed)	.617	.431	.031	.007	.010	.306	.065	.244	.254	.109
	N	36	24	23	37	37	37	37	37	37	36
PRAXIS Reading Specialist Certification	Pearson Correlation	.181	.586**	.417*	.434**	.514**	.052	-.173	.038	-.100	.100
	Sig.(2-tailed)	.297	.003	.047	.009	.002	.768	.319	.827	.569	.569
	N	35	24	23	35	35	35	35	35	35	35

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-ta

4.4.4 Research Question Four

How did teachers perceive the program?

Interview transcripts were analyzed to determine if there was a pattern in the ways reading specialist candidates perceived their reading specialist program, and what they valued from the program. Examining the academic/field experience for reading specialist candidates provided information as to what was working well, and what needed to be improved.

Questions were asked regarding the helpfulness of coursework as it applied to their daily teaching, course assignments, the intern experience, or the work in the field that went along with various courses. Not all students had the same professors, and this seemed to have had an influence on which courses were thought to be more helpful in the program.

Graduate students interviewed were at various stages in the program. Some had just begun the previous semester while others were finishing or had finished their coursework. Interviews were held in the summer and fall after Diagnosis II was completed. Several matrices were composed so that it would be easier to understand the data (Miles & Huberman, 1984). Table 6 shows where each interviewed student was in the program.

Data were examined from the standpoint of determining reading specialist candidates' perceptions of coursework. Candidates' statements and opinions were analyzed to determine what was most important to them and what activities helped them perform as a teacher or intern. Results are discussed by reviewing each interview question.

Table 6. Interviewee Place in Program

Students Interviewed	RS Interns	Full-time Teacher	Neither Intern/ Or Teacher	R. Specialist Program Completed	R. Specialist Program Incomplete
*April			X		X
Brianna		X		X	
Cari			X		X
Dominique	X			X	
Emma		X			X
Felicity	X			X	
Gail	X				X
Hadassah	X			X	

* Pseudonyms

1. Which courses were most helpful in working with struggling readers and why?

The reading specialist candidates viewed their coursework as being helpful. Major strengths of coursework were case studies, strategies, assessments—how to assess, and how to help the struggling reader after assessing, and working “hands-on” with students.

All interviewed graduate students felt that Diagnosis I and II provided the background and basis for the other courses. These beginning courses provided the glue (cohesiveness) for the whole program. Learning to assess struggling readers was an important aspect of coursework that appeared to be very helpful to students. In speaking about Diagnosis and Instruction I and II, students articulated their thoughts.

That to me was the most helpful... That was the meat and potatoes of reading instruction. It taught us how to assess. What the red flags were with struggling readers and to recognize those weaknesses and how to go beyond that and instruct to those weaknesses. That was the meat and potatoes. Without that class I don't think I could have caught hold of everything else. (Felicity)

One aspect of the coursework deemed important was the variety of reading strategies learned, (e.g., word building, syllasearch, and reciprocal teaching). These were appreciated for their practicality and ability to be quickly utilized in the classroom. “There were strategies that made some sense to me and that would make sense for instruction” (Cari). Practicing strategies in their classes helped students to learn how to teach them. “Putting strategies into practice” (April) was an important way to apply what they had learned in class.

The ones that I thought were the most helpful were 2213 (Diagnosis I) And 2214 (Diagnosis II). Because I really learned some strategies that I hadn't been exposed to before. I thought that I could really work with a struggling reader and make some progress. Like I could really teach a student how to read.... More than going through the motions of reading. (Brianna)

Thus, students had strong foundational courses on which to build. Diagnosis I and II provided the framework on which to base the rest of their reading course work and learning. Students appreciated the strategies that enabled them to help struggling readers, their new knowledge of assessments, and the confidence they gained from the program. Other classes

brought different reflections about the coursework and what students thought was valuable. Two students thought Reading in the Content Area a great introductory course for the reading specialist program and recommended that it be taken as a first course.

Leadership in the School Literacy Program was a close second to the diagnosis courses. This course highlights the importance of reading specialists as leaders in their schools, some perhaps directing the literacy program for the school or the district. Graduate students felt this class was helpful because of the exploration of the reading specialist leadership and coaching role, the professional development, reflection, and the fact that it caused them to learn about different aspects of the reading specialist role. Students were forced to explore areas in which they were not as comfortable, (e.g., coaching peers and holding conferences with them). “She had us do a visit with different teachers and talked a lot about the coaching role, what that would be like. She forced you into areas that may not be as comfortable. ...I thought that every single project that we did was worth while” (Dominique). Students felt Leadership was a strong culminating class, as it provided personal and professional development.

A Language Arts Elective was required of all students as part of their 24 hour requirement. Six students completed courses that suited their needs and interests. Two students took the Literacy Workshop (Orton-Gillingham) which they found very helpful. “It broke language down into individual units and methods of instruction. It was very specific. And the more specific you can be when dealing with the struggling reader the better” (Felicity). Another student suggested that the Literacy Workshop be a required course because of its intensive instruction in phonics.

Other courses met graduate students’ particular needs. They appreciated these courses because they were more germane to their areas of interest, (i.e., specific to middle school, adult learning or writing). “Special Topics in Reading was actually for me the most relevant class that I took to middle school students because we read lots and lots of middle school adolescent novels” (Gail).

Students also mentioned aspects of their courses that were not helpful. One area of concern was the class size. There were two courses that were commented on as being too large. Students felt that there was an extra burden on the professor because of the large class, and that they would have had greater understanding and more knowledge provided if their class had been smaller. Another area for concern was the use of outdated materials in the reading library. It was

felt that up-to-date materials would have more transfer to actual schools. A third concern by one student was that the coursework in two courses, Methods and Materials and Content Area Reading repeated content and thus was not as helpful, or could have been more helpful with different content. Content Area Reading was thought of as definitely being an introductory course. Thus, we can appreciate that these reading specialist candidates reflected on the help their coursework gave them or did not give them as they applied their coursework to teaching situations. Coursework provided an important resource for their teaching.

2. What assignments were most helpful to you for working with struggling readers and why?

Many different assignments were thought to be helpful to the reading specialist teachers. The case studies (87%), learning reading strategies (75%), “hands-on” work with students(75%), and learning to diagnose reading difficulties (50%) were identified as being the most helpful. Assessments were also mentioned. Students felt that they learned many strategies to use with their children in each of their classes. The assignment of observing a child was felt to be helpful, as well as the hands-on experience of teaching a lesson. Others felt that learning about diversity was important in working with urban school children. Students discussed the case study assignments:

Both case studies were very helpful in understanding what you can do with a (child) in a certain length of time and what is an unreasonable goal, and also looking at (children’s) particular problems and prescribing strategies to help them address their needs. (Gail)

Learning to individualize instruction to meet each child’s needs was important to the students. As they learned to analyze miscues and apply strategies, they became more confident in their own efficacy. “The case studies we did for ___’s Class. It forced me to put into practice the strategies we learned. And to get her feedback, how I could improve, what was working, and if I was on the right track” (Brianna).

Reading specialist candidates appreciated the feedback they received on their case studies. It was important for candidates to get feedback to know they were working with their student in an appropriate manner. Many candidates would check and recheck with instructors and peers to focus on what instruction was effective for their case study student (see Table 7).

Table 7. Helpful Assignments

Student	Case Study Assessments	Portfolio	Prof. Dev.	Strategies	Diagnosing	CAR Text Structure	Explicit Ins. Hands-on	QRI	Dibels	Grant Writing	Peer Discussion	Vocabulary	Feedback	Presentations	Coaching	Tutoring	No. of Words
April*				X			X				X	X					1376
Brianna	X			X	X		X	X					X				1493
Cari	X	X		X			X	X									1733
Dominique	X	X	X		X		X	X	X	X			X	X	X		2676
Emma	X			X			X										1951
Felicity	X	X	X	X	X			X	X	X				X		X	1086
Gail	X			X	X												1708
Hadassa	X			X	X		X					X					1415

*Pseudonyms

3. In what ways did your work in the field help you with the requirements of the Reading Specialist Program?

All of the reading specialist candidates (100%) mentioned hands-on or direct application of coursework to field experiences as helpful. All students were applying strategies directly to their students in internships, full-time positions or tutoring. When asked how fieldwork helped them with the requirements of the various courses students replied that it was a helpful way to apply their learning quickly.

It was extremely...it was hands on. Everything I learned at Pitt I took right to (school) and I applied it directly. And, to have that insight to looking at those students who were very low reading performance really gave me a picture of exactly (who) the struggling reader is, and what challenges they have to deal with. (Felicity)

Having access to children to be able to apply strategies immediately was very helpful to students. The application and/or realization that some strategies would only work for some students made their learning more realistic.

It is interesting to note that those who reflected most on the aspects of their experiences did well in their coursework, tests, and performance. Dominique, Brianna, and Felicity, had more

salient thought segments than did the other graduate students. They also showed discernment in knowing what was helpful in assignments, and what helped them learn.

4. How did Reading Specialist courses help you with your field work?

Most of the reading specialist candidates came to the program with an idea that this program would help them teach reading, but they were not aware of how much support it would give them. Coursework provided strategies and techniques to use with children. Strategies were mentioned most often as important for working in the field with children. Reading specialist candidates' ability to apply diagnostic tools to children's needs helped with their work in the field. They appreciated practical ideas that would be useful in their teaching.

Reading specialist candidates gained more confidence in their own ability to teach reading. They knew the strategies that they could use with children and appreciated the on-site help as well as support from the university liaisons.

5. Overall, what do you see as your strengths as a reading specialist entering the profession?

Reading specialist candidates viewed their ability to diagnose and remediate individual children (63%) as their greatest strength. Knowledge of reading (50%), or foundational knowledge was cited second. Leadership (37%), Strategies (37%), and Personal relationship skills (37%) were mentioned as being a strength of some. They felt they had the knowledge and ability to diagnose and remediate struggling readers. They were confident in these areas. Some were confident in their leadership and personal relationship skills.

Reading specialist candidates were somewhat surprised to be asked about their strengths in entering the reading specialist position. Some did not plan to become a reading specialist, and others realized that they would need some teaching experience before becoming a specialist. One student planned to work in the high school area and develop a way to make the role of the reading specialist more effective in that setting.

6. How do you plan to capitalize on your strengths?

Reading specialist candidates planned to capitalize on their strengths by keeping abreast of research that would help with their work. They saw themselves as resource persons who want

to assist other teachers/student teachers, help on councils, tutor, teach at various grade levels, diversify instruction, or work at the graduate level. They were more confident that they could find resources to help with their own or other teachers' problems. Some students wanted to go back into the classroom either to gain experience or to have a reading specialist position. If they were currently employed they wanted to use their skills to improve their current position and help their students.

7. Where do you think you still have some “room to grow”?

Reading specialist candidates indicated that they felt there was still much need to grow in their education and experience. Often the initial response to this question was laughter and a comment similar to “Everywhere.” There was no definitive, collective, outstanding response to this question, but all students agreed that they needed/wanted more education to further increase their ability. They indicated a need for professional reading, education, or more knowledge and understanding of the reading process.

8. What plans do you have to develop the areas where you feel there is need for growth?

Plans to continue their education and/or stay current with research were indicated most often by the graduate students as a way to continue to grow. Membership in professional organizations was indicated as a way to keep current with reading research. Finishing their master's degree was also mentioned as a way to develop their knowledge and skills. Students knew they were not at the end of their learning but merely at the beginning of a long learning journey.

9. Have there been any changes during your year in the reading specialist program in terms of how you teach reading?

Reading specialist candidates felt that they could use strategies more effectively since their matriculation in the reading specialist program at the University of Pittsburgh. Overall, they exhibited more confidence in their ideas of how they would teach reading. There were differences in those who had teaching experience and those who did not, with those with experience exhibiting more confidence in what they could do.

10a. Is there anything else that you would like to tell me about how your background experiences contributed to your work in the program?

Reading specialist candidates expressed concern over the fact that their previous background experiences (undergraduate education) did not provide enough knowledge of how to teach reading.

When I worked as a permanent substitute in second grade I realized my own (in)effectiveness in reading instruction. I did not know how to teach vowel sounds, when to teach them, how to teach. It motivated me to become a reading specialist. (Felicity)

The two most experienced students felt that their teaching experience enabled them to apply their education to what they knew from working in the classroom. One commented:

When I started it was probably my 9th year teaching....I just had a lot of different situations that would be brought up in class. I would think, oh yeah, that reminds me of Jimmy or that reminds me of Sally. It melded everything together. And it just made sense. This was why Johnny had trouble reading that year I had him. Maybe this strategy would have worked. I had a lot to look back on and learn from and learn with. (Brianna)

Being able to reflect on different students helped this teacher apply different strategies to improve her practice. Because she had many years of experience she was able to apply her learning directly to students, or to past situations where students needed assistance in reading.

10b. How did your educational experiences contribute to your work in the program?

Three of the four reading specialist candidates who had special education background felt that special education was significant in their learning how to improve practice with struggling readers.

My special education background, ...because I've worked with struggling students and it has helped. So when I come in these classes, it's not completely unfamiliar— the testing and way you approach students who are having difficulty. (Cari)

Others did not feel as confident in their undergraduate coursework in reading and felt the need for more training and experience in the reading process.

I thought I had a strong undergraduate education...They could have done a better job at that time teaching me how to teach a child to read.

It was more like methods and materials. Like these are some methods and here are some materials. And then, that was it! It was not explicit instruction on teaching reading (Brianna).

Another candidate felt that her only guide was in the area of field experience. “I’m going to say I was poorly prepared for my teaching. The most effective for my undergraduate (work) was working in field experience, and watching teachers teach” (Felicity).

Again, education and experience are portrayed as important as these teachers discuss their needs and education at the undergraduate level. They recognized the need for experience in the field as well as learning new strategies that were lacking.

10c. How did your experiences contribute to your work in the program?

Reading specialist candidates responded that their years of experience either as a professional, substitute, or as an intern gave them some background to rely on as they learned various reading teaching techniques and strategies. Two other students commented that their lack of knowledge about reading before entering the program made them work harder, or motivated them to become a reading specialist. “Just the lack of knowledge on how to teach reading inspired me to delve deeply into everything that I could get my hands on” (Gail). In contrast, the experienced candidates could easily apply what they were learning and relate it to their background experiences. Because of the experience in the classroom, these teachers were able to reflect on different situations and children. They could use their knowledge of how their children would react to evaluate different strategies. Their knowledge of strategies allowed them to aid children’s learning. Previous experience in the classroom facilitated these teachers’ ability to assimilate their education quickly and apply it readily to their classrooms.

In sum, interviewed students felt that their experiences in the program—course- work and internship/practicum— were valuable. They valued coursework that included learning strategies and diagnosis procedures as well as learning how to interpret assessment results. All were deemed as important parts of the reading specialist program.

Thus, both the results from the various Praxis tests and the results of the interviews point to the intrinsic and extrinsic value of experience before and during the reading specialist program. With ways to apply their teaching immediately in the classroom, reading specialist candidates were able to secure their knowledge. Experienced teachers were able to relate their new knowledge to past and present experiences. Results are further discussed in the following chapter.

5.0 FINDINGS, CONCLUSIONS, AND DISCUSSION

This study explored the factors of education and experience in the reading specialist program at the University of Pittsburgh both quantitatively and qualitatively. The goal was to examine data: scores on tests, age, experience, number of undergraduate reading courses taken and type of undergraduate teacher preparation program— Master’ of Teaching, four year, or five year— to determine their relationship to coursework rating (professor’s ratings and grades), reading specialist Praxis test, or teaching performance. What students brought into the program in terms of initial Praxis scores was examined to see if that was a determining factor in how they performed in the reading specialist program.

In this chapter, research questions were listed and findings were presented based on analysis of the quantitative data and interviews with candidates. Where possible, the findings were compared to current research. An assessment of how the reading specialist program aligned with the International Reading Association’s standards for reading specialists follows. Finally, a discussion of practical implications and recommendations for future research are presented.

5.1 FINDINGS

5.1.1 Research Question One

How do educational factors such as entry GPA and initial elementary/secondary teacher Praxis score in elementary/secondary teacher certification relate to outcome measures: Coursework Composite score, the Reading Specialist Praxis test, and the Intern/Practicum Performance rating?

5.1.1.1 Finding

Undergraduate Grade Point Average did not relate to any outcome measures. Undergraduate GPA did not relate to any outcome measure, even though there was a range of scores from 2.33 to 4.0. This finding is similar to that of Ferguson and Wolmack (1993) reviewed in Chapter 2, which states that GPA did not seem to make a difference in the quality of the teacher or in student achievement. He pointed out that to refuse admission to the teacher preparation program merely on the basis of a GPA lower than 3.0 would exclude students who would probably make credible teachers. Improvements in teaching performance are not gained by increasing the requirement of a GPA above the 2.5 level.

5.1.1.2 Finding

Tests taken for initial teacher certification related to outcome measures of coursework, performance, and the reading specialist Praxis test. The Praxis test, Curriculum, Instruction, and Assessment, was related to how students scored on the Coursework Composite. Higher scores on the Praxis indicated higher success in the reading specialist program, e.g. these reading specialist candidates did better in their coursework. Taken along with other measures and assessments, this entry test for teachers' initial certification may be a way to predict which students will perform well in the coursework; this does not necessarily mean that students who do well in the coursework will also perform well as reading specialist interns, or in the future, as reading specialists.

Also, scores on the Principles of Learning and Teaching Praxis Exam (PLT) correlated with the Reading Specialist Praxis exam, and the Performance Rating. In the study, it served as a predictor variable to indicate which candidates did well in the reading specialist certification program.

In a study of Pennsylvania hiring in 1997, Strauss, Bowes, Marks, and Plesko (2000) found that test scores were not weighed heavily in the hiring process. In that study, they indicated that the Educational Testing Service's (ETS) position was that these NTE/Praxis tests do not predict the teaching competency of a prospective teacher. "That is, subject matter knowledge or content knowledge, as reflected in higher NTE/Praxis tests, is a necessary but not sufficient condition for being an effective teacher" (p.395).

5.1.2 Research Question Two

How do years of teaching experience relate to the outcome measures?

5.1.2.1 Finding

Years teaching experience was an indicator of how reading specialist candidates performed in the program, and how they performed on the Praxis Reading Specialist test. Years teaching experience related to the Performance Rating and to the Praxis Reading Specialist Test ($p = .01$). Experience was directly related to these two measures, with more experience predicting higher Performance and higher Reading Specialist Praxis test scores. The Performance Ratings were assessments of teaching skills by professors who taught in the reading clinic or supervised the interns in schools.

Further, interviewed reading specialist candidates who had experience teaching showed more thoughtfulness toward their studies. They exhibited great enthusiasm for teaching and excelled in their performance as teachers. Various factors may contribute to this. Students who have teaching experience are more likely to apply concepts presented in class because they can readily relate the importance of these concepts directly to the students they teach. Other researchers have also identified experience as an important factor. Ferguson (1991) and Whitehurst (2002) determined that teacher experience had a greater effect on student outcome than did other factors. Hanushek et al. (1998) determined that up to, but not more than 2 years experience, had an effect on children's achievement.

In this study, reading specialist candidates with experience were more adept at application as evidenced from their performance ratings. Given the nature of the activities or tasks that are expected of reading specialists, the importance of experience seems to be critical. Bean, Trovato, Armitage, Bryant and Dugan (1993) found that members of their focus groups composed of reading specialists and teacher educators emphasized the need for reading specialists to have adequate teaching experience as a prerequisite before entering the reading specialist certification program, although they did not designate the number of years experience necessary. Research indicates that students who have had extensive field experiences and education in reading prove to be better teachers of reading than those who do not have these experiences (Hoffman et al, 2005; Pressley et al, 2001). At the present time, there is no

experience requirement for the reading specialist certification in Pennsylvania, although many universities include experience as a prerequisite. For reading specialist certification in Pennsylvania, college graduates have to attend a certified reading specialist program at a college or university and pass the Praxis reading specialist test.

Ferguson (1991) found that teachers with experience had students who achieved higher on the Texas Examination of Current Administrators and Teachers (TECAT). In *Studies of excellence in teacher education*, Darling-Hammond (2000) points to the common denominator of extended clinical experiences among the shared foci of excellent teacher preparation schools. It seems evident that experience matters in terms of teacher performance and ultimately student achievement (Greenwald et al., 1996; Whitehurst, 2002a).

At the University of Pittsburgh, internships offered reading specialist candidates opportunities to gain hands-on experience. While the internships differed in that they are located in various schools in the surrounding area, they all provided interns with mentors and children with whom to work. Direct application of strategies learned in the reading specialist certification program was emphasized. One reading specialist candidate discussed the importance of experience because she could apply her ideas directly to experiences with students in the classroom. “I’m glad I did the program as an experienced teacher. It was much more cohesive and applicable having the background experience” (Brianna).

5.1.3 Research Question Three

How do demographic factors such as age, type of degree—4 year, 5 year or MAT—number of undergraduate courses in reading, race and gender relate to the outcome measures: Coursework Composite score, the Reading Specialist Praxis test, and the Intern/Practicum Performance Rating, identified as important for successful completion of the program?

5.1.3.1 Finding

There was a relationship between age and success in the program with older reading specialist candidates being more successful. There was a direct relationship between age and the three outcome measures— the older the student the higher the Performance, Coursework, and Reading Specialist Test Ratings. Taking age and experience together—an older age does not necessarily

determine more experience in teaching, but it is more likely—experience and age together indicate that the reading specialist candidate is more likely to succeed in the reading specialist program, and by extension, more likely to succeed in the role of a reading specialist.

5.1.3.2 Finding

There was no relationship between four-year, five-year, or MAT program and coursework, performance, or the Praxis reading specialist test. There were five people from the Master's of Arts in Teaching (MAT) program at the University of Pittsburgh who pursued the reading specialist certification in this study. There were also five students who underwent a 5-year preparation program for teaching. Participants of these programs in this study did not perform any differently from the students who had a traditional 4-year program. However, with so few students in each of these programs, no conclusions can be drawn.

5.1.3.3 Finding

Number of undergraduate reading courses did not relate to coursework, performance, or Praxis reading specialist test. There was no relationship between the number of undergraduate courses in reading and language arts and the outcome measures. Although there were several students who had more than 3 reading/language arts courses prior to the reading specialist program there was no relationship between number of courses taken and the outcome variables. Many reading specialist candidates had at least 2 or more undergraduate reading/language arts courses which may have affected the outcome. Further, there was great variety in course content from various universities.

Total number of master's level reading courses taken at the University related to the performance rating ($p = .05$) of these candidates. How students performed in field work or clinic experiences was related to the number of reading courses they had. Students who had completed the most courses had better performance ratings than those who had completed only the core coursework.

5.1.4 Research Question Four

How did students perceive the program?

5.1.4.1 Finding

Interviewed candidates considered Diagnosis and Assessment to be a foundational component of their coursework. Reading specialist candidates felt that what they learned in the Diagnosis and Instruction classes provided a strong foundation upon which to build further learning. Professors modeled instruction for candidates, using various strategies and groupings, which demonstrated teaching methods for reading specialist candidates. Assessments were presented, discussed, practiced and finally used by the candidates with their case study. This provided a thorough grounding in many types of assessments. Candidates were able to look at assessment results and know what strengths and weaknesses children had and what strategies to use to strengthen children's reading ability. Snow et al., (1998) recommends that special service teachers have the ability to pinpoint difficulties in reading performance and to provide effective strategies to remediate problems. The International Reading Association Standards confirm the necessity to provide strong preparation in assessment of reading difficulties.

5.1.4.2 Finding

Internships and hands-on experience in learning strategies allowed reading specialist candidates to apply knowledge, and thus, further secured knowledge gained in class. The interviews of reading specialist candidates indicated that what was most valued in the program was the theory that provided adequate foundation for the candidates, the strategies that provided practical ways to help children learn to read, and the application—they were able to work with children to apply what they learned in class. Joyce and Showers (1983) indicated that teachers learn a skill or a new strategy and use it in the classroom only after they know the rationale, learn the strategy, and practice it in a comfortable group with feedback, and then try it with children. They need to transfer the strategy into their active repertoire, but will not do so without continuous practice, feedback, and the support of coaches to provide feedback.

Hands-on learning was highly valued by interviewed reading specialist candidates as being important in conjunction with what they learned from their academic classes. Field experiences such as those recommended by Snow, Burns, and Griffin (1998) and in the IRA standards (2003) indicate the need for specialized teachers to know and be able to model strategies. The standards place emphasis on performance—can the candidate demonstrate the best way to teach various strategies. For example, IRA Standard 2.2 requires the reading specialist to

support classroom teachers in the use of a wide range of instructional practices, approaches, and methods including technology based practices, and model these options in their own teaching.

Application of learning, modeling strategies, and practicing them, were vital components of the program, according to interviewed reading specialist candidates. The reading specialist candidates not only wanted the theory and background of reading strategies, but they understood it was essential to be able to model these strategies for other teachers and children. Thus, practice in class was tantamount to being able to perform in schools with children and to be able to model for teachers. This finding is similar to those of Maloch et al., (2003) who stated that field experiences, modeling of teaching techniques, opportunities for assessment and tutoring, and an articulated philosophy of teaching and learning are important variables in excellent reading teacher preparation programs.

Keehn et al. (2001) indicated in their study of teachers with a reading specialization that reading specialists demonstrated competencies, and discussed components for effective reading instruction more so than the comparison group of teachers without a reading specialization. Reading specialist majors had the self confidence that they could change reading programs in their schools if there was a need to do so. Likewise, interviewed reading specialist candidates with experience completing the University of Pittsburgh reading specialist program expressed confidence that they were able to teach struggling readers.

Ability to apply learning was very important to all reading specialist candidates. Reading specialist candidates in the University of Pittsburgh program valued experience which required working with students, i.e. case study projects which required application of strategies with students in clinic or school settings. Further, they valued learning strategies to help their students; theory to help them understand why they needed to teach in a certain way; and application to know what worked. Coursework was important to them as it stimulated learning how to work with struggling readers. Applying this learning, through case studies with children, was essential.

5.2 CONCLUSIONS

5.2.1 Conclusion 1

A number of factors taken together are helpful in predicting success in the reading specialist program, e.g. grades, initial certification Praxis scores, age and experience.

Grades alone should not be a determining factor in admitting graduate students to the reading specialist program. Ferguson and Wolmack (1993) indicated in their study that raising the teacher entrance requirement of a GPA above 2.5 did not make a difference in student performance. Likewise, this study did not find a relationship in any outcome variable to the GPA of the reading specialist candidates. While Grade Point Average is important, multiple measures have been shown to be more effective in assessment (Andrew, Cobb, & Giampietro, 2005; Payne, 1997); by extension, multiple measures should be used for admission to the reading specialist certification program. Initial Praxis scores, experience, and grades and other factors would be more useful than a single measure.

Initial certification Praxis scores are appropriate measures for predicting coursework success in graduate reading specialist programs. The Praxis assessment, Curriculum, Instruction, and Assessment seemed to indicate knowledge of teaching. The Educational Testing Service (ETS) does not indicate predictive validity of teacher ability based on the National Teacher Examination/Praxis (Wilson & Youngs, 2005), but does indicate their tests assess subject matter knowledge (Strauss et al., 1997). There was no relationship between the Praxis Curriculum, Instruction and Assessment test and the field or clinic performance of the reading specialist candidates. The test related to coursework and the Reading Specialist Praxis test. It is safe to assume that these initial Praxis measures give some indication of the knowledge of the prospective reading specialist candidate. They seem to be an appropriate indicator of how the candidate will do in university coursework.

Experience is an important criterion for admission to the reading specialist program. Experienced teachers as reading specialist candidates had the background knowledge to easily apply their new learning to what they have experienced in the classroom, e.g.,

I felt like that I had a lot of good background experiences to think about.

Like when Dr. X would give us a strategy I would think, wow, that was

the missing piece that I haven't been able to get through to the kids for comprehension. I think I brought a lot of experience to the courses with me thinking, "Yeah, I don't think that would really work based on my experiences with the kids." I thought that I wasn't just starting off a blank slate. I knew what my strengths were, too, and I knew what my needs were, what I wanted to get from the program (Brianna).

Experienced reading specialists candidates also can relate to more teachers in the schools since they share teaching experiences. Moreover, teaching experience gives reading specialists credibility with teachers in the schools (Bean et al., 1993). Having played an instructional role helps reading specialists establish their credibility as competent teachers (Bean et al., 2003). Therefore, it might be expeditious to consider encouraging older and more experienced individuals to enter the reading specialist program. Those students who are pursuing a second career may be more serious about their professional choices, and consequently, have more focused goals as they enter the teaching field. The university can direct MAT and Professional Year students to consider the Reading Specialist program. Experienced, skilled teachers should continue to enhance their skills by adding the reading specialization certification so that they can continue to improve the teaching of reading.

The International Reading Association Standards (IRA, 2003) suggests 2 years of teaching experience as a requirement for the reading specialist certification. Universities and colleges might do well to examine their requirements in light of the International Reading Association or National Teachers of English Standards to provide the Commonwealth with experienced teachers as reading specialists. Bean et al. (2003) noted that it was the advanced expertise of the credentialed reading specialists that supported the high quality reading instruction in schools with exemplary reading programs. All reading specialists were experienced teachers, and all had postgraduate work in the area of reading.

Moreover, acquiring the certification without the experience may make it difficult to obtain a reading specialist position, although many reading specialist candidates who served as interns had little difficulty obtaining such positions. They had a year working in schools with struggling readers, fellow teachers, principals, and administrators. They had gained experience with methods and materials, working with content teachers, and providing professional development.

Experienced reading specialist candidates in this study did well in the performance part of the program—internship or clinical experiences. Since it is demonstrated that reading specialists with experience did significantly better in performance, accepting experienced teachers as reading specialist candidates seems to be an important criteria for preparation programs.

Older students did better than did students coming into the program immediately from undergraduate school. Older reading specialist candidates did well in the coursework, performance, and on the Praxis reading specialist tests. It would be well to consider encouraging older students, or those changing careers to enter the reading specialist program. Again, the factor of experience continues to be an important criterion for preparation programs.

5.2.2 Conclusion 2

Overall, interviewed reading specialist candidates had positive perceptions of the program.

Leadership and Diagnosis and Instruction courses met the needs of Reading Specialist candidates, and instructed them in the changing role of the reading specialist. These courses allowed candidates to learn how to assess strengths and weaknesses of their students and plan instruction based on students' needs. Strategies to meet children's needs, e.g. in fluency, comprehension, phonics, phonemic awareness and vocabulary, were provided. The Leadership course provided exploration of the reading specialist leadership and coaching role. Candidates were asked to develop a staff development session, write a grant, teach a demonstration lesson, coach a teacher, and write a paper describing a literacy program. All candidates felt that this class was one that caused them to grow in different ways and to expand their thinking about the role of the reading specialist.

Learning strategies and teaching techniques by actually practicing them in the classroom were perceived as important. Reading specialist candidates must not only have content knowledge, but they must be able to use what they know in their instructional practices. This requires opportunities for practice and feedback. International Reading Association Standards--Revised, 2003 suggest that candidates of reading teacher programs be able to model or demonstrate that they know how to implement various research based strategies. Joyce and Showers (1985) indicate that this will be an uncomfortable time for learners, but a powerful

experience in that all are learning and helping one another to become proficient. Reading specialist candidates can, in turn, impart these strategies efficiently to teachers and students.

Hands-on assignments (fieldwork) that involved students working with children were considered to be of great importance in improving reading specialist candidates' skills. Of paramount importance to the interviewed reading specialists were the case studies which allowed them to use assessments and teaching strategies. Other assignments that were identified as being the most helpful were the Qualitative Reading Inventory assignment, learning and practicing reading strategies, learning assessments, and learning to diagnose reading difficulties. Darling-Hammond determined that class work that was closely tied to fieldwork provided a "best fit" program for graduate students at the Banks Street School (Darling-Hammond et al., 2000).

5.3 DISCUSSION

The purpose of this discussion is to emphasize 1) the importance of studying program effectiveness and 2) using standards to assess the quality of specific programs. Because of increased demand for accountability at higher educational levels, studying program effectiveness is crucial. Part of the accountability demand is due to governmental legislation such as No Child Left Behind which continues to require highly qualified teachers. Also, reports of the National Research Council (1998) and the National Reading Panel (2000) called for reform of current course and credit hour certification requirements. Private groups provide additional pressure by taking over failing schools or decrying the skill of teachers in the field. This places strong responsibility on college and university teacher preparation programs to continually refine their programs. While education may always be under public criticism, continuous improvement of higher education programs is necessary and vital to provide high quality education so teachers are able to meet the needs of every child.

Both formative and summative evaluations (Worthen et al., 1997) may be used to provide effective teaching programs with feedback for improving their programs. Formative evaluations by staff allows fine tuning of existing programs. External summative evaluations might be a product of certification by the National Council for Accreditation of Teacher Education or the Teacher Education Accreditation Council. Certification by boards maintain the

standards of the teaching program, thus assessing the quality of education and increasing accountability.

Requiring Praxis test scores, teaching certificates and other data by the admissions department is essential if an extensive study of the reading specialist program is to be conducted. This would help determine the best way to inform the field and help point the direction for future programming.

Developing a program to enable reading specialist candidates to perform at the highest possible levels in imparting strategies to teachers involves preparing specialists to model and demonstrate teaching techniques and strategies, provide leadership for their school, design professional development, and be knowledgeable about assessments. How did the University program compare in relationship to standards provided by the International Reading Association? Evaluation and fine tuning are appropriate in order to maintain an effective reading specialist program. In this section, the reading specialist certification program was compared to the International Reading Association standards.

The International Reading Association Standards—Revised, 2003 provide a basis for evaluating and developing reading preparation programs. These address the question of what “new reading professionals should know and be able to do.” The standards present a matrix of various reading competencies that educators, from beginning paraprofessionals through teacher educators and administrators should have. Emphasis is placed on performance. The reading professional should be able to demonstrate various strategies and instruction. Attention is given to linguistic and cultural diversity, and technology is included as a means of teaching and learning. The general requirements by the International Reading Association are that reading specialist candidates have knowledge of the following five major categories:

- foundations of reading and writing processes and instruction;
- a wide range of instructional practices, approaches, methods and curriculum materials;
- a variety of assessment tools and practices to plan effective instruction;
- creating a literate environment;
- viewing professional development as life-long learners (IRA Standards for Reading Professionals, 2003, p.3).

The program at the University of Pittsburgh meets the standards in various ways.

5.3.1 Knowledge of Foundations of the Reading and Writing Processes

Courses such as Language and the Reading Process, Methods and Materials, Content Area Reading, and Diagnosis and Assessment provide knowledge of the foundations of reading and writing processes and instruction. This knowledge is evidenced by course grades, case studies completed by reading specialist candidates, and the ability to pass the Reading Specialist Praxis Test. Using the matrix provided by the IRA Standards is helpful in assessing each component.

5.3.2 Knowledge of Instructional Practices

Knowledge of instructional practices, approaches, methods and curriculum materials is evidenced by the ability to perform as a teacher of reading in a school or clinic setting. Being able to practice the strategies taught is important. It is in this area of performance that reading specialist candidates at the university need more work and opportunities to practice. Students need to show not only that they know what the strategies are, but they need to demonstrate or model the strategies that they are taught. As one candidate said, “It is more important to know six strategies well, than to know twelve and not be able to do them” (Brianna).

In many cases, especially in the intern program, fieldwork is a viable part of the reading specialization process. It provides interns with experience, and gives schools some needed help for their children. Other reading specialist candidates who are working as teachers are working with children every day, and in this way, they are gaining opportunities to apply their coursework. The reading specialist program has three options for experience—interns working in schools, clinic on campus, or clinic at an on-site school location. The internship provides two semesters, at least fifteen hours a week per semester, of working with students; while the clinic option provides three hours per week over one semester. The International Reading Association’s recommends six semester hours of practicum experience which is greater than the three hours of practicum required by the university. However, in every university course students are asked to apply what they are learning as part of their assignments, therefore, clinical experiences are integral to all six courses (24 credits) in the program.

5.3.3 Knowledge of Assessments

Various assessments and their use are addressed in Diagnosis 1 and 2. Collectively, reading specialist candidates have a strong knowledge of the Qualitative Reading Inventory and use it as a basis upon which to build knowledge of other assessments. A variety of assessments are taught, so that reading specialist candidates are able to knowledgeably diagnose children's strengths and weaknesses, monitor and evaluate their progress.

5.3.4 Professional Development

Interviewed reading specialist candidates who were rated high in the Performance Rating were committed to being life-long learners. These students expressed a need for continuing education, professional organizations and conferences to keep them abreast of cutting edge research, and new strategies as they developed.

5.3.5 Perceived Strengths of the University Program

There are many areas of strength in the university program. One strength is the varied faculty who expose reading specialist candidates to a variety of approaches to teaching, teaching methods, and materials. Students learn about socio-cultural, behavioral, and cognitive approaches to teaching reading; they learn via technology, and from actively modeling strategies.

Another strength is the variety of clinical experiences. Reading specialist candidates may be in a supervised clinic on campus, in a clinic at a school off campus, or serve as an intern in a school for the whole year. The reading clinic provides for one-on-one and small group tutoring. This allows reading specialist candidates to experience teaching reading skills to children in a structured, well-maintained setting. The clinic provides a learning setting for the candidates to practice the strategies and knowledge of reading learned in class. Reflective teaching is encouraged. Coaching and mentoring are provided through observation and conferences with the reading specialist candidates. Candidates are video taped and peer-reviewed to emphasize

strengths in teaching and areas needing improvement. Videos of tutoring being conducted by reading specialist candidates are critiqued.

In other settings, the reading specialist candidates are able to see what a reading specialist position in a school is like. Candidates tutor children in a school setting to improve children's reading. In this setting, reading specialist candidates are exposed to the reality of school schedules and time constraints that do not exist in the clinic setting. Reading specialist candidates experience working with teachers, providing professional development, and providing help for struggling readers.

A third area of strength is the Leadership course which provides for professional training and background knowledge for reading specialist candidates. This course includes personal development, professional development, and knowledge of how reading specialist candidates can improve their practice in terms of school leadership. Candidates are asked to model coaching, provide coaching to other teachers, and reflect on how their coaching improved. Candidates prepare and deliver a staff development session, model a specific strategy or teaching approach with conferencing and reflection on the modeling; write a grant; and write a paper summarizing a literacy program. Candidates also keep a log of their work with various groups to reflect what they learned about their leadership qualities and style.

The emphasis on assessment and instruction (Diagnosis I and II) is another strength of the program. These two courses provide the foundation for diagnosing reading difficulties. They also provide the assessments and strategies to work with struggling readers. Most importantly, these two courses establish a foundation for all the other coursework. Interviewed reading specialists cited these courses and the assignments from these courses as being instrumental in their learning, citing especially the case studies which enabled them to apply their learning to working with a struggling reader.

5.3.6 Perceived Areas for Improvement in the University Program

Reading specialist candidates who were interviewed identified several areas for improvement. Large class size limited the amount of active learning that could be incorporated into each session. Interviewed candidates felt that the university needed to provide smaller classes so that

professors can incorporate more active learning into class work. Reading specialist candidates need opportunities to practice and model strategies in small group sessions.

There are differences between the Universities' and the International Reading Association's Standards. Many candidates are seeking a Master's degree as a part of their reading certification process, but they may receive their reading specialist certification before finishing their Master's degree. Some reading specialist candidates may not have previous teaching experience, as recommended by the International Reading Association. The University of Pittsburgh reading specialist intern program attempts to bridge this gap in experience. Finally, the IRA suggests six hours of supervised practicum. As mentioned previously, reading specialist candidates are required to do three formal hours of supervised practicum, although they also have experience with children in their coursework assignments.

5.4 LIMITATIONS

Because there were a limited number of people in this study, and the study was conducted over one year, these findings and conclusions must be viewed as exploratory. Also, data were not available for all students. Some findings may not be applicable to the present time frame since the university continues to improve their program.

5.5 RECOMMENDATIONS

The results of this study provide important information to universities with reading specialist programs. These recommendations follow:

5.5.1 Recommendations for coursework

Include opportunities in courses for candidates to practice strategies and teaching techniques through built-in fieldwork or experience in classrooms or clinics.

5.5.2 Recommendations for fieldwork

Continue to look for ways to enhance excellent field experiences for students to insure application and practice of concepts and strategies taught in classes. Assignments should include application experiences that require tutoring students as part of the learning experience.

5.5.3 Candidate recommendations

Given the importance of experience, strong consideration for admission should be given to those candidates who have teaching experience.

5.5.4 Programmatic recommendations

1. Multiple sources of data for entrance into the reading specialist certification program should be used.
2. Universities would be wise to maintain a database with demographic data and scores on various tests to provide information that would enable universities to evaluate their programs. These data should be collected as part of the entrance requirements. Accountability requires that schools self-evaluate as a means of improving programs. The database could include evidence of a teaching certificate, undergraduate GPA, Praxis test scores, teaching experience, other experience with students, etc.
3. If follow-up on candidates by universities occurred six months to a year after candidates completed the reading specialist program continued refinement of the reading specialist program could be made.

5.6 IMPLICATIONS

Given the changing role of the reading specialist and new demands of the role, it is important to look at 1) entry skills of the candidates, 2) what matters in the program, and 3) how successful

the candidate is after completing the program. It is also important to consider ways to continue to improve the reading specialist program to accommodate the changing roles of the reading specialist. This study contributed to the knowledge base by substantiating the need for teaching experience for those entering the reading specialist program. The results of this study could be used by colleges/universities with reading specialist programs to assess the experience element in their programs. Teaching experience seems to provide a solid knowledge base and also helps establish credibility. Further significance derives from the fact that age, and entry certification Praxis test scores can act as predictors as to how reading specialist candidates will perform in the program. Beyond this, actual hands on learning with case studies, practicing teaching strategies in class, and strong coursework in diagnosis and instruction were emphatically emphasized as important by reading specialist candidates. Using this knowledge along with the International Reading Association Standards to examine college and university programs could increase possibility that universities will credential highly qualified reading specialists.

5.7 FURTHER STUDY

1. A follow-up study of reading specialists who completed the program into their first year as teachers or reading specialists could provide information about the efficacy of a university/college program.
2. A comparison of the intern program to the regular reading specialist program over 3 years with follow up into the reading specialists' first year of teaching would further substantiate the findings presented here, and further define needs of the reading specialist. Continued data collection on the reading specialist program at the university would provide a larger sample and more data. Providing a rich description of coursework, performance in clinic or schools, and Praxis examinations with follow up into candidates' first and second year as a reading specialist would further inform reading specialist educators.
3. A comparison study of reading specialist programs to see how different colleges meet the standards could help all programs meet specific standards. Developing an analysis of

required coursework for the certification, and number of hours of actual fieldwork or practicum teaching would provide a clearer picture of reading specialist education.

APPENDIX A

COURSE DESCRIPTIONS

I&L 2210 LANGUAGE AND THE READING PROCESS

Examines current reading instruction processes in relation to language processes. Theories of language learning and reading learning are examined and related to current issues such as state policies and educational mandates. Language and reading models are developed in class.

I&L 2212 - METHODS AND MATERIALS IN READING

Methods and materials that prepare teachers/specialists to teach beginning reading, word identification, vocabulary, comprehension, study methods, and recreational reading. Classroom management of reading, informal assessment, and evaluation of reading materials are also addressed.

I&L 2213 - DIAGNOSIS AND INSTRUCTION I

Focus on diagnostic principles and procedures used in the teaching of reading, K-adult. Includes an analysis of informal and formal assessment tools. Emphases are on helping students understand the importance of diagnosis in planning instruction and diagnosis as a process rather than a product.

I&L 2214 - DIAGNOSIS AND INSTRUCTION II

Course focuses on developing understanding of instructional strategies that can be used with students experiencing difficulties with reading/language process. Various roles of specialists will be described and discussed.

I&L 2215 - APPLIED PRINCIPLES OF REMEDIATION

In schools or clinical sites, students use knowledge and skills gained in earlier experiences to diagnose reading difficulties of several pupils at varied levels, to develop and implement a thorough program of individualized remedial instruction, and to evaluate that program.

I&L 2220 - READING IN CONTENT AREAS

Addresses methods and materials for assisting students as they read, study, and learn in content classrooms. Emphasis on functional approaches that facilitate learning of both content and process across the curriculum. Also implications of current research findings for content area instruction are examined.

I&L 2281 - LEADERSHIP SCHOOL LITERACY PROGRAM

This course examines theories about leadership of the school literacy program. Leadership skills are defined and applied. Leadership theory and research as related to literacy curriculum and instruction are discussed; example of how reading specialists and others (principals, teachers) can fulfill a leadership role as described. Course combines theory with practical application.

<http://www.education.pitt.edu/programs/readinged/>

APPENDIX B

IRB PARTICIPATION LETTER

Approval Date: 03/29/04

IRB Participation Letter

Renewal date: 03/28/05
University of Pittsburgh
Institutional Review Board
IRB#0403024

CONSENT TO ACT AS A SUBJECT IN A RESEARCH STUDY

TITLE: A Study of the Characteristics of University Reading Specialist Candidates: Individual and Programmatic Dimensions and Their Correlates to Scores on the Praxis and Other Outcome Measures.

PRINCIPAL INVESTIGATOR: Nancy Kennedy, University of Pittsburgh, 5C12 Posvar Hall, Pittsburgh, PA, (412) 624-3014

CO-INVESTIGATORS: Dr. Rita Bean, University of Pittsburgh, 5C34 Posvar Hall, Pittsburgh, PA (412) 624-1718

Dr. Douglas Hartman, University of Pittsburgh, 5A15 Posvar Hall, Pittsburgh, PA (412) 648-7348

SOURCE OF SUPPORT: None

SOURCES OF STUDENTS: Students will be recruited from reading specialist candidates in I&L 2213, and I&L 2214.

DESCRIPTION: I understand that I have entered into a one-time collaboration with the University of Pittsburgh to learn about the effects of experience and other variables on reading specialist candidates performance on various outcome measures. All the students in the Diagnosis and Instruction II class are being asked to volunteer for this study. If I decide to take part in this study I will be asked to contribute some information about my undergraduate GPA--that will be obtained from the Office of Student Services-- and teaching experience, and my assignments from class will be part of the study. I understand that this study will take place this semester, spring, 2004, and that I will be asked to contribute my elementary education Praxis scores and reading specialist Praxis scores to the investigator. I may also be asked to answer a brief survey and participate in an interview.

RISKS AND BENEFITS:

I understand that there are no foreseeable risks associated with this study aside from the risk for breach of confidentiality which will be minimized by keeping research records confidential and accessible to the investigators. No student will be identified in the study, and all records will be confidential. Information obtained will not affect class grades or future job possibilities. Society might benefit from this research by knowing the characteristics that make informed reading specialists.

COSTS AND PAYMENTS: I understand that as a participant, I will not be paid for my participation. All costs involved in this study will be borne by the Reading Specialist Project.

CONFIDENTIALITY:

I understand that any information about me including GPA and assessments and surveys obtained in the course of this study will be utilized for research and kept confidential.

Participants Initials _____

Information will be coded to keep confidentiality of records through use of the last 4 digits of my social security number. Information which might identify a person will be kept in a locked office and only the

PI will have access to it. I understand that participation will not affect my grades in any class at the University of Pittsburgh.

I will not be identified by name in any publication of the research results unless I sign a separate form giving my permission. I am aware that research records will be kept on file for at least five years. If information from this study is ever shared with other researchers in the future, it will be fully de-identified before doing so.

RIGHT TO WITHDRAW:

You may withdraw, at any time, your consent for participation in this research study, to include the use and disclosure of your identifiable information for the purposes described above.

VOLUNTARY CONSENT:

All of the above has been explained to me and all of my current questions have been answered. I understand that I am encouraged to ask questions about any aspect of this research study during the course of this study, and that such future questions will be answered by the researchers listed on the first page of this form. Any questions which I have about my rights as a research participant will be answered by the Human Subject Protection Advocate of the IRB Office, University of Pittsburgh (1-866-212-2668). By signing this form, I agree to participate in this research study. A copy of this consent form will be given to me.

Participant's Signature

Date

CERTIFICATION of INFORMED CONSENT

I certify that I have explained the nature and purpose of this research study to the above-named individual(s), and I have discussed the potential benefits and possible risks of study participation. Any questions the individual(s) have about this study have been answered, and we will always be available to address future questions as they arise.

Nancy G. Kennedy
Printed Name of Person Obtaining Consent

Principal Investigator
Role in Research Study

Signature of Person Obtaining Consent

Date

APPENDIX C

READING SPECIALIST CANDIDATE SURVEY

The purpose of this survey is to provide information to the reading community on how different characteristics of candidates in the reading program play a part in developing reading specialists. All data will be confidential.

Last four digits of your Social Security Number _____

Please indicate by checking or explanation the answers to the following questions.

1. Prior to this program please indicate the number of years teaching experience. (Do not count work as an aide.)

Indicate how many years experience. _____ What levels did you teach? _____

Years Substitute experience. _____ Describe _____

2. Indicate the number of years of other experience with children. (Scouts, Boys & Girls Club, Teacher aide, etc.) _____ years

Describe kind of experience _____

3. Are you a parent? ___ Yes ___ No If yes, indicate children's ages beginning with the oldest. _____

4. Please check your age group.

___ 20-24 ___ 25-29 ___ 30-34 ___ 35-40 ___ 41+ ___

5. List your undergraduate major _____

6. Do you have an undergraduate degree in education? ___ Yes ___ No

7. Did you complete a 5 year program in education? ___ Yes ___ No

8. Did you complete a MAT program in education? ___ Yes ___ No
Where? _____

9. Write the number of formal (semester- or quarter-long college classes) courses you had in teaching reading and language arts. _____ courses, _____ credits List the titles of these courses. Use back as needed.

10. Check courses completed at the University of Pittsburgh.

___ Lang. and the Reading Process ___ Diagnosis and Instruction I

___ Methods and Materials in Reading ___ Diagnosis and Instruction II

___ Reading in the Content Field ___ Leadership/School Read. Program

___ Applied Principles of Remediation ___ Language Arts Elective

___ Others, please list _____

APPENDIX D

RATING SCALE FOR PROFESSORS

Student _____

For each item on this checklist, please rate the extent to which the behavior was present as you observed over time. Check the number which applies:

0=Unsatisfactory	1=Limited Proficiency	2=Satisfactory	3= Superior	4=Exemplary	NA
The candidate rarely, and, inappropriately or superficially demonstrates indicators of performance.	The candidate shows limited proficiency in demonstrating indicators of performance.	The candidate sometimes and adequately demonstrates indicators of performance.	The candidate usually and extensively demonstrates indicators of performance.	The candidate consistently and thoroughly demonstrates indicators of performance.	The candidate has not been observed demonstrating this indicator of performance.

1. Shows commitment to the program in terms of attendance. 0 1 2 3 4 NA

2. Shows commitment to program in terms of participation in classroom discussion and activities. 0 1 2 3 4 NA

3. Applies and incorporates class learning into lessons and assignments. 0 1 2 3 4 NA

4. Demonstrates knowledge of language development and reading acquisition and the variations related to cultural and linguistic diversity. 0 1 2 3 4 NA

5. Has knowledge of a wide range of assessment tools and practices. 0 1 2 3 4 NA

6. From the case study shows knowledge of a wide range of instructional practices, approaches, and methods. 0 1 2 3 4 NA

7. From the case study shows ability to design programs that will intrinsically and extrinsically motivate students. 0 1 2 3 4 NA

8. From the exam, “demonstrates knowledge of the major components of reading (phonemic awareness, word identification and phonics, vocabulary and background knowledge, fluency, comprehension strategies, and motivation) and how they are integrated into fluent reading” (IRA, 2003, p.11) 0 1 2 3 4 NA

APPENDIX E

LEADERSHIP RATING SCALE

Student _____

For each item on this checklist, please rate the extent to which the behavior was present as you observed over time. Check the number which applies:

0=Unsatisfactory	1=Limited	2=Satisfactory	3= Superior	4=Exemplary	NA
The candidate rarely, and, inappropriately or superficially demonstrates indicators of performance.	The candidate shows limited proficiency in demonstrating indicators of performance.	The candidate sometimes and adequately demonstrates indicators of performance.	The candidate usually and extensively demonstrates indicators of performance.	The candidate consistently and thoroughly demonstrates indicators of performance.	The candidate has not been observed demonstrating this indicator of performance.

1. Shows ability to present information about reading in a professional manner. 0 1 2 3 4 NA
2. Shows ability to provide leadership in groups of peers. 0 1 2 3 4 NA
3. Shows ability to work with colleagues to observe, analyze, and provide feedback on each others' practice. 0 1 2 3 4 NA
4. Has good interpersonal relationships with peers. 0 1 2 3 4 NA
5. Shows leadership skills in the ability to develop and design programs. 0 1 2 3 4 NA
6. Can model reading and writing activities with enthusiasm. 0 1 2 3 4 NA
7. Strives to learn more than taught by outside reading, observation and discussion. (Learns with enthusiasm). 0 1 2 3 4 NA
8. Is articulate in discussing reading and writing skills, strategies, and instruction. 0 1 2 3 4 NA
9. Uses appropriate technical skills in written communication. 0 1 2 3 4 NA
10. Writing shows substantive content and is well organized. 0 1 2 3 4 NA

APPENDIX F

PERFORMANCE IN FIELD SUMMARY CHECKLIST

Student Name _____

Liaison/Practicum supervisor _____

For each item on this checklist, please rate the extent to which the behavior was present as you observed over time. Check the number which applies:

0=Unsatisfactory	1=Limited	2=Satisfactory	3= Superior	4=Exemplary	NA
The candidate rarely, and, inappropriately or superficially demonstrates indicators of performance.	The candidate shows limited proficiency in demonstrating indicators of performance.	The candidate sometimes and adequately demonstrates indicators of performance.	The candidate usually and extensively demonstrates indicators of performance.	The candidate consistently and thoroughly demonstrates indicators of performance.	The candidate has not been observed demonstrating this indicator of performance.

	0	1	2	3	4	NA
Instruction						
Teacher uses appropriate strategies based on student needs.						
Teacher knows how to implement strategies accurately.						
Teacher shows evidence of planning to meet specific learning needs.						
Teacher can make adjustments based upon student actions and responses.						
Teacher reinforces responses to students in a positive manner.						
Teacher establishes good rapport with students.						
Teacher creates and maintains a climate conducive to learning.						
Teacher is able to motivate students.						
Children are actively involved in lesson.						
Teacher connects reading and writing activities where applicable.						
Materials						
Teacher uses materials that are appropriate for children.(e.g. at correct levels.)						
Teacher uses materials appropriate to the learning objective.						
Teacher uses materials that are of interest to the children, including multi-cultural material.						
Management						
Teacher paces the lesson appropriately.						
Teacher focuses attention of students effectively.						
Teacher uses effective means to manage student behavior.						
Teacher Knowledge						
Teacher knows the guiding principles underlying areas of reading, e.g.						
Phonemic awareness						
Phonics						
Vocabulary						
Comprehension						
Fluency						
Writing						

Figure 1. Summary Checklist. Adapted from Grumet, J. (1999). Reflections and success of reading specialist interns in a field-based program. Unpublished dissertation. University of Pittsburgh.

APPENDIX G

INTERVIEW PROTOCOL

Introduction: Today, I am asking for some feedback on the Reading Specialist Program. I am going to ask you some questions about your coursework in the reading specialist program at the University of Pittsburgh, and about your field experiences in working with struggling readers as you fulfilled some of the practical requirements for your courses.

Coursework:

1. Which courses were most helpful in working with struggling readers and why?

2210 Lang. and the Reading Process
2212 Methods and Materials in Reading
2213 diagnosis and Instruction I
2214 Diagnosis and Instruction II
2215 Applied Principles in Remediation
2220 Reading in the Content Areas
2281 Leadership School Literacy Program
Language Arts Elective

2. What assignments were most helpful to you for working with struggling readers and why?

Field Experiences:

3. In what ways did your work in the field help you with the requirements of the Reading Specialist Program?

Tell me what you did.

- a. Intern
- b. Teacher
- c. Other

How did that work help you with the requirements of the Reading Specialist Program?

4. How did Reading Specialist courses help you with your field work?

5. Overall, what do you see as your strengths as a reading specialist entering the profession?

6. How do you plan to capitalize on your strengths?

7. Where do you think you still have some “room to grow?”

8. What plans do you have to develop the areas that need to grow?

9. Have there been any changes during your year in the reading specialist program in terms of how you teach reading?

10. Is there anything else that you would like to tell me about how your background experiences contributed to your work in the program?

How did your educational experiences contribute to your work in the program?

How did your experiences contribute to your work in the program?

APPENDIX H

STUDENT SCORES AND DEMOGRAPHICS

Table 8: Student scores and demographic

Subj.	Age Group	GPA	Teaching Ex.	Num Rdg. Lang arts courses	Num Rdg. Lang arts credits	Praxis Curric Instru. Asses	Praxis PLT	Under-grad degree edu.	5 yr Pgm.	MAT Pgm	Course Grades Composite	Performance	Praxis RS cert
1	20-24	3.76	0	3	12	184	185	yes	no	no	.16	1.90	560
2	20-24	2.86	2	3	9	.	.	yes	.	yes	-2.43	.	.
3	30-34	3.31	10	3	10	.	.	yes	no	no	.22	4.00	650
4	41+	4.00	30	2	6	196	182	yes	no	no	.89	.	700
5	20-24	3.64	0	0	0	173	187	no	no	no	.48	.	610
6	20-24	3.93	2	2	6	173	189	no	no	no	.22	3.00	550
7	25-29	3.18	2	2	6	187	184	yes	yes	no	.47	.	.
8	41+	2.55	1	5	15	189	174	no	no	no	.87	.	640
9	20-24	3.80	1	4	12	.	.	yes	no	no	.14	.	.
10	25-29	3.56	0	3	9	193	.	yes	no	no	.95	3.95	650
11	35-40	3.06	10	2	6	.	.	no	yes	no	.15	.	730
12	25-29	3.82	3	2	6	192	197	yes	no	no	.86	4.00	670
13	41+	3.08	25	2	8	.	.	no	no	no	.19	.	660
14	25-29	3.29	0	3	9	182	176	yes	no	no	.44	2.77	620
15	20-24	3.41	1	3	8	175	187	yes	no	no	-.38	3.82	670
16	25-29	3.38	2	4	12	196	182	yes	no	no	.27	3.09	650
17	20-24	3.49	0	2	6	.	187	yes	no	no	-.18	2.35	580
18	41+	3.08	10	1	3	.	.	no	no	yes	.76	.	670
19	25-29	3.40	1	2	6	.	175	yes	no	no	-.28	3.36	580
20	25-29	3.50	4	1	9	178	.	yes	yes	no	-.92	4.00	570
21	20-24	3.54	0	4	12	177	171	yes	no	no	-1.34	1.95	510
22	25-29	3.55	5	2	6	185	179	yes	no	no	-.65	3.59	670
23	25-29	3.34	4	3	9	181	189	yes	no	no	-.72	4.00	620
24	25-29	3.14	1	3	9	184	.	no	no	yes	-.05	2.40	590
25	25-29	3.50	4	3	9	.	187	yes	no	no	.48	.	.

Table 8 Continued

Subj.	Age Group	GPA	Teaching Ex.	Num Rdg Lang arts courses	Num Rdg Lang arts credits	Praxis Curric Instru. Asses	Praxis PLT	Under-grad degree edu.	5 yr Pgm.	MAT Pgm	Course Grades Composite	Performance	Praxis RS cert
26	35-40	3.64	8	2	7	182	181	yes	no	no	.26	4.00	690
27	25-29	3.51	1	4	12	.	.	yes	no	no	.33	3.62	620
28	25-29	3.66	1	.	.	.	.	yes	no	no	-.05	.	.
29	25-29	3.29	0	1	3	171	176	yes	no	no	.27	4.00	630
30	20-24	3.89	2	4	12	.	.	yes	no	no	-.05	1.85	.
31	35-40	2.98	0	4	12	.	.	yes	no	no	.70	3.35	670
32	30-34	3.09	3	1	3	.	.	no	yes	no	.49	4.00	610
33	25-29	3.95	4	5	15	190	186	yes	no	no	.04	3.82	.
34	25-29	.	5	2	6	.	.	yes	no	no	.18	3.00	.
35	25-29	3.17	0	2	6	164	166	yes	no	no	.22	3.14	590
36	25-29	3.18	1	1	3	180	169	yes	no	no	-.04	2.15	570
37	20-24	3.52	0	2	6	177	182	yes	no	no	-.61	.	.
38	25-29	3.95	2	3	9	199	189	yes	no	no	.66	4.00	690
39	41+	2.78	9	.	.	.	.	yes	no	yes	.30	.	.
40	30-34	2.84	5	2	6	.	.	yes	no	no	-.56	3.59	.
41	35-40	2.90	10	2	6	.	.	yes	no	no	-.30	3.95	540
42	20-24	3.45	2	4	12	.	.	yes	no	no	.05	2.33	630
43	35-40	3.53	4	2	6	191	186	no	no	no	.51	2.42	.
44	20-24	3.00	0	2	6	179	170	yes	no	no	-1.02	1.95	570
45	25-29	3.35	2	3	9	182	179	yes	no	no	-.05	2.36	610
46	25-29	3.20	0	2	6	179	183	yes	no	no	-.09	4.00	580
47	20-24	3.45	1	3	9	.	.	yes	no	no	-.47	3.45	.
48	25-29	2.33	2	3	9	175	171	no	no	yes	-.24	2.30	550
49	25-29	3.51	4	4	12	.	.	yes	no	no	.77	3.73	.
50	25-29	3.43	2	3	9	171	168	yes	yes	.	.16	3.05	.
Total	N 50	49	50	49	49	29	29	50	49	49	50	37	35

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