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Putting the Horse Before the Cart: Utilizing What Assessment Data Reveal About Struggling Young Adolescent Readers to Inform Policy and Instruction

Danielle V. Dennis
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To the Graduate Council:

I am submitting herewith a dissertation written by Danielle V. Dennis entitled "Putting the Horse Before the Cart: Utilizing What Assessment Data Reveal About Struggling Young Adolescent Readers to Inform Policy and Instruction." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.

Richard L. Allington, Major Professor

We have read this dissertation and recommend its acceptance:

Anne McGill-Franzen, Vincent Anfara, Amy Broemmel

Accepted for the Council:
Dixie L. Thompson

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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PUTTING THE HORSE BEFORE THE CART: UTILIZING WHAT ASSESSMENT DATA REVEAL ABOUT STRUGGLING YOUNG ADOLESCENT READERS TO INFORM POLICY AND INSTRUCTION

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Danielle V. Dennis
May 2007

DEDICATION

For my family. Each and every one of you.

"May the long time sun shine upon you
all the love surround you, and the pure light
within you guide you all the way on."
Author Unknown

The love and support my family has provided me throughout my life has made this goal attainable. Each and every member is a pillar of strength, a ray of light. I cannot express my admiration, respect, and love with words. But, you must know that you are with me every minute, every second, and we can do anything because we have one another.

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ABSTRACT

In recent years, increased attention has been paid to accelerating the development of struggling young adolescents' reading skills (Franzak, 2006). It has been widely acknowledged that these students require intensive instruction in reading in order to meet changing societal demands (Allington, 2002; Afflerbach, 2004; Alvermann, 2001; Biancarosa & Snow, 2004). Score reporting from the National Assessment of Educational Progress (NAEP) may demonstrate a dichotomy amongst our young adolescent readers, but the scores do not tell us about the specific needs of individual students. In other words, these levels essentially create two groups: those who can read and those who cannot. Further, instructional decisions are being made based on the limited proficiency scores of state mandated standardized assessments. This method of reporting scores creates a notion of homogeneity amongst the reading skills of young adolescents.

The purpose of this multivariate correlational study was to determine the patterns of reading abilities amongst struggling young adolescent readers in an attempt to demonstrate the heterogeneous nature of these students and the variability of reading skills they bring to middle school classrooms (grades 6-8), in an effort to influence both policy and instruction at this level. Data were collected during the 2005-2006 academic year. Each student participant (n=94) was administered five assessments that measured alphabetics (phonemic awareness and phonics), fluency, vocabulary, and comprehension, which were representative of both the highly and less constrained skills (Paris, 2005) presented as essential components of reading instruction by the National Reading Panel (NRP, 2000). Independent samples t-tests were used to compare the assessment means of several subgroups, students who qualified for special education, free and reduced price

lunch, and English Language Learner services, and those who did not qualify for these services. Results indicated all of these students scored below grade level on the assessments administered. However, all of the students represented varying abilities and needs that required further analysis. Factor analysis was then utilized to determine which reading skills assessed were most directly related to student performance on TCAP. Three factors emerged, meaning, decoding, and rate and accuracy. Finally, cluster analysis presented four distinct clusters of struggling young adolescents, which represented heterogeneous abilities in various reading skills.

Results indicated one-size-fits-all approaches to policy and instruction relating to struggling young adolescent readers do not meet the heterogeneous needs of this population of students. Rather, in-depth assessment and diagnoses are necessary to determine the most appropriate instructional tools for individual students. Further, by suggesting the use of state mandated standardized assessment scores be the sole indicator of student placement in remedial reading courses, policy fails to address the multifaceted process of reading and the differing trajectories of young adolescent reading development.

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Chapter Introduction

"Hey, Ms. [Mathson], you know what I think? Just because I don't always understand what I read doesn't mean I'm stupid."

-Javaar, 6th grade student

Javaar made this statement after I introduced a new reading program my school district had purchased for struggling middle school readers. Phonemic awareness and decoding strategies were the focus of the program, in which students were expected to spend most of each session practicing how to chunk phonemes. Then, they would read about cats that sat on mats, and answer "comprehension" questions about what the cat sat on in the story. Like many teachers, I felt a tension between what I was *supposed* to teach, and what I knew my students *needed*. Javaar's comment, and the ensuing nods of agreement from other students, opened my eyes that day. My students forced me to look at what they knew about literacy, to find their strengths, and to look at what *I* knew about literacy. They sent me on a path that has ultimately led to this line of research.

My first step was to look at all of the assessment information I had collected on my students. I knew they were in my class because they had failed the state reading assessment, but what did that really tell me as a teacher? Did it tell me they were missing the skills required of early readers? No, and neither did any other assessment I had administered and conveniently filed away. Informal reading inventories demonstrated that most of my students were able to read the words on the page, but had a difficult time

comprehending what they had read. In general, the assessment data I had gathered suggested that problems with fluency, limited vocabulary, and use of comprehension strategies were hindering their reading success. I had to develop a plan that would build on and support their strengths, which meant explaining to the administrative team why this new remedial reading program was not the best instructional tool for my students. With data in hand, and a formulated plan, I took the team step-by-step through what I had learned by first looking at what the students knew, and then developing a framework for literacy instruction. This framework differed in several ways from the commercial reading program the district had purchased. First, it was based on assessment data I had gathered. Second, instructional decisions were made based on the similarities and differences my students demonstrated through the assessments. Finally, instructional decisions were on-going, meaning as students demonstrated specific strengths and needs instruction was changed to meet them. My students had a successful sixth grade year, and greater gain scores on the state assessment than any other reading class in the school.

However, I now worry that too many school districts are making the same sort of decision that my district made for my young adolescent struggling readers: purchasing a single commercial reading program for remedial and special education interventions. There are, undoubtedly, several reasons for this and I explore some of those below.

Statement of the Problem

In recent years, increased attention has been paid to accelerating the development of struggling young adolescents' reading skills (Franzak, 2006). It has been widely acknowledged that these students require intensive instruction in reading in order to meet changing societal demands (Afflerbach, 2004; Allington, 2002; Alvermann, 2001;

Biancarosa & Snow, 2004; Conley, 2005; Franzak, 2006; Langer, 2004; Moje, 2002; Moore, Bean, Birdyshaw, & Rycik, 1999; NASBE, 2005). However, a consensus on the best approaches for meeting these demands has not been reached (Biancarosa & Snow; Franzak, 2006; NASBE, 2005). Although researchers have qualitatively demonstrated the varying abilities and skills of young adolescent readers (Alvermann & Eakle, 2003; Franzak, 2006; Ivey, 1999; Langer, 2004; Moje, 2002; Moje, Young, Readence, & Moore, 2000), the use of national and international reading assessment scores have been used to support certain instructional policies and fuel a crisis in young adolescent literacy (Allington, 2002; Biancarosa & Snow, 2004; Buly & Valencia, 2002). Scores such as the National Assessment of Educational Progress (NAEP) are reported based on four proficiency levels: Advanced, Proficient, Basic and Below Basic (NCES, 2006). As Allington (2002) noted, the percentage of students scoring at the Basic and Below Basic levels are often inaccurately reported as reading below grade-level, and those scoring proficient and advanced represent the percentage of students capable of reading on grade-level. While such levels may demonstrate a dichotomy between our young adolescent readers, they do not tell us about the specific needs of individual students. In other words, these levels essentially create two groups: those who can read and those who cannot. This method of reporting scores creates a notion of homogeneity amongst the reading skills of young adolescents. Such a view may lead to the one-size-fits-all instructional approach that Javaar, and other struggling young adolescent readers across the United States, are being exposed to in middle school classrooms (Buly & Valencia, 2002; Shanahan, 2005).

Buly and Valencia (2002) tested the assumption that students who failed the state reading assessment were missing the most basic of skills required for successful reading

achievement. A variety of reading skills assessments were administered to 108 fourth grade students from 13 elementary schools that failed the Washington Assessment of Student Learning (WASL). Although some of the fourth grade students demonstrated slow word identification, most experienced difficulty reading fluently and reading for meaning. The majority of these struggling readers had better developed decoding and word recognition skills and more limited development of skills and strategies necessary for reading with understanding. Therefore, providing these students with intensive intervention in decoding skills was superfluous for some students, because the instruction would not match the variety of reading skills represented through the assessment results. Additionally, Buly and Valencia demonstrated that the students in the study represented a heterogeneous group of reading abilities, all of which could not be addressed through the implementation of one commercially developed reading program like the one Javaar and his classmates were exposed to.

National Context

The reauthorization of the Elementary and Secondary Education Act (ESEA) led a bipartisan Congress to pass into law the No Child Left Behind (NCLB) Act of 2001. The goal of NCLB was to "help close the achievement gap between disadvantaged students and their peers" (Bush, 2001, p. 7). Much of the policy within NCLB focused on reading achievement, and mandated specifically accountability, high standards, and annual academic assessments in grades 3-8. In other words, states were required to develop high academic standards in reading for all students, and then develop assessment programs to measure students' progress in achieving those standards.

Although annual testing was required in grades 3-8, at the center of the reading policy was early reading instruction. This component of NCLB, known as Reading First, was designed to alleviate reading difficulties early, before children fell too far behind, and was centered on the recommendations of the National Reading Panel (NRP, 2000). Based on their review of experimental studies of reading, the National Reading Panel cited five pillars of reading instruction: phonemic awareness, phonics, fluency, vocabulary, and comprehension (NRP).

Since the inception of NCLB, reading instruction in the early grades has received increased funding and attention. Funding for reading initiatives was geared toward the development and implementation of scientifically based reading programs in kindergarten to second grade, which focused on the five pillars of reading instruction set forth by the National Reading Panel. Based on students' developmental literacy trajectories (Paris, 2005; Spear-Swerling, 2004), many of the reading programs adopted by schools concentrated on the acquisition of phonics and phonemic awareness skills. These skills were viewed as necessary precursors to fluent reading, vocabulary acquisition, and the ability to comprehend text (Spear-Swerling, 2004).

Despite the focus on early reading instruction as a result of NCLB, a RAND (2005) report countered that explicit reading instruction was essentially non-existent by the third grade and "many children [were] not moving beyond basic decoding skills as they advanced to the fourth grade" (p. 1). In other words, the RAND report found most students were not receiving reading instruction that focused on vocabulary or comprehension strategies, because reading instruction was halted by the third grade in the participating schools. Yet, beginning in the third grade mandated state assessments were

administered to students to determine progress in meeting academic standards in literacy. Thus, the focus of reading instruction was placed in the early grades (K-2/3) and did not provide students with instruction in reading skills beyond decoding.

Although no "scientific evidence" exists revealing a connection between testing and increased achievement (Afflerbach, 2005; Allington, 2002), many school districts have used the data from these assessments to make indiscriminate decisions about individual students (Afflerbach; Allington; Buly & Valencia, 2002; Linn, 2000). According to Afflerbach, using results from standardized reading assessments as estimates of individual growth are "at best an approximation of the students' actual achievement level" (p. 158). However, students scoring below proficient on state assessments were identified and placed in supplemental or remedial reading classes (Allington, 2001, 2006; Buly & Valencia; Klenk & Kibby, 2002), which often focused exclusively on phonemic awareness and decoding skills regardless of the grade or reading level of the students being taught (Buly & Valencia; Pressley & Allington, 1999; Shanahan, 2005).

"Cause for Alarm"

According to the National Center for Education Statistics (NCES, 2006), more than eight million students in grades 4-12 are struggling readers. These students failed to achieve the Basic proficiency level in reading on the National Assessment of Educational Progress (NAEP). NCES reported that less than 35% of eighth grade students performed at or above the proficient level on the NAEP. Such staggering accounts of student performance lead to increased talk of a literacy crisis in the United States (Biancarosa & Snow, 2004).

Demands for a more educated and literate workforce have driven the discussion on how to best meet the needs of these struggling readers. Policy reports for adolescent literacy and government-funding programs to support reading instruction for students in grades 4-12 have also begun to trickle into the debate. Although as Franzak (2006) reported "the research specifically addressing policy with regard to adolescent readers is still scant yet there is increasing recognition that literacy scholars must pay attention to policy in terms of both research and advocacy" (p. 237).

Because of its recent emergence, adolescent literacy policy has not been well defined (Conley & Hinchman, 2004; Franzak, 2006; Moje, 2002). However, most policy documents have supported the notion that adolescent literacy must focus on getting students beyond the basic literacy skills learned in the elementary grades, and support instruction in the comprehension of more complex texts (Alvermann, 2001; Biancarosa & Snow, 2004; Franzak, 2006; Moore, Bean, Birdyshaw, & Rycik, 1999; NASBE, 2005).

Striving Readers

In 2005, President Bush allocated $100 million to the Striving Readers Initiative (U.S. Department of Education, 2006). This discretionary grant program funded large-scale research projects designed to raise the achievement of middle and high school students who are at-risk of not making adequate yearly progress on state literacy assessments. According to the website (USDOE), the goals of the program were to "support initiatives that improved the quality of literacy instruction across the curriculum, provide intensive literacy interventions to struggling adolescent readers, and help to build a strong, scientific research base for identifying and replicating strategies that improve adolescent literacy skills."

Eight agencies received funding through this program during the 2005-2006 fiscal year. All of the grant recipients reported the use of commercial reading programs to meet the needs of their target group. These were the same programs Shanahan (2005) asserted had little to no research base, and have not demonstrated the ability to raise the achievement of struggling adolescent readers. Further, the commercial reading programs were selected prior to participants' individual needs having been assessed and understood. Although assessment was a major component of the initiative (USDOE, 2006), it was limited to the identification of at-risk students and monitoring of their progress over the course of the intervention program. In other words, assessment was not considered integral for planning instruction, or making thoughtful, diagnostic decisions for struggling adolescent readers. Thus, despite a lack of research into what adolescent readers need in order to be successful in literacy tasks, programs were selected that purported to meet the needs of struggling adolescent readers.

Struggling Adolescent Readers

Biancarosa and Snow (2004) authored *Reading Next: A Vision for Action and Research in Middle and High School Literacy*, a report prepared for the Carnegie Corporation of New York. In this report, Biancarosa and Snow suggested there were very few struggling adolescent readers who were unable to read the words on the page, rather these students had difficulty comprehending the text they read. The National Association of State Boards of Education (NASBE, 2005) shared this sentiment in their report, *Reading at Risk*, by offering that, "Specifically, there is general consensus among researchers about the five major factors for advanced literacy skills and the ability of adolescents to understand and learn from what they read: speed and accuracy when

reading the text, vocabulary, background knowledge, comprehension, and motivation" (p. 5). In fact, most policy reports that focused on adolescent readers supported the assertion that struggling young adolescent readers represent a variety of reading abilities, rather than a homogeneous group of non-readers (Biancarosa & Snow; Kamil, 2003; International Reading Association/National Middle School Association, 2002; NASBE). These reports call for instruction that acknowledges the heterogeneous nature of young adolescent reading abilities, but policymakers have yet to heed that call (Alvermann, 2001; Buly & Valencia, 2002; Franzak, 2006).

Acknowledging the needs of struggling young adolescent readers was a necessary step in the development of instructional policy, and the reports noted above address these requisite skills. As Buly and Valencia (2002) suggested, however, each individual student varies in the level and amount of instruction needed in any one of the aforementioned skills. In other words, some students may read quickly and accurately, but not have the vocabulary knowledge necessary for comprehending text. Other students may have a wide vocabulary, but lack comprehension strategies necessary for negotiating complex text. Still others may be successful when reading fiction text, but not as capable when provided with non-fiction. While recognizing what young adolescents need on a broad-scale is essential for the formulation of instructional policy, designing such policy becomes a successful enterprise when the variations amongst individual students are considered in the process (Afflerbach, 2004; Buly & Valencia; Franzak, 2006). Sweeping decisions based on a homogenous view of young adolescent reading abilities will not allow those students to further develop the reading skills necessary to become proficient readers. Rather, policy must take into account the varying abilities and instructional needs

of these students. Furthermore, continued testing of these students using high-stakes standardized assessment will not demonstrate improved reading skills if the heterogeneous nature of their reading abilities are not addressed through both policy and instruction (Afflerbach; Allington, 2003; Buly & Valencia).

Emergence of Adolescent Literacy Policy

One challenge in implementing adolescent literacy policy is a lack of agreement regarding what it means for an adolescent to be a proficient reader (Franzak, 2006). Alvermann (2001) noted that adolescents who perform poorly on state mandated reading assessments were often considered to be missing the skills necessary for succeeding at that particular grade level, and that their inability to reach proficiency was often considered the responsibility of the adolescent. Franzak proposed, "if reading is defined and treated as a set of hierarchically listed tasks, some readers will continue to occupy the bottom rung of the literacy ladder" (p. 231). But what does each rung on the ladder represent? Although several models of reading development exist, few delve into the specific proficiencies necessary to obtain the more advanced skills related to the comprehension of more complex texts. Thus, standards created that hold students accountable for those skills are somewhat nebulous for policymakers and teachers to discern (Biancarosa & Snow, 2004; Hargis, 2006). Often, students who fail these state reading assessments are deemed as struggling, or non-readers (Allington, 2002; Alvermann, 2001). As Hargis (2006) discussed, however, many young adolescent readers are capable of reading text but the variation amongst reading levels is great. For example, Hargis noted that the average achievement students, those who scored in the second and third quartiles on the Peabody Individual Achievement Test (PIAT) in the seventh grade

demonstrated reading levels between grades 5 and 10. These "average achievement" students, then, were all *readers* but not all were capable of reading text based on grade-level expectations. Buly and Valencia (2002) addressed this, "for many struggling students, grade-level standards are goals rather than immediate needs" (p. 234). In other words, the students assessed were able to read text. However, the reading abilities demonstrated by these students varied greatly, or represented a heterogeneous group of young adolescent readers with a range of instructional needs for aiming toward successful meaning making of grade-level text.

The Role of Assessment in Adolescent Literacy Policy

Most of the policy reports reviewed for this research recognized the importance of assessment in addressing the needs of struggling adolescent readers (Alvermann, 2001; Biancarosa & Snow, 2004; IRA/NMSA, 2002; Moore, Bean, Birdyshaw, & Rycik, 1999; NASBE, 2005). However, most also agreed with Franzak's (2006) assertion that "policy is currently driven by assessment tools that do little to improve the actual reading lives and experiences of marginalized adolescents" (p. 235), and suggested the use of instructionally informative assessments that provide teachers with information pertaining to what reading abilities students bring with them to the classroom (Moore, Bean, Birdyshaw, & Rycik, 1999). Combining the information gained through the administration of these assessments with that provided by high-stakes assessments of reading may begin to address the varying needs of struggling young adolescent readers.

Recognizing the current political climate was here to stay, Biancarosa and Snow (2004) asserted, "students need to perform well on their state or local standardized or high-stakes tests, both because these tests act as gatekeepers in increasing numbers of

states and because the national emphasis is on improved educational accountability" (p. 9). But, the authors agreed with the NASBE (2005) recommendations for assessment that was based on a number of data sources to identify the instructional needs of students, including assessments that measured word-level reading, fluency, reading level, and reading comprehension (Biancarosa & Snow).

Local Context

The Tennessee Comprehensive Assessment Program (TCAP) is a criterion-referenced test given to students in grades 3-8. This assessment measures students' proficiency of the Tennessee content standards and state performance indicators, which are specific, measurable skills, at each grade level (Tennessee Department of Education, 2006). Teachers receive score reports that provide them with each student's scale score and performance level (advanced, proficient, below proficient) on seven separate reporting categories in reading. The reporting categories for reading are broadly listed as content, meaning, vocabulary, writing/organization, writing/process, grammar/conventions, and techniques/skills (TNDOE). However, the state performance indicators are not directly tied to the reporting categories noted above. Therefore, a teacher is not able to discern areas of strength or difficulty for individual students, because there is no indication as to which standards are being measured through the reporting categories. Again, without this specific information on individual students a homogenous view of struggling young adolescent readers is likely to emerge (Alvermann, 2001; Buly & Valencia, 2002; Franzak, 2006), since scores reflected proficiency levels on broad scoring categories rather than specific performance indicators.

The Tennessee Reading Policy asserted all students "have the right to reading assessment with multiple methods that provide information about their strengths and needs as learners…" (Tennessee State Board of Education, 2005, p. 2). This suggestion was consistent with the recommendations of the policies reviewed for this research. Additionally, the Tennessee Middle Grades Policy (TNSBE, 1998) listed nine indicators called the "Elements of Quality Middle Grades Education". Of those nine indicators, six are specifically related to literacy development and acquisition. However, no further discussion ensued regarding how policymakers or teachers might begin to address those indicators in the classroom.

Specific to adolescent literacy, the Tennessee Reading Policy called for adherence to the fifteen elements of effective adolescent literacy programs listed in the *Reading Next* report. These elements include (Biancarosa & Snow, 2004):

- Direct, explicit comprehension instruction
- Effective instructional principles embedded in content
- Motivation and self-directed learning
- Text-based collaborative learning
- Strategic tutoring
- Diverse texts
- Intensive writing
- A technology component
- Ongoing formative assessment of students
- Extended time for literacy

- Professional development
- Ongoing summative assessment of students and programs
- Teacher teams
- Leadership
- A comprehensive and coordinated literacy plan

Representation of these elements within the Tennessee Reading Policy recognized a view of young adolescent readers as a heterogeneous group with various reading abilities and needs. However, not noted in the Policy, was the acknowledgement of the authors of *Reading Next* that all 15 elements do not need to be implemented simultaneously (Biancarosa & Snow, 2004). Further, Biancarosa and Snow noted that the elements noted above were, "treat[ed] as a distinct entity, but it is important to recognize that the elements are often synergistically related, and the addition of one element can stimulate the inclusion of another. The elements should *not* be seen simply as isolated elements in an inventory of potential elements, but rather as a group in which elements have a dynamic and powerful interrelationship" (p. 12). Thus, districts and schools must carefully choose which elements are most closely in line with their beliefs and infrastructure, and then build in additional components with time.

No suggestions or resources were listed in the Tennessee Reading Policy for adhering to these elements. Such an oversight was supported through the assertion that "Despite the indisputable importance of literacy instruction, however, NASBE's Study Group on Middle and Secondary School Literacy found that only a very few states have begun to think systematically about how state policies and practice should support a new approach to the education of adolescents" (NASBE, 2005, p. 4). While an important first step in

developing local policy for the implementation of young adolescent literacy programs is determining effective elements, it is also essential to recognize that each district and school will have different needs for supporting their young adolescents (Biancarosa & Snow). Thus, the Tennessee Reading Policy cannot be used as a homogeneous blueprint for every school in the state, but may be used as a framework to acknowledge the heterogeneous populations represented by the schools within the state.

So What?

What was not apparent in the literature on adolescent literacy policy was what patterns of reading abilities struggling young adolescents bring into the classroom. In other words, the literature largely fails to address the reading abilities our struggling young adolescent readers possess. In many ways the discussion of adolescent reading is framed within a conception of reading difficulties that suggests a certain homogeneity in that population: all Below Basic, all struggling, all missing early literacy skills. What seems lacking are both data and acknowledgement of the heterogeneity of reading proficiencies among the population of striving, struggling, lower achieving readers. What sort of variation in the development of specific proficiencies do young adolescent struggling readers demonstrate? While we have some evidence that patterns of variation exist, we still know too little about this heterogeneity and its implications for instructional intervention policies. Without this knowledge, it is difficult to define appropriate intervention designs for young adolescent struggling readers, develop proficiency standards to estimate students' progress, and effectively plan for instruction that meets the needs of these students.

However, there is some evidence and much theorizing suggesting adolescent struggling readers display heterogeneous patterns of proficiency, and suggesting that interventions must be flexibly designed to account for that variation. The Tennessee Reading Policy asserted elements of effective literacy instruction for young adolescents that districts must adopt, without acknowledging that each district would develop their own plan based on appropriate data from assessments of their students. Similarly, Striving Readers funded the implementation of specific intervention programs for struggling young adolescent readers before assessment data had been collected on the specific targeted students. In other words, by creating this policy without data that demonstrate the varying needs of struggling young adolescent readers, the cart has been placed before the horse.

Purpose of the Study

The purpose of this study was to determine the patterns of reading abilities amongst struggling young adolescent readers; to put the horse before the cart. More broadly, this study was designed to use the results relating to the patterns of reading abilities of struggling young adolescents to demonstrate the heterogeneous nature of these students and the variability of reading skills they bring to middle school classrooms. Until this information is brought forward, policies promoting homogenous approaches to reading instruction for struggling young adolescents will continue to follow the patterns noted above. Discussions on appropriate instruction for these students, although already taking place amongst policymakers (Biancarosa & Snow, 2004; Franzak, 2006; Shanahan, 2005; USDOE, 2006), can only productively continue when paired with meaningful data that more fully portray the reading abilities of the students.

Research Questions

This research study was influenced by the work of Buly and Valencia (2002) but designed to investigate the homogeneity/heterogeneity of reading proficiencies among struggling young adolescents. For the purposes of this research, a struggling young adolescent is defined as a student who scored below proficient on the Reading TCAP. The first research question required disaggregation of the data to represent what, if any, differences existed between students receiving special education services and those who do not, students who qualify for free and reduced price lunch and those who do not, and students who qualify for English Language Learner (ELL) services and those who do not. The second research question addressed the relationship between reading abilities and state assessment scores. The final research question guiding this study is an extension of Buly and Valencia's original research question to specifically include struggling young adolescents.

1. Is there a difference in reading abilities between:
    a. struggling young adolescents who qualify for special education services and those who do not?
    b. struggling young adolescents who qualify for free and reduced price lunch and those who do not?
    c. struggling young adolescents who qualify for ELL and those who do not?

d. struggling young adolescents who do not qualify for free and reduced price lunch, special education, or ELL programs compared to those who do qualify for these programs?

2. Which reading abilities are most directly related to young adolescents' below proficient scores on TCAP?
3. What patterns of reading abilities do struggling young adolescent readers who score below proficient on state mandated standardized assessments demonstrate?

The aforementioned research questions were developed based on the theoretical framework discussed below, and were used to design the study, collect and analyze data, and discuss the findings of this study.

Theoretical Framework

As noted in the Statement of the Problem, current models of reading development are both linear and hierarchical (Franzak, 2006). Borrowing heavily from both Spear-Swerling (2004) and Paris (2005), the following model of reading development was built to counter this tradition (Figure 1). The model was designed to address the varying reading abilities struggling young adolescent readers display, and to illustrate the heterogeneous nature of adolescent reading development. It will be discussed more fully in chapter 2 as it relates to the literature on the skills represented by the model, and chapter 3 as it related to the assessments administered to participants in this study.

Definition of Terms

The following terms are found throughout this research study and are defined for purposes of creating clear understanding of the components of this research. Although

some of the terms have more than one definition, those noted below are representative of this project and were carefully chosen for use in this study.

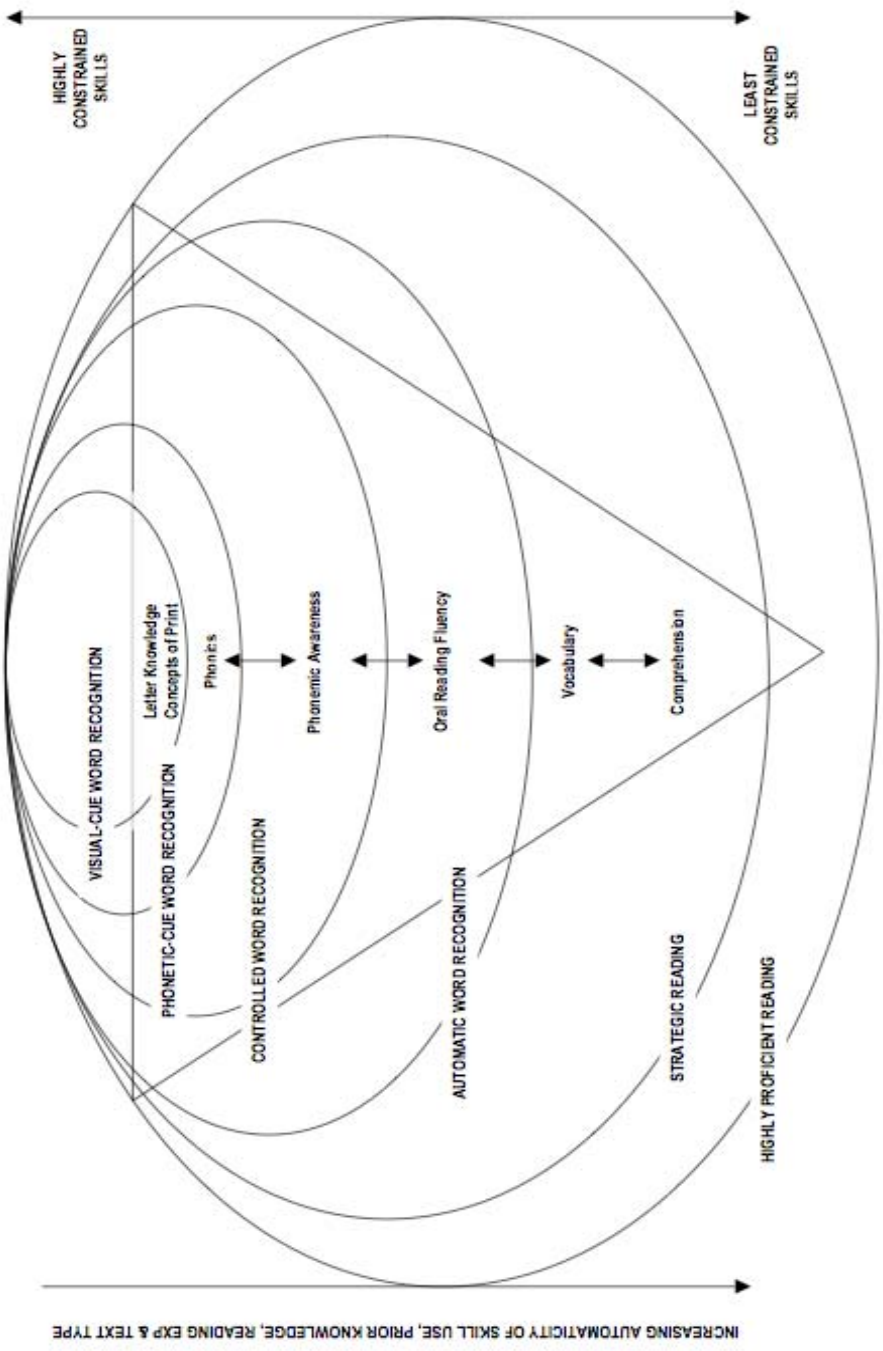

Figure 1
Model of Young Adolescent Reading Development

Alphabetics: The National Reading Panel (NRP, 2000) collapsed phonemic awareness and phonics into one category of alphabetics for the purposes of their discussion of these components as essential to reading development. Thus, in this study the term alphabetics will be used to encompass these components.

Automaticity: Samuels (2004) states, "one way to think of automaticity is that it represents the ability to perform a task with little attention" (p. 1130). This automaticity of one skill, then provides for attention to be placed on a more advanced skill.

Below Proficient: The Tennessee Comprehensive Assessment Program assigns students to one of three levels (advanced, proficient, below proficient), based on their scale score on each test. According to the Tennessee Department of Education (2005), below proficient "demonstrates a lack of understanding of the essential concepts and skills of the content" (p. 15).

Criterion-Referenced Assessment: Measure of a student's level of mastery of particular information and skills according to pre-established criteria and/or benchmarks (McKenna & Stahl, 2003; Salvia & Ysseldyke, 2004).

Decoding: "Decoding in relation to reading is the process of translating printed words into spoken words" (Samuels, 2004, p. 1131). According to McKenna and Stahl (2003), this process requires three successive understandings: acquisition of the alphabetic principle, the ability to blend letters into sounds, and the ability to use both phonograms (chunks of letters) and analogies.

High-Stakes Standardized Assessment: "Standardized assessments become high-stakes when educational or personnel decisions are based on the results" (Franzak, 2006, p. 235).

Standardized Assessment: Formal assessment designed and scored by sources outside the classroom setting, and is accompanied by a set of administration procedures, or directions, to be precisely followed by the classroom teacher (Caldwell, 2002). Under the No Child Left Behind Act (Bush, 2001), these assessments are currently mandated in all states for students in grades 3-8.

Struggling Young Adolescent Reader: For the purposes of this study, a struggling young adolescent reader is one who scored below proficient on the state standardized assessment (TCAP) in reading, thus indicating a breakdown in the aforementioned definition of adolescent reading.

Tennessee Comprehensive Assessment Program (TCAP): TCAP is the state standardized assessment program. TCAP is criterion-referenced, based on the Tennessee Content Standards and State Performance Indicators. The reading assessment, one of the components measured through the TCAP, is given to students in grades 3-8 (TNDOE, 2006).

Tennessee Content Standards: Benchmarks by which Tennessee educators develop grade-level curricula (TNDOE, 2006).

Tennessee State Performance Indicators: Pre-established criteria, arranged by grade level, by which TCAP questions are (a) generated, and (b) assessed (TNDOE, 2006).

Young Adolescent: Shanahan (2005) defined adolescents as students in grades 6-12, and much of the literacy research community recognizes these broad parameters. However, many experts argue that middle school students have distinct developmental needs, abilities, and strengths that make it necessary to narrow the scope of the definition predominately used in literacy research. Thus, for the purposes of this study, a young adolescent will be defined as a student who is 10-14 years of age, and enrolled in grades 6-8.

Young Adolescent Literacy: School-sanctioned activities, relating to reading and writing (content-area/secondary reading), coupled with the experiences of young adolescents outside of school, which also relate to reading and writing. Thus, young adolescent literacy encompasses young adolescents at its center, and the multiple literacies (e.g., internet, music, comic books) in which they engage (Stevens, 2002).

(Young) Adolescent Reading: "Adolescent reading involves the use of skills, strategies, and prior knowledge to construct meaning from text. Adolescent readers continue to develop the ability to construct meaning from text, and use and reflect on the information gained from written texts, so that they may achieve goals, develop knowledge and potential, and participate in society" (Afflerbach, 2004, p. 372).

Limitations

Due to the quantitative methodology employed for this study, the research is limited to the data provided through assessment of students on multiple literacy measures. Thus, not taken into account are researcher observations of students in the assessment situation, conversations with students about their school and outside literate

lives. While all of these factors play a role in students' literacy development, they can not be measured through the instruments chosen for the purposes of this research.

Delimitations

Several delimitations narrow the scope of this study. First, the sample of students was confined to those who scored below proficient on the reading components of the 2005-2006 TCAP. Thus, there is no comparison between those students who scored below proficient and those who scored proficient or advanced. Secondly, the study was restricted to four middle schools in one large southeastern school district. For purposes of researcher travel this is a necessary delimitation, however it does make the sample less representative of the national population. Finally, only 94 struggling middle school students were assessed. This number represents roughly one-third of the students who qualified for the study within the four participating middle schools.

Assumptions

As with any study, the researcher brings several assumptions to the project. First, it is assumed that middle school students who scored below proficient on state mandated standardized assessments were struggling readers. Secondly, it is assumed that the TCAP is an accurate measure of the reading achievement of middle school students. Finally, it is assumed all participants were given the TCAP reading components under similar conditions, as mandated by the assessment program.

Significance of the Study

This study is designed to add to the growing research base in the field of young adolescent literacy, specifically documenting the patterns of reading development in one group of struggling middle school readers. Through careful analysis of multiple

assessments administered to 94 struggling middle school readers, this research will serve as a first step in documenting patterns of reading development of young adolescent struggling readers and addressing policies focused on accelerating the reading development of these students. As Afflerbach (2004) suggested, "our understanding of the nature of adolescent reading must be combined with our understanding of appropriate assessment materials and procedures" (p. 376).

Currently, little assessment is conducted in relation to students' developmental and instructional needs (Caldwell, 2002). Assessments should provide teachers with information that drives instruction. In other words, students must first be assessed to determine their literacy strengths. Then, an instructional framework designed to build upon those strengths; the horse must come before the cart if the cart is to travel to its intended destination. Missing in the research on young adolescents, however, is an understanding of potential patterns of variation in their literacy abilities. This study is designed to initiate conversation regarding struggling young adolescents' literacy strengths, with the intent to encourage policymakers and instructional leaders to utilize research in an effort to meet the needs of middle school students.

CHAPTER 2

REVIEW OF THE LITERATURE

Chapter Introduction

Within any middle school classroom there is a range of reading abilities (Hargis, 2006). Some students are proficient word callers. They use appropriate intonation when reading, decode words quickly and accurately, but have difficulty comprehending the material they read. Some students are slow readers, but demonstrate strong comprehension skills. Others may be successful readers of fiction, but find informational text difficult to negotiate. Certainly there are middle school students who demonstrate the ability to decode and comprehend, while still others are unsuccessful with both.

Although this variability becomes obvious when viewing individual students in classrooms (Alvermann, 2001; Ivey, 1999; Moje, 2002), the heterogeneous nature of young adolescents' reading abilities is not evident in current policy (Buly & Valencia, 2002). Instead, the use of high-stakes assessments and mandated instructional programs alludes to a homogeneous view of student reading abilities at the middle school level (Afflerbach, 2005; Shanahan, 2005). Such an outlook is based on results from national and international assessments of literacy (Allington, 2002; Biancarosa & Snow, 2004; Buly & Valencia; Bush, 2001) that imply a staggering number of our young adolescents are missing the most basic reading skills (Biancarosa & Snow; NCES, 2006).

The purpose of this literature review is two-fold. The first section will discuss what is known about the relationship of assessment, policy, and instruction of struggling young adolescent readers. The second will address the reading development of young

adolescents based on the theoretical model presented in Chapter 1 (Figure 1). Each will be delineated more fully throughout this chapter.

How did we get here?

In *Reading Next*, Biancarosa and Snow (2004) elucidated the "Reading Crisis" by citing scores from the National Assessment of Educational Progress (NAEP). According to the authors, the United States has over 8 million struggling adolescent readers (Biancarosa & Snow). The authors cite a steady trend of, "almost 70 percent of students entering ninth grade…[that] can be considered as reading below grade level" (p. 7). This information prompted the development of *Reading Next*, as well as several other policy reports relating to young adolescent/adolescent reading development and instruction (Biancarosa & Snow; NASBE, 2005; USDOE, 2006).

Actually, the NAEP was reported as, "the definitive source of information for state-to-state comparisons in educational achievement. For this reason, it is of paramount importance to education policy makers, practitioners, and researchers alike" (Swanson & Barlage, 2006, p. 43). In addition to having analyzed the Nexis and EBSCO databases for citations, Swanson and Barlage conducted a two-part survey of experts to determine the studies, people, organizations, and information sources that have most influenced educational policy over the past decade. The NAEP overwhelmingly earned the highest ranking in both categories of influential studies and information sources. In other words, NAEP scores and the way in which they were reported were the overriding factor in the development of educational policy over the last decade (Swanson & Barlage).

National Assessment of Educational Progress

As noted, the NAEP was an influential factor in the creation of young adolescent reading policy documents such as *Reading Next* (Biancarosa & Snow, 2004; Swanson & Barlage, 2006). The NAEP assessment measured reading comprehension performance of a sample of students in fourth, eighth, and twelfth grade across the United States (National Center for Education Statistics, 2006). Developed by the National Assessment Governing Board (NAGB), the NAEP assessed three contexts for reading: reading for literary experience, reading for information, and reading to perform a task. Additionally, NAGB developed questions to measure the approaches students take when reading. Four aspects were assessed: forming a general understanding, developing interpretation, making reader/text connections, and examining content and structure (NCES).

Scale scores were reported for the NAEP from 0-500, with students placed in three categories: basic, proficient, or advanced. Students who scored basic were considered to demonstrate "partial mastery" of the skills necessary to be successful at the grade assessed, while those students that scored proficient demonstrated "solid academic performance on challenging subject matter" (NCES, 2006). NCES reported 42 percent of 8th grade students scored at the basic level on the 2005 NAEP, and an additional 29 percent scored below basic. As reported, the results were understandably staggering. Seventy-one percent of American eighth graders had basic or below basic reading abilities! But, was this actually represented by the scores? Allington (2002) suggested using the word basic as a descriptor category for the NAEP persuaded stakeholders that reading achievement amongst adolescents in the United States was in crisis. The word basic alluded to an inability to achieve the most fundamental reading skills, when in

actuality students that scored at this level were able to attain mastery of some grade level skills (NCES). Further, Linn (2000) reported, "the proficient standard is an ambitious standard intended to encourage greater effort" (p.10).

As Afflerbach (2005) suggested, "tests have the ability to reduce and summarize complexities of reading to single raw scores and percentile rankings, and in doing so they appear almost magical" (p. 153). Thus, while it appeared our eighth grade students were mostly non-readers, the scores did not provide enough information to determine the varying reading abilities of these young adolescents. Elizabeth Moje (2004) discussed this concern in a paper presented at the National Reading Conference, "Even for youth who fall 'below basic' on the National Assessment of Education Progress or on state proficiency tests, the specific difficulties they encounter remain unclear. Are adolescent readers' struggles problems of decoding, fluency or comprehension? Do comprehension problems stem from lack of fluency or lack of strategy use?" (p. 5). In other words, NAEP scores have provided a springboard for increased attention on young adolescent literacy policy (Swanson & Barlage, 2006), but as Pressley (2004) urged, "much needs to be known about what secondary students can do and what they cannot do, much more than is being tapped by the NAEP" (p. 430).

While it was not possible to extrapolate information pertaining to young adolescents' specific reading abilities from the NAEP, the assessment did provide stakeholders with data imperative for ensuring the reading success of all students. Based on long-term trend data, NAEP scores for eighth grade students have remained relatively stable over time (NCES, 2006). Our current eighth graders have not demonstrated gains in reading abilities compared to eighth graders previously tested, nor have they

dramatically dropped compared to earlier administrations of the NAEP (Allington, 2002; NCES). However, scores revealed a disturbing and significant discrepancy between several subgroups of students. At all grade levels, Black and Hispanic students scored significantly lower on the NAEP reading assessment than their white peers, and students who qualified for free and reduced priced lunch scored significantly lower than those who did not (NCES). These data prompted legislation of the No Child Left Behind Act (Bush, 2001), which aimed to decrease the achievement gap amongst these student subgroups. This was the primary example of NAEP data influencing educational policy in the last decade (Swanson & Barlage, 2006).

No Child Left Behind

In a bipartisan effort to improve educational achievement in the United States, Congress passed the No Child Left Behind (NCLB) Act of 2001. Discussed in greater detail in Chapter 1, this reauthorization of the Elementary and Secondary Education Act (ESEA) required states to implement accountability systems based on student performance on standardized tests. These assessments were administered to students in grades 3-8, and designed to measure progress on state reading standards. Although NCLB testing requirements extended through eighth grade, little attention was given to the research and instruction of young adolescents in the policy (Conley & Hinchman, 2004).

Focused on narrowing the achievement gap of disadvantaged students, NCLB established the requirement for states to meet Adequate Yearly Progress (AYP) (Spellings, 2005). The subgroups included in AYP were: minorities, students who qualified for free and reduced price lunch, students with disabilities, and English language learners. AYP is measured based on either a percentage or a confidence interval

of students from several subgroups that scored proficient or above on state standardized assessments (Spellings).

Citing abysmal results from the NAEP, the law called for increased funding for early literacy instruction and a demand to have all children reading by grade three (Bush, 2001). The Reading First initiative, as it was named, promoted the use of "science-based reading programs," (Bush, p.10). These programs were to be implemented in Kindergarten through second grade, and follow the findings of the National Reading Panel (NRP, 2000) which suggested appropriate reading instruction required focus on distinct components of reading.

National Reading Panel Report

In 1997, the National Reading Panel was created by Congress to research the most crucial skills necessary for teaching children to read (NRP, 2000). According to the NRP report, this mixed panel of researchers, educators, and government officials reviewed experimental and quasi-experimental reading research to determine the factors needed to develop and carry out scientifically based programs for teaching children to read. Based on this review of reading research, the panel determined three overriding components necessary for learning to read: alphabetics, fluency, and comprehension. Since the original publication of the NRP report, these three components broadened into what were often referred to as the five essential elements of reading instruction (TNSBE, 2005). The elements were phonemic awareness, phonics, fluency, vocabulary, and comprehension.

NCLB in Tennessee

In response to the requirements of NCLB, the state of Tennessee revised the Tennessee Comprehensive Assessment Program (TCAP). This criterion-referenced

standardized assessment was used to monitor student proficiency with the Tennessee Content Standards in grades 3-8 (TNDOE, 2006). TCAP scores are reported across three categories: advanced, proficient, and below proficient. Students scoring below proficient did not answer enough questions correctly to satisfy the minimum state requirements in that reporting category (TNDOE, 2006).

The content standards were designed following the criteria developed by the Tennessee Reading Policy (TNSBE, 2005), which called for "direct and explicit reading instruction using a comprehensive SBRR [Scientifically Based Reading Research] program that systematically and effectively includes the five essential elements of reading taught appropriately per grade level" (p. 4). According to the Tennessee Department of Education (2006), TCAP results were to be used by schools to make instructional decisions about individual students. However, when scores were reported, teachers and schools did not receive information that demonstrated which content standards students completed successfully (TNDOE, 2005). Rather, score reports provided only the level (advanced, proficient, or below proficient) at which students scored on each section of the TCAP.

If instructional decisions for young adolescent readers were being made based on TCAP results, then were these decisions based on the idea that all students who scored at the below proficient level were missing the same basic skills? Research on the instruction offered to struggling elementary school readers demonstrated this was often the case, and that ensuing instruction promoted skills required of early readers (Buly & Valencia, 2002; Rupp & Lesaux, 2006). This would support Linn's (2000) assertion that using scores from standardized assessments "had undesirable effects on teaching and learning

because they led to a narrowing of the curriculum and an over-emphasis on basic skills" (p. 8). In other words, such use of standardized assessment scores promoted a homogenous view of student abilities.

Interventions for Struggling Young Adolescent Readers

As noted earlier, young adolescents who experienced reading difficulties as measured by the TCAP are provided instruction through a selected array of commercially developed SBRR programs (TNDOE, 2006). This policy espoused a homogeneous view of struggling young adolescent readers by asserting one program would meet the varying instructional needs of these students. As Buly and Valencia (2002) discussed, "the assumption is that underlying students' poor performance on state reading assessments is a monolithic reading problem – that most students need a similar fix" (p. 220). However, the data presented by Buly and Valencia did not support this assumption, but reported various, heterogeneous needs and abilities of at-risk elementary school students.

A recently published report described an analysis of current instructional interventions commonly adopted for use with struggling adolescents (Shanahan, 2005). According to Shanahan, two insights were gleaned from review of the available intervention programs. The first was the lack of research available regarding the efficacy of the programs. While some of the publishing companies conducted their own research, which demonstrated increased achievement across groups of young adolescents exposed to the programs, many companies reported they had no research available about their product. The second insight reported by Shanahan was the abundance of skills-based interventions available for struggling young adolescent readers, which "target particular narrow areas of literacy" (p. 5).

Specifically, programs that focused on alphabetics were being widely disseminated for this population of students (Buly & Valencia, 2002; Cassidy, Garrett, & Barrera, 2006; Fisher & Ivey, 2006; Shanahan, 2005). Fisher and Ivey (2006) warned, "programs that focus on phonemic awareness and phonics instruction are particularly problematic because there is little reason to believe that emphasizing these fundamental skills would have any significant benefits for secondary students" (p. 182). Further, several researchers have wondered what data suggested the use of such programs would meet the varying instructional needs of struggling young adolescents, since state assessments such as the TCAP do not directly measure the skills being taught through the programs (Buly & Valencia; Franzak, 2006). Franzak cautioned that by allowing such policy measures to continue to drive assessment and instruction, stakeholders turn the focus farther away from the needs and abilities of young adolescent readers.

Conley and Hinchman (2004) urged researchers to further examine the differences and abilities of young adolescent readers, in order to develop "individually appropriate reading instruction and accountability for growth" (p. 48). Research in this area is scant, and must be further developed in order to meet the heterogeneous reading abilities struggling young adolescents bring into the classroom (Buly & Valencia, 2002; Conley, 2005; Conley & Hinchman, 2004). The next section discusses what is known about young adolescent reading development and how that knowledge base might be expounded upon in order to turn a homogenous view of young adolescent reading development into a heterogeneous view of varying reading abilities.

What Does Theory and Research Tell Us About Next Steps?

Theoretical Model

The Model of Young Adolescent Reading Development presented in chapter 1 acknowledges that the heterogeneous reading abilities of young adolescents cannot be represented by a single factor. Instead, the assumption is that all adolescents have some level of proficiency in each of the identified skills, although, that level may vary depending on the demands of the particular text. Based on the type of text, the student's knowledge of the content within the text, and their level of automaticity with the various skills involved in reading the text, each young adolescent reader will process text differently. Therefore, each new text requires the student to pass through the model using all of their skills in unique combinations in order to successfully negotiate the text. Thus, mastery of a particular skill does not imply the student no longer uses that skill when reading; rather, it implies simply that the student requires less cognitive attention to use that skill, especially when reading familiar text. Unfamiliar text, or text beyond the student's independent reading level, may require the student to slow down the reading process as he passes through the model, consciously utilizing those skills to help make sense of the text. This model reflects the understanding that different students will respond to different texts in various ways.

Paris (2005) defined highly constrained skills as those that have a ceiling for mastery. One example of a highly constrained skill is letter knowledge. Since there are only 26 letters in the alphabet, all students will master this skill early in their school career. Less constrained skills, such as vocabulary acquisition and comprehension are those that do not have a ceiling (Paris). The theoretical model suggests all the noted skills

are working in concert every time a reader negotiates text. Although the stages through which a reader passes are consistent with the Spear-Swerling (2004) model, they are inverted in this model. The purpose for inverting the stages was to demonstrate that readers may utilize each of the noted skills every time they work with a new text. Young adolescent readers process text through the filter (triangle), entering at the wide end, and passing quickly through the highly constrained skills they have mastered (Paris, 2005). As readers focus more attention on less constrained skills, the reading process is slowed.

This model also recognizes the increasing automaticity (Samuels, 2004) that allows readers to quickly pass through stages they have mastered as they gain experience from reading different types of text, are provided with appropriate instruction, or develop background knowledge on the content within the text. Automaticity, then, assumed those skills that have been mastered can be executed with little conscious cognitive attention so that more cognitive capacity is available for skills that have not been mastered. Further, as noted by the arrow on the left side, the model acknowledges that as new or unfamiliar text is encountered, readers may need to slow these processes, actively engaging those skills that are usually automatic. In such a case, readers may need to process the text again before they can reach the Strategic or Highly Proficient Reading stages, even if they have been able to reach those stages with other text. In addition, the model recognized students who have the capacity to use skills automatically might not exhibit difficulty transferring the use of these skills when reading independently. This model acknowledged the fact that the reader, the reader's skills, and the text all contribute to the success or failure of each particular reading session.

Heterogeneity versus Homogeneity: How this Model Differs from Others

The model recognized that all young adolescents have abilities in each of the skills presented, but that those abilities will differ based on the automaticity of each skill, prior knowledge of the content, reading experiences, and the type of text. Struggling adolescent readers were recognized as having competencies in each of the skill areas, although their abilities may differ from their peers. Recognized, then, was a heterogeneous view of young adolescents' reading abilities.

This view differed considerably from the deficit model often associated with adolescents that fail to demonstrate proficiency on state-mandated assessments (Buly & Valencia, 2002; Franzak, 2006; Rupp & Lesaux, 2006). According to Franzak, the deficit model was based on the assumption that "students who perform poorly on reading tasks are assumed to have not yet developed the necessary skills for functioning at a particular grade level" (p. 214). Further, this hypothesis suggested that remediation in isolated skills would allow students to develop into successful readers. However, this did not take into account the varying experiences, prior knowledge, or level of automaticity of skills young adolescents brought to the classroom. Thus, interventions for struggling young adolescents have focused on remediating isolated skill areas, despite a lack of research signifying such remediation had positive effects on young adolescents' reading abilities (McKenna & Stahl, 2003).

(Dis)Ability or (Dis)Advantage?

Franzak (2006) suggested that under the deficit model, young adolescents who did not demonstrate success with literacy learning were likely to be labeled as learning disabled. This assertion was preceded by the work of McGill-Franzen (1987) who

reported the transition from socioeconomic disadvantage to learning disability as a factor for students being unsuccessful readers within the literature. Until 1976, most students with reading difficulties were serviced through Title I programs, which focused efforts on schools with low socioeconomic status. After 1976, however, a dramatic shift in policy introduced reading difficulties to special education, and students were placed into special education programs labeled as learning disabled. Not only did this change the face of Title I programs, but with a shift to special education the student with reading difficulties was seen to have a medical problem that could be treated, but probably not "fixed" (McGill-Franzen). According to the author, referrals to special education programs increased by a staggering 119% in the decade following 1976, while participation in Title I programs decreased by 42%.

Allington and Mathson (in press) asserted, "Simply testing and then labeling or penalizing struggling readers fails to even begin to address the real issue: supporting and extending the development of reading proficiencies throughout the adolescent years". By failing to acknowledge the varying abilities of struggling young adolescents, and adhering to the deficit model, the assumption made is that these students represent a homogeneous group with the same disability and instructional needs. Siegel (2003) proclaimed, "children with a reading disability show a remarkable homogeneity in the profiles of their cognitive abilities" (p. 160). The author defined reading disability as a deficit in word reading skills, and asserted, "the problems of the beginning or the disabled reader are clearly at the level of the word" (p. 159). Although research establishing the heterogeneous nature of young adolescent readers remains limited, the narrow view of reading disabilities marked solely on the basis of word identification skills has been

refuted by a growing body of research on the heterogeneous reading abilities of struggling elementary readers.

Heterogeneity in the Elementary Grades

In a study of fourth grade students, Buly & Valencia (2002) assessed 108 students on a variety of reading tests that included the components of reading instruction described by the NRP (2000), alphabetics, fluency, vocabulary, and comprehension. All of the students had tested below proficiency levels on the Washington Assessment of Student Learning (WASL). The goal of this study was to demonstrate the patterns of students' reading abilities, and then to explore implications for both policy and instruction based on this information. The results indicated multiple clusters of student reading abilities (Table 1), which demonstrated a heterogeneous population of struggling adolescent readers. Buly and Valencia noted the trend, which assumed students not performing at grade level on state-mandated standardized tests of reading demonstrated a lack of ability in relation to beginning literacy skills – regardless of the fact that most state-mandated standardized assessments in grades 3-8 measured comprehension skills, which are multifaceted and complex (Buly & Valencia; Rupp & Lesaux, 2006). The authors warned, "this research is a vivid reminder of the complexity of reading performance and the potential danger of policy that fails to acknowledge this complexity of strategies for dealing with it" (p. 235).

Influenced by the work of Buly and Valencia (2002), Rupp and Lesaux (2006) conducted a study that investigated the diagnostic profiles of students across proficiency levels on a mandated standardized assessment of reading. The researchers used multiple assessments to determine 1,111 fourth grade students' reading abilities. The assessments

Table 1

Clusters of Struggling Readers (Buly & Valencia, 2002)

Cluster & Percentage of students	Characteristics
Automatic Word Callers (18%)	• Read words quickly and accurately • Do not read for meaning • More than 60% English Language Learners • Most from homes of low SES
Struggling Word Callers (15%)	• Stronger in fluency and word ID than comprehension • Experience some difficulty in word identification
Word Stumblers (18%)	• Read for meaning • Difficulty with word identification
Slow and Steady Comprehenders (24%)	• Slow reading rate • Word identification and comprehension are relatively strong
Slow Word Callers (17%)	• Accurate, but not automatic, readers • Struggle with meaning
Disabled Readers (9%)	• Struggle with word ID, fluency, and meaning • Need intense intervention

used in the study tested Siegel's (2003) assertion that, "*all* children with reading problems have deficits in phonological processing, working memory and short-term memory, and syntactic awareness" (p. 160, emphasis added). Rupp and Lesaux utilized myriad statistical methodologies and reported strong heterogeneity amongst the students in the study at all levels of proficiency, which did not support Spiegel's claim. The authors summarized, "This study shows that proficiency classifications of the standards-based assessment reflect the diagnostic profiles on a select set of component skill of reading rather poorly" (p. 330).

White, Graves, and Slater (1990) researched the differences in the vocabulary growth of students at three elementary schools. School A was a suburban school, enrolling mostly white students, with only 10% of the population qualifying for free and reduced price lunch. School B was an inner-city school, predominately enrolling African American students, and 99% of the population qualified for free and reduced price lunch. School C was rural, enrolling Asian-American students, with a free and reduced price lunch population of 88%. Using a multiple-choice test, 756 students in grades one through four were assessed on their knowledge of 56 frequently used words. Additionally, half of the students tested were then interviewed on their ability to decode and define 28 of the 56 words. Students at School A demonstrated vocabulary knowledge that was 50% larger than students at School B and School C. Based on the data, the authors concluded that decoding ability was consistent across the three schools, but the "reading vocabulary gap reflects, to a considerable extent, differing knowledge of word meanings" (p. 288). Students from families of lower SES enter school having fewer

experiences with words than their more privileged peers, and the discrepancy continues throughout their elementary career and beyond.

The research conducted by White, Graves, and Slater (1990) supported the assertions presented by Hart and Risley (2003), which provided a deeper look at the significance of socioeconomic status (SES) on reading achievement. In a study of 42 families, ranging from upper SES to families on welfare, Hart and Risley qualitatively studied "everything" that took place in these homes. The study began when students were 7-9 months old, in order to observe the home environment before children began talking. The researchers followed the children until they were three years old. The results indicated that by age 4, according to the trajectory, children in professional families would experience 45 million words, while children in welfare families would have an accumulated experience of 13 million words. Thus, by the time children entered kindergarten, those from welfare families were already behind their wealthier peers.

Young Adolescent Reading Skills

In a study of 161 fourth and fifth grade students, Leach, Scarborough, and Rescorla (2003) compiled data to determine the factors related to late-emerging reading disabilities. The researchers administered a series of assessments to students who were early-identified (before third grade) reading disabled (n=31), late identified (after third grade) reading disabled (n=35), and students who were normally achieving (n=95). The goal was to determine whether or not students who demonstrated late-emerging reading disabilities had deficits in word identification, comprehension, or both. In other words, were they identified late, or did the disability emerge later in their school careers?

Results from the measures administered in the study revealed heterogeneous

reading abilities across the participants. Those students labeled with late-emerging reading disabilities exhibited a range of reading difficulties, "35% had word-level processing deficits in combination with adequate comprehension skills, 32% showed weak comprehension skills accompanied by good lower level skills, and 32% exhibited both kinds of difficulty" (p. 220). Further, the authors retrospectively reviewed third grade achievement results, which indicated higher achievement levels for students labeled with late-emerging reading disabilities, and concluded that "their reading abilities were not just late identified but actually emerging" (p. 211). In other words, the students labeled with late-emerging reading disabilities had shown normal development in reading through the third grade, while acquiring the highly constrained skills (Paris, 2005), but were demonstrating difficulty by the fourth grade as they were transitioning to the strategic reading stage of development (Spear-Swerling, 2004).

Saenz and Fuchs (2002) conducted a study of less constrained skills with 111 adolescents with learning disabilities, in which students were asked to read two narrative passages and two expository passages and answer comprehension passages about both. Results indicated that students had more difficulty answering questions relating to expository text. However, the authors noted students did equally well on explicit questions for both narrative and expository text, but challenges emerged when students were asked to respond to implicit questions about both texts. In other words, students were able to answer direct, factual questions about both texts, but were less able to draw on their prior knowledge to make inferences from expository text. While this study indicated that the students tested demonstrated abilities across the less constrained skills,combining the assessments used with additional measures of various skills would

provide a more detailed, heterogeneous, cognitive profile of struggling young adolescent readers.

The Florida Center for Reading Research (Schatschneider et al, 2004) reported that seventh grade students who scored at the lowest performance levels on the Florida Comprehensive Achievement Test (FCAT) also scored below the 25th percentile on measures of phonemic decoding ability, which measures students' ability to quickly sound out non-words, and fluency. As reported, this data suggested all readers who scored at the lowest performance level on the FCAT were deficient in phonemic decoding and fluency skills. Such a generalization masked the underlying, multifaceted needs and abilities of these students, and created an image of a homogeneous group of struggling readers.

Because no additional measures of comprehension were reported, the researchers made the assumption that the FCAT is a valid measure of grade-level text and that student results on that assessment are representative of students' reading abilities. Further, by not assessing less constrained skills, the researchers supported the assumption that students who score below proficient on a state-mandated standardized assessment are missing the more highly constrained skills (Paris, 2005). Paris argued that these skills are generally learned and mastered in childhood and "thus yield asymptotic performance with minimal variance before and after their brief periods of learning" (p. 196). This result, according to Paris, made it difficult to correlate individual highly constrained skills with less constrained skills, and doing so created a transitory effect.

Conclusion

Rupp and Lesaux (2006) referred to the reading comprehension process as "inherently multidimensional" (p. 317). This statement took into account the many skills required of young adolescents in order to make meaning from the text. As noted, the skills young adolescents filter through in the model described above were representative of the National Reading Panel's (NRP, 2000) essential elements of reading instruction, alphabetics, fluency, vocabulary, and comprehension. The current, although limited, research has resulted in the development of broad generalizations relating to young adolescent reading abilities based on individual elements recognized by the model (Leach, Scarborough, & Rescorla, 2003; Saenz & Fuchs, 2002; Schatschneider, Buck, Torgesen, Wagner, Hassler, Hecht, & Powell-Smith, 2004; White, Graves, & Slater, 1990). By not developing profiles of young adolescent reading abilities, such a narrow representation of adolescent reading abilities promoted a homogeneous view of this population of students.

Although research demonstrating heterogeneous reading abilities amongst struggling young adolescents remains scant, those reported above have made it clear further research must be conducted with this population of students before large scale curricular decisions are made based on below proficient scores on state-mandated standardized assessments (Buly & Valencia, 2002; Rupp & Lesaux, 2006). In order to put the horse before the cart, policy decisions must be made based on research linking the varying reading abilities of struggling young adolescent readers. Rupp and Lesaux noted, "It is virtually impossible to disentangle the myriad sources of reading difficulty for those children with deficiencies in the foundational skills on the basis of a single global score

or classification that is derived from a standards-based assessment alone, and additional diagnostic information is necessary to obtain reliable and rich student profiles on reading proficiency" (p. 318). Thus, in order to determine the heterogeneous reading abilities of young adolescents, assessments measuring the various component skills of reading must be administered in order to begin to develop the student profiles Rupp and Lesaux called for in their discussion.

CHAPTER 3

METHODS

Chapter Introduction

The purpose of this study was to determine the patterns of reading abilities amongst struggling young adolescent readers. More broadly, this study was designed to use the results relating to the patterns of reading abilities of struggling young adolescents to demonstrate the heterogeneous nature of these students and the variability of reading skills they bring to middle school classrooms. Until this information is brought forward, the development of policies promoting homogenous approaches to reading instruction for struggling young adolescents will continue. Discussions of appropriate instruction for these students, although already taking place amongst policymakers (Biancarosa & Snow, 2004; Franzak, 2006; Shanahan, 2005; USDOE, 2006), can only productively continue when paired with meaningful data that more fully portray the reading abilities of the students.

Five assessments that measured alphabetics (phonics and phonemic awareness), fluency, vocabulary, and comprehension skills were administered to 94 struggling young adolescent readers. It was necessary to assess these skills based on (a) the research questions that guided this study, and (b) the theoretical framework discussed in chapters one and two. It was hypothesized that struggling young adolescent readers would have mastered the highly constrained skills of phonics and phonemic awareness, but that variability in reading abilities amongst these students would be increasingly evident across assessments of fluency, vocabulary, and comprehension, since these skills are less constrained (Paris, 2005). In other words, fewer students would experience mastery of the

less constrained skills as they move through the filter in the model presented in chapter 1 (Figure 1).

This study was influenced by the work of Buly and Valencia (2002), in which patterns of reading abilities were identified for fourth grade students in Washington State. Thus, similar methodology was employed for the purposes of this research. Data were analyzed using quantitative methods, specifically descriptive statistics, independent samples t-tests, factor analysis, and cluster analysis. The data were collected and analyzed in order to answer the research questions developed for the purposes of this research. To review, the research questions for this study were:

1. Is there a difference in reading abilities between:
    a. struggling young adolescents who qualify for special education services and those who do not?
    b. struggling young adolescents who qualify for free and reduced price lunch and those who do not?
    c. struggling young adolescents who qualify for ELL and those who do not?
    d. struggling young adolescents who do not qualify for free and reduced price lunch, special education, or ELL programs compared to those who do qualify for these programs?
2. Which reading abilities are most directly related to young adolescents' below proficient scores on TCAP?
3. What patterns of reading abilities do struggling young adolescent readers who score below proficient on state mandated standardized assessments demonstrate?

This chapter describes the research design, sample selection, instrumentation and materials, variables in the study, and data analysis.

Research Design

As noted, this primarily multivariate correlational study was influenced by the work of Buly and Valencia (2002), in which the authors determined patterns of reading abilities amongst struggling fourth grade students in Washington State. This design, according to Stanovich and Cunningham (2004), "attempts to compare the levels of one variable with those of another" (p. 29). In this study, the researcher compared below proficient scores on the Tennessee Comprehensive Achievement Program (TCAP) to the skills measured by a series of literacy assessments (described in the Instrumentation and Measures section). The goal of this comparison was to determine which factors most closely correlated to below basic scores on the TCAP. Factor analysis was used to make these comparisons.

Additionally, the researcher then utilized cluster analysis to create comparisons between the results of the literacy assessments that were administered to each student to determine the skills that most closely correlated to each other. The goal of this comparison was to determine patterns of reading abilities based on the skills represented by clusters of students.

Stanovich and Cunningham (2004) espoused the use of factor and cluster analysis as appropriate methodology for a multivariate correlational research design, "These statistics, in essence, allow the correlation between two variables to be recalculated after the influence of other key variables are removed, or "factored out" or "partialed out."

Thus, these types of correlational statistics and designs help to *rule out* certain causal hypotheses, even if they cannot demonstrate the true causal relation definitively" (p. 31).

Based on these assertions, this multivariate correlational design could not lead to an understanding of the *causes* for young adolescents' below proficient scores on the TCAP. Rather, results from the research demonstrated the factors that were most closely aligned, as well as those that did not directly relate to below proficient scores on the TCAP, or to the skills measured by the assessments administered.

Sample Selection

The school district that participated in this study enrolls 53,070 students in grades K-12; there are 14 middle schools composed of grades six, seven, and eight. The district was chosen due to its size and proximity to the researcher. The schools – one suburban and three urban – chose to participate in the research.

Following university approval of the Internal Review Board (IRB), the researcher contacted the Director of Curriculum and Accountability for the school district, who approved the study at the district level. Once approved, the Director of Curriculum and Accountability worked with the researcher to purposively select a sample based on the following criteria, (a) all students were enrolled in a district middle school (grades 6-8), (b) all students scored below proficient on the 2005-2006 TCAP reading. Five schools were selected as a representative sample of the district's demographics, based on these criteria and recommendations from the Director of Curriculum and Accountability. The five middle school principals were contacted and provided with information pertaining to the research study. Four schools elected to participate and provided facilities for testing.

Table 2 shows the 2005-2006 school year demographic information for the entire school district, as well as the four participating middle schools.

Once the schools were identified, the Director of Curriculum and Accountability provided the researcher with a list of all students at the four schools (n=318) that qualified for the study. Students were identified for participation in this study based on their below proficient performance on the Tennessee Comprehensive Assessment Program (TCAP) reading components. This criterion-referenced assessment is state mandated in grades 3-8 with the purpose of measuring student mastery of content standards. Following identification, and consistent with the IRB agreement, the researcher sent a Letter of Consent describing the research to the parent or guardian of each student. Students who returned the Letter of Consent were provided with an Assent Form, which the researcher read to the student. Those students who agreed to participate signed the Assent Form. Participating students (n=94) were administered a series of individually administered assessments, all of which will be discussed further in the Instrumentation and Materials section that follows.

Instrumentation and Materials

The assessments used in this research varied slightly from the study conducted by Buly and Valencia (2002) for several reasons. First, Buly and Valencia reported that results on the Comprehensive Test of Phonological Processing (CTOPP) (Wagner, Torgesen, & Rashotte, 1994) did not correlate to scores on other assessments, and therefore the results were not used in determining patterns of reading abilities. Thus, the CTOPP was not used in this research. Secondly, in order to remain consistent in terms of the skills being assessed, the Test of Word Reading Efficiency (TOWRE) (Torgesen,

Table 2

Demographic Information for Participating School District and Middle Schools as Categorized by the Tennessee Department of Education

	Number of Students	Ethnicity	Special Education	Free and Reduced Price Lunch	English Language Learner
District	53,130	W*: 81.2% B: 14.5% H: 2.3% O: 2.1%	13.1%	40.7%	1.6%
School A	1202	W: 70.6% B: 21.8% H: 3.3% O: 4.2%	12%	49.6%	2%
School B	550	W: 80.2% B: 10.7% H: 4.2% O: 4.9%	6%	29.7%	2%
School C	1018	W: 63.5% B: 31.8% H: 3.1% O: 1.7%	16%	69.4%	3%
School D	1231	W: 78.6% B: 18.1% H: 2.6% O: .7%	12%	55.7%	1%

*W: White, B: Black, H: Hispanic, O: Other

Wagner, & Rashotte, 1999) replaced the CTOPP. The TOWRE was chosen because it assessed similar skills (phonological awareness) and reported satisfactory reliability.

Additionally, Schatschneider et al. (2004) used the TOWRE as an assessment in their study in which they implied that seventh graders who scored on the lowest performance levels of the Florida Comprehensive Achievement Test (FCAT) scored below average on measures of phonemic decoding ability. However, while the authors suggested these scores, and the subsequent skills represented by the scores, were correlational, they provided little data beyond percentile ranking to demonstrate correlation between results on the TOWRE and low performance levels on the FCAT.

Another assessment not included in the Buly and Valencia (2002) study, was the intermediate spelling inventory (Bear, Invernizzi, Templeton, & Johnston, 2004). Bear et al reported on the link between reading development and orthographic (spelling) development, and designed a series of spelling inventories to assess the latter. The intermediate spelling inventory was chosen because it is the only inventory designed for use with all of the grades participating in this research. Buly and Valencia qualitatively analyzed individual writing samples in their study to assess spelling knowledge. For purposes of uniformity of data, however, the researcher chose to administer the intermediate spelling inventory because it provided the researcher with feature points, which were subsequently used as data points within the factor and cluster analysis. The remaining assessments administered to this sample of young adolescent struggling readers paralleled those used by Buly and Valencia. When available, versions of the assessments that were updated, or re-normed, since the Buly and Valencia study were included.

Each assessment is discussed below in terms of (a) what it measures, (b) how it relates to the theoretical framework, and (c) how it is administered (see Table 3). The assessments are discussed beginning with the highly constrained skills measured and ending with the least constrained skills measured. The researcher individually administered all of the assessments. Reliability information for each assessment is available in Table 3. All assessments were purchased through the publisher.

Woodcock Johnson Diagnostic Reading Battery--III

The Basic Reading Skills cluster of the Woodcock Johnson Diagnostic Reading Battery--III (WJR--III) (Woodcock, 1998) was administered to students. This cluster included Letter-Word Identification and Word Attack. Letter-Word Identification measured students' ability to accurately identify letters and to read single and multisyllabic words. Word Attack measured students' ability to apply sound-symbol (phonic) relationships and structural analysis, or decoding skills, to pronounce pseudo-words. According to Woodcock, the Basic Skills Cluster provided an, "Aggregate measure of word identification and phonic and structural analysis" (p. 12).

Skills assessed by the Woodock Johnson Diagnostic Reading Battery--III (Woodcock, 1998) were considered highly constrained (Paris, 2005). These skills have a ceiling reached by most students by grade 3-4, as they enter the Strategic Reading Stage of development (Spear-Swerling, 2004). Although students may reach a ceiling with the skills measured, it is not expected that all students would master the assessments because acquisition slows once a ceiling is reached but ceilings are not uniform across individuals (Paris, 2005).

Each section of the Basic Reading Skills cluster took about five minutes to

Table 3

Instruments Used to Assess Research Participants

Assessment	What did this assessment measure?	What did the student do on this assessment?	What scores were used?	Reliability
Woodcock Johnson Diagnostic Reading Battery-III (Woodcock, 1998)	• Word Identification • Phonic and structural analysis	Basic Reading Skills Cluster *Letter Word Identification* Identify letters and words, ordered by difficulty *Word Attack* Apply phonic and structural analysis to unfamiliar words (Woodcock, 1998)	Standard Score Grade Equivalent	Cluster reliability = .93
Test of Word Recognition Efficiency (Torgesen, Wagner, & Rashotte, 1999)	• Phonological Awareness	*Sight Word Efficiency* Identify real printed words in 45 seconds *Phonemic Decoding Efficiency* Decode pronounceable printed non-words within 45 seconds (Torgesen Wagner, & Rashotte, 1999)	Standard Score Grade Equivalent	Test-retest reliability = .88
Intermediate Spelling Inventory (Bear, Invernizzi, Templeton, & Johnson, 2004)	• Orthographic knowledge	Demonstrate knowledge of key spelling features that relate to the different spelling stages (Bear et al., 2004)	Feature Points	Not reported
Peabody Picture Vocabulary Test-III (Dunn & Dunn, 1997)	• Receptive vocabulary	Demonstrate receptive vocabulary (Dunn & Dunn, 1997)	Standard Score Age Equivalent	Test-Retest = .91
Qualitative Reading Inventory -4 (Leslie & Caldwell, 2006)	• Word recognition skills • Prior knowledge • Reading rate • Accuracy while reading • Comprehension	Identify words and comprehend text (Leslie & Caldwell, 2006)	Transformed Score Grade Equivalent	Inter-rater Reliability Oral Reading Miscues=.99 Scoring Comprehension =.98

complete. Students were asked to read from lists of letters and words until they reached their ceiling (the highest six incorrect), at which time the researcher ended the assessment. The WJR--III is located in Appendix A-1.

Test of Word Reading Efficiency

As noted above, the Test of Word Reading Efficiency (TOWRE) (Torgesen, Wagner, & Rashotte, 1999) consisted of two sections, Sight Word Efficiency and Phonemic Decoding Efficiency. Sight Word Efficiency measured the number of real printed words that can be quickly and accurately identified. This assessment demonstrated students' ability to recognize familiar words as whole units. Phonemic decoding efficiency assessed the number of pronounceable non-words that can be quickly and accurately decoded. This assessment stressed students' ability to read "pronounceable non-words out of context and fully analyze each word to produce the correct pronunciation" (p. 8). According to Torgesen, Wagner, and Rashotte, "The use of the word *efficiency* in the title of the TOWRE is meant to communicate that the total scores on the test reflects both the accuracy and the speed with which children can execute word reading processes" (p. 8). Students had 45 seconds to complete each task. Although the TOWRE and WJR--III measured similar skills, and related to the theoretical framework in similar ways, the WJR--III does not include the component of efficiency, or measure automaticity of these skills. It was necessary to include the TOWRE for this reason. The TOWRE is located in Appendix A-2.

Intermediate Spelling Inventory

The Intermediate Spelling Inventory measured students' orthographic knowledge. Spelling inventories are words specially chosen to represent a variety of spelling features

or patterns at increasing levels of difficulty (Bear, Invernizzi, Templeton, & Johnston, 2004). The theoretical model assumed all skills worked in concert with one another in order for students to move through the filter. According to Bear, Invernizzi, Templeton, & Johnston, "Becoming fully literate is absolutely dependent on fast, accurate recognition of words in texts, accurate production of words in writing so that readers and writers can focus their attention on making meaning" (p. 4). Thus, the Intermediate Spelling Inventory provided information pertaining to students' understanding of how words work, and their ability to utilize multiple skills within the theoretical model. The inventory (Appendix A-3) was designed for students in grades 3-8, and was administered like a traditional spelling test.

Peabody Picture Vocabulary Test--III

According to Dunn and Dunn (1997), the Peabody Picture Vocabulary Test--III (PPVT--III) served two purposes: "(1) as an achievement test of receptive (hearing) vocabulary attainment for standard English; and (2) as a screening test of verbal ability" (p. x). According to Buly and Valencia (2002) this assessment measured "receptive vocabulary knowledge independent of students' ability to decode words" (p. 225).

Vocabulary knowledge was an essential component in the theoretical model presented in chapter 1. As noted in the model, vocabulary provided a direct link to successful comprehension of text, and was a less constrained skill. As such, the researcher expected students to demonstrate increased variance on this assessment as compared to those listed above, because the acquisition of vocabulary knowledge would not be normally distributed (Paris, 2005). Students looked at a series of four pictures, the

researcher then said a word, and the student chose the picture that best represented the meaning of the word. The PPVT--III is located in Appendix A-4.

Qualitative Reading Inventory--4

The Qualitative Reading Inventory--4 (QRI--4) (Leslie & Caldwell, 2006) is a commercially available informal reading inventory. Unlike most standardized reading assessments, the QRI--4 assessed students based on their reading level. Reading level is determined through the use of word lists, which students read aloud to the researcher. The researcher then began comprehension assessment based on the highest independent level from the word lists, which was 90% accuracy (Leslie & Caldwell). Following the assessment protocol, the researcher asked the student a series of concept knowledge questions to determine the students' prior knowledge of a subject before reading. Students were then asked to read narrative and expository passages aloud. As the student read, the researcher marked all errors and timed the students to determine accuracy and fluency rates. The QRI--4 estimated comprehension of each passage through a series of questions. This process continued until an independent and instructional reading level was determined for each student. The independent reading level is determined based on accuracy of word recognition (98% or higher) and comprehension scores (90% or higher) on the passage. Also, the students' WCPM score was determined based on their independent comprehension reading level. Both the QRI and the theoretical model presented for use in this study assumed adolescents are capable of making meaning from text, but do so at varying abilities based on a number of factors, thus the QRI was an appropriate assessment of comprehension. Samples of the QRI--4 word lists, narrative, and expository reading passages are located in Appendix A-5.

Variables in the Study

Factor and cluster analysis were non-dependent procedures (Garson, n.d.-a). Therefore no dependent variables were specified. This meant all of the factors included in the research were independent variables, and the a priori assumption was that any variable may have been associated with any other. Table 4 lists all independent variables included in the factor and cluster analysis. All variables were converted to z-scores prior to the factor and cluster analysis being run for the purposes of this study.

Three separate independent samples t-tests were run using the same independent variables as those listed in Table 4. The dependent variables used in the independent sample t-tests were, students with disabilities, students eligible for free and reduced price lunch, English Language Learners, and students who were not eligible for these services from the school district.

Data Analysis

Analysis of the data followed four steps, using Statistical Package for the Social Sciences (SPSS). First, descriptive statistics were computed to determine whether students who scored below proficient on the TCAP reading components also fell below grade level on the additional assessments administered for the purposes of this study. On assessments that provided a standard score (WJR-III, TOWRE, and PPVT), a score of 90 or below was used to determine below grade level status. On the QRI, a grade equivalent was used to determine students who fell below the grade in which they were enrolled. Specifically, mean and standard deviation were calculated for each assessment based on scores noted in the variables section of Table 4 from each assessment administered. Following the computing of descriptive statistics, independent samples t-tests, factor

Table 4

(Independent) Variables in the Study

Assessment	*Variable*
Woodcock Johnson Diagnostic Reading Battery-III (Woodcock, 1998)	*Standard Score* • Letter-Word Identification • Word Attack
Test of Word Recognition Efficiency (Torgesen, Wagner, & Rashotte, 1999)	*Standard Score* • Sight Word Efficiency • Phonemic Decoding Efficiency
Intermediate Spelling Inventory (Bear, Invernizzi, Templeton, & Johnston 2004)	*Feature Points*
Peabody Picture Vocabulary Test-III (Dunn & Dunn, 1997)	*Standard Score*
Qualitative Reading Inventory -4 (Leslie & Caldwell, 2006)	*Transformed Score (Grade Equivalent x Percentage)* • Independent Level - Word List *Narrative and Expository Passages – Independent Level* • Concept Knowledge • Comprehension • WCPM
Tennessee Comprehensive Assessment Program (TNDOE, 2005)	*Reading Scale Score*

analysis, and cluster analysis, were utilized in order to address the research questions that guided this study. Each will be discussed in further detail below.

Independent Samples t-Tests

Independent samples t-tests were run to compare the means between various groups of students. Independent samples t-tests are used to test the null hypothesis that the means of two populations were the same, H_0: $\mu_1 = \mu_2$, when a sample of observations from each population is available (Landau & Everitt, 2004). Three assumptions were present prior to employing this procedure (Coladarci, Cobb, Minium, & Clarke, 2004). The first was that the two samples were independent. Secondly, it was assumed that each of the two samples was normally distributed. The third and final assumption was that the samples were equally variable. This assumption of homogeneity of variance was examined using Levene's Test for Equality of Variance, which tests the null hypothesis that the variance of means is the same in both groups. A confidence interval of 95% was used to run the independent samples t-tests.

Factor Analysis

Exploratory factor analysis, more commonly referred to as factor analysis (Child, 1990), was employed in an effort to reduce the data and identify variables with underlying constructs (Buly & Valencia, 2002). In factor analysis, the a-priori assumption is that any indicator may be associated with any factor (Garson, n.d.-a). Factors are clusters of variables on a set of people, or other entities, at a given point of time, and represent the common variance of variables. Thus, factor analysis was used to determine what, if any, factors emerged as having greatest variance on TCAP scores. According to Landau and Everitt (2004), the application of factor analysis required two stages. In the

first stage, factor analysis attempted to "determine the number of common factors needed to adequately describe the correlations between the observed variable" (p. 284).

The first step in determining the number of common factors was to convert the variables listed in Table 4 to z-scores. A z-score states how many standard deviation units the variable lies above or below the mean of its distribution (Coladarci, Cobb, Minium, & Clarke, 2004). The purpose of converting the scores was to standardize the scale on which scores were reported, which was necessary because the scales on the measures used in this study were vastly different.

Factor analysis was concerned with whether the correlations between a set of manifest (observed) variables can be explained in terms of a smaller number of unobservable constructs known as latent variables. Multiple regression was the formal model that linked manifest and latent variables (Landau & Everitt, 2004). In this model, each manifest variable was being regressed on the common factors, and the resulting coefficients were known as factor loadings. The specific variates, then, represented that part of the manifest variable not accounted for by the common factors (Child, 1990). In order to account for the common factor variance, Principal Factor Analysis (PFA) was employed as an approach to estimation (Landau & Everitt). The use of PFA resulted in a correlation matrix, which was used to find factor loadings from which communalities between the manifest and latent variables were updated until some convergence criterion was satisfied (Child; Landau & Everitt).

The initial factor solution obtained from PFA was then simplified for purposes of interpretation by the process known as rotation. Rotation was the second stage required in the application of factor analysis (Landau & Everitt, 2004), and did not alter the overall

structure of the solution. Rather, it changed how the solution was described by altering the underlying mathematical properties (Landau & Everitt). The rotated factor was constrained to be independent, or orthogonal, through the use of Varimax rotation (Kline, 1994). Varimax rotation maximized the variance of the squared loadings of the factors on all the variables in a factor matrix. This was beneficial because it identified each factor to a single solution. Factor loadings were constrained to a salient (significant) loading of ±0.4 (Landau & Everitt). The loadings were determined using Kaiser normalization, which considered only the factors having latent roots greater than one as common factors (Child, 1990).

Cluster Analysis

While factor analysis reduced assessment data to determine common underlying constructs between variables, cluster analysis established network groups by determining which sets of young adolescents clustered together. This was the third step in the analysis process. Cluster analysis was a method used for displaying the similarities and differences between pairs of objects in a set (Romesburg, 1984). Cluster analysis consisted of six steps (Romesburg), and the goal of this procedure was to identify "homogeneous subgroups of cases in a population" (Garson, n.d.-b).

The first step in this process was to obtain a data matrix. In this study, the matrix consists of the objects, or the students whose similarities to each other were what were being estimated, and the attributes, or assessments that were the properties used to determine similarities between the students. The second step was to standardize the data matrix. Because the variables used in cluster analysis were the results represented by the factor matrix from the factor analysis procedure described above, standardization had

already taken place. Step three required computation of the resemblance matrix, or degree of similarity between objects. This was completed using Euclidean distance, which "measures the literal distance between two objects when they are viewed as points in the two-dimensional space formed by their attributes" (Romesburg, 1984, p. 12).

Step four was to execute the clustering method. Because of the small sample size in this study, hierarchical cluster analysis (HCA) was performed on the data. HCA began by combining the two individuals who were closest according to the Euclidean distance measure. The process then moves from individuals to a final stage in which all individuals were combined, with the closest two groups combined at each stage (Landau & Everitt, 2004). At each stage more and more individuals were linked together to form larger and larger clusters of increasingly dissimilar components, which represented the complete linkage and was represented by an agglomeration schedule that showed which cases were combined at each stage of the cluster procedure (Landau & Everitt). Step five required the researcher to rearrange the data and resemblance matrices. Essentially this meant the data was then displayed in a tree-like diagram, or dendrogram. The dendrogram displayed the series of fusions as the clustering proceeded from individual sample members to a single group (Landau & Everitt). The final step in cluster analysis was computing the correlation coefficient. For the purposes of this research, Pearson correlation was used to determine agreement between the resemblance matrix and the dendrogram (Romesburg, 1984).

Conclusion

Chapter 3 described the methodology utilized in order to address the research questions that guided this study. Descriptions of the assessments administered to

students, as well as the statistical procedures employed were provided to provide a deeper understanding of the purposes of the chosen methodology. Chapter 4 will provide a discussion of the results obtained after the methods described in this chapter were operationalized.

CHAPTER 4

RESULTS

Chapter Introduction

The purpose of this primarily multivariate correlational study was to determine the patterns of reading abilities amongst struggling young adolescent readers in an attempt to demonstrate the heterogeneous nature of these students and the variability of reading skills they bring to middle school classrooms. Data were collected during the 2005-2006 academic year. Each student (n=94) was administered five assessments that measured alphabetics (phonemic awareness and phonics), fluency, vocabulary, and comprehension, which were representative of both the highly and less constrained skills (Paris, 2005) presented as essential components of reading instruction by the National Reading Panel (NRP, 2000).

Following administration of the assessments, several statistical procedures were conducted in an effort to address the research questions that guided this study. This chapter focuses on the results of those statistical procedures. The sections are delineated based on the research question being addressed. To begin, demographic frequencies and descriptive statistics are highlighted for purposes of defining the study sample.

Demographic Frequencies

In order to determine the composition of the sample, frequencies were run on the number and percentage of students based on gender, ethnicity, qualification for free and reduced price lunch, as well as qualification for services in special education and English Language Learner (ELL) programs. The comparison between the study sample and the school district is shown in Table 5.

Table 5

Demographic Frequency Table

	Sample	District
Gender	M: 60.6% F: 39.4%	Not Reported
Ethnicity	W*: 56.4% B: 35.1% H: 7.4% O: 1.1%	W: 81.2% B: 14.5% H: 2.3% O: 2.1%
Free and Reduced Price Lunch	81.9%	40.7%
Special Education	36.2%	13.1%
English Language Learner	9.6%	1.6%

*W: White, B: Black, H: Hispanic, O: Other

As noted in Table 5, discrepancies between the sample and the school district existed in all categories represented. In terms of ethnicity, Black and Hispanic students were represented in the sample by more than double and triple their representation in the school district, respectively, and White students were underrepresented in the sample by nearly 30% compared to the district frequencies. Students who qualified for free and reduced price lunch were represented in the sample by a percentage that is double the representation of students who qualified across the district. Students that received special education services were represented in the sample by a percentage that was nearly three times greater than representation in the district, and there were six times as many students who qualified as English Language Learners in the sample than in the district. Gender frequencies were not reported by the school district. In this sample, 60.6% were male and 39.4% female.

Spellings (2005) asserted that in order for states to meet the Adequate Yearly Progress (AYP) goals set forth by NCLB, they must demonstrate that the needs of particular subgroups were being addressed. By definition, states are required to show that students are meeting the assessment expectations established by the state and approved by the U.S. Department of Education. States and districts are required to report on the subgroups of minority students, low-income students, students with disabilities, and English Language Learners. As noted earlier, each of these subgroups are overrepresented in this study as compared to the district averages. In other words, students in the AYP subgroups were more likely to score below proficient on the TCAP than their peers who were not accounted for by one of the AYP subgroups. Despite these discrepancies, the district in this study met the AYP goals for all subgroups (TNDOE,

2006). However, the number of English Language Learners in the district was not high enough to report scores for AYP.

Descriptive Statistics

In order to determine whether or not students who scored below proficient on the reading section of the TCAP also fell below grade level on the assessments administered for the purposes of this study, mean and standard deviation were computed for each of the assessments. This information is presented in Table 6 for the sample as well as the subgroups. On average, students in this study demonstrated below grade level scores on all the assessments administered, with scores on assessments of alphabetics being higher than those of vocabulary and comprehension. As noted in chapter 3, on assessments that provided a standard score (WJR-III, TOWRE, and PPVT), a score of 90 or below was used to determine below grade level status. On the QRI, a grade level equivalent was used to determine students who fell below the grade in which they were enrolled. The average student in this study scored grade level equivalents of early to mid fourth grade on all measures of word identification, and mid to late third grade on phases of typical reading development. These phases were also represented in the theoretical model presented in chapter 1 (Figure 1). Table 7 shows the features of these two phases as explained by Spear-Swerling. In both stages, students have moved beyond reliance of context for word recognition, and were reading words quickly and accurately. In the Automatic Word Recognition Phase, comprehension was hindered less by word recognition difficulties and more by vocabulary and background knowledge.

In the Strategic Reading Phase, students were beginning to utilize comprehension strategies to make meaning from text, and were utilizing text to gather information. It is

Table 6

Descriptive Statistics for Study Sample and Subgroups

	Sample	SpEd	ELL	FRL	No Program
TCAP					
Scale Score	448.98	451.91	430.56	446.55	461.20
SD	32.40	26.66	51.12	33.91	23.64
WJR LWI					
SS	79.39	72.32	79.00	78.10	86.60
SD	14.94	17.88	12.75	14.72	15.23
GE	4.2	3.7	4.3	4.0	5.4
WJRWA					
SS	86.16	82.09	86.22	85.48	91.20
SD	12.18	13.04	7.01	12.31	11.23
GE	4.3	3.7	3.7	4.1	5.6
TOWRE SWE					
SS	83.12	74.41	86.56	82.01	91.10
SD	15.11	19.32	8.50	15.34	13.25
GE	4.5	3.5	4.78	4.3	5.8
TOWRE PDE					
SS	82.70	76.00	97.44	81.42	90.40
SD	14.33	13.95	11.92	14.00	14.78
GE	4.2	3.1	7.0	4.0	5.4
PPVT					
SS	83.28	84.94	60.67	81.70	89.60
SD	14.58	16.23	12.54	14.70	6.00
ISI					
Feature Points	26.78	20.56	22.22	25.01	38.00
SD	13.44	11.98	14.49	13.03	14.15
QRI WI					
GE	4.6	3.5	4.0	4.4	6.3
SD	2.27	2.15	2.56	2.24	2.21
QRI NC					
GE	3.8	3.0	2.56	3.72	5.1
SD	1.84	1.83	1.13	1.82	1.73
QRI EC					
GE	3.4	2.6	2.13	3.3	4.6
SD	1.79	1.48	1.36	1.73	2.07
QRI WCPM					
WCPM	97.52	84.39	102.22	92.14	132.20
SD	36.23	40.02	39.10	32.18	47.52

SD=Standard Deviation; SS=Standard Score; GE=Grade Equivalent; WJR=Woodcock Johnson Revised; LWI=Letter Word Identification; WA=Word Attack; TOWRE=Test of Word Reading Efficiency; SWE=Sight Word Efficiency; PDE=Phonemic Decoding Efficiency; PPVT=Peabody Picture Vocabulary Test; ISI=Intermediate Spelling Inventory; QRI=Qualitative Reading Inventory; WI=Word Identification; NC=Narrative Comprehension; EC=Expository Comprehension; WCPM=Words Correct Per Minute

Table 7

Automatic Word Recognition and Strategic Reading Phases of Typical Reading Development (Spear-Swerling, 2004)

Phase	Defining Features	Additional Features	Approximate Age (Grade)
Automatic Word Recognition	Child recognizes common words automatically (without effort) as well as accurately.	• Does not usually rely on context to aid or speed word recognition; • Makes use of larger letter pattern units in word recognition; • Integrates automatic word recognition with comprehension processes for fluent text reading; and	Beginning at about 7 to 8 years (second to third grade)
Strategic Reading	Child routinely uses at least some comprehension strategies to aid reading comprehension.	• Has well-developed, accurate, automatic word-recognition skills; • Usually does not rely on context for word recognition but frequently uses context to aid comprehension; • Uses reading easily and extensively as a "tool" for gathering information; • Gains increasing vocabulary and background knowledge from reading; and	Beginning at about 8 to 9 years (third to fourth grade

important to note that the next phase in Spear-Swerling's model, Proficient Reading, did not begin until later adolescence. Therefore, students who reached the Strategic Reading Phase were working in that phase for most of their school careers. Thus, development of the reading abilities presented in Table 7 required considerable time. Additionally, it would be expected that students would work between the phases based on the type of text, level of interest, and background knowledge. In other words, the data presented in Table 6 represents young adolescents who demonstrated below grade level reading abilities. However, the data did not represent students who were, on average, missing highly constrained skills, rather those who must further develop the less constrained skills they already possess.

Addressing the mean scores presented in the descriptive statistics tables would provide only part of the information regarding these struggling young adolescents. The standard deviations for all the assessments were extremely variable, which was representative of heterogeneous groups of struggling young adolescents. For example, on the WJR Letter-Word Identification assessment, the grade level equivalent mean was 4.2 and the standard deviation was 2.0. In other words, the average student may have scored a grade level equivalent within the range of 2.2 and 6.4. On the QRI Narrative Comprehension assessment, the grade level equivalent mean was 3.8 with a standard deviation of 1.8. Again, the average student in this sample would have scored in the range of 2.0 and 5.6. Certainly, a student who earned a 2.0 on the WJR Letter-Word Identification and a 2.0 on the QRI Narrative Comprehension Questions would require dramatically different instruction than a student that scored on the higher ends of the ranges presented. Prior to determining the appropriate instruction for these students,

however, more information must be gleaned from the data. In order to answer research question #1, it was necessary to synthesize the information learned from both the demographic frequencies and the descriptive statistics through disaggregation of the data.

Research Question #1

Is there a difference in reading abilities between:

a. *struggling young adolescents who qualify for special education services and those who do not?*
b. *struggling young adolescents who qualify for free and reduced price lunch and those who do not?*
c. *struggling young adolescents who qualify for ELL and those who do not?*
d. *struggling young adolescents who do not qualify for special education, free and reduced price lunch, or ELL programs compared to those who do qualify for these programs?*

Independent samples t-tests were run to compare the means between the groups listed in sub-questions a-d. This procedure was used to test the null hypothesis that the means of the two populations were the same, H_0: $\mu_1 = \mu_2$, when a sample of observations from each population was available (Landau & Everitt, 2004). This was important in determining whether any of the subgroups demonstrated statistically significant differences from their peers on the assessments administered for the purposes of this study. It is important to note that individual students may have been counted in one or more subgroups. For example, a student who received special education services and qualified for free and reduced lunch would be represented within the t-test for each subgroup. Levene's Test for Equality of Variances was first utilized to test the null

hypothesis that the variance of the means was the same in both groups. Effect sizes (Cohen's d) were reported for all measures within each subgroup in order to represent the magnitude of the treatment effect (Cohen, 1988). Cohen (1988) suggested guidelines for interpretation of effect size that considered .20 as small, .50 as medium, and .80 or above as large.

Special Education

Based on the results of the independent samples t-tests, at the .05 alpha level the null hypothesis was rejected and there was a statistically significant difference between the groups, with the exception of the TCAP Reading and PPVT. Additionally, students who qualified for special education services scored below their peers on all measures. Although this was the case, no evidence emerged from the independent samples t-test to suggest all of these students were having difficulty with word-level skills as Siegel (2003) noted. Further review of the data would be required to determine the specific patterns of reading abilities presented by students who qualified for special education students. Considering the findings presented by Leach, Scarborough, and Rescorla (2003), it would be necessary to determine whether the students in this study demonstrated abilities in word-level skills, comprehension, or both. Such a review will be discussed in research questions #2 and #3. Table 8 illustrates the results for this subgroup.

Free and Reduced Price Lunch

With the exception of the PPVT, Intermediate Spelling Inventory, and Words Correct per Minute (WCPM), at the .05 alpha level there was no statistical significance between the groups and the researcher failed to reject the null hypothesis. Noticeably, students who qualified for free and reduced price lunch did not differ significantly on

Table 8

Results from Levene's Test for Equality of Variance, Independent Samples t-tests, and Effect Size (d) for students who qualified for special education services

Assessment	Levene's Test	F	Sig.	t	df	Sig. (2-tailed)	d
TCAP Reading	EVA	3.618	.060	-.659	92	.512	.15
WJR Letter Word Identification	EVNA	8.070	.006	3.261	92	.002	.74
WJR Word Attack	EVA	2.348	.129	2.508	92	.014	.53
TOWRE Sight Word Efficiency	EVNA	18.602	.000	3.880	41.433	.000	.90
TOWRE Phonemic Decoding Efficiency	EVA	.583	.447	3.630	92	.000	.77
PPVT	EVA	.948	.333	-8.12	91	.419	.17
Intermediate Spelling Inventory	EVA	.221	.640	3.585	92	.001	.78
QRI Word Identification	EVA	.170	.681	3.484	92	.001	.75
QRI Narrative Concept Questions	EVA	1.641	.204	2.023	90	.046	.43
QRI Narrative Comprehension	EVA	.467	.496	3.320	90	.001	.59
QRI Expository Concept Questions	EVNA	4.437	.038	3.302	77.396	.001	.71
QRI Expository Comprehension	EVA	.338	.563	2.461	87	.016	.56
QRI WCPM	EVA	3.205	.077	2.676	91	.009	.56

EVA=Equal Variances Assumed; EVNA=Equal Variances Not Assumed

measures of decoding, but did differ on measures of vocabulary, orthography, and rate and accuracy. These findings were consistent with those presented by White, Graves, and Slater (1990), which demonstrated that students from families of lower SES enter school having fewer experiences with words. Table 9 represents the results for this subgroup.

English Language Learners

As shown in Table 10, on most measures of alphabetics at a .05 alpha level there was no statistical significance between the groups and the researcher failed to reject the null hypothesis. However, on all other measures, at a .05 alpha level, the null hypothesis was rejected and there was a statistically significant difference between groups. These findings were consistent with those of Buly and Valenica (2002), which demonstrated that on average students that received services in ELL programs had decoding skills that were more developed than their comprehension skills. Thus, they were able to reach mastery of highly constrained skills quite rapidly, but were continuing to develop less constrained skills (Paris, 2005).

No Special Program

Students who did not qualify for any of the aforementioned programs demonstrated similar reading abilities as their peers who did qualify for the programs on most measures of highly constrained skills, and thus the researcher failed to reject the null hypothesis for those measures at the .05 alpha level. However, on the intermediate spelling inventory, QRI word identification, QRI narrative concept questions and comprehension, and QRI WCPM, students who did not qualify for special programs presented scores that were statistically different than their peers. Thus, the null hypothesis was rejected at the .05 alpha level for those measures (Table 11). These students' overall

Table 9

Results from Levene's Test for Equality of Variance, Independent Samples t-tests, and Effect Size (d) for students who qualified for free and reduced price lunch

Assessment	Levene's Test	F	Sig.	t	df	Sig. (2-tailed)	d
TCAP Reading	EVA	1.667	.200	-1.562	92	.122	.47
WJR Letter Word Identification	EVA	.068	.795	-1.802	92	.075	.48
WJR Word Attack	EVA	.028	.867	-1.152	92	.252	.32
TOWRE Sight Word Efficiency	EVA	.354	.553	-1.518	92	.132	.43
TOWRE Phonemic Decoding Efficiency	EVA	.108	.743	-1.877	92	.064	.49
PPVT	EVA	.274	.602	-2.261	91	.026	.64
Intermediate Spelling Inventory	EVA	.395	.531	-2.806	92	.006	.76
QRI Word Identification	EVA	.126	.724	-1.795	92	.076	.49
QRI Narrative Concept Questions	EVA	.189	.665	-1.815	90	.073	.48
QRI Narrative Comprehension	EVA	.528	.469	-1.057	91	.293	.29
QRI Expository Concept Questions	EVNA	4.786	.031	-1.166	18.885	.258	.35
QRI Expository Comprehension	EVA	3.018	.086	-.471	87	.639	.11
QRI WCPM	EVA	1.189	.278	-3.168	91	.002	.76

EVA=Equal Variances Assumed; EVNA=Equal Variances Not Assumed

Table 10

Results from Levene's Test for Equality of Variance, Independent Samples t-tests, and Effect Size (d) for students who qualified for ELL

Assessment	Levene's Test	F	Sig.	t	df	Sig. (2-tailed)	d
TCAP Reading	EVNA	5.126	.026	1.175	92	.272	.49
WJR Letter Word Identification	EVA	.640	.426	.083	92	.934	.03
WJR Word Attack	EVA	1.484	.226	-.016	92	.987	.01
TOWRE Sight Word Efficiency	EVA	1.543	.217	-.716	92	.476	.30
TOWRE Phonemic Decoding Efficiency	EVA	.422	.518	-3.428	92	.001	1.27
PPVT	EVA	.191	.663	5.660	91	.000	1.99
Intermediate Spelling Inventory	EVA	.145	.704	1.070	92	.288	.36
QRI Word Identification	EVA	.104	.748	.719	92	.474	.24
QRI Narrative Concept Questions	EVA	1.475	.228	2.658	90	.009	1.04
QRI Narrative Comprehension	EVA	2.294	.142	2.495	91	.014	1.03
QRI Expository Concept Questions	EVA	1.875	.175	2.811	84	.006	1.23
QRI Expository Comprehension	EVA	.058	.810	2.319	87	.023	.93
QRI WCPM	EVA	.029	.864	-.408	91	.684	.14

EVA=Equal Variances Assumed; EVNA=Equal Variances Not Assumed

Table 11

Results from Levene's Test for Equality of Variance, Independent Samples t-tests, and Effect Size (d) for students who do not qualify for special programs

Assessment	Levene's Test	F	Sig.	t	df	Sig. (2-tailed)	d
TCAP Reading	EVA	.925	.339	-1.266	92	.209	.48
WJR Letter Word Identification	EVA	.061	.806	-1.627	92	.107	.54
WJR Word Attack	EVA	.117	.733	-1.391	92	.168	.48
TOWRE Sight Word Efficiency	EVA	.613	.436	-1.788	92	.077	.63
TOWRE Phonemic Decoding Efficiency	EVA	.619	.434	-1.819	92	.077	.60
PPVT	EVA	3.545	.063	-1.460	91	.148	.61
Intermediate Spelling Inventory	EVA	.373	.543	-2.903	92	.005	.93
QRI Word Identification	EVA	.187	.667	-2.609	92	.011	.87
QRI Narrative Concept Questions	EVA	.762	.385	-2.542	90	.013	.93
QRI Narrative Comprehension	EVA	1.365	.246	-1.984	91	.050	.70
QRI Expository Concept Questions	EVNA	4.493	.037	-1.577	8.826	.150	.64
QRI Expository Comprehension	EVA	2.976	.088	-1.448	87	.151	.40
QRI WCPM	EVA	2.788	.098	-3.382	91	.001	.95

EVA=Equal Variances Assumed; EVNA=Equal Variances Not Assumed

scores were higher than their peers, which may represent less of a developmental lag. This could be an indication as to why they are not serviced by any special program. Again, these findings are consistent with White, Graves, and Slater (1990), which suggested students who did not qualify for free and reduced price lunch had more experience with words. Additionally, these findings also draw a parallel to the study by Saenz and Fuchs (2002) that demonstrated students had a more difficult time comprehending expository text than narrative text.

The subgroup analyses supported the notion that struggling readers demonstrated below grade level skills on assessments of reading skills. However, ending analyses at this level would suggest a limited and homogeneous view of these students. Although the independent samples t-tests shed light on the differences between the subgroups assessed in this study, the procedure was limited to comparing the means between the groups. In order to begin to address patterns of reading abilities amongst struggling young adolescent readers, procedures addressing research questions #2 and #3 were conducted and will be discussed further below.

Research Question #2

Which reading abilities are most directly related to young adolescents' below proficient scores on TCAP?

Factor analysis was used to address this research question. The first step in this analysis was to determine the communalities, or common variance, between the variables (Table 12). With the exception of three, all of the variables were highly correlated (>.7). This meant that 74.8% of the total variance was accounted for based on these assessments. Two factors, the QRI-4 Narrative (QRINCQ) and Expository Concept

Table 12

Communalities of factors

Factor	Extraction
WJR Letter Word Identification	.896
WJR Word Attack	.764
TOWRE Sight Word Efficiency	.772
TOWRE Phonemic Decoding Efficiency	.797
PPVT	.257
Intermediate Spelling Inventory	.837
QRI Word Identification	.812
QRI Narrative Concept Questions	.692
QRI Narrative Comprehension	.894
QRI Expository Concept Questions	.679
QRI Expository Comprehension	.844
QRI Words Correct Per Minute	.728

Questions (QRIECQ), were moderately correlated (>.6) with the remaining factors. Only one factor, the Peabody Picture Vocabulary Test (PPVT), was not correlated with the other factors. In other words, little of the variance of this test could be attributed to the common factors.

The second step in factor analysis was to determine the total variance attributed to a specific number of factors. Eigenvalues, or the latent roots of the factors, represented the variance. In factor analysis, any Eigenvalue over 1 was considered significant. Table 13 showed the Eigenvalues, percent of variance, and cumulative variance for the three factors that were extracted from the analysis. As shown, factors one and two combined to account for 63.4% of the variance, and emerged as being equally accountable for the variance. A third factor emerged accounting for an additional 11.4% of the variance. Thus, the total variance for the three factors was 74.8%. The remaining factors did not yield Eigenvalues over 1, and were not extracted for further analysis. Once rotation, in this case Varimax, was applied to the factor analysis procedure a factor matrix was produced to display the assessments that correlated to create each of the three factors represented in Table 13 (Table 14). Those numbers in bold print represented factor loadings of >.6, which is a high loading for extraction of factors (Landau & Everitt, 2004).

Based on the assessments that loaded within each factor, the three factors have been cautiously named meaning (comprehension and concepts), decoding, and rate and accuracy. Child (1990) warns, "the problem of naming factors has the drawback of requiring, in some cases, a notion of causal determinants" (p. 8). Thus, by naming these factors as such it was not intended to suggest they were causes, but indicators, of below

Table 13

Total Variance of Factors

Factor	Eigenvalue	% of Variance	Cumulative %
1	3.860	32.2	32.2
2	3.744	31.2	63.4
3	1.368	11.4	74.8

Table 14

Rotated Factor Matrix – Varimax Rotation

	Factor 1	**Factor 2**	**Factor 3**
QRI Narrative Comprehension	**.826**	.443	.121
QRI Expository Comprehension	**.826**	.400	-.043
QRI Expository Concept Questions	**.777**	.268	.059
QRI Narrative Concept Questions	**.749**	.221	.285
PPVT	.466	-.046	.195
TOWRE Phonemic Decoding Efficiency	-.008	**.849**	.274
WJR Word Attack	.317	**.807**	.111
WJR Letter Word ID	.497	**.748**	.298
Intermediate Spelling Inventory	.547	**.685**	.261
QRI Word Identification	.597	**.648**	.190
TOWRE Sight Word Efficiency	.296	.596	.574
QRI WCPM	.150	.296	**.786**

proficient scores on TCAP. In other words, the factors that emerged from this procedure were related to students' below proficient scores on the TCAP, but not the cause of those scores. Paris (2005) indicated this acknowledgement would minimize the proxy effect problem that occurs when researchers create causal inferences from correlational data. The factors were similar to the factors determined by Buly and Valencia (2002), although the loadings of each assessment and the variance attributed to each of the factors differed. Each of these factors will be discussed more thoroughly below.

Factor 1: Meaning

All of the measures that loaded to this factor were components of the QRI. The narrative and expository concept questions and comprehension questions produced high loadings. Thus, the label attributed to this factor, which presented 32.2% of the total variance, was meaning. Students responded orally to questions prior to reading a passage to determine their level of background knowledge on the concepts presented in the text. Scores were assigned to the responses provided by students based on the details of the definition given (Leslie & Caldwell, 2006). After reading the text, students were asked to respond orally to questions that were explicitly and implicitly related to the text. Scores were assigned to the responses based on the level of detail the student provided (Leslie & Caldwell, 2006). Although the PPVT accounted for little of the variance in this study, it was this factor on which it demonstrated the highest loading (.466), which would suggest a limited relationship to the factor of meaning. The fact the PPVT did not require students to read, but was a test of receptive vocabulary, may explain the lack of correlation to the other assessments. Meaning, then, is an indicator related to struggling young adolescents' below proficient scores on TCAP.

Factor 2: Decoding

The second indicator of students' below proficient scores on TCAP was decoding, which accounted for 31.2% of the total variance. With the exception of the TOWRE Sight Word Efficiency subtest, all decoding variables loaded to this factor. TOWRE Sight Word Efficiency loaded at .596, which was reasonably close to the >.6 loading requirement established within this study. Measures of both real words and nonsense words loaded to this factor, as did the intermediate spelling inventory. As noted in the descriptive statistics section, average grade level equivalent scores for most measures of decoding were in the early to mid fourth grade range, which demonstrated students were able to decode words beyond a basic level but did so below the grade level in which they were enrolled.

Factor 3: Rate and Accuracy

Accounting for 11.4% of the variance was the final factor extracted with an Eigenvalue greater than 1. Indicating a relationship to students' below proficient performance on TCAP, this factor was labeled rate and accuracy. One assessment component, QRI Words Correct Per Minute (WCPM) loaded to this factor at .786. The mean score for this assessment was 97.5 words per minute. According to Hasbrouck and Tindal (2006), this average represented oral reading fluency at or below the 25th percentile for students in grades 6-8.

However, Paris (2005) warned, "oral reading accuracy can be influenced by many different experiences and skills, and the oral reading fluency score may only be a proxy measure for many other influences on reading development" (p. 193). Rate and accuracy may be confounded by other reading abilities, as may any of the reading abilities

indicated by the factors presented from this analysis. This was made clear in the discussion of the theoretical model presented and utilized for the purposes of this study, in which it was assumed that all of the abilities represented by the model worked in concert with one another in order for students to create meaning from text. Thus, it was again important to note that each of the three factors noted were merely indicators of students' below proficient scores on TCAP, and not causes for these scores. Further examination of the role of rate and accuracy, as well as meaning and decoding, was necessary to determine patterns of reading abilities that emerged from these indicators.

Research Question #3

What patterns of reading abilities do struggling young adolescent readers who score below proficient on state mandated standardized assessments demonstrate?

Utilizing the three factors discussed in the previous section (meaning, decoding, and rate and accuracy), cluster analysis was performed to determine the similarities and differences of reading abilities amongst the sample of students in this study. In hierarchical cluster analysis, each student was a case and each case was represented by the three factor scores, which were obtained by averaging a student's standardized variable scores (z-scores) for each factor. Initially, eight distinct clusters emerged from the data. However, upon closer review of the Euclidean distance and proximity matrix, four salient clusters were extracted (Table 15). Although the four clusters represented a greater Euclidean distance than the eight clusters did, the cases in the four clusters remained highly correlated (>.7). Further the reading abilities represented for the cases within each of the eight clusters were preserved when the clusters were combined. Table 16 represents the characteristics of students in each of the four clusters. When

Table 15

Cluster Analysis

Cluster	*N*	Meaning	Decoding	Rate	TCAP Score	% SWD	% FRL	% ELL
1	23	.98	-.35	-.17	453	28.6	81	0
2	24	.05	.52	-.66	448	43.5	87	4.3
3	23	-.76	.57	.34	439	14.3	85.7	33.3
4	24	-.27	-.80	.56	459	47.6	71.4	0

Table 16

Clusters of Student Reading Abilities

Cluster & Percentage of Students	Characteristics
Cluster 1 (24.5%) Strategic Readers	• High level of concept knowledge • Read for meaning • Difficulty with non-sense word reading • Strong orthographic knowledge
Cluster 2 (25.5%) Slow Word Callers	• Concept knowledge not a strength • Read for meaning • Accurate word identification • Slow reading rate
Cluster 3 (24.5%) Automatic Word Callers	• Read words quickly and accurately • Do not read for meaning
Cluster 4 (25.5%) Rapid "Readers"	• Fast reading rate • Word identification less accurate than peers • Read for meaning on narrative text

appropriate, the cluster labels were chosen to match those presented by Buly and Valencia (2002) in order to develop consistency between the results. However, as expected based on the differences in age and grade between the two studies, the abilities represented by the struggling young adolescents in this study did not always match those of the study conducted by Buly and Valencia.

Cluster 1--Strategic Readers

Students in cluster 1 demonstrated the highest overall scores on the meaning factor of the four clusters represented. On average, students in this cluster earned independent grade level equivalent scores of 5.0 and 4.4 on narrative and expository text, respectively. These scores were nearly one standard deviation above the mean of the entire sample. Although both sets of scores were below the grade level in which the students were enrolled, the scores demonstrated the students' ability to make meaning from appropriately matched text. Students in this cluster also brought more knowledge to the text, and scored at higher levels on the concept questions than students in the other clusters. Additionally, the PPVT scores of students in cluster 1 were the highest of any cluster.

Mean scores for factor 2 (decoding) and factor 3 (rate and accuracy) fell below the sample mean. A closer look at the means of individual assessment components, however, revealed that students in cluster 1 scored at levels comparable to the means of the sample on assessments of real words (WJR Letter-Word ID, TOWRE Sight Word Efficiency) and scored higher than the sample mean on the QRI Word Identification. Additionally, students in this cluster demonstrated understanding of alphabetics by producing Intermediate Spelling Inventory scores that were higher than the scores from

most other clusters. However, cluster 1 students scored considerably lower than the sample mean on measures requiring the decoding of nonsense words (WJR Word Attack and TOWRE Phonemic Decoding Efficiency). Finally, the rate at which students in cluster 1 read was below the sample mean.

Cluster 2--Slow Word Callers

The students represented by cluster 2 had scores comparable to the sample mean on factor 1, and were similar to the sample in that decoding skills were slightly stronger than comprehension skills. Scores on the concept questions were considerably lower than scores on comprehension questions for this group of students, which indicated the students were able to make meaning from the text while reading. PPVT scores were lower than the sample mean. On both narrative and expository text, cluster 2 scored independent grade level equivalents near the fourth grade.

Factor 2 measures were higher than the sample means. This indicated students in cluster 2 had knowledge of alphabetic skills. Unlike the students in cluster 1, these students were particularly strong in decoding nonsense words. Additionally, students in cluster 2 reported the highest mean score on the Intermediate Spelling Inventory as compared to the other clusters. Students in cluster 2 had the lowest rate (factor 3) of any cluster. Although these students were able to decode at a higher level than their peers in other clusters, when reading text their rate was considerably slower. Thus, these students were slow, deliberate decoders while reading text.

Cluster 3--Automatic Word Callers

Cluster 3 represented a group of students with factor 1 scores that were significantly below the mean of the sample. Grade level equivalent scores on the QRI

narrative and expository comprehension assessments were 3.3 and 2.8, respectively. Additionally, these students entered with the lowest concept question and PPVT scores of any cluster. It is important to note, however, that cluster 3 students demonstrated gains from the scores on the concept questions to scores on comprehension questions, indicating they were able to generate meaning from text. Students in cluster 3 scored above the sample mean on measures represented by both factor 2 and factor 3, which demonstrated fast, accurate word calling skills. Further, cluster 3 students earned Intermediate Spelling Inventory scores above the mean of the sample.

Cluster 4--Rapid "Readers"

Students in cluster 4 demonstrated factor 1 scores that were lower than the sample mean, and factor 2 scores that were lower than those from any other cluster. However, their QRI WCPM scores (factor 3) were the highest of any of the four clusters. Grade level equivalent results on most measures revealed that these students consistently scored between second and third grade within all the factors. Based on gains between narrative concept questions and narrative comprehension questions, it appeared these students were able to make meaning from narrative text as they read. However, students did not demonstrate growth in scores between expository concept questions and expository comprehension questions. Cluster 4 students had scores on the Intermediate Spelling Inventory that were below the sample mean, and lower than any other cluster.

Conclusion

Results from the analyses presented in this chapter indicate heterogeneous groups of struggling young adolescent readers. These students demonstrated mean scores that were below grade level achievement indicators on the assessments administered.

However, the scores also represented that the students were working within a phase of reading development in which they utilized both highly constrained and less constrained skills.

Meaning, decoding, and rate and accuracy were the three factors that emerged as indicators of student performance on the TCAP. Based on the three factors, four salient clusters emerged, each representing roughly 25% of the total sample. Discussion of the implications for both policy and instruction will be presented in chapter 5.

CHAPTER 5

DISCUSSION

Chapter Introduction

The purpose of this study was to determine the patterns of reading abilities amongst struggling young adolescent readers in an attempt to demonstrate the heterogeneous nature of these students and the variability of reading skills they bring into middle school classrooms. As a result of this study, the goal is to influence both policy and instruction as it relates to this population of students. Current policy and instruction reveals an image of a homogeneous group of struggling young adolescent readers. Such a view has been projected based on the reporting of national assessments of literacy skills.

Noted as the source most influential in the development of educational policy over the past decade (Swanson & Barlage, 2006), the National Assessment of Education Progress (NAEP) reported that students scoring at a basic level exhibited partial mastery of the skills necessary to be successful at the grades assessed (NCES, 2006). Often, however, these results have been portrayed in a manner that indicates students scoring at this level were deficient in the skills necessary to be more advanced readers, thus creating a crisis relating to young adolescent literacy (Biancarosa & Snow, 2004; Buly & Valencia, 2002; Conley, 2005; Franzak, 2006), and suggesting a need for remediation in highly constrained skills (Paris, 2005). Although most of the students within the sample of this study are representative of the NAEP definition for students scoring at the below basic level, the view of what it means for a student to score at this level must be reframed in order to be demonstrative of the abilities these students exhibit, rather than the perceived crisis. Students in this study demonstrated only partial mastery of the skills

needed to successfully read text at the grade level in which they were enrolled, but they demonstrated reading abilities beyond the basic skills called for by the policies that were influenced by the NAEP. Only with a reframing of this definition can policy begin to focus on moving students beyond the basic literacy skills learned in the elementary grades, and support instruction of more complex text (RAND, 2005).

The NAEP was influential in the creation of the No Child Left Behind Act (Bush, 2001), which called for increased accountability as measured by state mandated standardized assessments in grades 3-8. While these assessments have been used for many purposes, the continued testing of struggling young adolescent readers will not promote improved reading skills if the heterogeneous nature of their reading abilities are not addressed through policy, instruction, and more fine-grained assessments. Further, policy such as the Tennessee Reading Policy (TNSBOE, 2005), promoting the use of these test results to place students in remedial reading classes in which the curricula are skills-based commercial reading programs, promotes a homogeneous view of students in these classrooms. By promoting the use of one program for all struggling young adolescents, the assumption is that all of these students require the same instruction and represent the same reading abilities. The data from this study demonstrate this is not the case. The mandating of such programs is simply not supported by evidence (Allington, 2002; Buly & Valencia, 2002; Paris, 2005; Shanahan, 2005).

Policies supporting the reading development of struggling young adolescents can no longer make the assumption of homogeneity based on levels of proficiency on state-mandated standardized assessments. Fortunately, perhaps, according to NASBE (2005), "only a very few states have begun to think systematically about how state policies and

practice should support a new approach to the education of adolescents" (p. 4). By acknowledging the data brought forth through this research, which clearly exemplifies the heterogeneity of reading proficiencies among the population of striving, struggling, lower achieving readers, policy can be developed that focuses on understanding the nature of young adolescent reading development.

This chapter will discuss the results of the data analysis presented in chapter 4, first by demonstrating how the data supported the theory behind this study, which was denoted through the emergence of the three factors, meaning, decoding, and rate and accuracy. Then, the four clusters will be revisited and discussed based on those studies reviewed in earlier chapters, and instructional implications for struggling young adolescent readers will be addressed. A brief discussion of changes to current policy, as well as directions for future research will then be addressed.

How Did the Data Support Theory?

The Model of Young Adolescent Reading Development presented throughout this dissertation was developed by the researcher to recognize that all young adolescents had abilities in each of the skill areas presented, but that those abilities differed based on the automaticity of each skill, prior knowledge of the content, reading experiences, and the type of text. The model was derived from the work of Paris (2005) and Spear-Swerling (2004), and was supported by the data gathered and presented in chapter 4, which showed that students in the study, although possessing reading abilities below the grade levels in which they were enrolled, exhibited working knowledge of all the skill areas at varying degrees. Further, the data also supported the NASBE (2005) assertion of four of the five major factors for advanced literacy skills, speed and accuracy, vocabulary, background

knowledge, comprehension, and motivation. It is important to note that motivation was not an area explored through the use of the assessments administered for this study. However, the other elements listed were delineated in the results of the factor analysis, from which the three factors of meaning (factor 1), decoding (factor 2), and rate and accuracy (factor 3) emerged. As indicators of struggling young adolescents' performance on TCAP, these factors were representative of the NASBE elements noted above. Further, the data demonstrated that each cluster of students possessed and utilized these skills to varying degrees, which provided further support for heterogeneity amongst this group of young adolescent readers.

Based on the assessments administered and what each measured, it is not surprising to find that these three factors materialized from the data. However, what was important about the emergence of these three factors was that student abilities were represented by high correlations between and amongst measures. This supported the theoretical model, which depicts that all the stated skills worked in concert. Further, these factors served as indicators, not causes, of student performance on the TCAP (Paris, 2005), which should be an important consideration when developing policy and instruction for these students. It is necessary to consider this because it requires policy to move away from a deficit model in which the underlying assumption is that students missing a specific skill can have it "plugged-in" through programs that focus on these narrow elements of reading, and toward a more holistic view of the need for instruction that focuses on the heterogeneous abilities of all students as represented, but not causally encompassed, by the factors.

As noted in chapter 4, the three factors were used in the cluster analysis to discern

the patterns of reading abilities amongst the sample of struggling young adolescent readers. The output from the analysis loaded to the assessment scores represented by each factor and then generated clusters based on that data. Once the groups were determined, a more complete picture of the young adolescents within each group was developed through the use of the descriptive statistics provided for each cluster. In other words, simply reviewing the means of each factor would not accurately reflect the varying abilities of students within each cluster. Cluster means on specific measures were addressed throughout this discussion. As reported with the descriptive statistics for the overall sample, however, great variation remained amongst the standard deviations in each cluster. This demonstrated that even within each cluster that represented variations in reading abilities, care must be taken to acknowledge the individual differences of members within the cluster. Although the review of the results in chapter 4 briefly addressed this, discussion of the clusters related to policy and instruction will proceed below based on a deeper interpretation of each group.

Cluster Analysis Revisited

Cluster 1--Strategic Readers

Students in cluster 1 demonstrated the highest overall scores on the meaning factor, with an average that was nearly one standard deviation above the mean. They were able to make meaning from narrative and expository text at an average grade level equivalent of 5.0 and 4.4, respectively (Table 17). Additionally, students in this cluster scored higher on the concept questions for both narrative and expository text than their peers represented by the other clusters. Their scores on all assessments administered indicated these students were functioning within the Strategic Reading phase of

Table 17

Descriptive Statistics for Cluster 1--Strategic Readers

	Mean			
Assessment	**Standard Score***	**Grade Equivalent Score**	**Other Score**	**Standard Deviation**
TCAP Reading			453.8	27.2
WJR Letter Word Identification	81.95	4.2		9.4
WJR Word Attack	84.38	3.6		10.1
TOWRE Sight Word Efficiency	85.05	4.6		8.6
TOWRE Phonemic Decoding Efficiency	75.71	3.0		10.1
PPVT	89.38			9.3
Intermediate Spelling Inventory			30.1	11.6
QRI Word Identification		5.2		1.6
QRI Narrative Concept Questions			366.8	105.8
QRI Narrative Comprehension		5.0	486.5	116.1
QRI Expository Concept Questions			346.2	122.6
QRI Expository Comprehension		4.4		1.5
QRI WCPM			93.0	22.1

*Standard deviation reflected standard scores or other scores as reported.

development (Spear-Swerling, 2004). However, by looking only at the cluster analysis output, their decoding (factor 2) and rate (factor 3) scores may have been cause for concern, as both indicated students in cluster 1 scored below the mean on each factor. In chapter 4, it was noted that the students in this cluster scored at levels comparable to the overall means on assessments of real words, and presented scores on the Intermediate Spelling Inventory that were higher than the sample mean. This indicated that these students were able to both recognize and generate words at a level higher than their peers within the sample. Where these students demonstrated difficulty, however, was with the decoding of nonsense words, such as those on the WJR Word Attack and TOWRE Phonemic Decoding Efficiency subtests.

Schatschneider et al. (2004) reported on students who scored below basic on the FCAT, and concluded that based on scores from the TOWRE Phonemic Decoding Efficiency subtest these students were deficient in phonemic decoding and fluency. This assertion created an image of a homogeneous group of struggling young adolescent readers, which masked the underlying, multifaceted needs and abilities of these students. Although the students in cluster 1 did score below the mean of the sample on the TOWRE Phonemic Decoding Efficiency subtest, further examination of their reading abilities indicated that these students were able to read for meaning from appropriately leveled text. This would support Paris' (2005) argument that highly constrained skills, such as those assessed by the TOWRE Phonemic Decoding Efficiency subtest, were learned and mastered in childhood and "thus yield asymptotic performance with minimal variance before and after their brief periods of learning" (p. 196). In a study of early readers, Cunningham, Erickson, Spadorcia, Koppenhaver, Cunningham, Yoder, and

McKenna (1999) concluded that the use of non-words may be, "harder and less valid decoding items because they require a task-specific kind of self regulation" (p. 411). In other words, providing students with instruction on how to decode nonsense words would not produce higher standardized assessment scores, because these students were already reading common words automatically and making meaning from text. Thus, it was necessary to search the data for the abilities these students bring into the classroom in order to accurately determine the appropriate instruction. In relation to providing these students with instruction of the skills assessed on the TOWRE Phonemic Decoding Efficiency subtest, Fisher and Ivey (2006) stated there is "little reason to believe that emphasizing these fundamental skills would have any significant benefits for secondary students (p. 182).

Finally, students in cluster 1 also scored below the mean on the QRI WCPM component, which loaded to factor 3. At first glance, this may suggest that these students were in need of instruction relating to reading rate. Spear-Swerling (2004) suggested that students in the Strategic Reading phase of development re-read text when it did not make sense to them, and referred to this as an appropriate "fix-up" strategy to aid comprehension. A result of implementing this strategy, however, the student's reading rate would be necessarily slowed. Again, focusing only on the discrepancy of this one factor would overlook the overall abilities of these students.

Cluster 2--Slow Word Callers

Overall, students in cluster 2 earned higher scores on the measures indicated by factor 2 (decoding), with particularly high scores compared to the sample mean on measures of nonsense word decoding. At first glance, it appeared as though they had

stronger decoding skills than their peers in cluster 1. However, this was not necessarily the case. It may have been that students in cluster 2 devoted more attention to word identification, and therefore actually read words less automatically than those students in cluster 1 (Samuels, 2004). Because the skills measured in factor 2 were highly constrained, evidence of mastery may have taken on different forms for different students, especially young adolescents who demonstrate the asymptotic patterns noted by Paris (2005). Further examination of the assessment scores from factor 2, however, demonstrated that students in cluster 2 had the highest level of orthographic knowledge of any of the clusters (Table 18). In other words, they were able to apply their knowledge of alphabetics on the Intermediate Spelling Inventory.

Students in cluster 2 demonstrated higher decoding skills than meaning skills, which was evidenced in the overall sample means as well. However, students within this cluster demonstrated the ability to make meaning from text, earning grade level equivalent scores that were higher than the overall sample means. It was their ability to answer content knowledge questions that impeded their overall factor 1 scores. Although prior knowledge was indicated as an essential element of comprehension (NASBE, 2005), students in cluster 2 were able to make meaning from the text despite lower level knowledge of the content prior to reading the text. It would be a mistake, then, to view their overall meaning score as an indicator that these students demonstrated difficulty with comprehension. Although all of the clusters contained high percentages of students who qualified for free and reduced price lunch, cluster 2 represented the highest percentage (87%) of these students. Thus, the findings reported by White, Graves, and Slater (1990) become salient when considering the mean score for the meaning factor.

Table 18

Descriptive Statistics for Cluster 2--Slow Word Callers

	Mean			
Assessment	**Standard Score***	**Grade Equivalent Score**	**Other Score**	**Standard Deviation**
TCAP Reading			448.2	27.0
WJR Letter Word Identification	82.4	4.9		18.2
WJR Word Attack	91.4	5.8		12.7
TOWRE Sight Word Efficiency	78.87	4.1		21.2
TOWRE Phonemic Decoding Efficiency	86.43	4.7		12.9
PPVT	80.48			11.9
Intermediate Spelling Inventory			31.7	14.7
QRI Word Identification		5.2		2.7
QRI Narrative Concept Questions			276.1	163.2
QRI Narrative Comprehension		4.3	403.1	207.0
QRI Expository Concept Questions			241.2	167.4
QRI Expository Comprehension		3.9	330.8	175.9
QRI WCPM			80.7	38.7

*Standard deviation reflected standard scores or other scores as reported.

The researchers found that students who qualified for free and reduced price lunch entered school with 50 percent less vocabulary knowledge than their more privileged peers. The low QRI concept question scores exhibited by the students within cluster 2 evidenced these results.

Although students in cluster 2 had high scores on word reading efficiency measures (TOWRE) compared to the other students in the sample, they demonstrated factor 3 (rate and accuracy) scores that were .67 standard deviations below the sample mean. This would indicate that these students were capable of reading at higher rates, but much like their peers in cluster 1 slowed their rate when reading for meaning. Looking again at the results of the Intermediate Spelling Inventory (ISI) shed light onto students reading abilities as related to factor 3. By earning the highest ISI scores of any cluster, these students demonstrated an ability to decode and apply sound-symbol relationships. The slow reading rate, however, may be a result of the unknown meaning of words, which was a component of both fluency and orthographic knowledge as presented by Nathan and Stanovich (2001). The authors suggested this was a result of limited experiences with text, which demonstrated a need for increased volume of reading at an independent level (Allington, 1983; Krashen, 1989; Nathan & Stanovich, 1991). This assertion further supported the research conducted by White, Graves, and Slater (1990). Based on the information presented relating to the abilities demonstrated by students in cluster 2, most of these students would be functioning within the Strategic Reading phase of development, but would also be utilizing some of the skills represented by the Automatic Word Recognition phase, depending on the type of text being read (Spear-Swerling, 2004).

Cluster 3--Automatic Word Callers

Although students in cluster 3 exhibited lower levels on measures of comprehension than their peers in the other clusters, they were able to make meaning from appropriately leveled text. Their grade level equivalent scores were 3.3 and 2.8 on narrative and expository text, respectively (Table 19). Students in this cluster also entered text with the lowest level of prior knowledge of any cluster membership. Therefore, meaning represented a factor of difficulty for the students within this cluster. Difficulty, however, is not to be confused with deficiency, since students did demonstrate the ability to make meaning when matched with appropriate text.

Cluster 3 students presented an overall factor 2 (decoding) score that was .57 standard deviations higher than the sample mean, and was the highest of any cluster membership. Much like students in cluster 2, these students scored particularly high as compared to the sample mean on measures of word reading efficiency (TOWRE). Further, cluster 3 students also read at a higher rate than most students in the sample.

Based on these data, the students in cluster 3 did not fit neatly into any of the phases of reading development presented by Spear-Swerling (2004). These students demonstrated decoding abilities consistent with the Automatic Word Recognition phase, but comprehension abilities that were considerably less advanced. However, the phases preceding Automatic Word Recognition specified less developed word identification skills as a hindrance to comprehension. Consistent with the findings of Buly and Valencia (2002), seven of the nine ELL students who participated in this study were members of this cluster. In general, these students were able to read quickly and accurately, but were not reading for meaning. These data were also supported by the results of the independent

Table 19

Descriptive Statistics for Cluster 3--Automatic Word Callers

	Mean			
Assessment	**Standard Score***	**Grade Equivalent Score**	**Other Score***	**Standard Deviation**
TCAP Reading			438.8	43.2
WJR Letter Word Identification	82.14	4.3		10.3
WJR Word Attack	87.95	3.9		6.4
TOWRE Sight Word Efficiency	91.14	5.1		6.8
TOWRE Phonemic Decoding Efficiency	92.1	5.2		8.2
PPVT	78.81			16.9
Intermediate Spelling Inventory			26.6	11.4
QRI Word Identification		4.5		1.8
QRI Narrative Concept Questions			220.6	122.3
QRI Narrative Comprehension		3.3	299.5	108.9
QRI Expository Concept Questions			169.3	106.6
QRI Expository Comprehension		2.8	239.0	111.7
QRI WCPM			107.5	24.7

*Standard deviation reflected standard scores or other scores as reported.

samples t-tests presented in chapter 4, which indicated the ELL students in this study performed at significantly lower levels than their peers on measures of meaning, but not on measures of decoding or rate and accuracy.

Cluster 4--Rapid "Readers"

Cluster 4 represented students who read quickly, although not very accurately. In addition, students in cluster 4 revealed meaning (factor 1) scores .27 standard deviations below the mean. A closer look at the descriptive data (Table 20) for these students, however, revealed they exhibited consistent scores across the assessments, but that their scores were slightly below the sample mean. In other words, these students were utilizing the skill areas represented in the theoretical model, but were doing so with levels of automaticity that were different than their peers. Factor 3 (rate and accuracy) was the exception to this rule. Students in cluster 4 earned the highest rate scores, .56 standard deviations above the mean, of any of the four clusters represented by this sample. Further, these students also earned the highest scale score on TCAP.

Factor 1 (meaning) results indicated that students in cluster 4 met the independent reading criteria based on reading accuracy and comprehension on both narrative and expository text at the low to high second grade equivalent level. Like their peers in all other clusters, these students demonstrated higher levels of comprehension on narrative text. This was supported by the work of Saenz and Fuchs (2002), in which students were assessed on narrative and expository passages and exhibited greater challenge with expository text. The authors concluded that these students were less able to draw on their prior knowledge to make inferences from expository text. Although differences between responses on explicit and implicit comprehension questions were not considered for the

Table 20

Descriptive Statistics for Cluster 4--Rapid "Readers"

	Mean			
Assessment	**Standard Score***	**Grade Equivalent Score**	**Other Score**	**Standard Deviation**
TCAP Reading			458.6	20.1
WJR Letter Word Identification	71.2	3.3		13.4
WJR Word Attack	77.5	2.6		11.0
TOWRE Sight Word Efficiency	79.1	4.3		13.4
TOWRE Phonemic Decoding Efficiency	73.5	3.2		10.9
PPVT	87.4			15.0
Intermediate Spelling Inventory			21.4	12.0
QRI Word Identification		3.2		1.9
QRI Narrative Concept Questions			236.6	170.1
QRI Narrative Comprehension		2.8	269.2	142.2
QRI Expository Concept Questions			195.6	138.5
QRI Expository Comprehension		2.3	189.3	123.9
QRI WCPM			113.9	38.1

*Standard deviation reflected standard scores or other scores as reported.

purposes of this study, evidence of Saenz and Fuchs' findings were apparent in the drop between the level at which students answered expository concept questions (measuring prior knowledge) and expository comprehension questions. This would indicate that students in cluster 4 were not yet utilizing text as a "tool" for gathering information, as evidenced by students working within the Strategic Reading phase of development (Spear-Swerling, 2004). Instead, students in this cluster were representative of the Automatic Word Recognition phase of reading development, based on the skills demonstrated by their assessment results.

Represented in this cluster were nearly one-third of the students who qualified for special education services. This is important to note, because one available accommodation on TCAP for students receiving special education services is the ability to have the test read to them. Equally important to note, however, is that records of which students receive this accommodation are not kept at the district level. Therefore, it can only be speculated that some of the special education students within this study received this accommodation, which may account for the fact that cluster 4 represented higher TCAP scores than the other clusters, while also demonstrating assessment scores that were lower overall than the other clusters. Although the decoding scores of these students, on average, were lower than their peers, it would be a mistake to suggest students within this cluster necessarily demonstrated a disability with this skill, as Siegel (2003) asserted. Independent samples t-tests indicated that students who qualified for special education services significantly fell below their peers on all measures administered for the purposes of this study. However, these students revealed the ability to utilize all of the skills at a level just below that of their peers. Therefore, students in

this cluster would not require instruction that is significantly different, but more intensive than that required by their higher-achieving peers (Klenk & Kibby, 2002).

Instructional Implications

Analysis of the data provided through the assessment of the struggling young adolescent readers who participated in this study demonstrated heterogeneous groups of students. With differing abilities, these students also require differentiated instruction tailored to fit their unique needs. What is important about the results of this study, then, is the acknowledgment of the varying abilities and needs of the participating students. As hypothesized, the students in this study did not demonstrate deficiencies in highly constrained skills such as phonics or phonemic awareness (Paris, 2005). Rather, the struggling young adolescents showed an ability to utilize highly constrained skills, but less constrained skills were represented at levels below the grade levels in which they were enrolled. Thus, appropriate instruction for these students will focus on these areas.

Siegel's claim that "children with a reading disability show a remarkable homogeneity in the profiles of their cognitive abilities" (p. 160) was not supported by the results of this study. All of the determined clusters contained students who qualified for special education services, which demonstrated that this subgroup actually represented distinct heterogeneity of reading abilities. Further, as represented by their membership in all of the clusters, many of these students did not demonstrate disabilities that were "clearly at the level of the word" (Siegel, p. 159). Therefore, to make instructional decisions based on sweeping generalizations about a particular subgroup of students would only ensure that the needs of most of those students would not be addressed.

Students in all four clusters will benefit from opportunities to read text at their independent reading level, as well as opportunities for teacher support and guidance with access to instructional reading level text. Within classrooms, this will require teachers to utilize dynamic grouping strategies in order to accommodate the varying needs of the students within the classroom (Fountas & Pinnell, 2001). Dynamic grouping allows teachers to provide instruction to changing groups of students based on text type, interest level, level of background knowledge, and reading level. All of these factors play a role in the successful negotiation of text meaning, as demonstrated by The Model of Young Adolescent Reading Development (Chapter 1, Figure 1). Further, students within all four clusters must be provided with instruction in less constrained skills before, during, and after reading (Topping & McManus, 2002). This level of explicit instruction demonstrates for students how to make meaning from text by using all skills in concert, as required by the theoretical model described for the purposes of this study. For all clusters, this before, during, and after instruction should focus on the elements of factor 1 (meaning). In a meta-analysis of interventions designed to improve the reading comprehension of learning disabled students, Mastriopieri, Scruggs, Bakken, and Whedon (1996) found a mean effect size of .98 across the 82 research reports analyzed. Those interventions with the largest effect size included those that contained a component of self-questioning and self-monitoring of strategy use, while smaller effect sizes were reported for those interventions with a focus on text enhancements such as mnemonics or spatial organization. Based on these findings, it would be beneficial to provide struggling young adolescent readers with instruction that included the components listed above.

Word study is another area of instruction that will benefit students from all of the clusters. As with all of the instructional needs of these students, however, it is essential that instruction be provided to students at an appropriately matched level. For example, students in cluster 1 showed orthographic knowledge that was significantly above their peers in cluster 4. Both groups of students will benefit from word study instruction. However, students in cluster 1 will be provided with instruction at a level more closely representative of the grade level in which they are enrolled. Further, the vocabulary instruction provided to these two groups will also necessarily be different, because the independent and instructional levels represented by these groups are not similar.

In addition to the areas of instruction noted above, students in clusters 3 and 4 will need to be provided with instruction on how to slow reading rate in order to make meaning from text. These students would benefit from the use of the "fix-up" strategies demonstrated by students in cluster 1. Although cluster 3 students are reading at a high rate, it appears to hinder comprehension due to a lack of word meaning understanding, whereas students in cluster 3 also struggle with word reading accuracy. Therefore, slowing reading rate, coupled with appropriately matched word study and vocabulary instruction, will be necessary for these students to gain knowledge of the text being read.

Especially demonstrative in cluster 4, but highlighted in all clusters, is the discrepancy between comprehension of narrative and expository text. Students in all clusters will benefit from explicit instruction of the structure of different types of expository text. Again, this instruction should occur before, during, and after reading. Such an approach allows students and teachers to check for understanding throughout the reading process.

As Klenk and Kibby (2002) asserted, most struggling readers are not in need of dramatically different instruction from their peers, but more intensive instruction of various skills. This was highlighted within and across the four clusters presented throughout this chapter. All of the students within this study will benefit from instruction relating to the less constrained skills presented in the theoretical model. However, differences in instruction must occur at the independent and instructional reading levels represented by the students within each cluster. Further, each cluster demonstrated specific abilities and needs that must be addressed through appropriate instruction and differentiated based on the unique reading skills of each student.

Where Do We Go From Here?

Several initiatives promoting the reading abilities of young adolescents have emerged in recent years. For example, *Reading Next* highlights 15 elements of effective literacy programs (Biancarosa & Snow, 2004). Evidence of this policy is apparent in the Tennessee Reading Policy (TNSBOE, 2005), although guidance on how to appropriately implement the necessary elements was not included. However, with the deeper working knowledge of the abilities of struggling young adolescents provided through these data, such policies may begin to accurately address the varying instructional needs of these students. Certainly, what has been learned through this research is that struggling young adolescents demonstrate complex, heterogeneous reading abilities, requiring significantly different instructional interventions. As suggested by Buly and Valencia (2002), "states and districts can support such practices by providing teachers with curriculum frameworks that clearly articulate both grade-level expectations and developmental perspectives on teaching and learning in specific disciplines" (p. 234).

Federal grant initiatives also have the opportunity to meet the needs of these young adolescents. The Striving Readers program provided the first group of awardees with funding based on their commitment to implement specific commercial reading programs (USDOE, 2006). Students participating in these programs would be selected based on state mandated standardized assessment scores. Utilizing the evidence of the heterogeneous reading abilities of the students within this study, such initiatives have the opportunity to promote reading instruction that focuses on the multifaceted needs of the participating students. Only when the varying abilities and needs of these struggling young adolescents are acknowledged and addressed will accountability measures accurately portray the narrowing of the achievement gap sought by policymakers.

Next Steps

Several potential research studies could emerge from these data, however two will be discussed here. The first would be an effort to include the students' voice as a piece of the data puzzle. An interview study from members of the representative clusters would provide a glimpse into the perceptions of these students related to their own reading abilities and the instruction they receive. Potentially, this would also provide data relating to the motivation of struggling young adolescent readers, the fifth element of advanced literacy skills as reported by NASBE (2005), since specific questions related to this factor may be addressed to research participants.

Certainly, broadening this study would only generate more robust data sets. First, it may be broadened in sheer numbers. The methodology would be replicated as presented in this dissertation, however, there would be more students included in order to develop more durable factors and clusters from the data analysis. Secondly, the study

may be broadened to include students who scored proficient on state mandated standardized assessments. This would provide comparisons of young adolescent reading abilities to determine similarities and differences between students who "pass" the test and those who do not.

Conclusion

There is no "quick fix," no easy solution to meeting the needs of struggling young adolescent readers. They represent a heterogeneous group of learners with great variability in the inherently multidimensional processes of reading. As noted by Buly and Valencia (2002), "this research is a vivid reminder of the complexity of reading performance and the potential danger of policy that fails to acknowledge this complexity or strategies for dealing with it" (p. 235).

Policy, then, must focus not on accountability measures and adoption of one-size-fits-all commercial reading programs, but must instead realize the varying needs of struggling young adolescent readers and create infrastructures that support the needs and abilities of these heterogeneous groups of striving readers. Only by acknowledging what the data reveal about these students, can stakeholders begin to implement both policy and instruction that will address the achievement gap between struggling young adolescents and their higher achieving peers.

Much like the dangers of labeling factors and cases, labeling the type of instruction to be provided for students in each cluster presents ominous barriers as well. The point to be made is that no one program has the capability of meeting the needs of the demonstrably heterogeneous struggling young adolescent readers represented by these data. Paris (2005) stated it well,

> What is unscientific, illogical, and unwarranted are the claims that one kind of instruction is the best or only way to promote the acquisition of the skills, that those methods are uniformly appropriate for all children, that the instructed skills have greater priority than other skills, and that such interventions prevent reading failure. (p. 199)

Even within the clusters are particular students with specific abilities and needs that are quite different from the cluster as a whole. In other words, curricular decisions must not be made based on the below proficient scores reflected on state mandated standardized assessments. Further, it would be futile to use these scores to make instructional decisions before students enter the classroom. It is the student, and the students' abilities and needs as represented by multiple measures of reading development, which must be considered before instructional decisions are made. It is time to begin putting the horse before the cart.

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Appendices

Appendix A

Assessments

Appendix A-1

Woodcock Johnson Diagnostic Reading Battery

RICHARD W. WOODCOCK ◆ NANCY MATHER ◆ FREDRICK A. SCHRANK

WJ III Diagnostic Reading Battery

STANDARD TEST RECORD

IDENTIFYING INFORMATION

Last Name _____ First Name _____

Sex: ❑ M ❑ F ID _____

Date of Birth: ____ / ____ / ____ (MM / DD / YYYY)

School/Organization _____

Teacher/Department _____ Group ID _____

Adult Subjects: Education (Years Completed) _____

Occupation _____

Date of Testing: ____ / ____ / ____ (MM / DD / YYYY)

Grade _____ (+Years Retained _____ – Years Skipped _____ = Years of Schooling _____)

Examiner's Name _____

Normative Basis (Check one) ❑ Age ❑ Grade (K–12.9) ❑ 2-Year College (13–14.9) ❑ 4-Year College/University (13–18)

Additional Information

Does the subject have glasses? ❑ Yes ❑ No

Were glasses used during testing? ❑ Yes ❑ No

Does the subject have a hearing aid? ❑ Yes ❑ No

Was a hearing aid used during testing? ❑ Yes ❑ No

Other Information _____

Year-Round School Only:

____ Number of Days of Instruction in Year

____ Number of Days Completed So Far

TEST SESSION OBSERVATIONS CHECKLIST

Check only one category for each item.

Level of conversational proficiency

- ❑ 1. Very advanced
- ❑ 2. Advanced
- ❑ 3. Typical for age/grade
- ❑ 4. Limited
- ❑ 5. Very limited

Level of cooperation

- ❑ 1. Exceptionally cooperative throughout the examination
- ❑ 2. Cooperative (typical for age/grade)
- ❑ 3. Uncooperative at times
- ❑ 4. Uncooperative throughout the examination

Level of activity

- ❑ 1. Seemed lethargic
- ❑ 2. Typical for age/grade
- ❑ 3. Appeared fidgety or restless at times
- ❑ 4. Overly active for age/grade; resulted in difficulty attending to tasks

Attention and concentration

- ❑ 1. Unusually absorbed by the tasks
- ❑ 2. Attentive to the tasks (typical for age/grade)
- ❑ 3. Distracted often
- ❑ 4. Consistently inattentive and distracted

Self-confidence

- ❑ 1. Appeared confident and self-assured
- ❑ 2. Appeared at ease and comfortable (typical for age/grade)
- ❑ 3. Appeared tense or worried at times
- ❑ 4. Appeared overly anxious

Care in responding

- ❑ 1. Very slow and hesitant in responding
- ❑ 2. Slow and careful in responding
- ❑ 3. Prompt but careful in responding (typical for age/grade)
- ❑ 4. At times responded too quickly
- ❑ 5. Impulsive and careless in responding

Response to difficult tasks

- ❑ 1. Noticeably increased level of effort for difficult tasks
- ❑ 2. Generally persisted with difficult tasks (typical for age/grade)
- ❑ 3. Attempted but gave up easily
- ❑ 4. Would not try difficult tasks at all

Do you have any reason to believe this testing session may not represent a fair sample of the subject's abilities? ❑ No

❑ Yes. These results may not be a fair estimate because ... _____

Were any modifications made to the standardized test procedures during this administration? ❑ No

❑ Yes. The following modifications were made: _____

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Test 1 Letter-Word Identification

Basal: 5 lowest correct
Ceiling: 5 highest incorrect

Score 1, 0

1 ____ L

2 ____ A

3 ____ W
4 ____ S

5 ____ i
6 ____ y

7 ____ R
8 ____ N
9 ____ k

10 ____ red
11 ____ p
12 ____ Q
13 ____ b
14 ____ U

15 ____ see
16 ____ the

17 ____ is
18 ____ and
19 ____ go
20 ____ will
21 ____ not
22 ____ but
23 ____ from
24 ____ had

25 ____ keep
26 ____ said
27 ____ with
28 ____ light
29 ____ their
30 ____ which
31 ____ would
32 ____ use

33 ____ together
34 ____ young
35 ____ point
36 ____ piece
37 ____ built
38 ____ however
39 ____ enough
40 ____ practice

41 ____ bought
42 ____ interested
43 ____ knowledge
44 ____ diagram
45 ____ investigate
46 ____ process
47 ____ thermostat
48 ____ authority

49 ____ audience
50 ____ impatient
51 ____ fiercely
52 ____ courageous
53 ____ astronomer
54 ____ leagues
55 ____ deliberately
56 ____ essential

57 ____ acrylic
58 ____ chromosome
59 ____ apostrophe
60 ____ precipitate
61 ____ apparatus
62 ____ reminiscent
63 ____ italicized
64 ____ psychosis

65 ____ debris
66 ____ paraphernalia
67 ____ municipality
68 ____ melodious
69 ____ subsidiary
70 ____ euphemism

71 ____ trichinosis
72 ____ facetious
73 ____ phonemic
74 ____ ignominious
75 ____ tricot
76 ____ gouache

Number Correct (0–76)

Qualitative Observation

A. On Test 1: Letter-Word Identification, which of the following best describes the ease with which the individual identified words?

- ❑ 1. Identified words rapidly and accurately with little effort (automatic word identification skills)
- ❑ 2. Identified initial items rapidly and accurately and identified more difficult items through increased application of phoneme-grapheme relationships (typical)
- ❑ 3. Identified the initial items rapidly and accurately but latter items answered incorrectly lacked application of phoneme-grapheme relationships
- ❑ 4. Required increased time and greater attention to phoneme-grapheme relationships to determine the correct response (nonautomatic word identification skills)
- ❑ 5. Was not able to apply phoneme-grapheme relationships
- ❑ 6. None of the above, not observed, or does not apply

Test 1 Letter-Word Identification
Scoring Table

Encircle row for the Number Correct.

Number Correct	AE (Est)[a]	GE (Est)[a]
0	<2-0	<K.0
1	2-5	<K.0
2	3-5	<K.0
3	3-11	<K.0
4	4-4	<K.0
5	4-7	<K.0
6	4-10	<K.0
7	5-0	K.0
8	5-2	K.1
9	5-4	K.2
10	5-6	K.3
11	5-7	K.4
12	5-9	K.5
13	5-10	K.6
14	6-0	K.7
15	6-1	K.8
16	6-2	K.8
17	6-3	K.9
18	6-4	1.0
19	6-5	1.1
20	6-6	1.2
21	6-7	1.2
22	6-8	1.3
23	6-9	1.4
24	6-10	1.5
25	6-11	1.5
26	7-0	1.6
27	7-1	1.7
28	7-1	1.8
29	7-2	1.9
30	7-3	1.9
31	7-4	2.0
32	7-5	2.1
33	7-6	2.2
34	7-7	2.3
35	7-8	2.3
36	7-9	2.4
37	7-10	2.5
38	7-11	2.6
39	8-0	2.7
40	8-1	2.8
41	8-3	3.0
42	8-4	3.1
43	8-5	3.2
44	8-7	3.3
45	8-9	3.5
46	8-11	3.6
47	9-1	3.7
48	9-3	3.9
49	9-5	4.1
50	9-8	4.3
51	9-11	4.5
52	10-2	4.7
53	10-6	4.9
54	10-9	5.2
55	11-1	5.5
56	11-5	5.8
57	11-9	6.1
58	12-1	6.4
59	12-5	6.6
60	12-10	7.2
61	13-2	7.6
62	13-7	8.0
63	14-0	8.5
64	14-6	9.1
65	15-0	9.7
66	15-7	10.4
67	16-3	11.3
68	17-1	12.4
69	18-1	13.8
70	19	15.0
71	19	16.8
72	20	>16.0
>72	>22	>16.0

[a] AE and GE are estimates of the precise values provided by the software scoring program.

Test 3 Word Attack

Basal: 6 lowest correct
Ceiling: 6 highest incorrect

Score 1, 0

1 ____ points to r

2 ____ /s/
3 ____ /m/

A. ____ nat
B. ____ ib

4 ____ hap
5 ____ mell
6 ____ fim
7 ____ ven
8 ____ jop
9 ____ floxy

10 ____ leck
11 ____ pawk
12 ____ distrum
13 ____ chur
14 ____ vorse
15 ____ gradly

16 ____ loast
17 ____ blighten
18 ____ wreet
19 ____ yerdle
20 ____ koodoo
21 ____ baunted

22 ____ splaunch
23 ____ gnobe
24 ____ centizen
25 ____ quog
26 ____ wroutch
27 ____ phintober

28 ____ hudned
29 ____ cythe
30 ____ cimp
31 ____ depnoniel
32 ____ querpostonious

Number Correct (0–32)

Test 3 Word Attack
Scoring Table
Encircle row for the Number Correct.

Number Correct	AE (Est)[a]	GE (Est)[a]
0	<4-7	<K.0
1	5-1	<K.0
2	5-8	K.2
3	6-3	1.0
4	6-9	1.4
5	7-0	1.6
6	7-2	1.8
7	7-4	1.9
8	7-6	2.0
9	7-7	2.1
10	7-9	2.2
11	7-10	2.3
12	8-0	2.4
13	8-1	2.6
14	8-3	2.7
15	8-5	2.9
16	8-7	3.2
17	8-9	3.4
18	9-0	3.7
19	9-3	4.0
20	9-7	4.4
21	10-0	4.7
22	10-6	5.1
23	11-1	5.6
24	11-9	6.1
25	12-6	6.8
26	13-5	7.5
27	14-4	8.6
28	15-5	10.2
29	16-11	12.9
30	>21	15.5
>30	>21	>18.0

[a]AE and GE are estimates of the precise values provided by the software scoring program.

Qualitative Observation

C. On Test 3: Word Attack, which of the following best characterizes the individual's ability to pronounce nonwords?

- ❑ 1. Pronounced nonwords with ease and accuracy (automatic and fluent decoding)
- ❑ 2. Pronounced initial nonwords easily and accurately but pronounced more difficult nonwords more slowly and less fluently (typical)
- ❑ 3. Sounded out nonwords slowly and then attempted to blend the sounds (nonautomatic)
- ❑ 4. Had difficulty applying phonic skills to pronounce nonwords (nonautomatic and nonfluent)
- ❑ 5. None of the above, not observed, or does not apply

Appendix A-2

Test of Word Reading Efficiency (TOWRE)

TOWRE

Profile/Examiner Record Booklet

Form A

Test of Word Reading Efficiency

Section I: Identifying Information

Name _____ Female ☐ Male ☐ Grade ____

School _____

	Year	Month	Day
Date Tested			
Date of Birth			
Age			

Examiner's Name _____

Examiner's Title _____

Section II: TOWRE Scores

Subtest	Raw Score	Age Equiv.	Grade Equiv.	%ile	Standard Score
I. Sight Word Efficiency	__	__	__	__	☐
II. Phonemic Decoding Efficiency	__	__	__	__	☐
Sum of Standard Scores					☐

Total Word Reading Efficiency Standard Score ☐

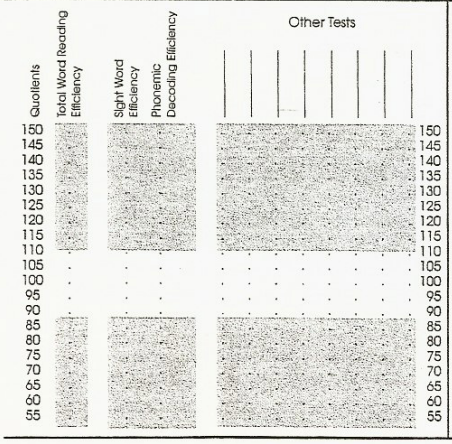
Total Word Reading Efficiency Percentile ☐

Standard Scores based on ☐ age ☐ grade

Section III: Other Test Scores

Test Name	Date	Standard Score	TOWRE Equiv.
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

Section IV: Profile of Scores



Section V: Interpretation and Recommendations

10 11 12 13 14 15 09 08 07 06 05

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Subtest I
Sight Word Efficiency

MATERIALS: Stopwatch, Forms A and B Sight Word Efficiency Reading Cards

CEILING: Administer all items

SCORING: Mark all the words the examinee reads incorrectly and draw a line after the last word read. The examinee's raw score is the total number of words correctly read within 45 seconds. If the examinee finishes all the words before the time is up, note the time required to read all of the words. If the examinee skips a word, simply count it as an error. If he or she hesitates for more than 3 seconds on a word and is instructed to go to the next word, mark the word as incorrect.

PRACTICE: Present the Practice Words on the Form B card. Say, "I want you to read some lists of words as fast as you can. Let's start with this practice list. Begin at the top, and read down the list as fast as you can. If you come to a word you cannot read, just skip it and go to the next word. Use your finger to help you keep your place if you want to." Have the examinee read the words. If the examinee skips around a lot, ask him or her to read the words from top to bottom, without jumping around.

NOTE: If you are giving Form A immediately after Form B, omit the practice instructions and proceed to Form A by saying, "Now we will do it one more time. Remember to read the words as fast as you can without making errors. Skip any words you cannot read."

PRACTICE WORDS: on, my, bee, old, warm, bone, most, spell

TEST: (Give the following instructions using Form B to demonstrate.) Say, "Okay, now you will read some longer lists of words. The words start out pretty easy, but they get harder as you go along. Read as many words as fast as you can until I tell you to stop. Begin here (point to the upper left corner on Form B) and read down this list (draw finger down the list) before you start on the next list (point to top of second column). Read the words in order, but if you come to one you can't read, skip it and go to the next one. Use your finger to keep your place if you want to, and if you skip more than one word, point to the word you are reading next. Do you understand? Okay, you will begin as soon as I turn over the card."

Quickly turn over the Form A card and start timing as soon as the examinee says the first word. As he or she is reading, mark any words that are misread or skipped. After 45 seconds, tell the examinee to stop, and *note* the last word read. If the examinee finishes all the words before the time is up, note the time required to read all the words. If, before the time is up, the examinee indicates that he or she cannot read any more words, ask the examinee to look over the whole list to see if there are any more words he or she can read. If the examinee then indicates he or she can read no more words, stop testing.

1. is
2. up
3. cat
4. red
5. me
6. to
7. no
8. we
9. he
10. the
11. and
12. yes
13. of
14. him
15. as
16. book
17. was
18. help
19. then
20. time
21. wood
22. let
23. men
24. baby
25. new
26. stop
27. work
28. jump
29. part
30. fast
31. fine
32. milk
33. back
34. lost
35. find
36. paper
37. open
38. kind
39. able
40. shoes
41. money
42. great
43. father
44. river
45. space
46. short
47. left
48. people
49. almost
50. waves
51. child
52. strong
53. crowd
54. better
55. inside
56. plane
57. pretty
58. famous
59. children
60. without
61. finally
62. strange
63. budget
64. repress
65. contain
66. justice
67. morning
68. resolve
69. describe
70. garment
71. business
72. qualify
73. potent
74. collapse
75. elements
76. pioneer
77. remember
78. dangerous
79. uniform
80. necessary
81. problems
82. absentee
83. advertise
84. pleasant
85. property
86. distress
87. information
88. recession
89. understand
90. emphasis
91. confident
92. intuition
93. boisterous
94. plausible
95. courageous
96. alienate
97. extinguish
98. prairie
99. limousine
100. valentine
101. detective
102. recently
103. instruction
104. transient

Number of words read correctly ☐ If examinee finishes list *before* 45 seconds, note time to finish ☐

Subtest II
Phonemic Decoding Efficiency

MATERIALS: Stopwatch, Forms A and B Phonemic Decoding Efficiency Reading Cards

CEILING: Administer all items

SCORING: Mark all the nonwords the examinee reads incorrectly on each form and draw a line after the examinee's last nonword. The examinee's raw score is the total number of nonwords read correctly within 45 seconds. If the examinee skips a nonword, simply count it as an error. If the examinee hesitates for more than 3 seconds on a nonword, mark it as incorrect and point to the next item and say, "Go on." Some items have more than one correct pronunciation for the vowel. Score the item correct if the examinee gives any of the correct pronunciations. Alternative correct pronunciations are indicated with real word examples, with the vowel in question underlined. For words with more than two syllables, alternative pronunciations are given separately for each syllable.

PRACTICE: Present the Practice Items on the Form A card. Say, "Now I want you to read some words that are not real words. Just tell me how they sound. I want you to read them as fast as you can. Let's start with this practice list. Begin at the top, and read down the list as fast as you can. If you come to a made-up word you cannot read, just skip it and go to the next word. Use your finger to keep your place if you want to." Have the examinee read the nonwords. If the examinee skips around a lot, ask him or her to read the words from top to bottom, without jumping around. If the examinee tries to substitute real words for the nonwords, remind him or her that these are made-up words, not real words, and the goal is to try to say how they sound.

NOTE: If you are giving Form A immediately after Form B, skip the practice instructions and proceed by saying, "Now we will do it one more time. Remember to read the nonwords as fast as you can without making errors. Skip any nonwords you cannot read."

PRACTICE WORDS: ba (b<u>a</u>t, f<u>a</u>te, pizz<u>a</u>), um (<u>u</u>mpire), fos (f<u>o</u>ssil), gan (g<u>a</u>nder), rup (r<u>u</u>pture), nasp (cl<u>a</u>sp), luddy (m<u>u</u>ddy), dord (f<u>o</u>rd).

DIRECTIONS: (Give the following instructions using Form B to demonstrate.) Say, "Now you will read some longer lists of nonwords. The words start out pretty easy, but they get harder as you go along. Just read as many of these nonwords as fast as you can until I tell you to stop. Begin up here (point to the upper left corner on Form B) and read down this list (draw finger down the list) before you start on the next list (point to top of second column). Read the words in order, but if you come to one you can't read, just skip it and go to the next one. Use your finger to keep your place if you want to, and if you skip more than one word, point to the word you are reading next. Do you understand? Okay, you will begin as soon as I turn over the card."

Quickly turn over the Form A card and start timing as soon as the examinee says the first nonword. As the examinee is reading, mark all the words that are misread or skipped. After 45 seconds, tell the examinee to stop, and *note* the last word read. The examinee's score is the total number of words correctly read within 45 seconds. If the examinee finishes all the nonwords before the time is up, note the time required to read all the words. If, before the time is up, the examinee indicates that he or she cannot read any more words, ask the examinee to look over the whole list to see if there are any more words he or she can read. If the examinee then indicates he or she can read no more words, stop testing.

Stimulus	Pronunciation
1. ip	(t<u>i</u>p)
2. ga	(g<u>a</u>p, g<u>a</u>te)
3. ko	(c<u>o</u>de, c<u>o</u>t)
4. ta	(t<u>a</u>ck, t<u>a</u>pe)
5. om	(<u>o</u>n)
6. ig	(p<u>i</u>g)
7. ni	(n<u>i</u>p, n<u>i</u>ce)
8. pim	(h<u>i</u>m)
9. wum	(s<u>u</u>m)
10. lat	(f<u>a</u>t)
11. baf	(b<u>a</u>t)
12. din	(p<u>i</u>n)
13. nup	(c<u>u</u>p)
14. fet	(m<u>e</u>t)
15. bave	(s<u>a</u>ve)
16. pate	(f<u>a</u>te)

17.	herm	(term)
18.	dess	(mess)
19.	chur	(blur)
20.	knap	(nap)
21.	tive	(hive)
22.	barp	(tarp)
23.	stip	(tip)
24.	plin	(fin)
25.	frip	(trip)
26.	poth	(moth)
27.	vasp	(clasp)
28.	meest	(feast)
29.	shlee	(flee)
30.	guddy	(muddy)
31.	skree	(tree)
32.	felly	(jelly)
33.	clirt	(shirt)
34.	sline	(line)
35.	dreef	(reef)
36.	prain	(pain)
37.	zint	(lint)
38.	bloot	(loot, book)
39.	trisk	(brisk)
40.	kelm	(helm)
41.	strone	(stone)
42.	lunaf	lu (tune, bun), naf (after)
43.	cratty	(fatty)
44.	trober	(sober)
45.	depate	de (dee, deck), pate (fate)
46.	glant	(plant)
47.	sploosh	(loose, book)
48.	dreker	dre (met, meet), ker (her)
49.	ritlun	rit (sit), lun (bun)
50.	hedfert	hed (bed), fert (fern)
51.	bremick	bre (tree, bed), mick (tick)
52.	nifpate	nif (sniff), pate (late)
53.	brinbert	brin (fin), bert (her)
54.	clabom	cla (clay, clap), bom (bomb)
55.	drepnort	drep (pep), nort (fort)
56.	shratted	(matted)
57.	plofent	plo (toe, mop), fent (bent)
58.	smuncrit	smun (fun), crit (bit)
59.	pelnador	pel (fell), na (nap, nut, hip), dor (for, fur)
60.	fornalask	forn (born), a (at, it, up), lask (task)
61.	fermabalt	ferm (firm), a (at, it, up), balt (malt, bat)
62.	crenidmoke	cre (hen, see), nid (lid, up), moke (hope)
63.	emulbatate	e (eel, or egg), mul (hull), ba (bat, bit, but), tate (late)

Number of words read correctly ☐ If examinee finishes list *before* 45 seconds, note time to finish ☐

Appendix A-3

Intermediate Spelling Inventory

INTERMEDIATE SPELLING INVENTORY

This inventory will help you assess the orthographic knowledge elementary students bring to reading and spelling. This inventory begins with the middle of the letter name–alphabetic stage and continues to the middle of the derivational relations stage of spelling. The results of the spelling inventories will have implications for reading, writing, vocabulary, and spelling instruction.

Instructions

Let students know that you are administering this inventory to learn about how they spell. Let them know that this is not a test, but that they will be helping you to teach by doing their best. Students are not to study this inventory beforehand.

Possible script: "I am going to ask you to spell some words. Spell them the best you can. Some of the words will be easy to spell; some will be more difficult. When you do not know how to spell a word, spell it the best you can."

Say the word once, read the sentence if the meaning is unclear, and then say the word again. Work with groups of words. Have students check their papers for their name and the date. You may want to stop administering the inventory when students miss most of the words and you can clearly determine a spelling stage. Consider using the Upper Level Spelling Inventory if students spell most of these words correctly.

Use either the Feature Guide on page 309 or the Error Guide on page 310. See Chapter 2 for further instructions on administration and interpretation.

Letter Name–Alphabetic and Within Word Pattern	
1. speck	The well-dressed man brushed away a **speck** of lint from his jacket. *speck*
2. charge	She bought new clothes with a **charge** card. *charge*
3. switch	The sick boy could **switch** television channels from his bed. *switch*
4. scrape	The fall caused her to **scrape** her knee. *scrape*
5. nurse	The **nurse** checked her blood pressure. *nurse*
6. flown	It was the first time he'd **flown** in a helicopter. *flown*
7. squirt	She squeezed the bottle to **squirt** ketchup on her hamburger. *squirt*
8. pounce	The cat was ready to **pounce** on the mouse. *pounce*
9. throat	The doctor gave him medicine for his sore **throat**. *throat*
10. smudge	The big **smudge** on the mirror made it difficult to see. *smudge*
Syllables & Affixes	
11. shaving	The teenager looked forward to **shaving**. *shaving*
12. chewed	They **chewed** slowly as they listened to the dinner speaker. *chewed*
13. pennies	The children threw **pennies** in the fountain. *pennies*
14. fraction	The team was disappointed to get only a **fraction** of the credit for the job. *fraction*
15. bottle	The **bottle** of shampoo fell from his slippery hands. *bottle*
16. discovery	The **discovery** of the gold made many people rich. *discovery*
17. lesson	She arrived at the **lesson** with a notebook and pencil. *lesson*
18. distance	The boys measured the **distance** between their houses. *distance*
19. trapped	The new graduate felt **trapped** by a low-paying job. *trapped*
20. sailor	He wanted to go to sea as a **sailor**. *sailor*
Early–Middle Derivational Relations	
21. resident	Mr. Squires has been a **resident** of this town for over 40 years. *resident*
22. confusion	There was **confusion** when there was a power failure. *confusion*
23. visible	The singer was **visible** to everyone in the room. *visible*
24. category	I will put the bottles in one **category** and the cans in another. *category*
25. criticize	The boss will **criticize** you for your work. *criticize*

Feature Guide for Intermediate Spelling Inventory

Directions: Check the features that are present in each student's spelling. In the bottom row, total features used correctly. Check the spelling stage that summarizes the student's development. Begin instruction at that stage with a focus on the types of features where the student missed two or more features in a column.

Student's Name _____ Class _____ Grade _____ Date _____

SPELLING STAGES→	LETTER NAME–ALPHABETIC		WITHIN WORD PATTERN			SYLLABLES & AFFIXES		DERIVATIONAL RELATIONS			
	MIDDLE	LATE	EARLY	MIDDLE	LATE	EARLY	MIDDLE	LATE	EARLY	MIDDLE	LATE
Features→	Short Vowels	Consonant Digraphs & Blends	Long Vowel Patterns	Other Vowel Patterns	Complex Consonants	Syllable Junctures & Easy Prefixes & Suffixes			Harder Prefixes, Suffixes, & Unaccented Final Syllables	Reduced Vowels, Bases & Roots	Feature Points	Words Spelled Correctly
LETTER NAME–ALPHABETIC & WITHIN WORD PATTERNS												
1. speck	e				ck							
2. charge		ch		ar								
3. switch	i	sw			tch							
4. scrape		scr	a-e									
5. nurse				ur								
6. flown			ow									
7. squirt				ir	squ							
8. pounce				ou								
9. throat		thr	oa									
10. smudge	u				dge							
SYLLABLES & AFFIXES												
11. shaving						e-drop ing						
12. chewed				ew		ed						
13. pennies						nn ies						
14. fraction									tion	fra		
15. bottle	o					tt			le			
16. discovery									dis y	cover		
17. lesson						ss			on			
18. distance									ance	dis		
19. trapped						pp dd						
20. sailor			ai						or			
Early–Middle DERIVATIONAL RELATIONS												
21. resident									ent	i		
22. confusion									con sion	fus		
23. visible									ible	vis		
24. category										e		
25. criticize									ize	critic		
Highlight cells with 2 or more errors	(4)	(4)	(4)	(5)	(4)	(9)			(12)	(8)	(50)	(25)

SPELLING STAGES:

❑ EARLY ❑ MIDDLE ❑ LATE
❑ LETTER NAME–ALPHABETIC
❑ WITHIN WORD PATTERN
❑ SYLLABLES & AFFIXES
❑ DERIVATIONAL RELATIONS

Words Spelled Correctly: ***/25***
Feature Points: ***/50***
Total ***/75***

Appendix A-4

Peabody Picture Vocabulary Test - III (PPVT)

PPVT-III

Peabody Picture Vocabulary Test–Third Edition

by Lloyd M. Dunn & Leota M. Dunn

Examiner's Record

Form IIIA

Name _____ Sex: ❑F ❑M

Home Address _____ Phone(___) _____

City _____ State _____ ZIP _____

School _____ (or agency) Grade _____ (or education)

Language of the Home ❑Standard English ❑Other _____ (specify: foreign language, or type of English dialect spoken)

Teacher _____ (or counselor) Examiner _____

Reason for testing _____

Other information on test taker _____

Date & Age Data

	Year	Month	Day
Date of testing			
Date of birth			
Chronological age*			

*Disregard extra days.

Jan–1 Feb–2 March–3 April–4 May–5 June–6
July–7 Aug–8 Sept–9 Oct–10 Nov–11 Dec–12

RECORD OF SCORES

Raw Score (from oval on page 2) _____

Deviation-type Norms

Standard Score (Norms Table 1) _____

Percentile Rank (Norms Table 2) _____

Normal Curve Equivalent (Norms Table 2) _____

Stanine (Norms Table 2) _____

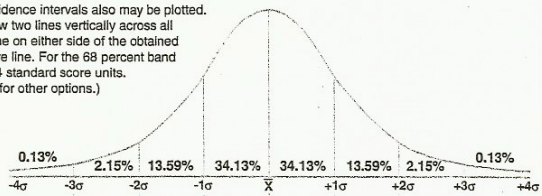
Developmental-type Norms

Age Equivalent (Norms Table 3) _____

Graphic Display of Deviation-type Norm Scores

Mark the obtained standard score on the appropriate line below. Draw a straight vertical line through it and across the other scales. (See manual for more information.)

Optional confidence intervals also may be plotted. To do so, draw two lines vertically across all the scales, one on either side of the obtained standard score line. For the 68 percent band width, use ± 4 standard score units. (See manual for other options.)



Standard Score Equivalents	40	50	60	70	80	90	100	110	120	130	140	150	160	
Percentile Ranks			1	5	10	20	30	40	50	60	70	80	90	95	99
Normal Curve Equivalents		1	10	20	30	40	50	60	70	80	90	99			
Stanines		1		2	3	4	5	6	7	8	9				
Score Range Descriptions	Extremely Low Score		Moderately Low Score		Low Average Score		High		Moderately High Score		Extremely High Score				

For additional forms, call or write American Guidance Service, Inc., 4201 Woodland Road, Circle Pines, MN 55014-1796, 800-328-2560, or www.agsnet.com.
In Canada, 800-263-3558.

FORM **IIIA**

ABBREVIATED INSTRUCTIONS AND SETS OF TEST ITEM STIMULUS WORDS

Study Part 2 of the manual before testing.

INTRODUCING THE TEST AND USING THE TRAINING ITEMS

All instructions for introducing the test and using the Training Items are located on the examiner's side of the Training Plates. Use Training Items A and B with children 2 to 7 years old, and C and D with persons 8 and older.

ADMINISTERING AND SCORING THE TEST ITEM SETS

After you have administered the appropriate Training Items, begin testing using the Sets of Test Items.

- **Complete Set Rule.** Once you begin a set of test items, always administer all 12 items in that set in order, and always start with the first item in the set.
- **Start Item.** Begin testing with the Start Item, which is the first item in the appropriate Set of Test Items designated for the test taker's age. These are listed at the top of the item sets and in the box below.
- **Basal Set Rule.** The Basal Set Rule is one (1) or no errors in a set. Establish the Basal Set first. If necessary, reverse sequentially by sets until the rule is met. Then test forward by sets until a Ceiling Set is obtained.
- **Ceiling Set Rule.** The Ceiling Set Rule is eight (8) or more errors in a set.

RECORDING RESPONSES AND ERRORS

- **Record Responses and Errors for Each Item.** Use numerals to record the test taker's response to each item in the blank in the Response column. Indicate errors by drawing an oblique line through the E in the last column as shown below.

  1. bus . . . . . (4) 3 E

- **Record the Number of Errors Per Set.** At the end of each item set, record the number of errors in the box provided.
- **Find the Total Errors Over the Critical Range.** Transfer the number of errors per set to the box below and add up the total errors. Be sure to use the lowest Basal Set through the highest Ceiling Set.

Ages	Start Item
2-6–3	1
4	13
5	25
6–7	49
8–9	73
10–11	85
12–16	109
17–Adult	145

No. of Errors

Set 1 ___	Set 7 ___	Set 13 ___
Set 2 ___	Set 8 ___	Set 14 ___
Set 3 ___	Set 9 ___	Set 15 ___
Set 4 ___	Set 10 ___	Set 16 ___
Set 5 ___	Set 11 ___	Set 17 ___
Set 6 ___	Set 12 ___	Total Errors ___

CALCULATING the RAW SCORE

Record the number of the **Ceiling Item,** which is the last item in the **Ceiling Set.** Subtract from it the total number of errors made by the examinee from the **Basal Set** through the **Ceiling Set.** This is the **Raw Score.**

Ceiling Item _____

Total Errors − _____

Raw Score _____

Transfer this Raw Score to page 1.

Basal Set Rule: 1 or no errors in a set.
Ceiling Set Rule: 8 or more errors in a set.

START Ages 4–16 SET A

Item	Word	Key	Response	Error
1.	bus	(4)	___	E
2.	drinking	(3)	___	E
3.	hand	(1)	___	E
4.	climbing	(1)	___	E
5.	key	(4)	___	E
6.	reading	(1)	___	E
7.	closet	(2)	___	E
8.	jumping	(3)	___	E
9.	lamp	(4)	___	E
10.	helicopter	(2)	___	E
11.	smelling	(2)	___	E
12.	fly	(3)	___	E

No. of Errors ___

START Ages 4–7 SET A

Item	Word	Key	Response	Error
13.	digging	(2)	___	E
14.	cow	(1)	___	E
15.	drum	(3)	___	E
16.	feather	(1)	___	E
17.	painting	(3)	___	E
18.	cage	(2)	___	E
19.	knee	(1)	___	E
20.	wrapping	(4)	___	E
21.	fence	(3)	___	E
22.	elbow	(4)	___	E
23.	garbage	(2)	___	E
24.	exercising	(4)	___	E

No. of Errors ___

Basal Set Rule: 1 or no errors in a set **Ceiling Set Rule: 8 or more errors in a set**

Item	Word	Key	Response	Error
25.	empty	(1)	____	E
26.	shoulder	(3)	____	E
27.	square	(4)	____	E
28.	measuring	(4)	____	E
29.	porcupine	(1)	____	E
30.	arrow	(2)	____	E
31.	peeling	(3)	____	E
32.	fountain	(2)	____	E
33.	accident	(2)	____	E
34.	penguin	(1)	____	E
35.	decorated	(4)	____	E
36.	nest	(3)	____	E

No. of Errors ____

Item	Word	Key	Response	Error
37.	castle	(2)	____	E
38.	sawing	(4)	____	E
39.	cactus	(3)	____	E
40.	farm	(1)	____	E
41.	going	(2)	____	E
42.	harp	(1)	____	E
43.	astronaut	(3)	____	E
44.	raccoon	(4)	____	E
45.	juggling	(4)	____	E
46.	envelope	(2)	____	E
47.	tearing	(3)	____	E
48.	claw	(1)	____	E

No. of Errors ____

Item	Word	Key	Response	Error
49.	parachute	(3)	____	E
50.	delivering	(1)	____	E
51.	rectangle	(1)	____	E
52.	diving	(2)	____	E
53.	camper	(4)	____	E
54.	target	(2)	____	E
55.	writing	(1)	____	E
56.	furry	(4)	____	E
57.	drilling	(2)	____	E
58.	hook	(3)	____	E
59.	group	(3)	____	E
60.	dripping	(4)	____	E

No. of Errors ____

Item	Word	Key	Response	Error
61.	vehicle	(4)	____	E
62.	oval	(1)	____	E
63.	luggage	(2)	____	E
64.	awarding	(3)	____	E
65.	hydrant	(4)	____	E
66.	swamp	(3)	____	E
67.	calculator	(2)	____	E
68.	signal	(1)	____	E
69.	squash	(4)	____	E
70.	globe	(2)	____	E
71.	vegetable	(3)	____	E
72.	frame	(1)	____	E

No. of Errors ____

Item	Word	Key	Response	Error
73.	gigantic	(2)	____	E
74.	nostril	(4)	____	E
75.	vase	(3)	____	E
76.	knight	(1)	____	E
77.	towing	(1)	____	E
78.	horrified	(3)	____	E
79.	trunk	(2)	____	E
80.	selecting	(1)	____	E
81.	island	(2)	____	E
82.	camcorder	(4)	____	E
83.	heart	(3)	____	E
84.	wrench	(4)	____	E

No. of Errors ____

Item	Word	Key	Response	Error
85.	flamingo	(2)	____	E
86.	tambourine	(4)	____	E
87.	palm	(1)	____	E
88.	surprised	(4)	____	E
89.	canoe	(3)	____	E
90.	interviewing	(1)	____	E
91.	clarinet	(4)	____	E
92.	exhausted	(2)	____	E
93.	pitcher	(3)	____	E
94.	reptile	(2)	____	E
95.	polluting	(3)	____	E
96.	vine	(1)	____	E

No. of Errors ____

Basal Set Rule: 1 or no errors in a set **Ceiling Set Rule: 8 or more errors in a set**

Item	Word	Key	Response	Error
97.	pedal	(2)	____	E
98.	dissecting	(2)	____	E
99.	bouquet	(4)	____	E
100.	rodent	(3)	____	E
101.	inhaling	(4)	____	E
102.	valley	(1)	____	E
103.	tubular	(3)	____	E
104.	demolishing	(4)	____	E
105.	tusk	(1)	____	E
106.	adjustable	(2)	____	E
107.	fern	(1)	____	E
108.	hurdling	(3)	____	E

No. of Errors ____

Item	Word	Key	Response	Error
109.	solo	(4)	____	E
110.	citrus	(2)	____	E
111.	inflated	(3)	____	E
112.	lecturing	(3)	____	E
113.	timer	(1)	____	E
114.	injecting	(1)	____	E
115.	links	(4)	____	E
116.	cooperating	(2)	____	E
117.	microscope	(1)	____	E
118.	archery	(2)	____	E
119.	garment	(4)	____	E
120.	fragile	(3)	____	E

No. of Errors ____

Item	Word	Key	Response	Error
121.	carpenter	(2)	____	E
122.	dilapidated	(4)	____	E
123.	hazardous	(3)	____	E
124.	adapter	(2)	____	E
125.	valve	(3)	____	E
126.	isolation	(1)	____	E
127.	feline	(2)	____	E
128.	wailing	(1)	____	E
129.	coast	(4)	____	E
130.	appliance	(1)	____	E
131.	foundation	(4)	____	E
132.	hatchet	(3)	____	E

No. of Errors ____

Item	Word	Key	Response	Error
133.	blazing	(3)	____	E
134.	mammal	(2)	____	E
135.	reprimanding	(1)	____	E
136.	upholstery	(4)	____	E
137.	hoisting	(1)	____	E
138.	exterior	(1)	____	E
139.	consuming	(4)	____	E
140.	pastry	(4)	____	E
141.	cornea	(2)	____	E
142.	constrained	(3)	____	E
143.	pedestrian	(2)	____	E
144.	colt	(3)	____	E

No. of Errors ____

Item	Word	Key	Response	Error
145.	syringe	(4)	____	E
146.	transparent	(3)	____	E
147.	ladle	(2)	____	E
148.	replenishing	(3)	____	E
149.	abrasive	(1)	____	E
150.	parallelogram	(3)	____	E
151.	cascade	(4)	____	E
152.	lever	(1)	____	E
153.	detonation	(2)	____	E
154.	pillar	(2)	____	E
155.	cultivating	(1)	____	E
156.	aquatic	(4)	____	E

No. of Errors ____

Item	Word	Key	Response	Error
157.	indigent	(2)	____	E
158.	oasis	(1)	____	E
159.	disappointed	(4)	____	E
160.	perpendicular	(3)	____	E
161.	poultry	(4)	____	E
162.	confiding	(1)	____	E
163.	periodical	(2)	____	E
164.	filtration	(1)	____	E
165.	primate	(4)	____	E
166.	spherical	(2)	____	E
167.	talon	(3)	____	E
168.	octagon	(3)	____	E

No. of Errors ____

Basal Set Rule: 1 or no errors in a set **Ceiling Set Rule: 8 or more errors in a set**

Item	Word	Key	Response	Error
SET 6				
169.	**incandescent** [in kuhn DES uhnt]	(4)	____	E
170.	**pilfering** [PIL fuhr ing]	(2)	____	E
171.	**trajectory** [truh JEK tuh ree]	(1)	____	E
172.	**mercantile** [MUR kuhn teel]	(3)	____	E
173.	**derrick** [DAYR ik]	(4)	____	E
174.	**ascending** [uh SEN ding]	(2)	____	E
175.	**monetary** [MON uh tayr ee]	(3)	____	E
176.	**entomologist** [ent uh MOL uh juhst]	(2)	____	E
177.	**gaff** [GAF]	(1)	____	E
178.	**quintet** [kwin TET]	(3)	____	E
179.	**nautical** [NAW ti kuhl]	(4)	____	E
180.	**incarcerating** [in CAR se rayt ing]	(1)	____	E

No. of Errors ____

Item	Word	Key	Response	Error
SET 7				
181.	**coniferous** [koh NIF uh ruhs]	(4)	____	E
182.	**wildebeest** [WIL duh beest]	(1)	____	E
183.	**caster** [KAS tuhr]	(3)	____	E
184.	**reposing** [ri POHZ ing]	(4)	____	E
185.	**convex** [kon VEKS]	(1)	____	E
186.	**gourmand** [GUUR mond]	(3)	____	E
187.	**dromedary** [DROM uh dayr ee]	(2)	____	E
188.	**diverging** [duh VUHRJ ing]	(4)	____	E
189.	**incertitude** [in SUHRT uh tude]	(2)	____	E
190.	**quiescent** [kwiy ES uhnt]	(3)	____	E
191.	**honing** [HOHN ing]	(1)	____	E
192.	**cupola** [KYOO puh luh]	(2)	____	E

No. of Errors ____

Item	Word	Key	Response	Error
SET 8				
193.	**embossed** [im BAWST]	(4)	____	E
194.	**perambulating** [puh RAM byuh layt ing]	(2)	____	E
195.	**arable** [AYR uh buhl]	(3)	____	E
196.	**importunity** [im puhr TOO nuht ee]	(1)	____	E
197.	**cenotaph** [SEN uh taf]	(1)	____	E
198.	**tonsorial** [ton SOHR ee uhl]	(4)	____	E
199.	**nidificating** [NID uf fuh kayt ing]	(3)	____	E
200.	**terpsichorean** [tuhrp sik uh REE uhn]	(1)	____	E
201.	**cairn** [KAYRN]	(4)	____	E
202.	**osculating** [OS kyuh layt ing]	(2)	____	E
203.	**vitreous** [VI tree uhs]	(3)	____	E
204.	**lugubrious** [luu GOO bree uhs]	(2)	____	E

No. of Errors ____

Pronunciation Key

ay = long a	u = short u	oo as in loot
ee = long e	j = soft g	uh as in shove
iy = long i	g = hard g	oy as in coin
oh = long o	s = soft c	ar as in farm
yoo = long u	k = hard c	uhr as in circle
a = short a	ow as in loud	ir as in cheer
e = short e	aw as in law	ayr as in chair
i = short i	uu as in foot	ohr as in shore
o = short o		

Test Behavior Notes:

For example, briefly describe such test behavior as interest in the task, quickness of response, signs of perseveration, work habits, disabilities, etc.

_____

_____

_____

_____

Data from Other Tests

Test	Date	Results
PPVT-III (Form IIIB)		

OPTIONAL RELIABILITY CONFIDENCE BANDS

	Level	Standard Score Units
Band of Confidence (Circle one)	68%	± 4
	90%	± 7
	95%	± 8

Standard Score _____ to _____

Percentile Rank (Norms Table 2) _____ to _____

Normal Curve Equivalent (Norms Table 2) _____ to _____

Age Equivalent (Norms Table 3) _____ to _____

See manual for complete instructions.

Performance Evaluation

This standardized test provides an estimate only of this individual's hearing vocabulary in Standard English, as compared with a cross section of U.S.A. persons of the same age. Do you believe the individual's performance represents fairly her or his true ability in this area? ☐ Yes ☐ No. If not, cite reasons such as rapport problems, poor testing situation, hearing or vision loss, visual-perceptual disorder, test too easy or too hard, etc.

Recommendations (including suggestions for follow-up testing)

Examiner's Signature

Appendix A-5

Qualitative Reading Inventory-4

(Sample word list, narrative reading passage, and expository reading passage)

Examiner Word Lists

Third

	Identified Automatically	*Identified*
1. lunch		
2. celebrate		
3. believe		
4. claws		
5. lion		
6. rough		
7. wear		
8. tongue		
9. crowded		
10. wool		
11. removed		
12. curious		
13. sheep		
14. electric		
15. worried		
16. enemies		
17. glowed		
18. clothing		
19. swim		
20. entrance		

Total Correct Automatic _____/20 = _____%
Total Correct Identified _____/20 = _____%
Total Number Correct _____/20 = _____%

Fourth

	Identified Automatically	*Identified*
1. sunlight		
2. desert		
3. crops		
4. engine		
5. favorite		
6. adaptation		
7. weather		
8. pond		
9. illustrated		
10. ocean		
11. pilot		
12. fame		
13. precious		
14. settlers		
15. guarded		
16. passenger		
17. memorize		
18. environment		
19. adventurer		
20. invented		

Total Correct Automatic _____/20 = _____%
Total Correct Identified _____/20 = _____%
Total Number Correct _____/20 = _____%

LEVELS		
Independent	Instructional	Frustration
18–20	14–17	below 14
90–100%	70–85%	below 70%

Level: Three

Narrative

Concept Questions:

What is a class trip?

_____

_____

_____ (3-2-1-0)

What does "taking notes" mean to you?

_____

_____

_____ (3-2-1-0)

What does "being by yourself" mean to you?

_____

_____

_____ (3-2-1-0)

Why do people use maps?

_____

_____

_____ (3-2-1-0)

Score: _____ /12 = _____ %

_____ FAM _____ UNFAM

Prediction:

_____

_____

"The Trip to the Zoo"

The day was bright and sunny. Carlos and Maria jumped out of bed and dressed in a hurry. They didn't want to be late for school today. It was a special day because their classes were going to the zoo. When they got to school, all of the children were waiting outside to get on the bus. When everyone was there, the second and third graders got on the bus and rode to the zoo. On the bus, the children talked about the zoo animals that they liked the best. Joe and Carlos wanted to see the lion, king of the beasts. Maria and Angela wanted to see the chimps. Maria thought they acted a lot like people.

When they got to the zoo, their teachers divided the children into four groups. One teacher, Mr. Lopez, told them if anyone got lost to go to the ice cream stand. Everyone would meet there at noon. Maria went with the group to the monkey house, where she spent a long time watching the chimps groom each other. She wrote down all the ways that the chimps acted like people. Her notes would help her write a good report of what she liked best at the zoo.

Carlos went with the group to the lion house. He watched the cats pace in front of the glass. Carlos was watching a lion so carefully that he didn't see his group leave. Finally, he noticed that it was very quiet in the lion house. He turned around and didn't see anyone. At first he was worried. Then he remembered what Mr. Lopez had said. He traced his way back to the entrance and found a map. He

Level: Three

followed the map to the ice cream stand, just as everyone was meeting there for lunch. Joe smiled and said, "We thought that the lion had you for lunch!" (312 words)

Number of Total Miscues
(Total Accuracy): _____

Number of Meaning-Change Miscues
(Total Acceptability): _____

Total Accuracy		Total Acceptability
0–7 miscues	___ Independent	___ 0–7 miscues
8–32 miscues	___ Instructional	___ 8–17 miscues
33+ miscues	___ Frustration	___ 18+ miscues

Rate: 312 × 60 = 18,720/____ seconds = ____ WPM

____ WPM – ____ errors = ____ CWPM

Retelling Scoring Sheet for "The Trip to the Zoo"

Setting/Background

___ Carlos
___ and Maria jumped
___ out of bed.
___ They didn't want
___ to be late
___ for school.
___ Their classes were going
___ to the zoo.
___ The second
___ and third graders
___ got on the bus
___ and rode
___ to the zoo.
___ They talked
___ about the animals
___ they liked best.

Goal

___ Carlos wanted
___ to see the lion.
___ Maria wanted
___ to see the chimps.

Events

___ Their teacher told them
___ their teacher, Mr. Lopez
___ if anyone got lost
___ to go
___ to the ice cream stand
___ where everyone would meet
___ at noon.
___ Maria went
___ to the monkey house.
___ She wrote down all the ways
___ that chimps acted like people.
___ Her notes would help her
___ write a report.
___ Carlos went
___ to the lion house.

Problem

___ Carlos was watching a lion
___ so carefully
___ he didn't see his group
___ leave.
___ He noticed
___ that it was quiet.
___ He turned around
___ and didn't see anyone.
___ He remembered
___ what Mr. Lopez said.
___ He traced his way
___ to the entrance
___ and found a map.
___ He followed the map
___ to the ice cream stand.

Level: Three

Resolution

___ Everyone was there
___ for lunch.
___ They thought
___ the lion had Carlos
___ for lunch.

55 Ideas

Number of ideas recalled _____

Other ideas recalled, including inferences:

Questions for "The Trip to the Zoo"

1. Why was it a special day for Carlos and Maria?
   Explicit: their classes were going to the zoo

2. What grades were Carlos and Maria in?
   Implicit: second and third

3. What animal did Carlos want to see?
   Explicit: lions

4. Why was Maria watching the chimps so carefully?
   Implicit: so she could write a report for school

5. How did Carlos get separated from his group?
   Explicit: he was watching the lions so carefully he didn't see his group leave

6. What made Carlos realize that his classmates had left the lion house?
   Implicit: it was quiet; he didn't hear any talking; *or* he turned around and no one was there

7. Where did Carlos find the map?
   Explicit: at the zoo entrance

8. Why did Carlos go to get a map from the zoo entrance?
   Implicit: to help him find his way to the ice cream stand

Without Look-Backs

Number Correct Explicit: ____

Number Correct Implicit: ____

Total: ____

____ Independent: 8 correct

____ Instructional: 6–7 correct

____ Frustration: 0–5 correct

With Look-Backs

Number Correct Explicit: ____

Number Correct Implicit: ____

Total: ____

____ Independent: 8 correct

____ Instructional: 6–7 correct

____ Frustration: 0–5 correct

Level: Three

Expository

Concept Questions:

What are sheep used for?

_____

_____

_____ (3-2-1-0)

What is wool used for?

_____

_____

_____ (3-2-1-0)

What is yarn used for?

_____

_____

_____ (3-2-1-0)

Why do people get haircuts?

_____

_____

_____ (3-2-1-0)

Score: _____ /12 = _____ %

_____ FAM _____ UNFAM

Prediction:

_____

_____

"Wool: From Sheep to You"

Do you have a sweater? Do you know what it is made from? One fiber used to make sweaters is wool. Do you know where wool comes from? It comes from a sheep. However, many things must be done before the wool on a sheep can be woven or knitted to make clothing for you.

First, the wool must be removed from the sheep. People shear the wool off the sheep with electric clippers somewhat like a barber uses when he gives haircuts. Like our hair, the sheep's wool will grow back again. Most sheep are shorn only once a year. After the wool is removed, it must be washed very carefully to get out all the dirt. When the locks of wool dry, they are combed or carded to make all the fibers lie in the same direction. It is somewhat like combing or brushing your hair. Then the wool is formed into fine strands. These can be spun to make yarn. The yarn is knitted or woven into fabric. The fabric is made into clothing.

Yarn can also be used to knit sweaters by hand. Sweaters made from wool are very warm. They help keep you warm even when they are damp. Just think, the sweater you wear on a winter day may once have been on a sheep. (221 words)

Level: Three

Number of Total Miscues
(Total Accuracy): _____

Number of Meaning-Change Miscues
(Total Acceptability): _____

Total Accuracy		Total Acceptability
0–5 miscues	___ Independent	___ 0–5 miscues
6–23 miscues	___ Instructional	___ 6–12 miscues
24+ miscues	___ Frustration	___ 13+ miscues

Rate: 221 × 60 = 13,260/___ seconds = ___ WPM

___ WPM – ___ errors = ___ CWPM

Retelling Scoring Sheet for "Wool: From Sheep to You"

Main Idea

___ Many things have to be done
___ before wool can be woven
___ or knitted
___ to make clothing.

Details

___ Wool is a fiber
___ used to make sweaters.
___ It comes from a sheep.
___ The wool must be removed
___ from the sheep.
___ People shear the wool
___ off the sheep
___ with clippers
___ electric clippers
___ like a barber uses.
___ The wool will grow back again.
___ Most sheep are shorn
___ once a year.
___ After the wool is removed,
___ it must be washed
___ very carefully
___ to get out the dirt.
___ When the locks are dry,
___ they are combed
___ to make the fibers
___ lie in the same direction.
___ It is like combing
___ or brushing
___ your hair.
___ Then the wool is formed
___ into strands.
___ These can be spun
___ to make yarn.
___ The yarn is knitted
___ or woven into fabric.
___ The fabric is made
___ into clothing
___ and knitted
___ into sweaters.
___ Sweaters made
___ from wool
___ are very warm
___ even when they are damp.

42 Ideas

Number of ideas recalled _____

Other ideas recalled, including inferences:

Questions for "Wool: From Sheep to You"

1. What is this passage mainly about?
   Implicit: how wool is made; *or* what you do to wool in order to use it

2. What is the first step in the making of wool?
   Explicit: cutting it off the sheep

Level: Three

3. What do people use to cut wool off sheep?
   Explicit: electric clippers; electric scissors (*electric* must be in the answer)

4. Why can sheep give wool for many years?
   Implicit: because it grows back after it is cut off

5. What is done to the wool after it is washed and dried?
   Explicit: it is combed

6. What happens to wool fibers after they are combed?
   Explicit: the fibers lie in the same direction

7. What two different things can people do with the wool yarn?
   Implicit: knit; weave into fabric; make into clothing

8. Why would it be good to wear a wool sweater out in the snow?
   Implicit: it will keep you warm even when it's damp. *Note:* If the student omits the idea of dampness and says only, "It will keep you warm," ask, "Why would it be especially warm in the snow?"

Without Look-Backs

Number Correct Explicit: ____

Number Correct Implicit: ____

Total: ____

____ Independent: 8 correct

____ Instructional: 6–7 correct

____ Frustration: 0–5 correct

With Look-Backs

Number Correct Explicit: ____

Number Correct Implicit: ____

Total: ____

____ Independent: 8 correct

____ Instructional: 6–7 correct

____ Frustration: 0–5 correct

Vita

Danielle V. Dennis earned her Ph.D. in Reading Education from the University of Tennessee in May 2007. She also holds a M.Ed. in Science and Environmental Education and a B.S. in Elementary Education.

While in the doctoral program at the University of Tennessee, Dr. Dennis worked closely with Dr. Richard Allington and Dr. Anne McGill-Franzen. She and Dr. Allington co-authored several chapters together. In addition, she was a graduate assistant on Dr. McGill-Franzen's Extended Day Kindergarten Literacy Program and accompanied Dr. McGill-Franzen to Kenya on an IRA/UNESCO partnership for diagnostic teaching.

Prior to entering the doctoral program, Dr. Dennis spent three years as a middle school reading, language arts, and social studies teacher in Denver, Colorado, three years as an elementary science specialist in Duluth, Minnesota, and one year as a middle school reading and language arts teacher in Fort Myers, Florida.

Dr. Dennis will begin her career as an assistant professor of elementary education and literacy studies at the University of South Florida in Fall 2007.