

COVER PAGE

What Is the Nature of Struggling Adolescent Readers in Urban Schools?
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Abstract

What Is the Nature of Struggling Adolescent Readers in Urban Schools?

The purpose of this descriptive study was to examine the component reading skills of adolescent struggling readers attending urban high schools. Specifically, 11 measures of reading skills and two measures of motivation and hope were administered to 345 adolescent readers in order to gain a research-based perspective on the reading skill profile of this population. Adolescent readers were assessed in the domains of Word Level, Fluency, Vocabulary, and Comprehension. Analysis of the results found that 61% of the struggling adolescent reader group had significant deficits in all of the reading components listed above. Subgroups of struggling readers showed similar but more severe patterns. For example, students with learning disabilities scored significantly below the levels of the struggling reader group at large. In contrast, most proficient readers scored high on all measures of reading with above-average component reading skills in word level skills, vocabulary, and comprehension. The lowest skill area for the proficient reader group was fluency, where they scored at the average level. Implications for policy and instructional programming are discussed in light of the findings.

If the ability to read and comprehend is foundational to individual and national success as is widely reported (e.g., Berman & Biancarosa, 2005; Biancarosa & Snow, 2004; Kamil, 2003; Lemke et al., 2005), clearly, knowledge about the nature of the reading skills possessed by students is important for two major reasons—as a means of preventing poor reading performance and intervening to improve the performance of struggling readers.

Despite the encouraging progress that has been made in addressing the reading problems experienced by young children in recent years (Lyon, Alexander, & Yaffee, 1997; McCardle & Chhabra, 2004), more than eight million adolescents have not mastered the reading skills necessary for them to successfully respond to demanding secondary school requirements or compete for meaningful jobs in the workplace (Hock & Deshler, 2003; Kamil, 2003). These same adolescents are even less prepared to face the demands of the global economy described by Thomas Friedman (2005) in his book *The World is Flat*. For example, according to the National Assessment of Educational Progress (NCES, 2005), 26% percent of eighth-grade students cannot read material essential for daily living, such as road signs, newspapers, or bus schedules. Overall, 68% of students score below the proficient level in reading. Students who are unable to handle the demands they face in high school will certainly struggle in postsecondary education. And if their reading problems are not addressed, they will persist into adulthood.

The magnitude of the problems facing adolescents, especially those who attend poor, urban high schools, are striking. In some of the largest urban school districts, nearly 65% of adolescents read below the “satisfactory” level on state reading assessments (Council of Great City Schools, 2001). Of major concern in this connection is the fact that for many struggling adolescents readers the goal has changed from one of improving reading proficiency so one can

participate in the existing economy to the goal of competing in a much more competitive global economy that demands mastery of high-level reading and thinking skills (Levy & Murnane, 2004).

While some information is available to inform policy and instructional decisions regarding the needs of younger struggling readers, the picture is far from complete for adolescents in urban high schools (Snow, 2002). Understanding what information we have must be mediated within the context of the urban environment. Living in an urban environment has been shown to exacerbate the educational risk and level of school failure associated with at-risk students (e.g., Leventhal & Brooks-Gunn, 2000; Leventhal & Brooks-Gunn, 2003; McWayne, Fantuzzo, & McDermott, 2003; Rury, 2005). Even high performing urban students perform at levels below their high performing suburban peers due to resilience factors (McWayne, Fantuzzo, & McDermott, 2003).

Contextual factors that predict urban student performance and school engagement include early childhood academic experiences and education (McWayne, Fantuzzo, & McDermott, 2003), poverty (Campbell, Pungello, Miller-Johnson, Burchinal, & Ramey, 2001); McWayne, Fantuzzo, & McDermott, 2003; Rury, 2006), social competence (Wentzel, 1999), neighborhood culture, socialization and high crime rates (Leventhal & Brooks-Gunn, 2003; Sampson, Raudenbush, & Earls, 1997), lack of employment and opportunities to grow outside the classroom (Gleason, & Cain, 1997; Jarrett, 1997; Newman, 1999), and a fear of danger associated with their school environment (Garcia-Reid, Reid, & Peterson, 2005). These factors should not be overlooked when looking at the broad context of the nature of struggling adolescent readers. While it is clearly an overgeneralization to state that all urban students will struggle because of their urban environment, differences associated with affluence have a

positive effect on student academic performance (Leventhal & Brooks-Gunn, 2003) and thus contribute to the nature of the adolescent urban reader.

Two additional factors related to the nature of urban readers include the level of student hope for the future and motivation for reading. Motivation has been recognized as a key factor in the academic performance of students (e.g., Eccles & Wigfield, 2002). Currently, little is known about motivation and hope for the future of urban adolescent readers. Both of these domains were assessed as part of the current study and results are briefly discussed in this report.

In response to the need for more research on reading comprehension and urban readers, a descriptive study was conducted to determine the reading component skill profiles of struggling adolescent readers in urban middle and high schools. Thus, this study was designed to gather empirical evidence that goes beyond the general information about reading skills found on most state reading measures of adequate yearly progress (AYP). The overarching goal was to describe the reading skill characteristics of both proficient and struggling adolescent readers.

Foundational Research Literature

Several descriptive studies have been conducted with younger adolescents to more clearly define the reading skills of this population. These studies have added to our understanding of the nature of adolescent readers and their reading skill component profile (e.g., Buly & Valencia, 2003; Catts, Hogan, & Adlof, 2005; Leach, Scarborough, & Rescorla, 2003). However, the data are sometimes contradictory.

Younger adolescents. Buly and Valencia (2003) examined the reading skills of 108 fifth-grade students who scored poorly on the Washington State Reading Assessment (WASL). Students who participated in the study scored at levels 1 and 2 (on a scale of 1 to 4) on the reading portion of the assessment. While the specific ethnic characteristics of the sample were not provided, the

authors note that at the district level 57% percent of the students were Caucasian and 43% were students of color. Students in the sample performed poorly on all reading measures, including word identification, phonemic awareness, comprehension, vocabulary, rate, and expression. However, three factors accounted for 78% of the variance on the WASL scale scores: word identification, meaning, and fluency. The authors concluded that poor student performance on the state reading assessment was due primarily to issues related to reading fluency and comprehension. Further, they stated that word-level problems contributed minimally to poor reading performance and only about 9% of the students in the sample were poor readers in terms of word recognition, fluency, and meaning. Thus, most struggling readers in the study needed instruction primarily in comprehension and fluency, with very few needing instruction in all three areas. This study is widely cited by policy groups and used as rationale for primary focus on reading comprehension intervention with adolescent struggling readers (e.g., Berman & Biancorosa, 2005).

Leach and colleagues (2003) studied the phenomenon of late-identified reading disability (RD) with a sample of 161 fourth and fifth graders. This sample consisted primarily of Caucasian students; only 5% of the students were ethnic minorities. Ninety-five of these adolescents were considered typically achieving readers, and 66 were identified as having some type of RD based on a standard score of 86 or less on reading comprehension test.

On the basis of reading skill component scores and deficits, the authors assigned students to one of four groups; (a) the RC group, which included students with good word-level skills but poor comprehension; (b) the WL group, which consisted of students with deficits in word-level skills but good comprehension; (c) the WL-RC, group in which students had deficits in both

word-level and comprehension; and (d) the NRD group, in which deficits were not detected in either word-level or comprehension.

In the groups with reading deficits, 35% of the students had word-level processing deficits with adequate comprehension (WL), 32% had deficits in comprehension with adequate word-level skills (RC), and 32% had deficits in both word-level and comprehension skills (WL-RC). Thus, according to the authors, about two thirds of the poor readers had comprehension deficits, and 64% of the students also had word-level deficits. Additionally, 41% to 47% of the poor readers were late-identified RD. That is, the reading skills of the students who met the established criteria for RD had adequate reading skills before the fourth grade. This is an important finding in terms of determining interventions that respond to student developmental needs and significantly narrow the reading achievement gap.

Older adolescents. In a longitudinal study and with older adolescents, Catts et al. (2005) examined the contributions of word recognition and listening comprehension to reading comprehension and identified the skill profiles of poor readers over time. They followed their sample across grades 2, 4, and 8. Within the first portion of the study, the authors used data from 527 subjects who participated in a longitudinal and epidemiological study through eighth grade. A regression analysis showed that word recognition and listening comprehension accounted for 76.6% (2nd grade), 71.8% (4th grade), and 72.8 % (8th grade) of the composite variance in measures of reading comprehension across grade levels. Word recognition and listening comprehension varied in their unique contributions to reading comprehension across grade levels and across time. For example, word recognition played a large role in predicting reading comprehension in early grades, whereas listening comprehension was significantly more predictive of overall reading comprehension as students grew older.

For the second portion of the study, the authors selected from the sample of 527 students who could be identified as poor readers ($N=154$). Eighth grade readers in this analysis clustered into one of three skill categories: (a) Dyslexic or students with deficits in word recognition but adequate listening comprehension (13.3%); (b) Mixed RD or students with deficits in both word recognition and listening comprehension (36%); and (c) Specific Comprehension Deficit or students with adequate word recognition but deficits in listening comprehension (30%). Thus, Catts et al. (2005) found that about 49% of the 8th grade poor reader group had poor word recognition and about 66% had poor comprehension.

These findings clarified the influence that developmental stages have on student reading skill profiles. For example, in the second-grade analysis, listening comprehension accounted for only 9% of the unique variance in reading comprehension. However, in the 8th-grade analysis, listening comprehension was found to account for 36% of the unique variance. Thus, these findings support the developmental nature of reading and highlight the shifting importance that word level and language comprehension play in predicting reading comprehension. According to the Catts et al. study, by the eighth grade, word-level reading skills contribute minimally to reading comprehension, and the percentage of poor readers who struggle with comprehension nearly doubles by the fourth and eighth grades. Catts et al. (2005) also found evidence of a fourth-grade slump whereby students considered to be satisfactory readers in second grade were identified as struggling readers by fourth grade.

These studies bring some level of clarity to the discussion about the reading skill profile of struggling readers in young adolescent populations. Together, they represent significant and foundational efforts to examine the component reading skills of struggling readers and to identify subcategories of readers. However, the extent to which these findings can be generalized to older

adolescents in urban schools is unknown. The majority of the participants in the studies reviewed were late-elementary students and not necessarily representative of the older adolescent population. Additionally, none of the studies focused on struggling readers in urban schools with the intent to capture the range of skills possessed by this population. The extant literature on the reading skill component profile of this population is limited. Finally, the results of these studies are somewhat mixed. For example, Buly and Valencia found only 9% of the population to have reading deficits in word identification. In contrast, Catts et al. and Leach et al. found between 49% and 67%, respectively, of the struggling reader group to be poor in word identification and comprehension.

In an effort to expand the knowledge base to include older struggling readers in urban school settings and to deepen our understanding of the type and proportion of struggling readers with reading problems in specific reading component skills, the current descriptive study was conducted. The reading skill profile outlined in this article is augmented with findings that examine other characteristics of adolescent struggling readers. For example, the level of hope possessed by this population and their motivation to engage in reading and reading instruction are domains of interest to many in the field.

The overriding goal of this study was to determine the nature of older adolescent struggling readers in urban high schools with regard to reading skills and motivation for reading and hope for the future, areas yet to be explored in the literature. Questions related to the overall goal above included the following: What are the differences between proficient and struggling readers on various reading measures that comprise the four components? Are the struggling readers' mean reading scores in the four specific reading component areas (i.e., word level, fluency, vocabulary, and comprehension) significantly different from the mean reading scores of

proficient readers (those who score above the 40th percentile)? What is the relationship profile of specific reading component skills (i.e., word level, fluency, and vocabulary) and reading comprehension? Do struggling adolescent readers need instruction in all reading components or is a focus on one or two component skills (e.g., vocabulary and comprehension) a better instructional strategy? Finally, what is the level of motivation for reading and what is the level of hope for the future for both proficient and struggling adolescent readers?

Methods

The sample included 345 late eighth- and early ninth-grade students who were selected from two suburban junior high schools, two urban middle schools, and three urban high schools in two Midwestern cities. The urban community consisted of 145,004 people; the suburban community consisted of 81,873 people (U.S. Census Bureau, 2002). Participants from the urban schools were recruited from their English classes during the end of their eighth-grade year or the beginning of their ninth-grade year. They were selected for inclusion in the study based upon their Kansas Reading Assessment (KRA) scores, a measure of adequate yearly progress (AYP) (Kansas Department of Education, 2005). The Kansas Reading Assessment (Kansas DOE, 2005) is a group-administered test given annually in the spring to students in the 5th, 6th, 7th, 8th, and 11th grades to measure AYP as defined in the No Child Left Behind Act of 2000. By the end of eighth grade, students are assessed on their proficiency in comprehending narrative, expository, and technical text. Measures are also taken on such skills as identification of main ideas, details, and the author's purpose, comparing, contrasting, problem solving and using text organizers. Additionally, students are assessed on fluency, decoding, and prior knowledge.

The overall sampling plan was to recruit at least 60 students in each of the five categories of the Kansas State Reading Assessment (i.e., unsatisfactory, basic, proficient, advanced, and

exemplary) so that adequate subgroups of students could be assessed and analyzed with regard to their reading skill component profiles. The goal was to differentiate the skill profile of adolescent readers, both proficient and struggling, using a common and standardized measure like that offered by the KRA continuum of reading proficiency. Those who scored at or below the 40th percentile were defined as Struggling Readers; those who scored above the 40th percentile were defined as Proficient Readers. The sample consisted of 202 adolescent “struggling” readers (ASRs) and 143 “proficient” readers. While not a traditional cut point, the 40th percentile was chosen because students scoring at this mark are almost one third of a standard deviation below the expected mean standard score, and thus below the expectation set by No Child Left Behind legislation that all children read at grade level (U. S. Congress, 2001). Given the focus of No Child Left Behind, many districts are keenly interested in the group of borderline readers and even more interested in appropriate ways to intervene. Using the 40th percentile cut point allowed us to use all the collected data and inform our knowledge of those readers who are not at grade level but close to it.

Eighty-two percent of the participants were drawn from the urban schools and 18% were from the suburban schools. (Suburban students were recruited in order to increase the number of exemplary readers and balance the five KRA categories.) Students ranged in age from 13.45 years to 17.5 years with an average age of 14.9 years. However, all students were enrolled in either eighth- or ninth-grade language arts or English classes. Fifty-five percent were male and 45% were females. The race and ethnicity profile of the sample consisted of 52% African-American, 15% Hispanic, 29% white, and 4% reporting in other categories. Fifty-one percent received free/reduced-cost/ lunch and 47% of the students paid for lunch. Ten percent were

enrolled in special education, and 5% reported that they were English Language Learners (ELL) during time of the assessment.

Measures and Instruments

Instruments were selected and grouped within a reading-component framework identified in the literature as essential to the reading success of younger and adolescent readers (Curtis, 2002; NICHD, 2000). The measures consisted of a battery of language and literacy tasks and selected student characteristics (see Table 1). Multiple measures of each construct were included so that the relations among latent abilities could be examined independent of task-specific factors or measurement error (Kline, 2005).

[Table 1 About Here]

Description of Assessment Measures

Word Level. Two measures of word-level skills were administered. Word decoding and word identification were measured with the Word Attack and Word Identification subtests of the Woodcock Language Proficiency Battery-Revised (WLPB-R; Woodcock, 1991). The Word Attack subtest requires individuals to apply phonics and structural analysis skills to pronounce nonsense words that are ordered in increasing difficulty. The split-half reliability is greater than .90. The Letter-Word Identification subtest uses real letters and words in isolation graded in order of difficulty. Participants read the increasingly difficult letters and words until a ceiling score is attained. The split-half reliability of this subtest also exceeded .90. Each subtest takes about 5 minutes to administer. The tests are administered individually.

Fluency. Fluency was assessed with three norm-referenced subtests. First, the TOWRE Sight Word Efficiency subtest (Torgesen, Wagner, & Rashotte, 1999) measured the number of real printed words accurately decoded within 45 seconds. This subtest has two forms (A and B) that

are of equivalent difficulty. The test-retest reliability of the Sight Word Efficiency subtest is .84 for students age 10-18 years. Second, the TOWRE Phonemic Decoding Efficiency subtest measures the number of pronounceable nonwords accurately decoded within 45 seconds. The test-retest reliability of the Phonemic Decoding Efficiency subtest is .89 for students age 10-18 years. Overall testing time is 2-3 minutes for each of the subtests. Finally, the Gray Oral Reading Test-4 was administered to evaluate oral reading rate and accuracy (Wiederholt, & Bryant, 2001). The GORT-4 is comprised of 12 passages. The participants were required to read aloud passages as quickly and as accurately as possible and then answer five comprehension questions. For each passage administered the examiner documented the time in seconds required to read the passage, the total number of reading errors, and responses to comprehension questions. The GORT rate and accuracy subtest scores are summed to provide an overall reading fluency score. Split-half reliability was .92 for the fluency measures.

Vocabulary. Receptive oral vocabulary was assessed using the PPVT-III (Dunn & Dunn, 1997). The PPVT-III requires the student to point to the one of four pictures that represents a stimulus word pronounced by the examiner. The words become increasingly difficult. The test requires about 10 to 12 minutes. Reading vocabulary was assessed with the WRPB-R (Woodcock, 1991) Reading Vocabulary subtest. The Reading Vocabulary subtest of the WLPB-R is comprised of two parts that assess a person's knowledge of Synonyms and Antonyms. The Synonym portion measures participants' ability to identify a word that possesses the same or nearly the same meaning as the test item presented by the examiner. The Antonym portion of the Reading Vocabulary subtest measures participants' ability to identify a word that possess the opposite or nearly the opposite meaning as the test item presented by the examiner. Performance

on the Synonym and Antonym portions of the Reading Vocabulary subtest form a single index of expressive vocabulary. Split-half reliability exceeds .90.

Comprehension. Reading comprehension was assessed with two measures, the WLPB-R Passage Comprehension subtest (Woodcock, 1991) and the Gray Oral Reading Test-Diagnostic (GORT-4, Bryant & Wiederholt, 2001). The WLPB-R Passage Comprehension subtest requires the learner to silently read a sentence or a short passage and supply a word that fits the meaning and context of the passage. This is a modified cloze procedure measure and is completed in about 6 minutes. The GORT-4 Paragraph Reading subtest requires the participant to read graded passages orally and to respond to comprehension questions presented in a multiple choice format. The passages range from about 20 to 160 words in length. The task requires about 10 minutes; two forms (A and B) are available.

Language comprehension was assessed using the WLPB-R Listening Comprehension subtest (Woodcock, 1991), which consists of analogies and inference items. This 38-item cloze procedure requires the participant to listen to a sentence and then supply a key word that completes the meaning of the sentence. The items primarily assess analogy and inference abilities. The task requires about 10 minutes. Split-half reliability exceeds .90.

Student motivation for reading was assessed with the *Motivation for Reading Questionnaire* (MRQ) (Baker & Wigfield, 1999; Wigfield & Guthrie, 1997). The MRQ measures 11 different aspects of reading motivation through subtests such as self-efficacy, curiosity, involvement, and preference for challenge. A factor analysis of the MRQ showed that 11 factors were theoretically and statistically justifiable. The questionnaire takes 10 minutes to administer.

Student hope for the future will be assessed by The Hope Scale (Babyak, Snyder, & Yoshinobu, 1993; Snyder et al., 1996). The Hope Scale is an 8-item self-referent questionnaire

designed to assess the relative level of hope within a goal-setting framework. Two subscales measure student agency and pathway for goals. The Hope Scale has demonstrated acceptable reliability and validity among children and young adult populations. The Hope Scale has demonstrated concurrent validity and correlates positively with measures of self-esteem, perceived problem-solving, optimism, and positive outcome expectations (Snyder, 1995). It takes about 5 minutes to administer the scale.

Procedures

Participants were individually tested during one 2- to 2.5-hour testing session. A total of 16 examiners participated in administering the test battery. Fourteen were certified classroom teachers with undergraduate degrees in education or master's degrees in education ($N = 2$). Of the remaining two examiners, one had a bachelors' degree in an associated area and the other was an undergraduate research assistant. All examiners completed an extensive six-hour training conducted by the investigators regarding administration and scoring procedures for each test within the assessment. In addition, previous to the first assessment, the examiners worked with a member of the project staff on assessment administration. The first assessment was observed for consistency in following the script, and the student record booklet was reviewed for recording/scoring accuracy. This was done individually with immediate feedback. Testing was conducted after school or on Saturday at the participant's school in a quiet classroom or the library. Teacher-examiners received monetary compensation for all completed assessments. To participate in the study, students or their parents/guardians (depending on age) had to sign letters of consent. Student participants received a monetary compensation of \$30.00 for completing the test battery.

The process for handling student data included steps for completion, accuracy, reliability, data entry and verification. Each completed student record book was assigned an ID number and identities were masked (The student name and assigned ID numbers were kept in a separate spreadsheet.). A completion check was then conducted to identify any missing information. Booklets with missing information were flagged and returned to the examiner for completion and/or explanation for missing information. Next, all student data were checked for precision in scoring, including accurate basal and ceiling calculations and accurate calculation of raw scores. Raw scores were converted to standard scores using examiner's manuals for the corresponding instruments or the assessment scoring software. Data entry and verification were completed independently for validity purposes. Data were handled in sets of five and entered into a SPSS file. Each set was assigned a number, and separate ExcelTM spreadsheet were used to keep track of all the sets. Project staff exchanged data sets for verification. Reliability checks were completed for each measure that involved scorer judgment. Two scorers independently scored 10% of the student responses on the GORT, the WLPB-R word attack subtest, and the TOWRE subtests, sight word reading and phonemic word reading. The inter-scorer reliability was 96.5% on the GORT-4, 92% on the WLPB-R, and 95.5% on the TOWRE.

Results

In this section we describe the characteristics of the ASR primarily with respect to the four reading components and compare descriptively their results to those of a group of proficient readers drawn from the same geographic region and attending the same schools. Also, demographic characteristics of the struggling and proficient readers in the sample are discussed. Lastly, the results for the ASR readers are compared to those of the proficient readers and the overall skill profiles of both groups of readers are examined.

Creation of Component Scores

A principal components analysis (PCA) was conducted to determine if the 11 measures formed distinct reading components. In order to make all scores comparable, the usual GORT standard scores (mean = 10, $SD = 3$) were transformed so that all measures would be in the same metric with a mean of 100 and a SD of 15. The results of the PCA indicated that the 11 variables could be summarized by four components. The Word Level component comprised the Word Attack and Word Identification measures; the Fluency component comprised the TOWRE Sight Word and Phonemic Decoding Efficiency measures, and the GORT Accuracy and Rate measures; the Vocabulary component comprised the WLPB-R Listening Comprehension and Reading Vocabulary measures, and the PPVT Total score; and, lastly, the Comprehension component comprised the WLPB-R Passage Comprehension and the GORT Reading Comprehension measures. Only one variable, Sight Word Efficiency, loaded on two components; however, the loading on the second component, Comprehension, was much smaller than its loading on Fluency, so Sight Word Efficiency was included in the Fluency measure. See Table 2 for results of the principal components analysis.

[Table 2 About Here]

A composite score was then formed for each of the four components by combining the standard scores for the individual measures comprising the component. Thus, the Word Level component score was the mean of the standard scores for the WLPB-R Word Attack and Letter-Word Identification measures. Similarly, component scores for Fluency (mean of Sight Word Efficiency, Phonemic Decoding, GORT-4 Rate and GORT-4 Accuracy), Vocabulary (mean of the PPVT and the WLPB-R Vocabulary and WLPB-R Listening Comprehension), and Comprehension (mean of GORT-4 Comprehension, WLPB-R Passage Comprehension) were

formed. Thus, each component score is the mean of the standard scores in the set of measures that comprise the component. These four component scores were the primary variables in the descriptive analyses below.

Definition of Struggling Readers

Struggling readers, as previously defined in this article, were defined on the basis of their scores on a Comprehension composite score, the mean of the WLPB-R -R passage comprehension subtest and the GORT-4 comprehension subtest score. Those who scored at or below the 40th percentile (standard score of 96) on the composite score were defined as Struggling Readers; those who scored above the 40th percentile were defined as Proficient Readers. Using this criterion, the sample used in the final analysis consisted of 202 adolescent “struggling” readers (ASRs) and 143 “proficient” readers.

Comparisons of Struggling Readers and Proficient Readers

Table 3 presents the standard scores of the ASRs and Proficient Readers on each of the 11 assessments. Examination of the mean scores on these assessments indicated that the poor readers’ standard scores were substantially below those of the good readers. Except for the TOWRE measures (Sight Word Efficiency and Phonemic Decoding), the differences were at least 20 standard score units, and were often greater than 25 units. Differences between the poor and good readers were tested using a Bonferroni adjustment ($\alpha = .0045$) to take into account the large number of tests being conducted. All differences were statistically significant across all reading scores; that is, ASR scores for the word level, fluency, vocabulary, and comprehension measures were significantly below the scores for the proficient readers.

[Table 3 About Here]

Table 4 presents the number of ASR and proficient readers by demographic characteristics, including gender, students with a disability, free/reduced lunch status, ELL classification and age. Nearly all of the ASRs were from the urban area (194 out 202). Of the proficient reader group, 90 were from the urban area, while 53 were from a suburban area.

A total of 34 students in the study had active IEPs, indicating that the presence of a specific learning disability had been determined. Twenty-nine were struggling readers and five were proficient readers. Local district and Kansas Department of Education identification procedures and criteria were used to identify students with disabilities. In the state of Kansas, specific learning disability is defined as: (a) disorder in 1 or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations; (b) Disorders included - Such term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia; (c) Disorders not included - Such term does not include a learning problem that is primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage; (d) Response to Intervention- In determining whether a child has a specific learning disability, not be required to take into consideration whether the child has a severe discrepancy between achievement and intellectual ability, and may use a process that determines if the child responds to scientific, research-based intervention as part of the child's evaluation. (Kansas Department of Education, 2006).

[Insert Table 4 about here]

Table 5 presents the standard scores on each of the four composites for the students in the two reading groups and in various subclasses. Overall, the pattern of results is very similar for

the ASRs and the proficient readers. The Fluency score is the lowest relative to the other measures, while the highest score is both groups is for the Word Level component. The range of means for the poor readers is somewhat narrower than the range for the good readers.

[Table 5 about here]

The relationships among the component scores were more formally examined using profile analysis with reading group as the between-subjects factor. Since the struggling readers were defined as students whose Comprehension component scores were below the 40th percentile, the formal comparisons and analyses were conducted using only the other three components. A profile analysis simultaneously compares the profiles of the groups on several measures and tests whether they have the same pattern of means on those measures. The three primary questions in a profile analysis concern (a) the equality of the means of the groups, (b) the parallelism of the profiles, and (c) the similarity of the response among the dependent variables. The test for the equality of the means indicated that the groups differed significantly, $F(1, 343) = 322.44, p = .000$. Follow-up tests showed that, for every component, the proficient readers scored significantly higher than the struggling readers. The result of the parallelism test (given by the interaction of group with component) was also significant, Wilks' Lambda $F(2, 342) = 15.92, p = .000$. These results indicate that the differences between the means (slopes) for some pairs of dependent variables are not the same in the two groups (see Figure 1).

Follow-up tests showed that for the struggling reader group, there were statistically significant differences between each of three pairs of means: Word Level compared to Fluency, $F(1, 201) = 60.29, p = .000$, effect size $d .61$; Word Level compared to Vocabulary, $F(1, 201) = 6.15, p = .014$, effect size $d .18$; and Vocabulary compared to Fluency, $F(1, .201) = 11.37, p = .001$, effect size $d .24$. For the proficient reader group, statistically significant differences were

found for two of three comparisons: Word Level compared to Fluency, $F(1, 142) = 147.4, p = .000$, effect size $d = 1.04$ and Vocabulary compared to Fluency, $F(1, 142) = 61.7, p = .000$, effect size $d = .66$. However, there was not a statistically significant difference between Word Level and Vocabulary for the proficient readers. Effect sizes were calculated using Cohen's adjustment for correlated measures, which is accomplished by multiplying the standard deviation in the denominator by the square root of $2(1-r)$ where r is the correlation between the two measures. The statistic may be interpreted using the suggested guidelines of Cohen (1988): A small effect is approximately .2, a medium effect is approximately .5, and a large effect is .8. Since the parallelism hypothesis was rejected, there was no need to test for flatness since clearly some means were greater than others.

We also examined the four component scores for various demographic groups. Scores for the free/reduced-cost lunch group were generally 9 to 13 standard score points lower than those of the non-reduced-cost or free lunch, with the largest difference being the Vocabulary scores. Vocabulary scores also showed the largest difference between the males and the females, with the females scoring slightly higher. The sample contained 13 students older than 16; this group scored lower on all components than did the other members of the sample. The sample included 19 ELL students; their scores were very similar to those of the non-ELL students on all components. Students with IEPs ($n=34$) scored lower on all components than the non-IEP students, with the largest difference on Word Level (approximately 22 standard score units). Students with disabilities were also below the mean standard scores of the proficient reader group on all components and were below the struggling reader group on all components except Vocabulary, where they scored at approximately the same level as struggling reader group. Complete results may be found in Table 5.

Additional descriptive analyses were conducted for students who scored at or below the standard score of 96 on at least one of the four components. Of the 345 students in the sample, 85 scored above 96 on all components, while 260 scored below the mean standard score of 96 (approximately the 40th percentile) on at least one of the components. The 260 students included 9 students in the struggling reader group who scored low only on Comprehension and were high on everything else. The other 193 struggling readers and 58 proficient readers scored low on at least one component other than Comprehension. Table 6 shows the distribution of the students in the various deficiency categories for each reading level group.

[Table 6 About Here]

Further examination of 202 struggling readers showed that 123 (61%) were low on every component including comprehension. Another 26 were low on every component except Word Level. Aside from Comprehension, the component for which the largest number of students scored below the mean standard score of 96 was Fluency (177 or 88%).

Among the proficient readers, only two scored below the mean standard score of 96 on every component except comprehension. As with the struggling readers, the component with the largest numbers of low scores was Fluency, 54 proficient readers were below the mean standard score of 96. A common combination for the proficient readers were those who had high Vocabulary scores, low Fluency scores, and varying Word Level scores; 42 proficient readers fell into these categories; only 28 struggling readers did. Table 6 gives a complete summary of all students in the high/low numbers on each component. Please note that all struggling readers, by definition, scored at or below 96 and all proficient readers scored above 96.

Student motivation for reading was assessed with the *Motivation for Reading Questionnaire* (MRQ) (Baker & Wigfield, 1999; Wigfield & Guthrie, 1997). The MRQ was administered to

two groups of students, the 345 students in the descriptive study and to an additional 359 students in an intervention study that took place at the same schools as the descriptive study. The larger data set was used given the questions about the utility and reliability of the MRQ (Watkins & Coffee, 2004). An exploratory factor analysis was conducted, which resulted in a three-factor solution for each group. Upon further examination, we selected common items that loaded together on each of the three subscales; these were then tested for internal consistency and correlation with the outcome variables. Only one of the subscales was highly correlated with the reading measures and was a significant predictor of reading outcome scores in the study. This factor had an internal consistency Cronbach alpha of .86 and comprised eight items about liking to read difficult or interesting materials. Eight factors on the MRQ predicted reading comprehension performance. Given the results of the factor analysis and results obtained by the authors of the MRQ, comparisons between struggling and proficient readers were not conducted. However, an eight item revised version of the MRQ was developed and will be tested in future studies.

Student hope for the future was assessed by The Hope Scale (Babyak, Snyder, & Yoshinobu, 1993; Snyder et al., 1996). The Hope Scale is an 8-item self-referent questionnaire designed to assess the relative level of hope within a goal-setting framework. Two subscales measure student agency and pathway for goals. The Hope Scale has demonstrated acceptable reliability and validity among children and young adult populations. The Hope Scale has demonstrated concurrent validity and correlates positively with measures of self-esteem, perceived problem-solving, optimism, and positive outcome expectations (Snyder, 1995). The results of this analysis indicated that both struggling and proficient urban adolescents are largely hopeful. No significant differences were found in Hope scores; student scores were almost identical in the

total test score and sub scale scores for pathway and agency with both groups scoring in a slightly average range.

A post hoc content analysis of high and low student mission statements was conducted to examine the specific nature of student goals. Using an emergent design, six dominant goal categories were identified: career, academic, professional, personal qualities, possessions, and family. The most commonly reoccurring goal statement students across dominant categories related to attending college. In addition, higher hope students with academic goals not only stated that they wanted to attend college, but also identified the specific name of the college that they wanted to attend and some even named the type of advanced degree that they intended to seek.

Discussion

Adolescents who arrive in high school lacking a solid foundation in core reading skills have a greatly reduced probability of successfully graduating with a standard diploma. Additionally, those with low motivation for learning to reading and reading to learn struggle with graduation from high school. For example, In a study by the Consortium on Chicago School Research, Allensworth and Eason (2005) found that students who stay “on track” in their freshman year (i.e., earn at least five credits and have no more than one semester F grade in their freshman year) are three and one half times as likely to graduate from high school as students who do not stay on track. This fact is even more startling when those in higher risk groups (e.g., students with disabilities) evidence nearly twice the dropout rate as their peers without disabilities (Thurlow, Sinclair, & Johnson, 2002).

The purpose of this descriptive study was to determine the reading component skill profile of struggling adolescent readers in urban high schools. Scant information is available from well-

controlled investigations of this population, and this study was designed to address this shortcoming. Specifically, the study described the reading component skill differences between proficient and struggling readers among various subgroups of students, including ethnicity, disability classification, and SES. Additionally, data was gathered on student motivation to read and the level of hope they had for the future. The resultant information contradicts some of the information that has been commonly used to describe struggling adolescent learners and provides a comprehensive set of descriptive data that have not previously been available.

In all component areas of reading, struggling readers were found to be statistically lower than their proficient reader counterparts. By and large, the struggling readers scored approximately one standard deviation below the mean in each reading area and 20 to 25 or more standard score points lower than the proficient reader group. While the areas of greatest deficit were in fluency and comprehension, many poor readers showed significant deficits at the word level as well (word attack, decoding, word recognition, and rate). Of particular note is the finding that the profiles of students with disabilities were similar across component areas; however, the size of the deficit was greater in Word Level and Fluency (10.56 points and 6.65 points lower respectfully). Students from poverty backgrounds as measured by free/reduced-cost lunch scored between 9-13 point lower on each of the components. Surprisingly, the level of hope for the future expressed by these students was indistinguishable from their highly proficient peers. Their motivation to attain success as readers was also as high as their successful reader peers. Collectively, these data are noteworthy when compared with the existing research literature on young adolescent readers as well as current reading theory. Further, they have implications for assessment, instruction, and policy. Each of these areas will be discussed below.

The findings from this study are at variance with what has been previously reported in the literature relative to the percentage of struggling readers who experience word-level and comprehension difficulty. Whereas the current study found that 61% of the struggling reader group scored low on all component reading skills and an additional 12% scored low on all reading components measures except Word Level (word attack and word identification), Buly and Valencia (2003) found that only 9% of their sample had word-level difficulties and comprehension weaknesses. However, Buly and Valencia did not categorize fluency deficits (i.e., rate and accuracy) as word-level deficits, which may have skewed the interpretation of their findings. Similarly, others (e.g., Berman & Biancarosa, 2005; Biancarosa & Snow, 2004; Kamil, 2003) have written that a relatively small percentage of poor adolescent readers have word identification problems. Our data differ from those reports but are more consistent with the findings reported by Catts et al. (2005) and Leach et al. (2003) who, respectively, found 49% and 67% of younger struggling readers to have word-level problems either in isolation or in combination with comprehension deficits. Specifically, 61% of the students were found to have word-level *and* comprehension difficulties. Thus, given that in many urban schools, large percentages of students fall at or below the basic level of proficiency, it would not be unusual to find as much as 65% of the total student body to experience word-level difficulties. However, the findings of the present study do confirm what has been reported about the difficulties experienced by poor readers in the areas of vocabulary, fluency and comprehension. The breadth of the reading challenges presented by struggling adolescent readers in urban secondary settings is underscored by the fact that 260 of the 345 students scored below the 40th percentile on at least one component (this includes 67 of the 150 proficient readers and all but two of the struggling readers). These findings underscore the notion that balanced reading instruction is necessary for

the majority of adolescent struggling readers in urban schools if improved reading proficiency is to be attained. In short, instruction in word-level skills as well as fluency, vocabulary, and comprehension should be provide to many students in urban schools.

One of the most significant challenges that secondary teachers face is having to design instructional programs for struggling adolescent readers in the absence of informative assessment data on the reading profiles of the students they will be teaching. Most frequently, the only data available come from state assessments. Generally, the results from such testing are not made available to teachers until several months after the test is administered (Boudett, City, & Murnane, 2005); but more important, the nature of the information provided is not helpful from an instructional standpoint. That is, test reports consist of global designations of student performance (e.g., the student is reading at the unsatisfactory level or a percentile rating) that cannot be readily translated into instructional action plans.

This study underscored that assessing students with measures that provide detailed patterns of strength and weakness in the critical areas of reading can provide helpful information that teachers can use for instruction. Regrettably, there is a shortage of such instruments. A pressing need, therefore, is the development and validation of instruments that are efficient for screening, placement, and diagnostic purposes at the secondary level. It is instructive to note that in this investigation, four separate test instruments requiring two hours to administer were needed to generate the reading profile of poor readers. While workable for a research study, educators need fewer instruments that require less time to administer and result in a single report providing student results in a form that is easy to interpret and use.

An additional point related to the need for adolescent assessment tools is that fact that Leach et al. (2003) found that between 41-46% of their sample began to evidence reading difficulties

after the fourth grade. This finding, supported by the results of this study and related to the persistence of reading difficulties into adolescence, underscores the need for assessment instruments that can be used for screening purposes as students move into middle and high school to detect emerging reading difficulties that students encounter that were not present during their primary or early elementary grades.

Finally, the finding that struggling adolescent readers are remarkably resilient and still hopeful that they will be successful as learners is helpful. Many of these learners are willing to work hard to be better readers and learners when instruction is aligned with positive visions of themselves in the future. They also desire to become better readers. Together, these factors offer potentially powerful useful links between goals student and the context of school.

Implications for Practice

The most significant implications from this study relate to instruction. Given the profile of reading problems of poor readers in urban settings, it is important for teachers to be prepared to teach students reading skills and strategies in each of the reading component areas studied in this investigation (in all likelihood these students will also need instruction on factors not directly assessed in this study such as background knowledge, text structure, etc.). Given that many students will need instruction in all reading components (word identification, fluency, comprehension, vocabulary), but at different levels of intensity, secondary schools must conceptualize ways to provide an array of instructional alternatives to students that addresses their varying needs.

Both administrators and policy makers can take direction from the findings of this study. For federal policy makers, the data underscore the magnitude of the instructional problem facing those who work in urban schools with large percentages of poor students. For years, the majority

of federal and state policy initiatives and resources have been directed at younger children. For example, in 2002, federal funding for Head Start was \$6.7 billion, and for Title I in grades K-6, \$10.49 billion. By comparison, federal funding for Title I programs in grades 7-12 was only \$1.85 billion (National Center for Educational Statistics [NCES], 2004). Two relatively new federal initiatives, Reading First (for children in grades K-3) and Striving Readers (for students in grades 6-12), reflect a similar pattern of marked inequities in federal expenditures by granting \$1.04 *billion* for Reading First versus \$24.8 *million* for Striving Readers.

Striving Readers, while a relatively small investment, represents a symbolically important acknowledgment of the unique challenges faced by struggling adolescent readers in secondary schools. Given the importance of putting students on a solid foundation as they enter high school, it would be logical and reasonable for policy makers to insist that Striving Readers projects focus the majority of their efforts on upper-elementary and middle schools so we can quickly add to our knowledge base of how to better serve struggling adolescent readers prior to the stringent requirements they will encounter in high school.

For state and local policy makers, the data point to the need for professional development and certification and licensure programs to build in requirements that teachers must acquire the necessary competencies to teach the requisite reading skills to struggling adolescent readers. Additionally, these policy makers need to consider the implication of within district and within school resource allocation. If overly large percentages of a student body are lacking basic reading skills competencies in word-level skills and comprehension, reallocation of existing resources to provide highly intensive, concentrated instruction on these foundational skills will be necessary at the earliest point in the students' secondary school experience if these poor readers are to have any chance of staying abreast in their subject matter classes and to meet the

expectations of state assessments and receiving standard diplomas. It is essential that teachers, administrators, and policy makers have a clear understanding of the specific reading skill profile and instructional needs of this population and how that need changes over time and context. The reading skill profile found in this study demonstrates the need for a curriculum and instructional focus that includes *all* reading components if the development of proficient readers in urban schools is to be accomplished.

The results of this investigation should be interpreted in light of the following limitations. First, the study was conducted in only two school districts in the Midwest, hence, limiting generalizability of findings. Generalizability may be further limited since the majority of students were from urban school settings and all prevalence rates are estimates based upon this particular sample. Thus, the prevalence rates described in this study are not representative of a national sample. Second, the small sample size of some subgroups limited our ability to conduct detailed analyses on the various reading component skills (e.g., those from disability groups). Third, the type and number of measures used were limited. Additional measures in listening comprehension, additional student characteristics, and contextual factors might help further define the nature of adolescent struggling readers. Finally, given the limited descriptive research available of adolescent readers, studies of younger adolescents were used to provide some background information. With the exception of the Catts, et al. study (2005) the comparisons were between 4th and 5th grade students and differences in prevalence rates may be due to sampling procedures, development, and selection of measures.

Table 1
Reading Measures and Instruments

<u>Assessment Area</u>	<u>Measure</u>
<i>Word Level</i>	Woodcock Language Proficiency Battery (WLPB-R)
• Decoding	WLPB-Revised- Word Attack subtest
• Word Identification	WLPB-Revised- Word Identification subtest
<i>Fluency</i>	Test of Word Reading Efficiency (TOWRE)
• Pace & Accuracy	Sight Word Efficiency subtest
• Pace & Accuracy	Phonemic Decoding Efficiency subtest
• Rate	Gray Oral Reading Tests (GORT-IV) Rate subtest
• Accuracy	GORT-IV- Accuracy subtest
<i>Vocabulary</i>	
• Receptive	Peabody Picture Vocabulary Test- III
• Expressive	WLPB-R- Reading Vocabulary subtest
<i>Comprehension</i>	
• Reading Comprehension	WLPB-R- Passage Comprehension subtest GORT-IV- Passage comprehension subtest
• Listening Comprehension	WLPB-R- Listening comprehension subtest
<i>Learner Characteristics</i>	
• Motivation	Motivation for Reading Questionnaire
• Hope	The Hope Scale for Motivation
• Reading Achievement	The Kansas State Assessment- Reading subtest

Table 2
Principle Component Analysis Pattern Matrix

	Raw			
	Component			
	<i>Word Level</i>	<i>Fluency</i>	<i>Vocabulary</i>	<i>Comprehension</i>
WLPB-R Word Attack	22.90			
WLPB-R Word Identification	8.02			
TOWRE Sight Word Efficiency		12.12		6.79
GORT Rate		17.10		
GORT Accuracy		15.55		
TOWRE Phonemic Decoding Efficiency		10.95		
WLPB-R Listening Comprehension			24.39	
PPVT Total			9.66	
WLPB-R Reading Vocabulary			8.83	
GORT Reading Comprehension				17.59
WLPB-R Passage Comprehension				7.26

Table 3
Mean Standard Scores of Struggling and Proficient Readers on Assessments

Assessment variable	Reading Level					
	Struggling			Proficient		
	Mean	<i>SD</i>	<i>n</i>	Mean	<i>SD</i>	<i>n</i>
WLPB-R Word Attack	87.57	20.71	202	113.54	18.34	143
WLPB-R Letter-Word Identification	90.92	14.10	202	113.36	15.95	143
TOWRE Sight Word Efficiency	87.38	10.74	200	100.35	10.87	143
TOWRE Phonemic Decoding	84.20	14.51	191	100.29	12.29	143
GORT Rate	83.61	12.69	202	104.64	15.49	140
GORT Accuracy	81.63	14.09	195	107.71	17.65	140
PPVT Total	86.11	11.67	200	110.01	12.36	135
WLPB-R Reading Vocabulary	87.63	11.41	202	111.64	13.17	143
WLPB-R Listening Comprehension	86.34	14.86	202	112.04	16.88	143
WLPB-R Passage Comprehension	87.56	10.20	202	112.83	14.69	143
GORT Comprehension	80.22	10.30	202	105.21	11.22	140

Table 4
Sample Characteristics of Struggling and Proficient Readers

Characteristic	Reading level		Total
	Struggling	Proficient	
Gender			
Female	88 (44%)	68 (48%)	156 (45%)
Male	114 (56%)	75 (52%)	189 (55%)
SES			
Free/reduced-cost lunch	134 (68%)	43 (31%)	177 (53%)
No free/reduced-cost lunch	64 (32%)	96 (69%)	160 (47%)
English language learner			
No	190 (94%)	136 (95%)	326 (94%)
Yes	12 (.06%)	7 (.05%)	19 (.05%)
Special education status			
No IEP	173 (86%)	138 (97%)	311 (90%)
IEP	29 (14%)	5 (.03%)	34 (10%)
Age group			
< 14 yrs.	15 (.07%)	10 (.07%)	25 (.07%)
14-15 yrs.	106 (52%)	65 (46%)	171 (50%)
15-16 yrs.	70 (35%)	64 (45%)	134 (39%)
> 16 yrs.	11 (.05%)	2 (.01%)	13 (.04%)

Table 5
*Mean Component
 Standard Scores*

	Word Level	Fluency	Vocabulary	Comprehension
Characteristic	Mean (<i>SD</i>)			
<i>Reader status</i>				
Struggling (<i>n</i> = 202)	89.25 (16.55)	83.99 (11.95)	86.79 (10.77)	83.89(8.43)
Proficient (<i>n</i> = 143)	113.45(15.57)	103.17(12.73)	111.23(12.28)	109.10(10.82)
<i>SES status</i>				
Free/reduced-cost lunch (<i>n</i> = 177)	94.14 (16.70)	87.47 (12.62)	90.79 (14.04)	88.84 (11.81)
No free/reduced- cost lunch (<i>n</i> = 160)	104.87(21.94)	96.98 (16.90)	103.51(16.72)	100.33 (17.17)
<i>Special education status</i>				
No IEP (<i>n</i> = 311)	101.53(18.85)	93.53 (14.95)	97.98 (16.54)	95.66 (15.11)
IEP (<i>n</i> = 34)	78.69 (19.35)	77.34 (12.60)	87.21 (13.92)	82.29 (15.47)
<i>English language learner status</i>				
No (<i>n</i> = 326)	99.22 (19.77)	91.89 (15.26)	97.05 (16.36)	94.43(15.64)
Yes (<i>n</i> = 19)	100.29(25.27)	92.80 (19.48)	94.70 (20.61)	92.87 (15.91)
<i>Age group</i>				
< 14 yrs. (<i>n</i> = 25)	105.86(19.81)	96.18 (13.01)	96.31 (13.38)	94.48 (12.28)
14-15 yrs. (<i>n</i> = 171)	97.51 (18.42)	91.02 (14.25)	94.77 (15.76)	93.03 (14.37)
15-16 yrs. (<i>n</i> = 134)	101.32(21.99)	93.33 (17.37)	100.51(17.77)	96.92 (17.49)
> 16 yrs. (<i>n</i> = 13)	88.65 (16.48)	81.58 (11.22)	88.33 (14.92)	82.92 (11.48)
<i>Gender</i>				
Female (<i>n</i> = 156)	100.88(19.23)	94.28 (15.34)	95.70 (16.70)	94.84 (14.96)
Male (<i>n</i> = 189)	97.96 (20.69)	90.00 (15.39)	97.93 (16.48)	93.93 (16.21)

Figure 1
Estimated marginal means of component.

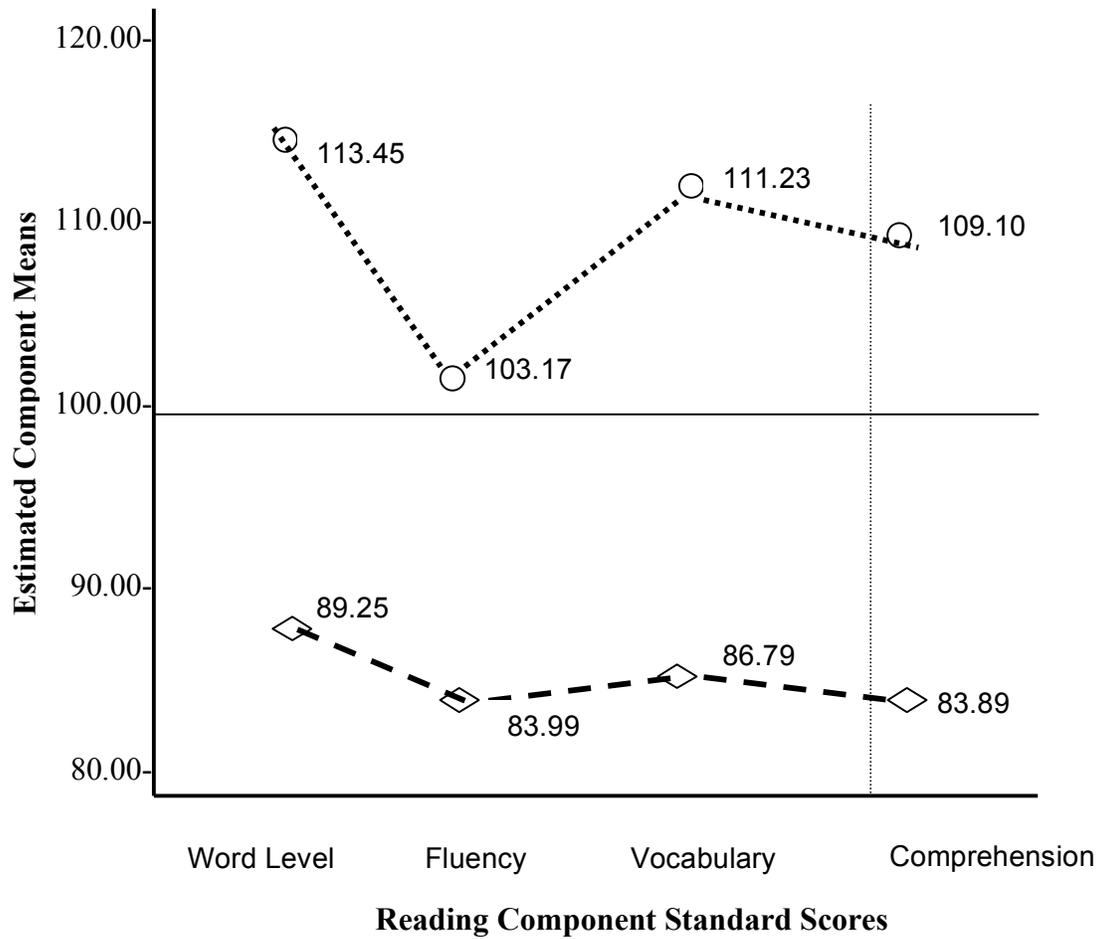


Table 6 *Cross-tabulation of High and Low Scores for Each Component by Reader Status*

Reader Status	Vocabulary	Fluency	Word Level	Total
Struggling	Low	Low	Low	121
	Low	Low	High	25
	Low	High	Low	2
	Low	High	High	14
	High	Low	Low	10
	High	Low	High	18
	High	High	Low	0
	High	High	High	9
Proficient	Low	Low	Low	4
	Low	Low	High	3
	Low	High	Low	0
	Low	High	High	8
	High	Low	Low	14
	High	Low	High	28
	High	High	Low	1
	High	High	High	85

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