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# Using a Previewing Strategy to Enhance Reading Comprehension of Secondary Students

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To the Graduate Council:

I am submitting herewith a dissertation written by Ashley Delores Williams entitled "Using a Previewing Strategy to Enhance Reading Comprehension of Secondary Students." 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.

Christopher H. Skinner, Major Professor

We have read this dissertation and recommend its acceptance:

Sherry K. Bain, Charles H. Hargis, Mark A. Hector

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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Charles H. Hargis, Ph.D.



Mark A. Hector, Ph.D.

Acceptance for the Council:



Vice Chancellor and Dean of Graduate  
Studies

Thesis  
2006b  
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USING A PREVIEWING STRATEGY TO ENHANCE READING  
COMPREHENSION OF SECONDARY STUDENTS

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

Ashley Delores Williams

August 2006

## ABSTRACT

A multiple-baseline-across-participants design was used to evaluate the effects of the TELLS procedure on reading comprehension levels, reading comprehension rates, and words correct per minute on previewed and un-previewed passages in three ninth-grade students with reading skills deficits. Results showed an immediate increase from baseline to intervention phases across all three students and dependent variables. However, these increases were not maintained. Effect sizes across all three students were from moderate to large, suggesting that the TELLS procedure had an affect on reading comprehension levels and rates, as well as words correct per minute. Thus, the TELLS procedure is an effective accommodation tool for children with reading skills deficits. However, data collected during generalization phase showed no improvements on un-previewed passages. Consequently, these data prevent one from concluding that the intervention caused generalizable increases in reading skills.

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## CHAPTER 1

### *Introduction*

Reading is essential to students' learning, to their success in school, and eventually to their success in life (Salinger, 2003). Reading is a major pathway to learning about academic (e.g., math, science, language arts, etc.) and vocational areas (Adams, 1990; Snow, Burns, & Griffin, 1998). Ultimately, reading is necessary for the successful completion of school and lifelong learning (National Research Panel [NRP], 2000).

Reading is a skill that can be obtained and developed throughout life (Daly, Chafouleas, & Skinner, 2005). However, many poor readers develop negative attitudes toward reading and may avoid opportunities where reading is required (Daly, Chafouleas, & Skinner, 2005; Rasinki & Padak, 2000). Struggling readers are not confident and believe they cannot succeed (i.e., low self-efficacy). Thus, they become disengaged (Butkowsky & Willows, 1980; Schunk, 2003).

While reading is important, staggering numbers of students have difficulty with reading (National Institute of Child Health and Human Development [NICHD], 2000). According to the results of the National Assessment Educational Progress (NAEP) report card (National Center for Educational Statistics [NCES], 2005), 36% of children are reading below the basic reading levels. This level of performance indicates that students are unable to read and comprehend grade-level material. Unfortunately, the majority of students in the United States that are identified as having a learning disability are based on deficits in reading (Lyon, 1998; NICHD, 2005).

## *Reading Skills Development*

Comprehension is the reason for reading (Salinger, 2003). Comprehension is the ability to gather meaning from print and understand text (NRP, 2000). Several pre-reading skills are needed in order to comprehend while reading. These skills include the development of phonemic awareness, reading fluency, comprehension fluency, and vocabulary. Failure to develop these skills often leads to comprehension problems.

*Phonemic Awareness.* Phonemic awareness is the initial skill developed when learning to read. Phonemic awareness is the ability to manipulate and understand the individual sounds in spoken words (Casey & Howe, 2002; Yopp, 1992). Phonemic awareness also includes the following skills: blending, segmenting, isolating sounds, grouping words with similar and dissimilar sounds, and detecting and manipulating sounds within words (Kaminiski & Good, 1996; NRP, 2000). Research has shown that children who lack phonemic awareness skills have difficulty learning to read and spell (Share & Stanovich, 1995). Children must understand that words are made up of speech sounds or phonemes, which may be a difficult task for some children (NRP, 2000). The development of phonemic awareness skills can improve children's word reading and reading comprehension (Ball & Blachman, 1991; Bradley & Bryant, 1985; O'Connor, Jenkins, Leicester, & Slocum, 1993).

Phonemic awareness assessment is used primarily to identify students who appear to be at-risk for difficulty in acquiring beginning reading skills (Kaminiski & Good, 1996). There are several tests available to assess phonemic awareness skills; however, the Dynamic Indicators of Basic Early Literacy Skills (Dibels) will be discussed since it

is an extension of curriculum-based measurements (Skinner, Neddenreip, Bradley-Klug, & Ziemann, 2002). There are three subtests available that provide a general idea of a student's abilities in the area of phonemic awareness. The first subtest is the Initial Sounds Fluency (ISF), which assesses a child's ability to recognize and produce the initial sound in an orally presented word (Kaminiski & Good, 1996; Laimon, 1994). The second subtest is Phoneme Segmenting Fluency (PSF), which assesses a student's ability to segment three and four phonemes words into their individual phonemes fluently. Performance on the PSF subtest has been found to be a good predictor of future academic achievement in reading (Kaminiski & Good, 1996). Finally, the Nonsense Word Fluency (NWF) subtest measures a student's ability to blend letters into words (Kaminiski & Good, 1996).

*Aloud Reading Fluency.* Reading fluency is the ability to read text aloud, both accurately and quickly. Reading fluency is the bridge between word recognition and comprehension. Marston (1989) and Fuchs, Fuchs, and Maxwell (1988) found that oral reading fluency was a strong indicator of comprehension. Fluent readers are more likely to comprehend text (Hintze, Callahan, Matthews, Williams, & Tobin, 2002; Kranzler, Brownell, & Miller, 1998; Marston, 1989; Shinn et al., 1992). In addition, Espin and Foegen (1996) found that oral reading fluency was a strong predictor of classroom-based tasks of comprehension. Fluent readers are likely to read words quickly and sentences smoothly; whereas non-fluent readers spend a lot of time sounding out words and re-reading sentences to comprehend. Thus, fluent readers have more cognitive capacity available to process text (Reynolds, 2000).

Curriculum-based measurement (CBM) procedures are often used to assess oral reading fluency and individual skills (Deno, Fuchs, Martson, & Shinn, 2001; Shapiro, 1996). During CBM assessment procedures, students read aloud for 1 minute from a passage within their reading text while the examiner marks errors. The errors include mispronunciations, omissions, substitutions, and skipped lines (Shapiro, 1996; Skinner et al., 2002). Researchers have shown CBM to be a sensitive, reliable, and valid measure that can be used to measure individual growth (Deno, Mirkin, & Chiang, 1982; Fuchs & Deno, 1992; Fuchs & Fuchs, 1992; Fuchs, Fuchs, & Maxwell, 1998; Madalaine & Wheldall, 1999; Martson, 1989; Shinn, Good, Knutson, Tilly, & Collins, 1992). Two rate measures are calculated when using CBM: words read correctly per minute (WCPM) and errors per minute (Deno & Mirkin, 1977; Shapiro, 1996). Words correct per minute serves as the primary measure for making the decision such as placement in the curricula.

Several studies suggest that WCPM is a useful measure of general reading proficiency for students reading in grade levels two to four (Hosp & Fuchs, 2005). However, as students' reading skills develop beyond grade four, CBM may suffer from three limitations. First, CBM data show less growth in WCPM as students' reading skills improve (Hintze & Shapiro, 1997). Second, researchers have shown that the relationship between CBM measures and reading comprehension declines as students' reading skills progress (e.g., Jenkins & Jewell, 1993 showed that at grades 5<sup>th</sup> and 6<sup>th</sup>, the correlation decreased to .63 to .73). Finally, WCPM may lack both face and educational validity for older readers (Skinner, 1998; Fuchs & Fuchs, 1992; Potter & Wamre, 1990; Chall, 1983). The lack of educational validity suggests that educators do not believe that oral reading



fluency predicts comprehension (Fuchs & Fuchs, 1992).

*Vocabulary Development.* Research has shown that there is a strong relationship between vocabulary development and comprehension (Anderson & Freebody, 1983; Carver, 1999; Davis, 1994; NRP, 2000). Knowing word meanings (e.g., vocabulary) enables children to understand texts in written or oral form (Anderson & Freebody, 1981; Stahl, 2003; Whipple, 1925). Hargis (1997) reported that if the percentage of unknown words in a passage exceeds 4%, helpful context is lost and comprehension diminishes. Consequently, the larger the reader's vocabulary, the easier it is to make sense of the text. Laufer (1992) reported that if a reader's vocabulary size enables them to recognize more than 95% of the words in a text, then they are capable of comprehending a reasonable amount of the text.

*Comprehension.* Comprehension is essential to learning (Daly et al., 2005; NRP, 2000). It is an active process that requires interaction between the reader and the text (Alexander, Graham, & Harris, 1998; NRP, 2000; Snow, Corno, & Jackson, 1996). To comprehend, the reader must acquire meaning from text (Sindelar & Stoddard, 1991). Comprehension is also established when the reader relates the text to his or her own knowledge and experiences (Daly et al., 2005).

*Comprehension Fluency.* Comprehension fluency is a measure of how much information a student comprehends per minute. Reading comprehension rates provide a more direct measure of reading comprehension than words correct per minute. To calculate reading comprehension rates (RCR), one would divide the percent of questions correct by reading time in seconds and multiple by 60. Converting oral reading accuracy

to a rate measure enhances sensitivity of oral reading measures (Shinn, 1995; Skinner, 1998; Skinner et al., 2002).

To illustrate, the scores and reading times for two students were taken. The first student read a 400-word passage in 8 minutes and answered 90% of the comprehension questions correctly; the reading comprehension rate would equal 11.3%. Likewise, the second student read the passage in 4 minutes and answered 90% of the comprehension questions correctly; the reading comprehension rate would equal 22.5%. This means that for each minute spent reading, the students understood 11.3% and 22.5% of the passages, respectively. This suggests that the second student has stronger reading skills. Given the same amount of time, the second student would comprehend more material than the first.

There is very little research measuring comprehension fluency. Previous researchers have evaluated the effects of reading interventions using RCR. However, in each of these studies researchers examined interventions that have traditionally been used to enhance oral reading fluency, not comprehension.

Freeland, Skinner, Jackson, McDaniel, and Smith (2000) used a multi-element design to evaluate the effects of a repeated reading intervention on silent reading comprehension rates in three secondary students with learning disabilities. This study showed that the measure was sensitive and stable enough to detect differences across the two conditions.

Neddenriep (2003) used a repeated measure design to evaluate a class-wide peer tutoring intervention by having sixth-grade students read passages aloud and measured a) WCPM; b) comprehension levels; and c) rates of oral reading comprehension.

Correlational data showed that comprehension rates correlated more strongly with WCPM than comprehension levels. The correlation between WCPM and comprehension levels was .57, while the correlation between WCPM and comprehension rates was .87.

Williams and Skinner (2004) used the TELLS procedure with a fifth grade student from a regular education class. A multiple baseline design was used to examine the effects of a previewing strategy on reading comprehension levels and rates. Results showed increases in reading comprehension levels after the intervention was implemented. However, rate of comprehension data showed a more gradual but larger increase in reading comprehension scores.

Neddenriep (in press) evaluated four measures of reading comprehension (i.e. aloud-RCL, aloud-RCR, silent-RCL, and silent-RCR) and WCPM using fourth, fifth, and tenth grade students. Results showed that aloud-RCR was significantly correlated with Woodcock Johnson Test of Achievement, 3<sup>rd</sup> edition for 4<sup>th</sup> ( $r = .90$ ) and 10<sup>th</sup> ( $r = .65$ ) grade students. These data suggest that aloud-RCR may be a direct, sensitive, and valid measure of functional reading skills.

Hale, Skinner, Winn, Oliver, and Allin (in press) used an alternating treatment design to evaluate the effects of listening-while-reading (LWR) and listening interventions on comprehension levels and rates in four middle school students with emotional disorders. The interventions did not produce comprehension levels better than the silent reading control condition, but LWR and listening interventions resulted in higher rates of comprehension than the silent reading control condition across all four students. However, listening appeared to improve reading comprehension rates in only

two students.

### *Schema Theory and Comprehension*

Schema is an important term in Piaget's learning theory. Schema consists of the general knowledge about objects and events acquired from past experiences (Hosseini, 2002). Using Piaget's theory, assimilation and accommodation must occur in order for learning to take place. Assimilation is the process of bringing new information into a scheme that already exists. Accommodation is the process of modifying old schemata or creating new ones to fit already existing information (Littlefield-Cook & Cook, 2005).

Schema Theory provides direction and focus for helping children enhance their comprehension (Keene & Zimmerman, 1997). Comprehension occurs when a reader is able to use clues supplied by the author to activate appropriate background knowledge and experiences in order to interpret written text (Bransford, 1985; McGinley and Denner, 1987; Norris & Phillips, 1987). Schema theory assumes that readers who have difficulty understanding text may not be activating prior knowledge as they read or do not have existing schema relevant to the new information (Anderson & Pearson, 1984; Rumelhart, 1980).

*Prior Knowledge.* Comprehension is affected by many factors, particularly prior knowledge (Anderson, Reynolds, Schallert, & Goetz, 1977; Usen, 1993). Prior knowledge is background information or experiences a reader may have about a particular subject. Singer and Donlan (1983) reported that activating prior knowledge related to content enables readers to develop initial purpose for reading and, in turns, helps the reader connect what they read to something they already know. Previous

researchers have indicated that what is known by an individual prior to reading affects the amount and type of information attended to and recalled (Anderson & Acker, 1984; Baldwin, Peleg-Bruckner, & McClintock, 1985; Stevens, 1982). If prior knowledge can be activated before reading and used during reading, comprehension may be enhanced (Baldwin, Peleg-Bruckner & McClintock, 1985; Pearson, Hansen, & Gordon, 1979).

### *Pre-reading Activities*

Pre-reading activities may be implemented as a mean of activating prior knowledge related to the material in order to enhance comprehension (Hansen & Pearson, 1982; Idol, 1987; Kueker, 1990; Usen, 1993). They can be used to enhance the speed and accuracy of student reading, thereby reducing the time and effort required to read (Rousseau & Yung Tam, 1991). Pre-reading activities may also clarify the purpose for reading. Many pre-reading activities are influenced by Ausebel's work (e.g., 1978, 1963), which centers on providing readers with an overview of a passage prior to reading. Three types of pre-reading activities will be discussed: graphic organizers, anticipation guides, and story impressions.

*Graphic Organizers.* There are many types of organizers (Clements-Davis & Ley, 1991). Graphic organizers illustrate important concepts so that children have a map of the text to be read. This provides a framework for previewing and reading a passage (Moore, 1989). The purpose of graphic organizers is to pre-teach difficult vocabulary and show the interrelationship of ideas (Moore, 1989; Irwin, 1991). They present a schematic design for major concepts and identify terms, which convey information to students before they read; therefore enhancing a student's comprehension (Searls, 1983;

Moore, 1989).

*Anticipation Guide.* Anticipation guides consist of a series of statements in a forced response format (Moore, 1989). Students answer all questions independently and then read to establish the correctness of their prior belief (Gray, 1990). An anticipation guide is a comprehension strategy designed to encourage active involvement by students in their own learning. It provides guidance in the form of purpose and setting behaviors as students interact with text (Moore, 1989; Tierney, Readance, & Dishner, 1990). Anticipation guides can be used with students of all ages (Moore, 1989). They can be administered orally or in written format. Readers rely on prediction when using anticipation guides. Anticipation guides enhance comprehension by allowing students to focus on concepts in the text (Moore, 1989).

*Story Impressions.* A story impression is a pre-reading activity for all ages in which a group of students uses key words or phrases from the actual story to write summary paragraphs of their impressions of the story. Afterwards, the students read the actual story and write another summary paragraph. The students will then compare and contrast their impressions (Denner & McGinley, 1990). Story impressions use prediction and prewriting to enhance comprehension of a story (Denner & McGinley, 1990). Story impressions assist readers by helping them use key words in making connections of the text prior to reading (McGinley & Denner, 1987). Tierney & Pearson (1983) reported “good reading and good writing are similar because the processes used are the same.” Denner and McGinley also reported “prewriting as a pre-reading activity may be beneficial because of its potential to affect the processes used by the readers as they make

use of their activated story-related knowledge.” In a study by Denner, McGinley, & Brown (1989), 60 second grade students were randomly assigned to story impressions preview (n=30) and no preview (n=30) treatment conditions. The results showed that the students who engaged in the preview activity correctly answered significantly more of the comprehension questions than students who read only the story.

*TELLS.* TELLs is an advanced organizer used to orient students to stories prior to reading. This strategy encourages readers to activate existing schema prior to story reading by guiding them to decide what a story is about before reading it (Idol-Maestas, 1985). In other words, TELLs is useful because it activates prior knowledge, improves making inferences, and activates existing schemata. The student activates prior knowledge by discussing the title and setting of each story read. Another purpose of the TELLs procedure is to provide a means of pre-teaching vocabulary. The student must identify and discuss hard words. Finally, the TELLs procedure is a way to bridge the gap between known and unknown; therefore enhancing a student’s comprehension. When completing the worksheet, a student finds synonyms to unknown words. This procedure increases reading fluency, which ultimately leads to better comprehension. Only one applied research study has been conducted using the TELLs procedure. The TELLs procedure was also used during a consultation case.

Idol-Maestas (1985) used this technique with four elementary and two secondary students from special education classes. A multiple baseline design across subjects (ABA) was used in this research. Results showed that after training, reading comprehension improved for both the elementary and secondary students as measured by

standardized tests and curriculum based assessment. However, comprehension performances did not maintain well after the TELLs procedure was removed.

### *Summary and Purpose*

TELLs is a previewing procedure designed to improve comprehension (Idol-Maestas, 1985). However, researchers have not used repeated measures to determine if this procedure can enhance reading comprehension rates. In addition, previous researchers have evaluated the effects of reading interventions using RCR (Freeland et al., 2000; Neddenriep, 2003; Neddenriep, in press; and Hale et al., in press). However, in each of these studies researchers examined interventions that have traditionally been used to enhance oral reading fluency, not comprehension.

The purpose of this study was to extend research on RCR and the TELLs procedure. Specifically, the study was conducted to determine if the TELLs procedure could be used to enhance comprehension levels and rates. Additionally, the study was designed to determine if RCR was sufficiently sensitive and reliable enough to detect improvements in reading comprehension caused by the TELLs procedure. The final purpose of this study was to determine if generalization occurred after the removal of the TELLs procedure.



## CHAPTER 2

### *Methodology*

#### *Participants*

Participants in this study included four students from a school in the Southeastern United States. The school serves approximately 880 students from grades 9-12 and is located in a rural area. Approximately 52.6% of the students receive free or reduced lunch. The ethnic make up of the school is predominately Caucasian, with African American students making up 2.2% of the school population.

Participants for this study were recruited in the following manner. The primary experimenter met with the principal and described the general goals and procedures associated with the current study. The principal consented to the experiment and suggested two teachers who might be interested in participating in it. Following a meeting with the primary experimenter, the two freshman English teachers agreed to participate.

After the English teachers agreed to participate, formal permission to conduct this study was solicited from the school district and the University where the primary experimenter was enrolled. Institutional permission to conduct this study was secured from both the district and the University.

Afterwards, the students were selected by the freshman English teachers and the primary experimenter to participate in the study. The teachers referred the students because of their difficulties in reading. One male and three females from the ninth grade were selected to participate based on the criteria and teacher recommendation. The four

participants were Caucasian and came from low-income families; they ranged from 14 to 15 years of age. However, one female student was unable to participate in the study due to excessive absences. Criteria for participating in this study included the following: each student should be on at least a 4th grade reading level and no more than two grade levels below the 9<sup>th</sup> grade in reading comprehension based on words correct per minute (WCPM) using Shapiro's (1996) book. More detail about each student is provided in Appendix A.

### *Setting*

For this study, all procedures took place in the school's conference room. The room was chosen because it was quiet, well lit, and spacious. In addition, this location had minimal distractions for the students.

### *Design*

A multiple-baseline-across-participants design was used to evaluate the effects of a pre-reading strategy on students' reading comprehension levels and rates and words correct per minute. A multiple baseline design was appropriate for many reasons. First, it does not require a withdrawal phase. Second, it is practical when using an intervention across three to five subjects (Richards, Taylor, Ramasamy, & Richards, 1999). Finally, frequent repeated measures allow for the immediate evaluation of treatment effects.

### *Dependent Measure*

Three dependent variables were used in this study. The first dependent variable is words correct per minute. Words correct per minute is a measure of oral reading fluency or speed of accurate aloud reading (Shapiro, 1996; Deno & Mirkin, 1977). To calculate

words correct per minute, the experimenter scored errors (e.g., omissions, mispronunciations, substitutions, skipped words and skipped lines) as the students read a passage aloud for 1 minute. After the minute, the experimenter put a bracket around the last word read. However, the timer was not stopped until the student read the entire passage. Words correct per minute is the number of words read minus errors.

The second variable is reading comprehension level. To measure comprehension, the students read 400-word passages from Spargo's (1989) Timed Readings curricula and were instructed to answer the 10 comprehension questions that followed each passage. These multiple choice questions included five factual and five inferential questions. The experimenter scored the responses to those questions and calculated each student's percent correct. The percent correct on comprehension questions served as the measure of comprehension level.

The third variable is reading comprehension rate. Reading comprehension rate measures the amount of comprehension that occurs per minute of reading (Freeland et al., 2000). To obtain the reading comprehension rate, the students read a passage orally while the experimenter recorded the time required to complete each passage. The student was then instructed to answer the 10 comprehension questions that followed each passage, which included five factual and five inferential questions (McDaniel et al., 2001). To calculate the rate measure, the experimenter multiplied the percent of comprehension questions correct by 60 seconds and divided that number by the number of seconds spent reading (Skinner et al., 2002).

Previous research has shown that reading comprehension rate is a valid measure

of reading comprehension. Neddenriep (in press) conducted a study designed to investigate the validity of reading comprehension rate. Reading comprehension rate, reading comprehension level, words correct per minute, and Broad Reading Score of the Woodcock –Johnson Tests of Achievement, 3<sup>rd</sup> edition (*WJ-III ACH*; Woodcock, McGraw, & Mather, 2001) data were collected. Correlation, step-wise regression, and group mean scores were used to analyze the sensitivity of reading comprehension when students read aloud and silently. Results indicated that aloud- reading comprehension rate was significantly correlated with WJ-III ACH subtests with correlations ranging from .65 to .90. Neddenriep (in press) concluded that reading comprehension rate is a psychometrically valid measure of functional reading skills.

#### *Independent Variable*

TELLS, a pre-reading strategy, served as the independent variable for the present study. TELLs is an acronym that stands for title, examine, look, look, setting (Idol-Maestas, 1985). A modified version of the intervention was implemented to four high school students. The experimenter guided the child through the procedures orally until he or she was able to answer the probe independently. This procedure took about 15 minutes to complete.

#### *Procedures*

*Pretest.* After the students turned in consent and assent forms, each student's reading performance was assessed using the Reading Comprehension subtest from the Wechsler Individual Achievement Test, 2<sup>nd</sup> Edition (WIAT-II). The Reading Comprehension subtest standard score represents the student's ability to understand what

has been read. This score can also represent accuracy when Reading Rate is calculated. The WIAT-II Reading Rate measures the examinee's average reading speed across multiple passages. The Reading Comprehension subtest total score represents comprehension accuracy (WIAT-II, 2002). This information was obtained to assess each student's reading level and determined which grade-level reading materials were selected. However, the scores on grade-level material were inflated for all students because the passages were too easy. Therefore, the experimenter placed them in a higher grade-level book in order to examine the effects of the intervention on their reading comprehension levels and rates.

*General procedures.* The experimenter scheduled sessions for 3 school days per week (Monday, Thursday, and Friday). Each session lasted between 10 and 30 minutes. During each session, students were exposed to one of the following three conditions: assessment (baseline), TELLS followed by assessment (intervention), or assessment only (generalization). During assessments, students read each passage aloud. Student read aloud for two reasons. First, reading a passage aloud ensured that students actually read the entire passage. If the student did not read the entire passage before answering the questions, then the reliability, validity, and sensitivity of the RCR measure would be compromised (McDaniel et al., 2001). Second, researchers have shown that poor readers may comprehend more information after reading orally (Collins, 1961; Duffy & Durrell, 1935; Rowell, 1976). Students were assigned to read passages from Spargo's (1989) *Timed Readings Series*, Level 8. Students read one passage per session in order, beginning with passage 1. Passages 1-50 become slightly more difficult as students

progress through each book (Spargo, 1989). The students were then instructed to answer the 10 multiple-choice questions.

*Baseline.* Baseline data were collected using scores obtained from the comprehension questions at the end of each passage from the Jamestown Publisher's *Timed Reading Series*. The students read and answered the 10 multiple-choice questions related to the story.

After escorting the participant to the testing area the experimenter started the tape recorder and read the following instructions:

*I am going to give you a reading passage. When I say begin, I want you to read the passage aloud. Read the passage aloud at your normal pace. When you have finished reading the passage aloud, I will take up the passage and give you comprehension questions to answer. I cannot answer any questions about the content of the passage. Do your best to answer each question correctly. Do you have any questions? Ok, here is the passage. The title of the passage is \_\_\_\_\_. You can now begin.*

When the student began reading, the experimenter started the stopwatch. The experimenter had a copy of the passage being read. When the student finished reading the passage aloud, the experimenter stopped the stopwatch, recorded the number of seconds required to read the passage and words correct per minute, collected the reading passage, gave the student the comprehension questions, and read the following instructions:

*Please answer the questions I have given you by placing a check mark next to the answer you think is right. You may not know the answers to all questions but try your best on each one. You may begin. Please tell me when you have finished.*

Once the participant indicated that he or she was finished the experimenter collected the passage. The same procedures were then followed for each passage read.

*Intervention (TELLS).* After escorting the participant to the testing area the experimenter started the tape recorder. Afterwards, the experimenter presented the student with a copy of the modified TELLs worksheet (See Appendix B). Each step of the TELLs worksheet was completed orally.

The first step in the TELLs procedure is to teach students to read the title and form clues as to what the story is about. The experimenter encouraged the students to form a hypothesis about the content of the passages by reading the title.

The second step is to examine. The students were taught to skim the passages for clues. This step should cause students to develop new hypotheses about the nature of the story. Clues include the structure and layout of the text.

In step three, the students were instructed to scan the passages for important words. Important words may be used frequently in the passage.

During the fourth step, students were taught to look for hard words. Hard words can be a variety of different kinds of words. These can be new or unfamiliar words. It can also include words that students do not readily recognize. Sometimes a student may

not recognize or know the meaning of a printed word, but may recognize the word once he or she hears it pronounced or uses his or her decoding skills to pronounce the word. It is possible that a student may know a printed word but is not familiar with its meaning.

During the final step, the students are taught to skim the passages for clues about the setting. Students should look for clues like places, area, description, dates, or reference to time periods. Students are instructed to focus on the beginning of the story since most settings are described early in the text.

Afterwards, the following instructions were given:

*When I say begin, I want you to read the passage aloud. Read the passage aloud at your normal pace. When you have finished reading the passage aloud, I will take up the passage and give you comprehension questions to answer. I cannot answer any questions about the content of the passage. Do your best to answer each question correctly. Do you have any questions? Ok, here is the passage. The title of the passage is \_\_\_\_\_ . You can now begin.*

When the student began reading, the experimenter started the stopwatch. The experimenter had a copy of the passage being read. When the student finished reading the passage the experimenter stopped the stop watch, recorded the number of seconds required to read the passage and words correct per minute, collected the reading passage, gave the student the comprehension questions, and read the following instructions:

*Please answer the questions I have given you by placing a check mark*



*next to the answer you think is right. You may not know the answers to all questions but try your best on each one. You may begin. Please tell me when you have finished.*

Once the participant indicated that he or she was finished the experimenter collected the passage. The same procedures were then followed for each passage read.

*Generalization.* To test for generalization, students were required to read a 400-word passage without the TELLS worksheet, and they were asked to answer the comprehension questions that followed each passage. This procedure was conducted every third session during the intervention phase. The passages were taken from the *Timed Reading in Literature* series (Spargo, 1989).

The following instructions were read:

*I am going to give you a reading passage. When I say begin, I want you to read the passage aloud. Read the passage aloud at your normal pace. When you have finished reading the passage aloud, I will take up the passage and give you comprehension questions to answer. I cannot answer any questions about the content of the passage. Do your best to answer each question correctly. Do you have any questions? Ok, here is the passage. The title of the passage is \_\_\_\_\_. You can now begin.*

When the student began reading, the experimenter started the stopwatch. The experimenter had a copy of the passage being read. When the student finished

reading the passage aloud, the experimenter stopped the stopwatch, recorded the number of seconds required to read the passage and words correct per minute, collected the reading passage, gave the student the comprehension questions, and read the following instructions:

*Please answer the questions I have given you by placing a check mark next to the answer you think is right. You may not know the answers to all questions but try your best on each one. You may begin. Please tell me when you have finished.*

Once the participant indicated that he or she was finished the experimenter collected the passage. The same procedures were then followed for each passage read.

#### *Treatment Integrity*

All sessions were audio-taped. A second independent observer listened to 20% of the sessions and recorded procedural integrity. A checklist (See Appendix C) was presented with the following steps (a) completed the steps of the modified TELLS worksheet orally, (b) instructed student to read 400-word passages aloud, (c) recorded student's reading time of passage, (d) instructed student to complete the 10 multiple-choice questions, (e) recorded student's WCPM score (f) scored the comprehension questions, (g) recorded the comprehension levels, and (h) calculated rate of reading comprehension. Procedural integrity was 100% for all administration.

In addition, interscorer agreement was checked. The second observer rescored the 10 multiple-choice comprehension questions for accuracy. Also, the second observer

recorded the time in seconds it took each student to read the passage and words correct per minute. Pearson's Product Moment Coefficient of Correlations were calculated to determine the strength of the relationship between the experimenter's recorded scores and the second observer's score on the same variables. Correlations between dependent variables ranged from .97 to 1.00 (See Table 1)<sup>1</sup>.

### *Data Analysis*

Reading comprehension rates, percent correct, and words correct per minute data were graphed. Means were computed by adding the percentages within each condition and dividing by the number within that condition. Computations were conducted for each student.

Effect sizes were calculated using a formula recommended by Busk and Serlin (1992). The difference between condition means was divided by the baseline standard deviation. Cohen's (1988) guidelines were used to interpret effect sizes. He suggested that effect sizes of .20 be considered small, .50 moderate, and .80 large.

The initial impact of the intervention was determined by examining the immediacy of change, which is the change between adjacent conditions. This number was determined by calculating the difference between the last baseline data point and the first intervention data point. Following guidelines suggested by Tawney and Gast (1984), larger positive differences indicate that immediate change is strong.

The teachers and students completed treatment acceptability scales after data collection was completed. Scales were completed a week after the completion of the

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<sup>1</sup> All Tables and Figures in Appendix

study. The teachers and students were instructed to read and respond to each item. The teacher acceptability form (See Appendix D) consisted of 15 questions with Likert scale responses ranging from 1 (strongly disagree) to 6 (strongly agree). A 6 indicates a highly acceptable rating and a 1 indicates a very unacceptable rating.

The student acceptability form (See Appendix E) consisted of 10 questions with Likert scale responses. The responses ranged from 1 (strongly disagree) to 4 (strongly agree). A 4 indicates a highly acceptable rating and a 1 indicates a very unacceptable rating. The students were encouraged to answer each question honestly because there was no right or wrong answer.

## CHAPTER 3

### *Results*

This chapter provides time-series graphs and effect size analysis for three dependent variables. The reading comprehension level and rate data will be presented first followed by the data for words correct per minute. Figures 1, 2, and 3 depict the time-series graphs displaying all the data for each student. Tables 2, 3, and 4 present the phase means, standard deviation, and effect sizes for all students across dependent variables. Table 5 contains the immediacy of change data for all three students.

#### *Reading Comprehension Level*

*Visual analysis across students.* Figure 1 provides the time-series data for reading comprehension level during baseline and intervention phases across all three participants. Visual analysis of Figure 1 shows an immediate increase in percent correct across all three students after the intervention was applied. Furthermore, when the intervention was applied to each student, students still in baseline did not show a concomitant increase in percent correct. These data suggest that the TELLS procedure as opposed to some other variable(s) (i.e., threats to internal validity), caused the increases in reading comprehension level.

*Individual analysis: Student 1.* Visual analysis of Figure 1 shows fairly stable percent correct responding during baseline (range of 50-60% correct). Immediately following the application of the intervention, percent correct increased to 70% and never fell below that level throughout the intervention phase (range 70-90%). Figure 1 shows no overlapping data points across phases and evidence of an increasing trend during the

intervention phase. Table 2 shows Student 1 averaged 56.67% comprehension questions correct during baseline and 78.75% during the intervention phase. These data yielded an effect size of 3.82, which is large (Cohen, 1988).

Both visual and statistical analyses suggest that the intervention may have enhanced Student 1's percent correct. However, the student's percent correct on unpreviewed passages was inconsistent (range 30% and 90%). These data prevent one from concluding that the intervention caused generalizable increases in reading comprehension skills.

*Individual analysis: Student 2.* Visual analysis of Figure 1 shows a decreasing trend in percent correct during baseline (range of 90-40% correct). The large range can be attributed to an extremely high score on the first passage. Immediately following the application of the intervention, percent correct increased to 70%. The intervention phase data show fairly stable accuracy during the intervention phase with accuracy ranging between 70- 80% for all passages with one exception, the 9th passage where she scored 60% correct. Table 2 shows Student 2 averaged 60.00% comprehension questions correct during baseline and 72.86% during the intervention phase. These data yielded an effect size of 0.60, which is moderate (Cohen, 1988).

Both visual and statistical analyses suggest that the intervention may have caused a moderate increase in Student 2's percent correct. However, the percent correct on unpreviewed passages ranged from 50-70% (mean = 60%) and suggest no improvement over baseline. This suggests that the intervention did not enhance comprehension levels on passages that were not first previewed.

*Individual analysis: Student 3.* Visual analysis of Figure 1 shows unstable percent correct responding during baseline (range of 40-70% correct). Additionally, there is some evidence of a cyclic trend. Figure 1 shows an immediate increase in percent correct after the intervention was applied. However, there is no clear trend during the intervention phase where percent correct ranged from 60-80%. Table 2 shows Student 3 averaged 53.00% comprehension questions correct during baseline and 70.00% during the intervention phase. These data yielded an effect size of 1.50, which is large (Cohen, 1988).

Although effect size analysis suggests that the intervention may have caused a large increase in comprehension levels, visual analysis of Figure 1 shows cyclical baseline data. This hinders our ability to conclude that the intervention caused increases in comprehension accuracy for Student 3. Generalization probes (mean = 70%, range = 60-80%) show little differences between baseline performance (range = 40-70%), which prevents us from concluding that the intervention caused generalizable increases in reading comprehension on passages that were not previewed.

*Summary.* Each student's comprehension level scores showed an immediate improvement from baseline to intervention phase. Across all students, intervention averages were higher than baseline averages. Although effect size analysis suggests either moderate or large increases in accuracy, visual analysis of Figure 1 suggests caution when drawing such conclusions as highly variable or cyclical data may have impacted performance. Finally, performance on generalization passages suggests that the intervention did not improve students' reading on un-previewed passages. Thus, we

found no evidence for improvement in generalized comprehension skills.

### *Reading Comprehension Rates*

*Visual analysis across students.* Figure 2 provides the time-series data for reading comprehension rates during baseline and intervention phase across all three participants. Visual analysis of Figure 2 shows an immediate increase in comprehension rates across all three students after the intervention was applied. Furthermore, when the intervention was applied to each student, students still in baseline did not show a concomitant increase in comprehension rates. These data suggest that the TELLS procedure as opposed to some other variable(s) (i.e., threats to internal validity), caused the increases in reading comprehension rates.

*Individual analysis: Student 1.* Visual analysis of Figure 2 shows stable comprehension rates during baseline (range of 10.17 -13.95 for percent of passage comprehended per minute). Immediately following the application of the intervention, comprehension rates increased to 18.83 and never fell below that level until the end of the intervention phase (range 18.75-24.24 PPC/M). Figure 2 shows no overlapping data points across phases and evidence of an increasing trend during the intervention phase. Table 3 shows Student 1 to have an average of 12.16 reading comprehension rate scored during baseline and 21.10 during the intervention phase. These data yielded an effect size of 4.71, which is large (Cohen, 1988).

Both visual and statistical analyses suggest that the intervention may have enhanced Student 1's reading comprehension rates. However, the generalization across reading material showed inconsistent performance on un-previewed passages (range 5.66



and 22.13 PPC/M). These data prevent one from concluding that the intervention caused generalizable increases in reading comprehension rates.

*Individual analysis: Student 2.* Visual analysis of Figure 2 shows a decreasing trend in comprehension rates during baseline (range of 10.53-21.34 PPC/M). Again, the large range was caused by an extremely high score on the first passage. Immediately following the application of the intervention, comprehension rates increased to 16.73. The intervention phase data show fairly stable comprehension rates, with rates ranging between 16.28 and 21.15 for all passages with one exception. In the 9th passage she had a reading comprehension rate of 13.89. The lower rate was due to her reading comprehension score for that passage (60%). Table 3 shows Student 2 to have an average of 13.95 for reading comprehension rate during baseline and 17.85 during the intervention phase. These data yielded an effect size of 0.78, which is moderate (Cohen, 1988).

Both visual and statistical analyses suggest that the intervention may have caused a moderate increase in Student 2's comprehension rate. However, the generalization across reading material showed ranges from 10.27-14.29 PPC/M (mean = 12.28) and suggest no improvement over baseline. This suggests that the intervention did not enhance reading comprehension rates on passages that were not first previewed.

*Individual analysis: Student 3.* Visual analysis of Figure 2 shows unstable comprehension rates during baseline (range of 7.50- 18.03 PPC/M). Additionally, there is some evidence of a cyclic trend. Figure 2 shows an immediate increase in comprehension rates after the intervention was applied. However, there is no clear trend during the

intervention phase where comprehension rates ranged from 11.66-17.78. Table 3 shows Student 3 to have an average of 10.47 for comprehension rate scored during baseline and 14.82 during the intervention phase. These data yielded an effect size of 1.23, which is large (Cohen, 1988).

Although effect size analysis suggests that the intervention may have caused a large increase in comprehension rates, visual analysis of Figure 2 shows cyclical baseline data. This hinders our ability to conclude that the intervention caused increases in comprehension rates for Student 3. Generalization probes (mean = 12.33, range = 9.78-12.97) show little differences between baseline performance (range = 11.66-17.78 PPC/M), which prevents us from concluding that the intervention caused generalizable increases in reading comprehensions rates.

*Summary.* Each student's comprehension rate scores showed an immediate improvement from baseline to intervention phase. Across all students, intervention averages were higher than baseline averages. Although effect size analysis suggests either moderate or large increases in accuracy, visual analysis of Figure 2 suggests caution when drawing such conclusions as highly variable or cyclical data may have impacted performance. Finally, performance on generalization passages does not allow one to conclude that the intervention improved students' reading comprehension rates.

#### *Words Correct Per Minute*

*Visual analysis across students.* Figure 3 provides the time-series data for words correct per minute during baseline and intervention phase across all three participants. Visual analysis of Figure 3 shows an immediate increase in words correct per minute

across all three students after the intervention was applied. Furthermore, when the intervention was applied to each student, students still in baseline did not show a concomitant increase in percent correct. These data suggest that the TELLS procedure as opposed to some other variable (s) (i.e., threats to internal validity), caused the increases in words correct per minute.

*Individual analysis: Student 1.* Visual analysis of Figure 3 shows the number of words correct during baseline (range of 60-105). Immediately following the application of the intervention, the number of words correct increased to 98 and never fell below that level throughout the intervention phase (range 98-146). Figure 3 shows little overlapping data points across phases and evidence of an increasing trend during the intervention phase. Table 4 shows Student 1 averaged 80.33 words correct per minute during baseline and 117.38 during the intervention phase. These data yielded an effect size of 1.62, which is large (Cohen, 1988).

Both visual and statistical analyses suggest that the intervention may have enhanced Student 1's words correct per minute. The generalization across reading material showed consistent performance on un-previewed passages (range 83 and 84). These data allow one to conclude that the intervention may have caused generalizable increases in words correct per minute.

*Individual analysis: Student 2.* Visual analysis of Figure 3 shows a decreasing trend in words correct per minute during baseline (range of 68-102). The large range was caused by an extremely high score on the first passage. Immediately following the application of the intervention, words correct per minute increased to 97. The

intervention phase data show fairly stable accuracy during the intervention phase with accuracy ranging between 89 and 118 for all passages. Table 4 shows Student 2 averaged 82.25 words correct per minute during baseline and 102.86 during the intervention phase. These data yielded an effect size of 1.44, which is large (Cohen, 1988).

Both visual and statistical analyses suggest that the intervention may have caused a large increase in Student 2's words correct per minute. However, the generalization across reading material showed ranges from 71-84 (mean = 77.5) and suggests no improvement over baseline. This suggests that the intervention did not enhance words correct per minute on passages that were not first previewed.

*Individual analysis: Student 3.* Visual analysis of Figure 3 shows unstable words correct per minute during baseline (range of 50-109). Additionally, there is some evidence of a cyclic trend. Figure 3 shows an immediate increase in words correct per minute after the intervention was applied. There is a stable trend during the intervention phase where words correct per minute ranged from 70-101. Table 4 shows Student 3 averaged 78.00 words correct per minute during baseline and 91.63 during the intervention phase. These data yielded an effect size of 0.60, which is moderate (Cohen, 1988).

Although effect size analysis suggests that the intervention may have caused a large increase in words correct per minute, visual analysis of Figure 1 shows cyclical baseline data. This hinders our ability to conclude that the intervention caused increases in words correct per minute for Student 3. Generalization probes (mean = 61.00, range = 59-63) show little differences between baseline performance (range = 50-109), which

prevents us from concluding that the intervention caused generalizable increases in words correct per minute.

*Summary.* Each student's words correct per minute showed immediate improvement from baseline phase to intervention phase. Across all students, intervention averages were higher than baseline averages. Although effect size analysis suggests either moderate or large increases in words correct per minute, visual analysis of Figure 3 suggests caution when drawing such conclusions as highly variable or cyclical data may have impacted performance. Finally, performance on generalization passages does not allow one to conclude that the intervention improved students' words correct per minute.

#### *Teacher and Student Acceptability*

The teachers' responses to the acceptability form are in Table 6. The teachers' average score across all of the items was 4.2, with a standard deviation of .86. All items received a positive response, with the exception of the statement, "Soon after using the intervention, the teacher would notice a positive change in the academic problem." These responses suggest a moderate level of teacher acceptability.

The students' responses to the acceptability form are in Table 7. The students' average score across all items and all students was 4.3, with a standard deviation of 1.02. All items received a positive response, with the exception of the statement, "The TELLS procedure was not time-consuming." These responses suggest a moderate level of student acceptability.

## CHAPTER 4

### *Discussion*

Previous researchers found that the TELLs procedure may have enhanced reading comprehension levels (e.g., Idol-Maestas, 1985). Using an empirical case study, Williams and Skinner (2004) found evidence that the TELLs procedure may have also enhanced reading comprehension rates in a fifth-grade student with a learning disability in reading. The current study was designed to extend this research by assessing the effects of the TELLs procedure on reading comprehension levels, reading comprehension rates, and words correct per minute on previewed and un-previewed passages in three ninth-grade students with reading skills deficits.

The current results provide some support for previous research, which suggest that the TELLs procedure can increase comprehension levels on previewed passages. However, the current study shows that these increases in comprehension were not consistent across students or within students. Additionally, only one student showed an increasing trend in comprehension levels during the intervention phases. An increasing trend would suggest some generalization in reading skills from one treatment to the next. However, data show that the TELLs procedure did not increase reading comprehension on un-previewed passages. Thus, while these results indicate that the TELLs procedure may enhance comprehension on previewed passages, the current results provide little evidence to suggest that the procedure enhanced generalizable reading skills that can improve comprehension on un-previewed passages.

In their empirical case study, Williams and Skinner (2004) found small but stable increases in reading comprehension rates as the TELLS procedure was repeatedly applied over the intervention phase. These data suggested that the intervention was causing generalizable increases in reading skills that were maintained and carried over to the subsequent passages. While the current study suggests that the TELLS procedure may have increased comprehension rates, the failure to find stable increasing trends across students and the failure to find clear increases in performance again suggest that the procedures did not enhance generalizable reading skills.

Although the TELLS procedure is designed to enhance comprehension, the current results showed that the procedure's impact on oral reading fluency was similar to its effect on comprehension rates and levels. Specifically, the current results suggest that while the TELLS procedure may improve oral reading fluency (i.e., words read correct per minute) on previewed passages, it had little impact on oral reading fluency on un-previewed passages.

Across all three dependent variables, the current results suggest that the TELLS procedure may enhance reading performance on un-previewed passages. However, both the failure to find steady improvement in reading performance during the intervention phases and the failure to find consistent improvement on un-previewed passages indicate that the TELLS procedure did not enhance generalizable reading skills. These results have both theoretical and applied implications.

*Theoretical Implications, Limitations, and Future Research.* There are several theories that may explain why the TELLS procedure enhanced reading comprehension on

previewed passages but not on un-previewed passages. First, various researchers have suggested that previewing strategies may enhance comprehension because these procedures activate prior knowledge, which in turn allows for more effective and efficient information processing (Hansen & Pearson, 1982; Idol, 1987; Kueker, 1990; Usen, 1993). Although this hypothetical causal process cannot be directly observed, the current results would be predicted by this theory. Specifically, the TELLS procedure would have activated prior knowledge related to the specific previewed passages, which may have enhanced comprehension on those passages. However, on un-previewed passages no improvement would be expected because prior knowledge was not activated.

A second causal mechanism that may explain the current results is vocabulary development. Vocabulary development and reading comprehension are related (Anderson & Freebody, 1981; Carver, 1999; Davis, 1994; NRP, 2000). Allowing students to obtain definitions of unknown words may have enhanced passage specific vocabulary, which may have accounted for the increase in comprehension on previewed passages. However, unless those words were used across passages, we would expect this procedure would have little impact on un-previewed passages.

A third causal mechanism is related to oral reading fluency. Previous researchers have shown that there is a strong relationship between oral reading fluency and reading comprehension (Deno, Mirkin, & Chiang, 1982; Fuchs & Deno, 1992; Fuchs & Fuchs, 1992; Fuchs, Fuchs, & Maxwell, 1998; Madalaine & Wheldell, 1999; Marston, 1989; Shinn, Good, Knutson, Tilly, & Collins, 1992). Once again, cognitive mechanisms may explain this causal relationship in that rapid and accurate reading may require less effort



and allow more cognitive resources to be applied to comprehension (Reynolds, 2000). In the current study, previewing the passages during the TELLs procedure may have enhanced reading fluency, which in turn enhanced comprehension. These data are supported by exploratory analysis<sup>2</sup>, which showed positive correlations between words correct per minute and comprehension levels and rates.

Future researchers should conduct studies designed to phase out the causal mechanism(s) that may explain the current results. For example, researchers could compare the effects of comprehension on previewing procedures that a) activate prior knowledge (e.g., have the students tell the teacher what they know about cells), b) provide definitions of words (e.g., providing the definition of semi-permeable membrane), and c) train students how to pronounce words like semi-permeable but do not provide definitions, as such would increase oral reading fluency without addressing word meaning or activating prior knowledge.

*Applied Implications, Limitations, and Future Research.* In Williams and Skinner's (2004) empirical case study, an elementary school student with a learning disability in reading showed immediate increases in reading comprehension levels and rates after the intervention was applied. Additionally, the results showed that comprehension levels improved rapidly but leveled off while comprehension rates continued to improve as the TELLs procedure was re-applied. These cumulative effects on reading comprehension rates suggested that the TELLs procedure enhanced generalizable reading skills. Additionally, the steady increases in reading comprehension

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<sup>2</sup> See Tables 8-11 in Appendix

rates suggested that this measure may be a more sensitive measure of reading skills development than comprehension levels, which were impacted by ceiling effects. Unfortunately, the current results failed to confirm either of these findings.

The current results suggest that engaging in the TELLs procedure was an effective strategy for enhancing comprehension. Thus, performing the TELLs procedure prior to reading may be an effective accommodation procedure for students with reading skill deficits. However, the current study provided little evidence that the TELLs procedure enhanced comprehension skills on un-previewed passages. Therefore, the TELLs procedure may not be an effective tool for remedying comprehension skills deficits.

Before concluding that the TELLs procedure cannot yield generalized increases in reading skills (i.e., is not an effective remediation procedure) future researchers should address several limitations associated with the current study. Differences in methods between the Williams and Skinner (2004) case study and the current procedures may provide directions for future researchers by indicating procedures that may enhance the effectiveness of the TELLs procedure.

In the Williams and Skinner (2004) case study, the TELLs procedure was run almost every school day. In the current study, the TELLs intervention was run two to three times per week. The inconsistency in the administration of the intervention may have caused the lack of generalization. Future researchers should address this limitation by administering the TELLs procedure on a more regular basis to promote retention of the procedure.

In the Williams and Skinner (2004) case study, the student was placed in grade-level material. In the current study, students were reading material above their current reading level. While the current study suggests that TELLS may be a good accommodation procedure designed to help students understand material that is written above their current grade-level, the current study did not allow us to evaluate the effects of the TELLS procedure on reading comprehension skills when students are reading from material at their instructional level. Consequently, our ability to find generalized improvements in reading skills may have been hindered by asking students to read passages that were too difficult. Future researchers should address this limitation by placing the students in appropriate reading material.

Third, there was a difference in motivational levels. During the Williams and Skinner (2004) case study, the student was very compliant and a hard worker. He responded well to one-on-one time with the experimenter. It is possible that the individual attention that he received was motivating enough for him to perform well. Research has shown that younger students are extrinsically motivated, which means they want to do well to please the teacher or they do not want to fail and be rejected by peers (Kostecky & Hoskinson, 2005; Wigfield, Guthrie, Tonks, & Perencevich, 2004).

There are reasons to believe that motivation levels may have negatively impacted the power of the treatment in the current study. Throughout the study, no feedback or reinforcement was given. Additionally, adolescent students are affected by peer and social pressures (i.e., is in not cool to do well in school), and they may begin to realize their abilities and lose motivation (Kostecky & Hoskinson, 2005; Wigfield et al.,

2004). Furthermore, the students were aware that their involvement in this study would not impact their classroom grades. For example, Student 3 worked hard most days, but rushed through at least two sessions. During one session, Student 3 was returning from suspension and was not interested in the passages. Although compliant, Student 3 tried to hurry through the procedures. Thus, the performance was low across all three dependent variables. Future researchers should conduct a similar study to determine if including feedback or tangible reinforcers will improve students' performance across all three dependent variables.

Finally, in the current study, there was not enough un-previewed data collected for each dependent variable. The experimenter collected generalization data points every three days during the intervention phase, which only amounted to two data points per student. The figures in the appendices (see figures 1-3) show a decrease in the first data point followed by an increase in the second data point across all three students on generalization probes. This occurrence may have been caused by a novelty effect. When the intervention was introduced, there were increases across all three dependent variables and students (i.e., the students liked and found the intervention to be helpful). However, when the intervention was initially removed, the data points were lower than those obtained during baseline and intervention phases. After the second generalization probe, there was a large increase in the data points. By this time, the students may have grasped the concept of the intervention and was able to use it while reading the passage. If more data points were collected, there might have been an increase from baseline to

generalization, and a trend may have been established. Future researchers can address this limitation by collecting more data points during the generalization phase.

### *Conclusion*

Across all three students, visual and statistical analysis showed an immediate increase in percent correct, reading comprehension rates, and words correct per minute following the implementation of the intervention. However, these increases were not maintained throughout the intervention phases. Although increases were observed on previewed passages, the TELLS procedure had little impact on reading comprehension levels and rates and words correct per minute on un-previewed passages. In the current study, generalization probes showed inconsistent performance on un-previewed passage. These data prevent one from concluding that the intervention caused generalizable increases in reading skills.

## LIST OF REFERENCES

- Adams, M. J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.
- Alexander, P. A., Graham, S., & Harris, K. (1998). A perspective on strategy research: Progress and prospects. *Educational Psychology Review, 10*, 129-154.
- Anderson, D. S. & Acker, R. L. (1984). An investigation of the effects of prior knowledge on comprehension of disclosure by good and poor comprehenders. *Reading World, 24* (2), 87-95.
- Anderson, R. C., & Freebody, P. (1981). Vocabulary knowledge. In J. T. Guthrie (Ed.), *Comprehension and teaching: Research reviews*. Newark, DE: International Reading Association.
- Anderson, R. C., & Freebody, P. (1983). Reading comprehension and the assessment and acquisition of word knowledge. In B. Hutson (Ed.), *Advances in reading/language research: A research annual*. JAI Press.
- Anderson, R. C., & Pearson, P. D. (1984). A schema-theoretic view of basic processes in reading comprehension. In P.D. Pearson (Ed.), *Handbook of reading research*, (pp. 255-293). New York: Longman.
- Anderson, R. C., Reynolds, R. E., Schallert, D.L., & Goetz, E.T. (1977). Frameworks for comprehending discourse. *American Educational Research Journal, 14*, 367-381.
- Ausubel, D. P. (1963). *The psychology of meaningful verbal learning*. New York: Grune & Stratton.
- Ausubel, D. P. (1978). In defense of advance organizers: A reply to the critics. *Review of Educational, 48*, 251-258.

- Baldwin, R. S., Peleg-Bruckner, Z., & McClintock, A. H. (1985). Effects of topic interest and prior knowledge on reading comprehension. *Reading Research Quarterly, 20*, 497-504.
- Ball, E. W., & Blachman, B. A. (1991). Does phonemic awareness training in kindergarten make a difference. In E. H. Hiebert (Ed.), *Literacy for a diverse society*, New York: Teachers College Press.
- Bradley, L., & Bryant, P. (1985). *Rhyme and reason in reading and spelling*. Ann Arbor, MI: University of Michigan Press.
- Bransford, J. (1985). Schema activation and schema acquisition. In H. Singer & R. B. Ruddell (Eds.), *Theoretical models and processes of reading*, (3<sup>rd</sup> ed.) (pp. 385-397). Newark, DE: International Reading Association.
- Busk, P. L. & Serlin, R. C. (1992). Meta-analysis for single case research. In T. R. Kratochwill & J. R. Levin (Eds.), *Single-case design and analysis: New Directions for Psychology and Education* (p. 187-212). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Butkowsky, I. S., & Willows, D. M. (1980). Cognitive-motivational characteristics of children varying in reading ability: Evidence for learned helplessness in poor readers. *Journal of Educational Psychology, 72* (3), 408-422.
- Carver, R. P. (1999). Percentage of unknown vocabulary words in text as function of the relative difficulty of the text: Implications for instruction. *Journal of Reading Behavior, 26*, 413-437.
- Casey, A., & Howe, K. (2002). Best practices in early literacy skills. In A. Thomas & J.



- Grimes (Eds.), *Best practices in school psychology IV* (p. 721-735). Bethesda, MD: NASP.
- Chall, J.S. (1983). *Stages of reading development*. New York: McGraw-Hill.
- Clements-Davis, G. L., & Ley, T. C. (1991). Thematic preorganizers and the reading comprehension of tenth-grade world literature students. *Reading Research and Instruction, 31* (1), 43-53.
- Collins, R. (1961). The comprehension of prose material by college freshman when read silently and when read aloud. *Journal of Educational Research, 55*, 79-82.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2<sup>nd</sup> ed.). Hillsdale, NJ: Erlbaum.
- Daly, E. J., Chafouleas, S., & Skinner, C. H. (2005). *Designing and evaluating measurably effective interventions for reading problems*. New York: Guilford Publications.
- Davis, Z. T. (1994). Effects of prereading story-mapping on elementary readers' comprehension. *Journal of Educational Research, 87*, 353-360.
- Denner, P. R., McGinley, W. J., & Brown, E. (1989). Effects of story impressions as a pre-reading/writing activity on story comprehension. *Journal of Educational Research, 82*(6), 320-326.
- Denner, P. R., & McGinley, W. J. (1990). Effects of prediction combined with story composing versus listing prediction activities on subsequent story comprehension. Retrieved on January 5, 2006, from the Eric Database.
- Deno, S. L., & Mirkin, P. K. (1977). *Data-based problem modification: A manual*.

Reston, VA: Council for Exceptional Children.

Deno, S. L., Fuchs, L. S., Martson, D., & Shinn, J. (2001). Using curriculum-based measurement to establish growth standards for students with learning disabilities. *School Psychology Review, 30*, 507-524.

Deno, S. L., Mirkin, P. K., & Chiang, B. (1982). Identifying valid measures of reading. *Exceptional Children, 49*, 36-45.

Duffy, G., & Durrell, D. (1935). Third grade difficulties in oral reading. *Education, 56*, 37-40.

Espin, C. A., & Foegen, A. (1996). Validity of general outcome measures for predicting secondary performance on content-area tasks. *Exceptional Children, 62*, 497-514.

Freeland, J. T., Skinner, C. H., Jackson, B., McDaniel, C. E., & Smith, S. (2000). Measuring and increasing silent reading comprehension rates via repeated readings. *Psychology in the Schools, 37*, 415-429.

Fuchs, L. S., & Deno, S. L. (1992). Effects of curriculum within curriculum-based measurement. *Exceptional Children, 58*, 232-243.

Fuchs, L. S., & Fuchs, D. (1992). Identifying a measure for monitoring student reading progress. *School Psychology Review, 21*, 45-58.

Fuchs, L. S., Fuchs, D., & Maxwell, L. (1988). The validity of informal reading comprehension measures. *Remedial and Special Education, 9*(2), 20-28.

Gray, M. (1990). Ready, set, read... and understand! Guide for teacher. Retrieved on January 5, 2006, from the Eric Database [ED 320136].

Hale, A. D., Skinner, C. H., & Winn, B. D., Oliver, R., & Allin, J. D., (in press). An

investigation of listening and listening-while-reading accommodations on reading comprehension levels and rates in students with emotional disorders.

Hansen, J. & Pearson, P. D. (1982). *The effects of inference training and practice on young children's comprehension*. Urbana: University of Illinois, Center for the Study of Readers.

Hargis, C. H. (1997). *Teaching low achieving and disadvantaged students* (2<sup>nd</sup> ed). Springfield, IL: C.C. Publisher.

Hintze, J. M., Callahan, J. E., Matthews, W. J., Williams, S. A., & Tobin, K. G. (2002). Oral reading fluency and prediction of reading comprehension in african american and caucasian elementary school children. *School Psychology Review*, 31 (4), 540-564.

Hintze, J. M., & Shapiro, E. S. (1997). Curriculum-based measurement and literature-based reading: Is curriculum-based measurement meeting the needs of changing reading curricula? *Journal of School Psychology*, 35, 351-375.

Hosp, M. K., & Fuchs, L. S. (2005). Using cbm as an indicator of decoding, word reading, and comprehension: Do the relations change with grades? *School Psychology Review*, 34(1), 9-26.

Hossein, N. (2002). Schema theory and knowledge-based processes in second language reading comprehension: A need for alternative perspectives. *Language Learning*, 52(2), 439-481.

Idol, L. (1987). Group story mapping: A comprehension strategy for both skilled and unskilled readers. *Journal of Learning Disabilities*, 20, 196-205.

- Idol-Maestas, L. (1985). Getting ready to read: Guided probing for poor comprehenders. *Learning Disability Quarterly*, 8, 243-254.
- Irwin, J. W. (1991). *Teaching reading comprehension processes*, (2<sup>nd</sup> ed.). Boston: Allyn and Bacon.
- Jenkins, J. R. & Jewell, M. (1993). Examining the validity of two measures for formative teaching: Reading aloud and maze. *Exceptional Children*, 59, 421-432.
- Kaminiski, R. A., & Good, R. H., III. (1996). Toward a technology for assessing basic literacy skills. *School Psychology Review*, 25, 215-227.
- Keene, E., & Zimmerman, S. (1997). *Mosaic of thought*. Portsmouth, NH: Heinemann.
- Kostecky, K. L., & Hoskinson, M. J. (2005). A “novel” approach to motivating students. *Education*, 125 (3), 438-442.
- Kranzler, J. H., Brownell, M. R., & Miller, M. D. (1998). The construct validity of curriculum-based measurement of reading: An empirical test of a plausible rival hypothesis. *Journal of School Psychology*, 36, 399-415.
- Kueker, J. (1990). *Pre-reading activities: A key to comprehension*. A paper presented at the International Conference on Learning Disabilities (Austin, TX).
- Laimon, D. E. (1994). *The effects of a home-based and center-based intervention on at-risk preschool children's early literacy skills*. Unpublished Doctoral Dissertation, University of Oregon, Eugene.
- Laufer, J. M. (1992). How much lexis is necessary for reading comprehension? In H. Bejoint & P. Arnaud (Eds.), *Vocabulary and applied linguistics* (pp. 126-132). London: Macmillan.

- Littlefield-Cook, J., & Cook, G. (2005). *Child development: Principles and perspectives*. Boston: Pearson Education, Inc.
- Lyon, G. R. (1998). *Overview of reading and literacy initiatives*. Retrieved January 5, 2006, from <http://www.nichd.nih.gov/publications/pubs/jeffords.htm>.
- Madalaine, A., & Wheldall, K. (1999). Curriculum-based measurement of reading: A critical review. *International Journal of Disability, Development, and Education*, 46, 71-85.
- Marston, D. B., (1989). Curriculum-based measurement approach to assessing academic performance: What it is and why do it. In M.R. Shinn (Ed.), *Curriculum-based measurement: Assessing special children* (pp. 18-78). New York: Guilford.
- McDaniel, C. E., Watson, T. S., Freeland, J. T., Smith, S. L., Jackson, B., & Skinner, C. H. (May, 2001). *Comparing silent repeated reading and teacher previewing using silent reading comprehension rates*. Association for Applied Behavior Analysis: New Orleans.
- McGinley, W., & Denner, P. (1987). Story impressions: A pre-reading / writing activity. *The Journal of Reading*, 31(3), 248-253.
- National Center for Educational Statistics (2005). *NAEP 2005: Reading: Report card for the Nation and the state*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.
- National Institute of Child Health and Human Development. (2000). Report of the National Reading Panel. *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for*

- reading instruction (NIH Publication No. 00-4769)*. Washington, DC: U.S. Government Printing Office.
- National Research Panel. (2000). Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction. Washington, DC: National Institute of Child Health and Human Development.
- Neddenriep, C. E. (2003). *Classwide peer tutoring: An experimental study investigating the Generalized effects of increased oral reading fluency to silent reading comprehension*. Unpublished doctoral dissertation, University of Tennessee, Knoxville.
- Neddenriep, C. E. (in press). An investigation of the validity of a direct dynamic measure of reading: Reading comprehension rates.
- Norris, S. & Phillips, L. (1987). Explanations of reading comprehension: Schema theory and critical thinking theory. *Teachers College Record*, 89 (2), 281-306.
- O'Connor, R., Jenkins, J. R., Leicester, N., & Slocum, T. (1993). Teaching phonological awareness to young children with disabilities. *Exceptional Children*, 59 (6), 532-546.
- Pearson, P. D., Hansen, J., & Gordon, C. (1979). The effect of background knowledge on young children's comprehension of explicit and implicit information. *Journal of Reading Behavior*, 11, 201-209.
- Potter, M. L., & Wamre, H. M. (1990). Curriculum-based measurement and developmental reading models: Opportunities for cross-validation. *Exceptional*

*Children*, 57, 16-25.

Rasinki, T., & Padak, N. (2000). *Effective reading strategies: Teaching children who find reading difficult* (2<sup>nd</sup> ed.). Columbus, OH: Merrill.

Reynolds, R. E. (2000). Attentional resource emancipation: Toward understanding the interaction of word processes in reading. *Scientific Studies of Reading*, 4(3), 169-195.

Richards, S. B., Taylor, R. L., Ramasamy, R., & Richards, R. Y. (1999). *Single subject research: Applications in educational and clinical settings*. San Diego, CA: Singular Publishing Group, Inc.

Rousseau, M. K., & Yung Tam, B. K. (1991). The efficacy of previewing and discussion of key words on the oral reading proficiency of bilingual learners with speech and language impairments. *Education and Treatment of Children*, 14, 199-209.

Rowell, E. H. (1976). Do elementary students read better orally or silently? *The Reading Teacher*, 29, 367-370.

Rumelhart, D. A. (1980). Schemata: The building blocks of cognition. In R. Spiro, B. Bruce, & W. Brewer (Eds.), *Theoretical issues in reading comprehension* (pp. 33-58). Hillsdale, NJ: Erlbaum.

Salinger, T. (2003). Helping older, struggling readers. *Previewing School Failure*, 47(2), 79-87.

Schunk, D. H. (2003). Self-efficacy for reading and writing: Influence of modeling, goal setting, and self-evaluation. *Reading and Writing Quarterly*, 19, 159-172.

Searls, E. F. (1983). An advance organizer is all or none of the above. *Reading*

*Horizons*, 23 (4), 242-248.

Shapiro, E. S. (1996). *Academic skills problems: Direct assessment and intervention* (2<sup>nd</sup> ed.). New York: Guilford Press.

Share, D. L., & Stanovich, K. E. (1995). Cognitive processes in early reading development: Accommodating individual differences into a mode of acquisition. *Issues in Education: Educational Psychology*, 1, 1-57.

Shinn, M. R. (1995). Curriculum-based measurement and its use in a problem solving model. In Thomas & J. Grimes (Eds.), *Best practices in school psychology-III* (pp.547-567). Washington, DC: National Association of School Psychologists.

Shinn, M. R., Good, R. H., Knutson, N., Tilly, W. D., & Collins, V. L. (1992). Curriculum- based measurement of oral reading fluency: A confirmatory analysis of its relation to reading. *School Psychology Review*, 21, 459-479.

Sindelar, P. T., & Stoddard, K. (1991). Teaching reading to mildly disabled students in regular classes. In G. Stoner, M.R., Shinn, & H.M. Walker (Eds.), *Interventions for achievement and behavior problems* (pp. 357-378). Silver Spring, MD: The National Association of School Psychologists.

Singer, H. & Donlan, D. (1983). Active Comprehension: Problem-solving schema with questions generation for comprehension of complex short stories. *Reading Research Quarterly*, 7, 166-185.

Skinner, C. H., Neddenriep, C. E., Bradley-Klug, K. L., & Ziemann, J. M. (2002). Advances in curriculum- based measurement: Alternative rate measures for assessing reading skills in pre- and advanced readers. *The Behavior Analyst*



*Today*, 3, 270-281.

- Skinner, C. H. (1998). Preventing academic skills deficits. In T.S. Watson & F. Gresham (Eds.), *Handbook of child behavior therapy: Ecological considerations in assessment, treatment, evaluation* (p.61-83). New York: Plenum.
- Snow, C. E., Burns, S. M., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.
- Snow, C. E., Corno, L., & Jackson, D., III. (1996). Individual differences in affective and cognitive functions. In D. C. Berliner & R. C. Calfee (Eds.), *Handbook of Educational Psychology* (p. 243-310). New York: Macmillan.
- Spargo, E. (1989). *Timed readings* (3<sup>rd</sup> ed.). Providence, RI: Jamestown Publishers.
- Stahl, S. A. (2003). Vocabulary and readability: How knowing word meanings affects comprehension. *Topics in Language Disorders*, 23 (3), 241-247.
- Stevens, K. C. (1982). Can we improve reading by teaching background information. *Journal of Reading*, 25(4), 326-329.
- Tawney, J. W. & Gast, D. L. (1984). *Single subject research in special education*. Columbus, OH: Charles E. Merrill Publishing Company.
- Tierney, R. J., & Pearson, P. D. (1983). Toward a composing model of reading. *Language Arts*, 60, 568-580.
- Tierney, R. J., Readance, J. E., & Dishner, E. K. (1990). *Reading strategies and practices: A compendium* (3<sup>rd</sup> ed). Boston, MA: Allyn and Bacon.
- Usen, T. (1993). *The effects of prereading activities on reading comprehension*. Published Masters Thesis, Kean College of New Jersey.

- Weschler, D. (2002). *Manual for the Weschler Individual Achievement Test- Second Edition*. San Antonio, TX: The Psychological Corporation.
- Whipple, G. (1925). *The twenty-fourth yearbook of the national society for the study of Education: Report of the national committee on reading*. Bloomington, IL: Public School Publishing Company.
- Wigfield, A., Guthrie, J. T., Tonks, S., & Perencevich, K. C. (2004). Children's motivation for reading: Domain specificity and instructional influences. *Journal of Educational Research*, 97 (6), 299-309.
- Williams, A. D., & Skinner, C. H. (2004). Using measures of reading comprehension rate to evaluate the effects of a previewing strategy on reading comprehension. Paper presented at the annual Mid-South Educational Research Association, Gatlinburg, TN.
- Woodcock, R. W., McGraw, K. S., & Mather, N. (2001). *Manual for the Woodcock-Johnson Tests of Achievement- Third Edition*. Itasca, IL: Riverside Publishing.
- Yopp, H. K. (1992). Developing phonemic awareness in young children. *The Reading Teacher*, 45, 696-703.

## APPENDICES

**Appendix A**  
**Participant Descriptions**

Student 1. Student 1 was of normal height and weight for his chronological age. His teacher indicated that he was a hard working student but struggled in reading. His teacher reports that he stays on-task during class time and completes all assignments. During the end of the first six weeks, he earned mostly C's while failing English. It was reported that he was evaluated during his kindergarten and third grade years and was certified as a student with mental retardation. However, during his fourth grade year, his certification changed to learning disabled. Student 1 tested out of special education in the seventh grade. On the WIAT-II, he received a grade score of 8-7 on the reading comprehension subtest.

Student 2. Student 2 was a little overweight for her age, but of average height. Her teacher reported she is often disrespectful and tends to follow the crowd to fit in with other students. She is not doing well in school, but the teacher does not believe it is a lack of ability. She struggles in reading; however, she rushes through assignments without putting forth effort. Her current grades are Bs, Cs, and one F in foundation math. On the WIAT-II, she received a grade score of 9-0 on the reading comprehension subtest.

Student 3. Student 3 was somewhat quiet during sessions. However, it was easy to establish rapport with her. She was of average height and weight for her age. Student 1 expressed an interest in football. I spoke with her mother and teacher, and they expressed concerns in her poor reading skills. Her mother reported that she makes up words without trying to sound them out. At the end of the first six weeks, she earned Cs, Ds, and Fs. On the WIAT-II, she earned a grade score of 8-5 on the reading comprehension subtest.

Appendix B  
TELLS Worksheet

What is this story about?  
(Modified TELLs procedure)

**Title**      What is the title of this story? What do you think it is about?

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**Examine**      Scan topic sentences to find clues about this story.

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**Look**      Write down important words, such as ones that are used frequently.

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**Look**      Look again through the story for hard words, words you do not know.  
Write them down.

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**Setting**      Write down clues about the setting, such as the place, date, and time  
period. (Hint: These clues are often found in the beginning of the story.)

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**Appendix C**  
**Treatment Integrity Checklist**



## Treatment Integrity Checklist

Reviewed By:

Date of Review:

Student:

Passage Number:

**Step 1. Completed the steps of the modified TELLs worksheet orally**

Step Completed (Y/N) \_\_\_\_\_

**Step 2. Instructed student to read 400-word passage orally**

Step Completed (Y/N) \_\_\_\_\_

**Step 3. Recorded students' reading time of passage**

Experimenter's recorded time \_\_\_\_\_

Observer's recorded time \_\_\_\_\_

**Step 4. Instructed student to complete the 10 multiple-choice questions**

Step Completed (Y/N) \_\_\_\_\_

**Step 5. Recorded student's words correct per minute score**

Experimenter's recorded score \_\_\_\_\_

Observer's recorded scores \_\_\_\_\_

**Step 6. Scored and recorded the comprehension questions**

Experimenter's recorded score \_\_\_\_\_

Observer's recorded score \_\_\_\_\_

**Step 7. Calculated reading comprehension rates**

Experimenter's recorded score \_\_\_\_\_

Observer's recorded score \_\_\_\_\_

**Appendix D**  
**Teacher Acceptability Rating Scale**

### *Teacher Acceptability Rating Scale*

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
This would be an acceptable intervention for students with an academic problem (i.e., reading comprehension).	1	2	3	4	5	6
Most teachers would find this intervention appropriate for academic problems in addition to reading problems.	1	2	3	4	5	6
The intervention should prove effective in changing the student's academic performance.	1	2	3	4	5	6
I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
The student's reading comprehension deficits is severe enough to warrant use of this intervention.	1	2	3	4	5	6
I would be willing to use this intervention with individuals in the classroom setting.	1	2	3	4	5	6
The intervention would not result in negative side-effects for the students.	1	2	3	4	5	6
The intervention would be appropriate for a variety of children.	1	2	3	4	5	6
The intervention is consistent with those I have used in the classroom setting before.	1	2	3	4	5	6
The intervention is a good way to handle the student's academic deficit.	1	2	3	4	5	6
The intervention is reasonable for improving reading comprehension.	1	2	3	4	5	6
I like the procedures used in the intervention.	1	2	3	4	5	6
Overall, the intervention would be beneficial for the students.	1	2	3	4	5	6
The intervention would produce a lasting improvement in the student's academic performance.	1	2	3	4	5	6
Soon after using the intervention, the teacher would notice a positive change in the academic problem.	1	2	3	4	5	6

Note: "Intervention" refers to the TELLS procedure used in the study.

## Appendix E

### Student Acceptability Rating Scale

*Student Acceptability Rating Scale*

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
The intervention was good for improving reading comprehension.	1	2	3	4	5	6
I like the TELLS procedure.	1	2	3	4	5	6
The TELLS procedure is good for all children.	1	2	3	4	5	6
I'd like to continue to use the TELLS procedure.	1	2	3	4	5	6
The TELLS procedure is easy to use.	1	2	3	4	5	6
The TELLS procedure would be OK to use for other subjects.	1	2	3	4	5	6
Most children would find the TELLS procedure OK to use for other subjects.	1	2	3	4	5	6
The TELLS procedure was effective in enhancing vocabulary skills.	1	2	3	4	5	6
The TELLS procedure was not time-consuming.	1	2	3	4	5	6
The TELLS procedure would only have good results.	1	2	3	4	5	6

**Appendix F**  
**Tables and Figures**

Table 1

*Pearson's Product Moment Coefficient of Correlation for Interobserver Agreement on Reading Comprehension Levels, Reading Comprehension Rates, and Words Correct Per Minute*

Reading Comprehension Level	Reading Comprehension Rates	Words Correct Per Minute
1.00 *	.97	.99

*Note.* Correlations significant at  $p < .001$

Table 2

*Reading Comprehension Level Condition Means, Standard Deviations, and Effect Sizes for all Three Students*

Students	Baseline M (SD)	Intervention M (SD)	$k$ *
1	56.67 (5.77)	78.75 (8.34)	3.82
2	60.00 (21.60)	72.86 (7.56)	0.60
3	53.00 (11.65)	70.00 (7.56)	1.50

*Note.*  $k$  = effect size. \* Effect size between baseline and intervention phases.

Table 3

*Reading Comprehension Rates Condition Means, Standard Deviations, and Effect Sizes for all Three Students*

Students	Baseline M (SD)	Intervention M (SD)	<i>k</i> *
1	12.16 (1.90)	21.10 (2.40)	4.71
2	13.93 (5.06)	17.85 (2.65)	0.78
3	10.47 (3.52)	14.82 (2.10)	1.23

*Note.* *k* = effect size. \* Effect size between baseline and intervention phases.

Table 4

*Words Correct Per Minute Condition Means, Standard Deviations, and Effect Sizes for all Three Students*

Students	Baseline M (SD)	Intervention M (SD)	<i>k</i> *
1	80.33 (22.81)	117.38 (16.62)	1.62
2	82.25 (14.29)	102.86 (10.19)	1.44
3	78.00 (22.81)	91.63 (9.81)	0.60

*Note.* *k* = effect size. \* Effect size between baseline and intervention phases.



Table 5

*Immediacy of Change for Reading Comprehension Levels (RCL), Reading Comprehension Rates (RCR) and Words Correct Per Minute (WCPM) for all Three Students*

Students	Immediacy of Change- RCL	Immediacy of Change- RCR	Immediacy of Change- WCPM
1	20	8.66	22
2	30	6.20	19
3	20	5.80	14

Table 6

*Teacher Responses on the Acceptability Scale*

		Mean	Standard Deviation
1.	This would be an acceptable intervention for students with an academic problem (i.e., reading comprehension).	4.5	0.71
2.	Most teachers would find this intervention appropriate for academic problems in addition to reading problems.	3	0
3.	The intervention should prove effective in changing the student's academic performance.	4.5	0.71
4.	I would suggest the use of this intervention to other teachers.	5.0	0
5.	The student's reading comprehension deficits is severe enough to warrant use of this intervention.	5.0	0
6.	I would be willing to use this intervention with individuals in the classroom setting.	4.5	0.71
7.	The intervention would not result in side-effects for the students.	4.5	0.71
8.	The intervention would be appropriate for variety of children.	4.5	0.71
9.	The intervention is consistent with those I have used in the classroom setting before.	4.0	0
10.	The intervention is a good way to handle the student's academic deficit.	4.0	0
11.	The intervention is reasonable for improving reading comprehension.	4.5	0.71
12.	I like the procedures used in the intervention.	5.0	0
13.	Overall, the intervention would be beneficial for the students.	4.5	0.71
14.	The intervention would produce a lasting improvement in the student's academic performance.	4.0	0
15.	Soon after using the intervention, the teacher would notice a positive change in the academic problem.	2.0	0
	Overall Total Average	4.2	0.86

Table 7

*Student Responses on the Acceptability Scale*

		Mean	Standard Deviation
1.	The intervention was good for improving reading comprehension.	4.3	0.58
2.	I like the TELLS procedure.	4.0	1
3.	The TELLS procedure is good for all children.	5.0	0
4.	I'd like to continue to use the TELLS procedure.	4.0	1
5.	The TELLS procedure is easy to use.	6.0	0
6.	The TELLS procedure would be OK to use for other subjects.	4.3	0.58
7.	Most children would find the TELLS procedure OK to use for other subjects.	4.0	0
8.	The TELLS procedure was effective in enhancing vocabulary skills.	5.0	0
9.	The TELLS procedure was not time-consuming.	2.3	0.58
10.	The TELLS procedure would only have good results.	4.0	0
	Overall Total Average	4.3	1.02

Table 8

*Pearson's Product Moment Coefficient of Correlation for Reading Comprehension Levels, Reading Comprehension Rates, and Words Correct Per Minute for Student 1*

	RCL	RCR	WCPM
RCL*	1	.93	.71
RCR*	.93	1	.81
WCPM*	.71	.81	1

\* RCL = Reading Comprehension Level, RCR = Reading Comprehension Rates, WCPM = Words Correct Per Minute

Table 9

*Pearson's Product Moment Coefficient of Correlation for Reading Comprehension Levels, Reading Comprehension Rates, and Words Correct Per Minute for Student 2*

	RCL	RCR	WCPM
RCL*	1	.90	.76
RCR*	.90	1	.91
WCPM*	.76	.91	1

\* RCL = Reading Comprehension Level, RCR = Reading Comprehension Rates, WCPM = Words Correct Per Minute

Table 10

*Pearson Product Moment Coefficient of Correlation for Reading Comprehension Levels, Reading Comprehension Rates, and Words Correct Per Minute for Student 3*

	RCL	RCR	WCPM
RCL*	1	.87	.18
RCR*	.87	1	.29
WCPM*	.18	.29	1

\* RCL = Reading Comprehension Level, RCR = Reading Comprehension Rates, WCPM = Words Correct Per Minute

Table 11

*Pearson Product Moment Correlation Coefficients for Reading Comprehension Levels, Reading Comprehension Rates, and Words Correct Per Minute Across all Three Students*

	RCL	RCR	WCPM
RCL*	1	.89	.57
RCR*	.89	1	.72
WCPM*	.57	.72	1

\* RCL = Reading Comprehension Level, RCR = Reading Comprehension Rates, WCPM = Words Correct Per Minute

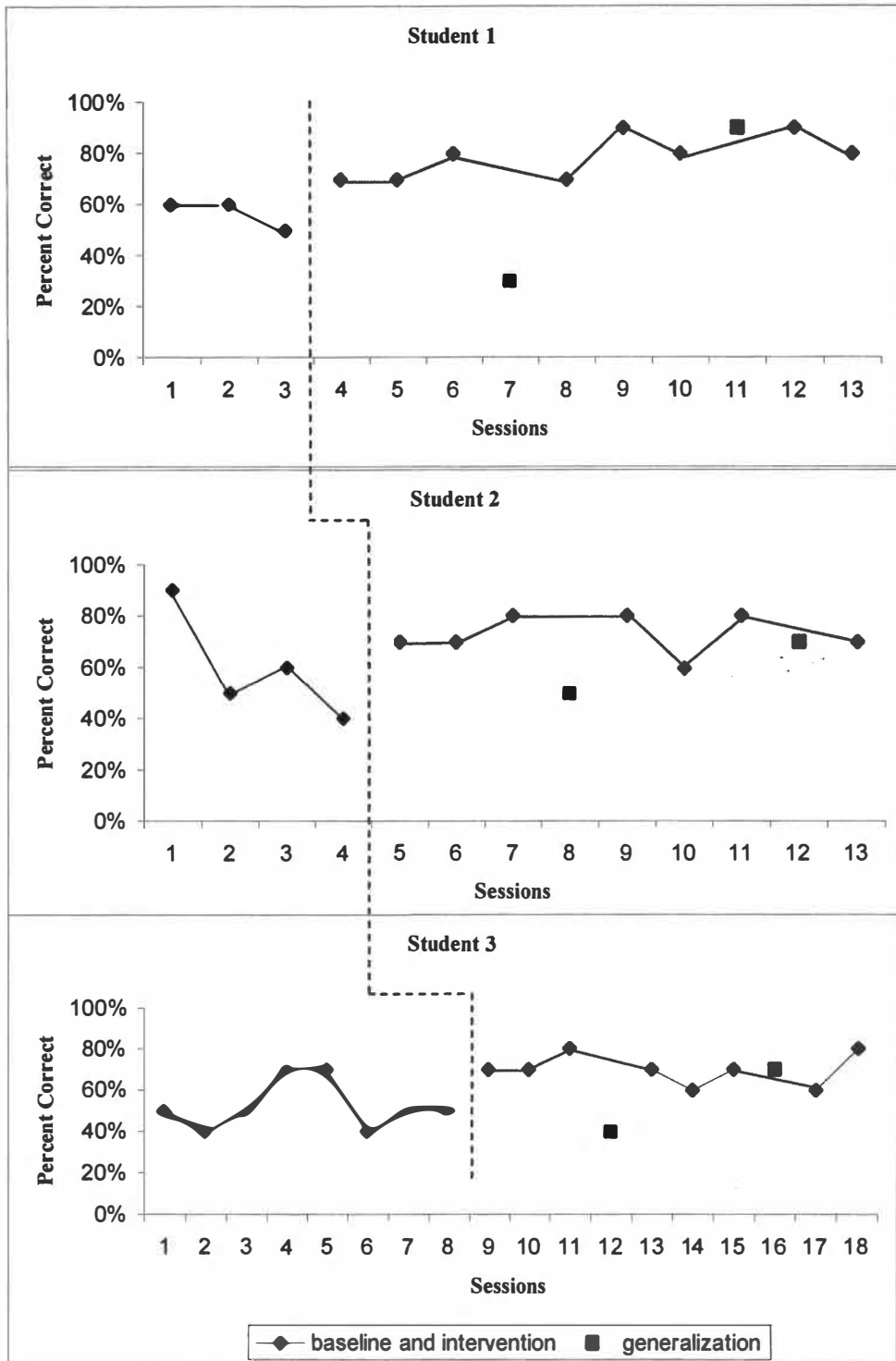


Figure 1. Percent Correct Across All Students and Phases.

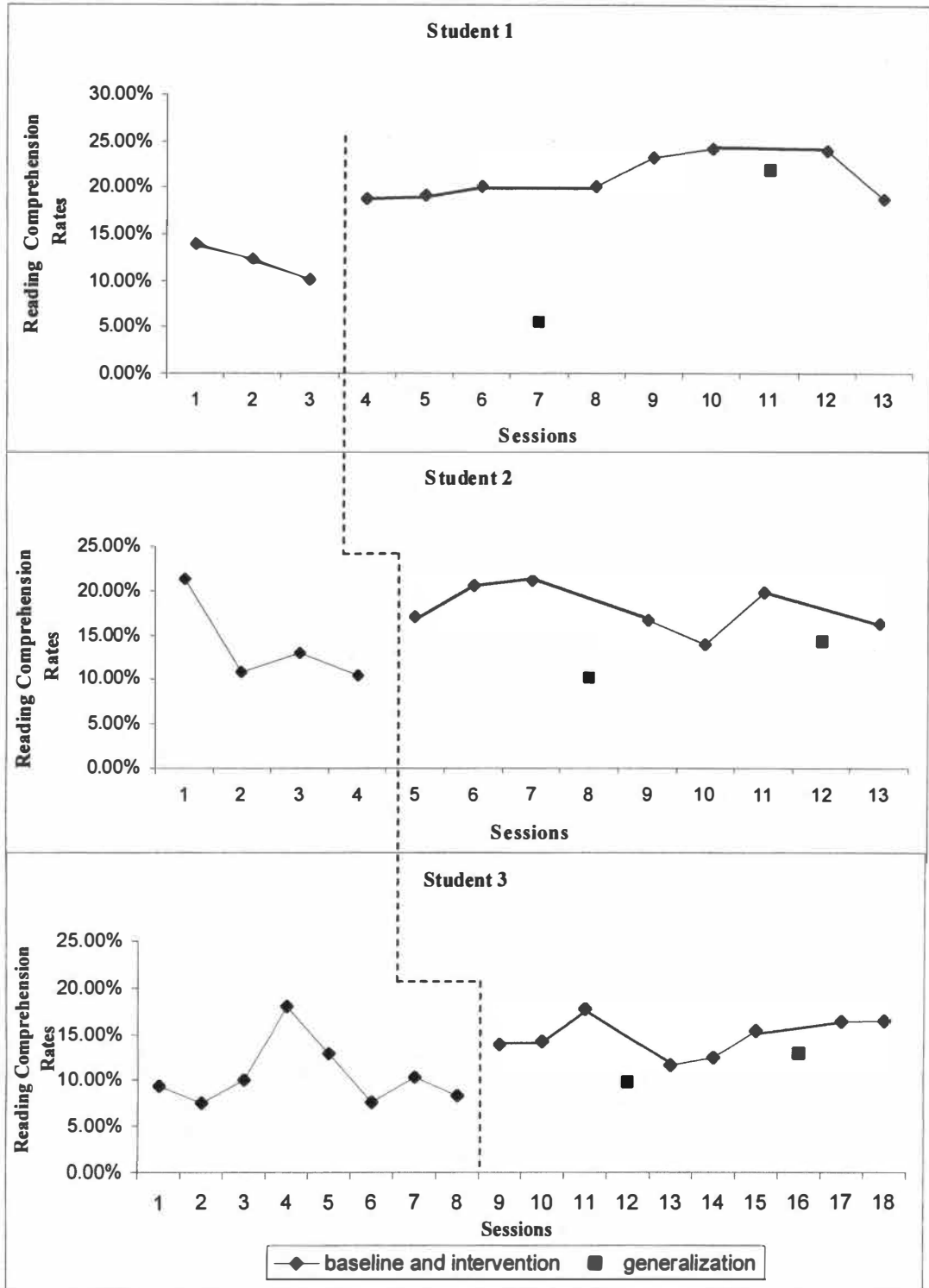


Figure 2. Reading Comprehension Rates Across All Students and Phases

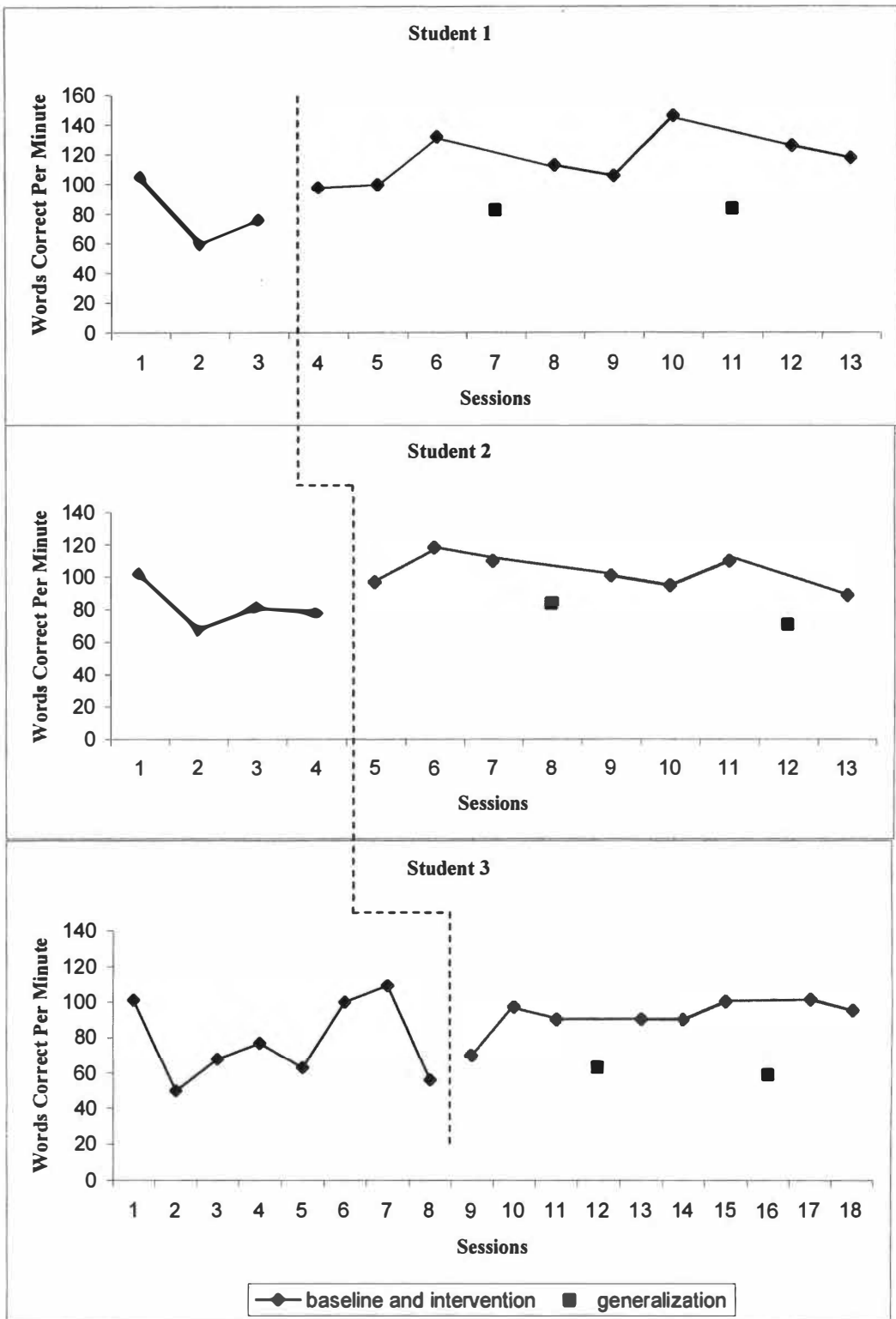


Figure 3. Words Correct Per Minute Across All Students and Phases.



## Vita

Ashley Delores Williams was born in Mobile, Alabama on May 10, 1977. She graduated from Murphy High School in 1995. From there, she went to the University of Alabama at Birmingham and received a B.S. in Psychology with a minor in Biology. Currently, Ashley is pursuing a doctorate in Education, with a concentration in School Psychology from the University of Tennessee, Knoxville. She will receive her degree following the completion of an internship with Cherokee Health Systems and Monroe County Schools.

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