

**EFFECTIVENESS OF LISTENING PASSAGE PREVIEW WITH CHILDREN
DIAGNOSED WITH ADHD**

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Abstract

There are many common reading interventions used to help students improve a variety of reading skills including word recognition, decoding, and reading fluency. This study examines one of these interventions, Listening Passage Preview. Listening Passage Preview is a reading intervention that is aimed at increasing student oral reading fluency, by providing a model of a passage prior to the student reading it. As a commonly prescribed reading intervention, it is vital that researchers determine its effectiveness across differing populations of students. Within this study, we examined the effectiveness of Listening Passage Preview for students who are diagnosed with Attention Deficit/Hyperactivity Disorder (ADHD) when compared to students who are not. Results suggest that the LPP procedure utilized in this study produced significant improvement for participants in their percent correct (words correct/total words attempted), while there was no significant change in time to read. They also determined that there was no significant difference in change scores for percent correct and time when comparing participants with ADHD and those without ADHD. This indicates that participants from this study benefitted from the LPP intervention, regardless of their diagnosis.

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CHAPTER I

Review of Literature

Reading is an essential skill that is required in many facets of our everyday life. For example, we need to be able to read signs, menus, directions, and warnings to effectively and safely complete necessary tasks in our lives. In our society, reading is a skill that is often necessary for us to live effectively and safely. Unfortunately, there are many children who have difficulty learning how to read. Reading problems have been and continue to be, a prominent issue affecting students in American public-school systems and these problems are exacerbated when the students also have problems with inattention or hyperactivity.

According to data collected by the National Center for Education Statistics (2019), 34% of fourth graders and 27% of eighth graders scored below the basic standard for reading. These scores were statistically different from scores in 2017, indicating there were more students who scored below Basic level achievement. In general, males are more likely than females to demonstrate reading difficulties during school (Badian, 1999; Chan et al., 2007; Wheldall & Limbrick, 2010). Wheldall and Limbrick (2010) found that there is a disparity between males and females in the prevalence of reading difficulties; however, it is not as great as previously thought. Although there may be a difference between genders, reading difficulties affect all students, and these difficulties have long-lasting effects.

Reading difficulties for school-aged children tend to have negative long-term outcomes across multiple areas of functioning. Children with low reading scores demonstrate conduct problems, social problems, and higher dropout rates (Benner et al., 2002). In fact, students who read poorly early on continue to have reading difficulties throughout their school years (Francis et al., 1996; Torgesen & Burgess, 1998). Stanovich (1986) took the position that the Matthew

effect occurs in reading achievement, that is, there is a “rich-get-richer” and “poor-get-poorer” outlook for those students who have difficulties with reading. Unfortunately, students with reading difficulties typically continue to demonstrate difficulties later in life, leading to more and more difficulties in areas outside of reading. These patterns tend to continue into adulthood as reading is often a skill that is required for employment and further success. Children who demonstrate reading difficulties may be at higher risk for unemployment and adjudication (Benner et al., 2002). While many children experience reading concerns and negative long-term outcomes, these concerns are exacerbated for students with comorbid Attention Deficit/Hyperactivity Disorder (ADHD).

Attention Deficit/Hyperactivity Disorder

Attention Deficit/Hyperactivity Disorder, more commonly referred to as ADHD, is a neurological disorder that negatively impacts an individual’s executive functioning, impulsivity, and/or activity level (Kewley, 2010; Pham, 2016). The Diagnostic and Statistical Manual of Mental Disorder, 5th Edition – Text Revision (2022), recognizes three possible categories of ADHD diagnoses. These areas include inattentive type, hyperactive/impulsive type, and combined type. For many, ADHD hinders the ability to remain focused on tasks, plan and/or strategize, think through decisions, and organize thoughts effectively. In the classroom, children with ADHD may demonstrate oppositional and disruptive behaviors, anxiety and/or depression symptoms, specific learning difficulties in reading and/or math, processing concerns, speech/language problems, obsessions, and motor control problems (Kewley, 2010). For school-aged children diagnosed with ADHD, these difficulties may negatively impact their education if left untreated or unmanaged.

Untreated/unmanaged symptoms associated with ADHD tend to lead to negative outcomes for children once they leave school as well. In a systematic review of the long-term effects of untreated ADHD, Harpin and colleagues (2016) found untreated ADHD is associated with lower levels of self-esteem and social functioning when compared to control samples. This finding suggests that if left untreated, ADHD can lead to persistent difficulties for students outside of school or later in a child's education. Regardless of presentation, children experiencing characteristics of ADHD (e.g., hyperactive and/or impulsive behaviors) may not benefit from reading instruction strategies in the same way that typically developing students benefit. To more fully understand the impact of ADHD on students' acquisition of reading skills, we should first examine the science of reading as a whole. This will provide us with the background to reading instruction, and why we need to be considerate of reading instruction with students diagnosed with ADHD.

The Science of Reading

The National Reading Panel (2000) identified five areas that are important to reading skills development. These areas included phonemic awareness, phonics, fluency, vocabulary, and comprehension. According to the report, reading instruction in these specific areas was found to benefit students' overall reading development and that deficits in reading could be traced back to deficits in one of these areas. Throughout the report, the Panel discussed several instructional strategies in order to best teach children how to read. These strategies included: explicit instruction in phonemic awareness and phonics, oral reading instruction, fostering vocabulary growth through in-text and direct learning, and teaching recall strategies for comprehension. When thinking about these strategies, it is important to understand the concepts behind them and what research tells us we should focus on when teaching reading skills. Specifically, the Simple

View of Reading provides an empirically-supported model for reading instruction. (Hoover & Gough, 1990; Kendeou et al., 2009; Nation, 2019).

Fries (1963) first introduced this way of thinking about reading that was different from previous views, by examining reading as a complex system [e.g., Gates (1949); Huey (1908/1968)]. This “simple view” suggests that readers are responding to graphics requiring them to decode those graphics into a linguistic form (Hoover & Gough, 1990). In other words, overall reading comprehension is the product of only two components, decoding skills and language comprehension skills. Decoding skills, which are learned early, requires us to sound out unknown words. Skilled readers can rapidly recognize visual graphics and identify them as words from their mental lexicon (Hoover & Gough, 1990). After readers can appropriately label words, they then need to assign the correct meaning. This is where skilled readers are able to use comprehension skills. Language comprehension skills are those skills through which we derive meaning from words and sentences that we hear and see. Skilled readers should demonstrate the ability to understand language through visual cues (e.g., words, letters, numbers; Hoover & Gough, 1990). If we view the Simple View of Reading as a mathematical equation where reading (R), decoding (D), and language comprehension (L) are the variables; it would be represented as $R = D \times L$ (Hoover & Gough, 1990). Although this provides a less complex view of reading, it still demonstrates a strong need for proper reading instruction. When viewed in this manner, reading as a total skill is highly dependent on the development of both decoding and language comprehension. Let’s look at the equation and view each of the variables on a scale of 0 to 1. If either of these skills (D or L) are equal to 0 within our equation above, reading (R) will equal 0. On the other hand, if learners develop both their decoding and language comprehension (i.e., they both equal 1), they also develop their overall reading ability (Hoover & Gough, 1990;

Nation, 2019). This demonstrates a strong need for quality reading instruction focusing on decoding and language comprehension skills for new learners. One way educators teach these skills to learners is through direct instruction.

Direct instruction is, at its basics, a form of structured teaching (Gersten, Woodward, & Darch, 1986). Educators often use direct instruction as a form of explicit instruction that uses concepts such as modeling, practice, and feedback to effectively teach a new skill or skill set (Lombardi, 2019). In many interventions that use direct instruction, these concepts are often key in learner progress when implemented correctly by educators.

Modeling during instruction involves educators providing a model of a skill/behavior being performed correctly before the student attempts the skill/behavior themselves (Hendrickson & Gable, 1981). For example, an educator may read a passage before the student reads the same passage to demonstrate the necessary skills involved to read the passage correctly. If we were to take this practice in a behavioral view, an educators may demonstrate a skill such as raising their hand when they need to ask a question or to speak in class. Past research indicates that modeling is a necessary stage of instruction that aids the student in conceptualization and application of new skills (Methe & Hintze, 2003; Rupley, Blair, & Nichols, 2009; Regan & Berkely, 2012). During reading instruction, modeling allows for the students to see and hear how words, sentences, and passages are correctly pronounced and read before they are asked to read the material themselves. Modeling requires sufficient time, specificity, explicitness, and flexibility of instruction to be productive in teaching students new skills (Regan & Berkely, 2012). Once students benefit from modeling/instruction, practice of new skills is important.

Practice is a component of direct instruction commonly used when learning new skills, and typically the student will practice through repeated trials the word, sentence, or passage so they learn the correct responses. In reading instruction, sight word practice using flashcards is effective in building mastery and fluency (Fraher et al., 2019). For students with reading difficulties, repeated practice of common words or of sentences/passages prior to reading may lead to more success in reading (Stevens & Burns, 2021). Even with students with other disabilities (e.g., Intellectual and/or Developmental Disabilities) practicing keywords can be effective in improving sentence and passage reading skills (Stevens & Burns, 2021). A commonly used intervention in which practice is heavily involved is Repeated Reading. Repeated Reading requires students to read the same passage several times, until they reach a goal for fluent reading of the passage (Lee & Yoon, 2017). This method allows students to practice reading the same passage multiple times with the goal of improving word recognition, fluency, and comprehension. However, it is important that students do not practice new material incorrectly. To prevent students from continuing mistakes, feedback is essential (Reed, 2018).

Feedback is an important component involved in direct instruction. For the student to understand that they are performing a skill correctly, adequate feedback must be given. Feedback should be specific and constructive to appropriately convey to the student accurate or inaccurate performance. Providing students with specific and immediate feedback allows them to identify mistakes and receive stronger gains than with feedback that may be delayed (Opitz et al., 2011). This can allow for students to practice without repeating the same mistakes. With regard to reading, if a student mispronounces a word while reading a sentence or passage, the instructor should provide corrective feedback by correctly pronouncing the word for the student to attempt again.

There are several evidenced-based interventions that can be used to improve reading skills that focus on the development of reading acquisition. These include interventions such as Repeated Reading, Direct Instruction, and Listening Passage Preview. The effectiveness of these interventions has long been studied; however, for this study we focused on Listening Passage Preview.

Listening Passage Preview

Listening Passage Preview (LPP) is a commonly used intervention for reading difficulties. LPP provides a model to demonstrate the appropriate way to read a word, sentence, or passage. Typically, LPP is conducted by having the student listen and follow along while a passage is read. After the passage has been read aloud, by either the instructor or a recording, the student then attempts to read the passage themselves orally. Due to the important aspects necessary to how LPP is conducted (e.g., modeling), educators typically need to ensure learners are capable of following along while listening to someone else reading.

There have been many studies over the years that have examined the effectiveness of using previewing as a strategy for students struggling with reading (Begeny et al., 2009; Billingsley-Ring et al., 2023; Rogers et al., 2018; Rose & Sherry, 1984; Skinner et al., 1997; Swain et al., 2017; Van Bon et al., 1991; Wredt, 2022). Early results from Rose and Sherry (1984) found that previewing practices with students had a positive correlation to oral reading skills. In this study, an alternating treatment design was used to examine the effectiveness of two oral reading previewing interventions. They examined silent reading, where the student read the passage silently before reading aloud, and listening previewing, where the student listened to the teacher read the assigned passage prior to reading aloud. When compared to baseline procedures, both procedures were related to higher level of words read correctly. Between the two

procedures, they found that previewing the passage through listening was related to greater reading improvement than previewing the passage silently (Rose & Sherry, 1984).

These results were replicated a few years later when Van Bon and colleagues (1991) found that preview techniques increased student reading rates following implementation. Researchers examined the effects of reading-while-listening (i.e., teacher reads passage first, then student reads the passage) and text repetition (i.e., student reads the same passage) by determining the differences between reading-while-listening with the same text versus different texts. They found that overall, reading-while-listening helped to increase the reading rates of the participants; however, there were no differences between the use of the same text and different texts (Van Bon et al., 1991).

Other researchers have developed adaptations to previewing strategies and examined the impact of those adaptations on student reading. Skinner et al. (1997) supported the claims by Rose and Sherry (1984) that listening preview can increase rates of accurate reading when compared to silent previewing alone. In this study, researchers compared the effectiveness of two listening passage preview procedures (slow and rapid) and silent reading previewing. Like previous research, they found that listening passage preview procedures resulted in higher reading accuracy than silent passage preview alone. They also found that reading accuracy may be higher if instructor reading rate is slowed (Skinner et al., 1997).

Other studies have compared the effectiveness of common reading interventions, including listening passage preview, in a small-group setting (Begeny et al., 2009; Billingsley-Ring, 2023). In 2009, Begeny and colleagues studied the effects of listening passage preview, repeated reading, and listening only (i.e., students listens to a more skilled reader read the passage without following along) on reading fluency in elementary-aged students. Findings

indicated that LPP demonstrated a similar amount of retained words compared to repeated reading practices. The findings also added support to the use of LPP as a small-group intervention which may make implementation more feasible in the school setting. While repeated reading appeared to demonstrate stronger immediate gains in words correct per minute, the study demonstrated that LPP was a viable option, especially for retention gains across students (Begeny et al., 2009). In a replication study, Billingsley-Ring and colleagues (2023) found similar results when comparing small-group based listening passage preview, repeated reading, and a combination of the interventions. Specifically, they found that for all of the students within their study, there was a stronger gain when RR and LPP were combined into a single intervention; however, all interventions resulted in higher words correct per minute when compared to baseline and control conditions. These studies demonstrate that LPP is a viable option for use in increasing reading fluency for students in the small-group intervention setting.

Researchers have also examined the effectiveness of how the preview is delivered during an LPP intervention. A study by Swain and colleagues (2017) revealed that the use of teacher-modeled LPP resulted in a large increase in reading fluency among participants. Within this study, the researchers examined the effectiveness of repeated reading, audio listening passage preview, and teacher modeled listening passage preview. All of these interventions resulted in improved oral reading fluency after seven weeks of intervention. More specifically, they also found that teacher-modeled listening passage preview resulted in the greatest increase in oral reading fluency among the examined interventions (Swain et al., 2017).

An interesting avenue of research, conducted by Wredt (2022) examined the student's preference of reading interventions targeting reading fluency. Specifically, Wredt (2022) studied the effects of repeated reading, listening passage preview, and a combination of the two

interventions on student reading. Listening passage preview and the combination intervention were selected by the two students as their preferred interventions even though neither of these interventions provided the most gains for them. Although there was not a strong indication of gains made by the students' preferred interventions, results showed that students were still able to show improvement with their preferred interventions. These results may add additional support to the use of LPP as a reading intervention as it may be a preferred intervention among the students who engage in reading intervention. However, more research is needed to replicate these gains with additional participants.

Listening Passage Preview and ADHD

Although an often-used intervention component, research exploring the effectiveness of LPP with students diagnosed with ADHD is lacking. An unpublished dissertation completed by Elizabeth Patrick (2021) suggested that LPP procedures implemented virtually with children diagnosed with ADHD were effective in improving accurate reading fluency; however, LPP was not as effective as a repeated reading strategy. Patrick (2021) indicated that these results could be due to attentional concerns reported during LPP procedures for two of the three participants. Specifically, the participants were observed looking around the room, looking at themselves on the computer screen, laying their head down, and having difficulties maintaining focus while researchers were reading the passage. Outside of this dissertation study, to date, there have been no published studies examining the relationship between a diagnosis of ADHD and LPP effectiveness.

Aims of the Current Research

While previewing procedures, including Listening Passage Preview, are commonly used in reading instruction, it is not clear that these procedures will effectively remediate reading

difficulties in children with ADHD due to the impact of inattention and hyperactivity. Therefore, the current study will examine the effectiveness of Listening Passage Preview with children who are diagnosed with ADHD and compare to those who are not diagnosed with ADHD.

Specifically, we look to answer the following: (1) Is LPP effective in increasing reading speed and decreasing reading errors, and (2) is LPP more effective for participants who do not meet ADHD diagnostic criteria?

CHAPTER II

Methods

Participants and Setting

Participants were recruited from clientele of the Korn Learning, Assessment, and Social Skills (KLASS) Center. To be included in the study within the ADHD group, clients must have been between the ages of 7 and 14 and either have an existing diagnosis for ADHD or are being evaluated for ADHD. Control, or “Non-ADHD”, participants were KLASS Center clients of the same age group (7-14), who were being evaluated for learning concerns (e.g., Specific Learning Disorder) and/or who do not have a previous diagnosis of ADHD. A total of 17 participants were included within the study (12 ADHD and 5 Control). The mean age for participants was 9.41 and the average grade was 3.53. There were 7 participants identified as male while 10 identified as female. Demographic data is represented in Table 1.

Procedures for this study were conducted within testing rooms at the KLASS Center at the University of Tennessee, Knoxville. The testing rooms were private and free of most distractions. These rooms were also equipped with cameras for monitoring. These systems were used for treatment fidelity, interobserver reliability, and behavioral observations. It is important to note that during data collection, the camera system within the KLASS Center was upgraded to a new system. This made recordings difficult to obtain for an extended period during data collection and limited the amount of treatment integrity and interobserver reliability data that could be recorded. Examiners included trained KLASS Center graduate clinicians and volunteer research assistants from the School Psychology program at the University of Tennessee, Knoxville. Training procedures for examiners are described below.

Materials

To measure words correct per minute, oral reading fluency probes from DIBELS 8th Edition were used (University of Oregon, 2020). These probes allowed us to provide instructional level material to the students with ease. DIBELS 8th Edition also took steps to equate the difficulties of passages at each grade level (University of Oregon, 2020). It is reported that these form effects are still present; therefore, to counteract these effects, median scores were recorded from three probes in both baseline and Listening Passage Preview conditions. In addition, probes were reduced to 100-word passages each to maintain consistency for every participant. Examiners used copies of probes as marking sheets for errors and stopping point. Oral reading fluency probes were organized in electronic folders by grade-level, including both participant reading probes and examiner scoring probes. The data collection sheet included sections for words read correctly, total errors, total words read, percentage of words read correctly (words read correctly/total words read), and time to complete reading (seconds). An audio-recording of each Listening Passage Preview probe was used by examiners during the Listening Passage Preview procedure. This recording allowed for consistent examiner reading rate between participants. Examiners were required to access a stopwatch for timing purposes throughout the study procedures. On the day of evaluation, parents of participants were given standard KLASS Center consent forms that included a section on research participation. If they provided consent, they were then provided a secondary consent form specified for participation in the current study. For data storage, all data was entered into an Excel spreadsheet sorted by participant number.

Dependent Variables

The dependent variables for this study included reading speed and errors. Reading speed was measured by recording the amount of time required by each participant to read the passage. To minimize unnecessary strain on participants, time was capped at one minute. Errors recorded by examiners included hesitations greater than 3 seconds and substitutions. Participants were allowed to correct themselves (within 3 seconds) and omissions were not counted as errors. Percent correct was calculated for each probe (i.e., words correct/total words attempted). This allowed researchers to account for differences in total errors between participants who attempted to read more words within the minute.

Independent Variable

The independent variable was the Listening Passage Preview intervention. In this intervention, an audio recorded reading of a passage was previewed to the participant prior to their reading of the same passage. Detailed information on the steps of the intervention is described in the Procedures below.

Procedures

Recruitment. Participants (ADHD and control) were recruited based on referral concerns at the time of their scheduled initial appointment with the KLASS Center. Those who were undergoing a psychoeducational evaluation for ADHD were asked if they wished to participate in the study. Consent was provided in two forms: the standard KLASS Center consent and a consent form specific to this study. Parents were asked if they wished to have their child considered for possible participation in research studies through the standard KLASS Center consent form. If consent was obtained from parents on this form, they also were provided the specific parental consent form for the current study. Both consent forms were read to parents

verbally, and once consent was obtained, the child became an active participant in the study. After paperwork was completed, the participant began their psychoeducational evaluation, which typically required two KCLASS Center sessions. Each session included testing procedures (i.e., cognitive testing or academic testing).

Screening. To determine the instructional level for each participant, standardized achievement scores were used. During evaluations at the KCLASS Center, clients routinely complete standardized academic achievement testing by using the Woodcock-Johnson IV: Test of Achievement (Schrang et al., 2014), Weschler Individual Achievement Test – Fourth Edition (NCS Pearson, 2020), or the Kaufman Test of Educational Achievement – Third Edition (Kaufman & Kaufman, 2014). Each of these tests provide a standardized score representing reading achievement, along with estimated grade-level. Using this score allowed researchers to accurately find participant instructional level.

Pretest. After the completion of the participant’s second day of evaluation, the examiner provided baseline procedures. Examiners selected the appropriate grade-level folder based on the instructional level determined from screening procedures. During the pretest procedure, examiners followed a script (Appendix B) and sat with the participant in a KCLASS Center testing room, free of major distractions. A copy of each pretest probe was made available to both the participant and examiner. The participant was then asked to read the passage orally for one-minute. Once the participant finished the passage or reached one-minute exactly, examiners asked them to stop and recorded the stopping point and time. These steps were repeated for two additional probes and recorded words correct, errors, total words attempted, percent correct, and time spent reading.

Listening Passage Preview. After the participant completed the three pretest probes, the examiner administered three probes with an LPP procedure in place. During LPP Examiners followed a script (Appendix B) that outlined procedure instructions. Each LPP probe had a corresponding audio recording of a researcher reading the passage. For each probe, examiners played the corresponding recording while participants were asked to read along silently. After the recording was completed, participants were then asked to read the passage orally. Once the participant completed the passage or read for exactly one minute, examiners recorded the time and stopping point and continued to the next probe. These steps were repeated for two additional probes and the examiner recorded words correct, errors, total words attempted, percent correct, and time spent reading.

Treatment integrity. Examiners were trained on how to appropriately administer these procedures in the KLASS Center. Examiners were given practice opportunities administering the screening and LPP conditions with researchers. To maintain treatment integrity, examiners had to be able to complete all intervention steps with at least 80% accuracy over three administrations as recorded by researchers. This process was completed through observation of procedure administrations by the researchers through the camera systems in the KLASS Center. In addition, examiners were also given the opportunity to review procedures before and debrief with researchers after data collection to discuss their performance.

Interobserver Reliability. To maintain interobserver reliability, sessions were video recorded and researchers collected data on words read correctly and time to read along with the examiners. Interobserver reliability was calculated using the median scores (pretest and posttest) for both time recorded, and total words correct. Comparisons were made between observers by taking the total time recorded and the total number of words correct. Interobserver data was

collected across 30% of intervention sessions. Data were considered reliable if there was 85% agreement or higher between the researcher and examiner.

Design and Analysis

Data were analyzed via SPSS using Pair-Sample T-tests and Independent Samples T-tests to examine the impact of the Listening Passage Preview procedure (independent variable) on reading speed and reading errors (dependent variables) for students with and without ADHD. Specifically, this data was explored using percent correct (reading errors) and time to read (reading speed). Percent correct was calculated by dividing words correct by total words attempted (words correct + errors). This data allowed researchers to account for differences in total words attempted between participants. Time was calculated as the time it took participants to read 100-word passages but was maxed at one minute for all participants. Data was collected and stored via a password protected Excel spreadsheet.

CHAPTER III

Results

The purpose of this study was to evaluate the effectiveness of LPP between students with a diagnosis of ADHD as compared to those without ADHD to provide guidance for practitioners recommending interventions for students needing reading interventions. Both groups were asked to read six, 100-word passages at instructional level. Three passages were for pretesting, and three included post testing following LPP procedures. Analysis of research questions are described in more detail below. Data are presented in Tables 2, 3, and 4.

Research Question One

The first research question assessed whether the current implementation of LPP was effective in reducing participant errors and increasing reading speed. This question was measured using overall percent correct and time to complete reading. To evaluate this information, paired-sample t-tests were run on overall percent correct change scores and time taken (pre-intervention to post-intervention). Results of the t-test examining percent correct were significant [$t(16,1) = 2.67; p = .008$]; therefore, there was a statistically significant difference between changes from pre to post-LPP intervention. Results of the t-test examining time taken were not significant [$t(16,1) = .737; p = .236$]; therefore, no statistically significant difference was detected between pretest and LPP procedures.

Research Question Two

The second research question aimed to evaluate the difference in LPP effectiveness for participants with ADHD and those without. This question was measured by examining the difference in percent correct and time between groups using independent t-tests. Results of the t-test examining percent correct were not significant [$t(15,2) = -1.37; p = .096$]; therefore, there

was no significant difference found between the percent correct for the ADHD and control groups (pre to post-LPP intervention). Results of the t-test examining time were also not significant [$t(15,2) = -.703$; $p = .246$]; therefore, no statistically significant difference was observed between ADHD and control group time scores.

Treatment Integrity/Interobserver Reliability

Treatment integrity and interobserver reliability data was able to be collected on five total sessions (29.4%) throughout this study. Examiners averaged scores of 95% (range from 80% to 100%) on treatment integrity checklists throughout collected sessions. Additionally, interobserver reliability data was collected during these same five sessions. On average, there was 97.18% agreement on median prompts for total words correct (range from 93.75% to 100%) and 99.83% agreement on total time to read (range from 99.15% to 100%).

CHAPTER IV

Discussion

Several evidence-based reading interventions are used to develop and fine-tune student reading skills. One of these interventions commonly prescribed for students with fluency difficulties is Listening Passage Preview. Many researchers have collected evidence supporting the use of LPP for students demonstrating difficulties with reading skills (Begeny et al., 2009; Billingsley-Ring et al., 2023; Rogers et al., 2018; Rose & Sherry, 1984; Skinner et al., 1997; Swain et al., 2017; Van Bon et al., 1991; Wredt, 2022). LPP has been shown to be effective in improving student reading fluency through multiple methods (i.e., teacher-modeled, audio recording-modeled), and in different settings (i.e., group and independent; Begeny, 2009; Billingsley-Ring, 2023; Swain et al., 2017). Currently, the literature does not address the use of LPP with clinical populations. This gap in the research is necessary to explore as wide-spread interventions need to be examined for their effectiveness with clinical populations.

Research Question 1: Is LPP effective in decreasing reading errors and increasing reading speed?

To examine the overall effectiveness of LPP on reading errors, percent correct (Words Correct/Total Words Attempted) was examined through paired-sample t-tests. Percent correct allowed researchers to account for participants who could not complete the passage in 60 seconds and those who completed whole passages. The mean percent correct during pretest probes was 93.37% while the mean percent correct following LPP was 96.48%. Results suggest that this difference the LPP procedure led to significant growth in percent correct across participants. These results support previous research identifying LPP as an effective reading intervention, as they indicate that LPP improves student accuracy when students read orally

(Begeny et al., 2009; Billingsley-Ring et al., 2023; Skinner et al., 1997). In combination with these previous studies, these results continue to support the use of LPP as a viable reading intervention targeting improvements in accuracy.

Similarly, a paired-sample t-test was also used to examine the LPP procedure's effect on reading speed, which was measured by the time to complete reading a passage. Results did not produce a statistically significant difference between pretest and LPP procedures. This means that participants generally required the same amount of time to read through the pretest and posttest probes; therefore, we can conclude that the current LPP procedure was not effective in increasing reading speed for participants in this study. This information is difficult to compare to previous research, as the majority of studies do not examine time differences for participants when using this intervention. In the current study, time was used to examine reading speed for 100-word passages so that researchers could determine if there was a difference for participants after the LPP procedure was implemented. These results do not support this hypothesis.

Data of individual participants in Table 3 indicates large areas of improvement for some of the participants. Specifically for participants 1, 3, 6, 7, 10, 12, and 13, data indicates an improvement in words read correctly by 10 or more from pretest to posttest. On average, these participants saw an increase in 18 words correct pretest to posttest. The largest improvement was demonstrated by participant 3, who demonstrated 34 additional words correct on the passage following the LPP intervention. These participants also did not demonstrate significant change in percent correct, aside from participant 10 (change of 16.2%). These results show that while they read more words correctly, participants did not demonstrate a large change in errors made following LPP intervention. In terms of time, there was one participant (participant 9) who

showed an improvement of 10 seconds following LPP intervention, which was the largest improvement in time across participants.

Research Question 2: Is LPP more effective for participants who do not meet ADHD diagnostic criteria?

To examine effectiveness of the current LPP procedure between groups, independent-sample t-test were used to examine percent correct and time difference for each group (pretest and LPP). Both independent-sample t-test (percent correct difference and time difference) did not yield statistically significant differences between the ADHD and Control groups. It is important to note, however, that the t-statistic representing percent correct difference was approaching statistical significance ($p=.096$). It is possible that with more participants added to the Control group, researchers could see a significant difference between the two groups. For the current study, however, the findings above do not support the idea that LPP procedures were more effective for students without ADHD than students with ADHD which is important information for practitioners who recommend LPP for students with reading difficulties. These results support an argument that LPP can be comparable for students who have reading difficulties regardless of the presence of an ADHD diagnosis. For students struggling with reading, LPP can be a useful instrument in improving reading fluency and accuracy (Rose & Sherry, 1984; Skinner et al., 1997; Begeny et al., 2009; Billingsley-Ring et al., 2023) and these results appear to support that for students diagnosed with ADHD.

When reviewing the individual data (Table 3), most of the improvement in words correct following LPP was demonstrated by participants with a diagnosis of ADHD. Participants 1, 3, 6, 7, and 12 all demonstrated improvements in this area by 10 or more words. On the other hand,

participants 10 and 13 were not diagnosed with ADHD and demonstrated improvements of 12 and 14 words, respectively.

Limitations and Future Directions

There are several limitations within this study. The first limitation is related to sample size and recruitment difficulties. It was anticipated that recruitment through an on-campus clinic, specializing in diagnostics and academic/behavioral interventions would provide a sufficient number of possible participants over the course of the study. For a multitude of reasons, there were many suitable candidates for participation who did not wish to participate in the study. This decision may have been due to the setting in which the study was conducted, as all possible participants were engaged in a complete psychoeducational evaluation over the course of two days minimum. It can be assumed that clients may not have had time to complete the study (e.g., prior arrangements after evaluation time, evaluation took longer than expected) or there were cases of fatigue from their evaluation. The study also encountered several instances where parental consent was received but child assent was refused. Future researchers may want to consider conducting sessions within a variety of settings (i.e., clinics, schools), to increase the recruitment opportunities and increase the participant pool. Recruiting in a school setting will provide more opportunities to obtain control participants and study procedures can be conducted outside of a formal testing setting. As discussed earlier, having more participants should allow for a stronger data analysis and further exploration of the problem examined by this study. Future studies may also choose to redefine the inclusion criteria for participants between the groups. The current study limited recruitment to those between the ages of 7 and 14 to find participants; however, increasing this age range may provide more potential participants.

Another limitation focuses on the single-dose delivery of the intervention. LPP is often delivered multiple times over a period of several weeks, as are most reading interventions; however, within this study participants received a single session of LPP. This decision was made to lessen the burden placed on participants and to help with participant recruitment as participants were only on site for a limited amount of time. It is recommended for future research to continue LPP sessions with students over the course of several weeks, which would allow researchers to determine change over a period of time, as practitioners would most likely see in the field.

A third limitation focuses on the time recording procedures in place for data collection. To demonstrate some control across participants, recording time was capped at 60 seconds and participants were asked to stop reading. This procedure was also added to reduce unnecessary strain to participants who had just completed psychoeducational evaluations. This time restriction may have made it difficult to demonstrate differences in total reading time among participants as many participants needed more than 60 seconds to read a passage. Some participants may have required far more time to complete the passage; therefore, giving researchers a more detailed look into the time differences for participants pretest to posttest. Future researchers may want to consider making a change to this procedure to see the change it may have to the results.

Finally, sessions were conducted within a strongly controlled environment that was optimal for reducing distractions for participants while they were engaged in reading probes. This setting was important for minimizing outside influences on the study; however, reading interventions are often delivered within the school setting where distractions can be minimized to

a certain extent. Future researchers may be interested in delivering procedures in a setting similar to those seen in the field.

Implications

The results of this study can be important for practitioners in the field who are regularly working with students who have difficulties with reading. These results appear to support the use of LPP for all students, as an ADHD diagnosis appeared to have little effect on improvement outcomes for participants within this study. Practitioners should feel comfortable recommending LPP to improve reading fluency and accuracy, despite a diagnosis of ADHD.

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APPENDICES

Tables

Table 1

Individual Participant Demographic Data

Participant	Group	Age	Sex	Grade	Reading Grade Equivalent
1	ADHD	9	Male	3	3.1
2	ADHD	13	Male	7	3.4
3	ADHD	8	Female	2	2
4	Control	8	Male	3	3
5	Control	11	Female	5	3
6	ADHD	7	Female	1	1
7	ADHD	7	Female	2	1.8
8	ADHD	12	Female	6	5
9	ADHD	11	Male	5	4.9
10	Control	8	Female	2	1.2
11	ADHD	8	Male	3	3.5
12	ADHD	14	Male	8	8
13	Control	8	Female	2	2
14	ADHD	7	Female	1	1
15	ADHD	13	Female	7	2.8
16	ADHD	9	Male	2	1.5
17	Control	7	Female	1	2.3

Table 2

Results of Paired-Sample t-tests Examining Percent Correct and Time across Conditions

	Pretest		Post test		$t(16)$	p	Cohen's d
	M	SD	M	SD			
Percent Correct	93.38	6.71	96.48	3.48	2.67	.008	.648
Time	53.53	9.21	54.65	7.38	.737	.236	.179

Table 3*Results of Independent-Samples t-tests Comparing Change Scores across Groups*

	Control		ADHD		<i>t</i> (15)	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Percent Correct	5.50	6.77	2.11	3.62	-1.37	.096	-.726
Time	2.00	6.93	-.420	6.27	-.703	.246	-.374

Table 4*Individual Participant Data for Words Correct, Percent Correct, and Time across Conditions*

Participant	Group	Pretest Words Correct	LPP Words Correct	Pretest Percent Correct	LPP Percent Correct	Pretest Time	LPP Time
1	ADHD	80	97	94.1	98.9	60	57
2	ADHD	99	93	99	95.9	53	60
3	ADHD	36	70	85.7	93.3	60	60
4	Control	73	71	97.3	98.6	60	60
5	Control	97	96	97	96	38	52
6	ADHD	39	61	84.8	92.4	60	60
7	ADHD	50	60	90.9	96.8	60	60
8	ADHD	93	95	97.9	96.9	40	48
9	ADHD	98	99	98	99	57	47
10	Control	26	38	76.5	92.7	60	60
11	ADHD	98	97	98	97	42	46
12	ADHD	79	97	100	99	60	58
13	Control	86	100	96.6	100	60	56
14	ADHD	32	39	84.2	86.7	60	60
15	ADHD	97	99	97	99	39	51
16	ADHD	98	98	98	98	41	34
17	Control	74	74	92.4	100	60	60

Appendix A

Parental Consent Form

Permission for Research Participation of a Minor

Research Study Title: Effectiveness of Listening Passage Preview with Children Diagnosed with ADHD

Researcher(s): David Castleman, Ed.S., University of Tennessee, Knoxville
Merilee McCurdy, Ph.D., University of Tennessee, Knoxville

Why is my child being asked to be in this research study?

The study looks to examine the effectiveness of the reading intervention, Listening Passage Preview, for children aged 7-14, who are diagnosed with ADHD. Listening Passage Preview is a reading intervention aimed at increasing oral reading fluency for children through modeling. We are asking your child to be in this research study because they have been identified as a student with reading concerns.

What is this research study about?

The purpose of this study is to determine if Listening Passage Preview is as effective for children with ADHD as it is for those without. Researchers from the University of Tennessee will obtain achievement test scores and current ADHD symptoms from participants. Participants will then be provided oral reading fluency probes both with and without the use of Listening Passage Preview in order to determine improvement. We anticipate that Listening Passage preview will not be as effective for students who demonstrate diagnostic behaviors consistent with ADHD and there will be a smaller change in their word reading accuracy when compared to participants without ADHD.

Who is conducting this research study?

This study is being conducted by researchers at the University of Tennessee, Knoxville. Researchers are professors or doctoral students in the school psychology program and have completed research training requirements and background checks for research through the University.

How long will my child be in the research study?

If you give permission for your child to be in the study, and your child agrees, participation in the study will only require two sessions, which will be integrated into KCLASS Center evaluations. The first session will include collection of academic achievement data and behavior ratings (these are normal procedures for the KCLASS Center Evaluation). The second session will include oral reading probes with and without the use of the Listening Passage Preview intervention.

What will happen if I say "Yes, I want my child to be in this research study"?

If you give permission for your child to be in this study, we will collect data and information on your child's current reading skills and behavior through the in progress KCLASS Center evaluation materials. During your second appointment with the KCLASS Center, we will ask that your child stay for 15-30 minutes following testing, in order to complete oral reading probes and receive the Listening Passage Preview intervention.

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IRB EXPIRATION DATE: 03/29/2025

What happens if I say "No, I do not want my child to be in this research study"?

Your child's being in this study is up to you. You can say no now or leave the study later. If you say, "No, I don't want my student to be in this research study," we will not collect data on your student. Either way, your decision won't affect your child's KLASS Center evaluation or their relationship with the researchers or the University of Tennessee.

What happens if I say "Yes" but change my mind later?

Even if you decide to allow your child to be in the study now, you can change your mind and stop at any time. If you decide to stop before the study is completed, you can let us know by contacting the researchers listed at the top of this form. If your student withdraws from the study before data collection is completed, their data will be destroyed.

Are there any possible risks to my child?

It is possible that someone could find out your child was in this study or see their study information, but we believe this risk is small because of the procedures we use to protect your information. These procedures are described later in this form.

Are there any benefits to being in this research study?

There is a possibility that your child may benefit from being in the study, but there is no guarantee that will happen. Possible benefits include improved reading skills for your child. Even if your child doesn't benefit from being in the study, their participation may help us learn more about a widely utilized reading intervention. We hope the knowledge gained from this study will benefit others in the future.

Who can see or use the information collected for this research study?

We will protect the confidentiality of your child's information by assigning your child a participant number and removing all potentially identifying information from all hard copy data forms once data is collected and entered into an electronic database. If information from this study is published or presented at scientific meetings, your child's name and other personal information will not be used.

We will make every effort to prevent anyone who is not on the research team from knowing that your child gave us information or what information came from your child. Although it is unlikely, there are times when others may need to see the information we collect about your child. These include:

- People at the University of Tennessee, Knoxville who oversee research to make sure it is conducted properly.
- Government agencies (such as the Office for Human Research Protections in the U.S. Department of Health and Human Services) and others responsible for watching over the safety, effectiveness, and conduct of the research.
- If a law or court requires us to share the information, we would have to follow that law or final court ruling.

What will happen to my child's information after this study is over?

We will keep your child's information to use for possible publication in scientific journals or presentations at scientific meetings. Your child's name and other information that can directly identify them will be deleted from their research data collected as part of the

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study. All hard copies of data forms will be stored in a locked file cabinet in the researcher's office on the UTK campus. The electronic database will include his/her participant number. Their data will be stored on the researcher's strong password-protected personal document location of the UTK network, and only the researchers will know the password to access the files.

Who can answer my questions about this research study?

If you have questions or concerns about this study, or have experienced a research related problem or injury, contact the researchers. You may contact David Castleman at dcastle4@vols.utk.edu. You may contact Dr. Merilee McCurdy at 865-974-8144 or by email, mcurdy2@utk.edu.

For questions or concerns about your rights or to speak with someone other than the research team about the study, please contact:

Institutional Review Board
Phone: 865-974-7697
Email: utkirb@utk.edu

STATEMENT OF PERMISSION

I have read this form, and the research study has been explained to me. I have been given the chance to ask questions, and my questions have been answered. If I have more questions, I have been told who to contact. By signing this document, I am giving permission for my child to be in this study. I will receive a copy of this document after I sign it.

Child's Name (printed) _____

Parent's Name (printed) _____

Parent's Signature _____ Date _____

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Child Assent Form

Child Assent Statement

(This form will be read to the student)

Hello, my name is [Insert your name]. I am a graduate student at the University of Tennessee. I am working for a research project that looks to help students who may be having some difficulties with reading. The project is looking at an intervention called Listening Passage Preview and how well it works with students who have ADHD. During your evaluation at the KLASS Center, you will be completing some academic testing and behavior rating scales. After your second day of testing, you will complete some reading aloud tasks and engage in Listening Passage Preview with a researcher. We are asking you to be part of this research study because you may have some difficulties with reading and are between the ages of 7-14.

Your evaluation will be recorded, so that researchers can view your behavior and monitor other researchers. If you agree to participate, researchers will have access to your evaluation materials, recorded sessions, and collected data. You'll be asked to stay for 15-30 minutes after your second day of evaluation, in order to complete some oral reading tasks. If you say no, we will not collect any of your data and your evaluation will not be affected as a result.

It is possible that someone may find out that you were in this study or see your information, but this risk is small as your information will be protected. Your real name will be removed and replaced with a number in order to organize collected data. All information collected will be stored in a secure location or on secure devices approved by researchers.

Please talk this over with your parents before you decide whether or not to be part of this study. We will also ask your parents for permission for you to take part in this study, but even if your parents say "yes", you may still decide not to participate.

Please give a verbal "yes" or "no" at this time and mark your initials here _____.

If you have questions or concerns about this study, or have experienced a research related problem or injury, contact the researchers. You may contact David Castleman at dcastle4@vols.utk.edu. You may contact Dr. Merilee McCurdy at 865-974-8144 or by email, mcurdy2@utk.edu.

For questions or concerns about your rights or to speak with someone other than the research team about the study, please contact:

Institutional Review Board

The University of Tennessee, Knoxville

Phone: 865-974-7697

Email: utkirb@utk.edu

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Data Collection Sheet

Data Collection Sheet

Probe	Number	Words Correct	Errors	Total Words	Percent Correct	Time (Seconds)
Baseline	1					
Baseline	2					
Baseline	3					
LPP	1					
LPP	2					
LPP	3					

Treatment Integrity Score Sheets

Examiner:			
Pretest Procedure	Ratings		
1. Obtained correct packet of oral reading fluency probes.	0	1	2
2. Follows script.	0	1	2
3. Times for one-minute while Participant reads.	0	1	2
4. Marks errors correctly.	0	1	2
5. Completes three probes with Participant.	0	1	2
Total score of 8 (80%) and higher reflects adequate treatment integrity	Total Score: _____		

Examiner:			
Listening Passage Preview Procedure	Ratings		
1. Obtained correct packet of oral reading fluency probes.	0	1	2
2. Follows script.	0	1	2
3. Times for one-minute while Participant reads.	0	1	2
4. Marks errors correctly.	0	1	2
5. Completes three probes with Participant.	0	1	2
Total score of 8 (80%) and higher reflects adequate treatment integrity	Total Score: _____		

0 = Examiner did not demonstrate skill.

1 = Examiner demonstrated skill with few errors.

2 = Examiner demonstrated skill with no errors.

Interobserver Reliability

Examiner:	Date:
Rater:	Participant #:
Total Words Correct:	Total Time to Read:
Examiner:	Date:
Rater:	Participant #:
Total Words Correct:	Total Time to Read:
Examiner:	Date:
Rater:	Participant #:
Total Words Correct:	Total Time to Read:

Appendix B

Pretest Examiner Procedure and Script

1. Examiner will determine the correct DIBELS 8th Edition oral reading fluency probes from achievement scores collect on Participant's first evaluation day.
 - a. Instructional level oral reading fluency probes can be found in prepared marked folders for each grade-level.
 - b. Pretest probes are marked "Pretest"
2. Examiner and Participant will sit directly across the table from each other.
3. Examiner will provide Participant will a copy of "Pretest" probes and follow the following script:
 - a. *I want to listen to you read out loud. Please read clearly. If you come to a word you do not know, I will help you with it. Ready? Begin.* Start the one-minute timer.
 - b. As the Participant is reading, record errors including hesitations greater than 3 seconds and substitutions. Provide corrective feedback and have the student continue reading.
 - c. Once the Participant has read for one minute: *Stop. Now let's move on to another passage.*
4. After the timer is complete, Examiner will mark the stopping point with "] "
5. Repeat steps 3-4 with two more "Pretest" probes.

Listening Passage Preview Examiner Procedures and Script

1. Examiner will determine the correct DIBELS 8th Edition oral reading fluency probes from achievement scores collect on Participant's first evaluation day.
 - a. Instructional level oral reading fluency probes can be found in prepared marked folders for each grade-level.
 - b. Listening Passage Preview probes are marked "LPP".
2. Examiner and Participant will sit directly across the table from each other.
3. Examiner will provide Participant will a copy of "Listening Passage Preview" probes follow the following script:
 - a. *You will listen to an audio-recording and follow along with your copy of the reading passage. Once the recording is complete, it will be your turn to read out loud. Begin the recording.*
 - b. *After the recording has completed: Now it is your turn to read. If you come to a word you do not know, I will help you with it. Ready? Begin.*
 - c. Start the one-minute timer. As the student reads, mark any hesitations that are greater than three seconds and substitutions. Provide corrective feedback and have the student continue reading.
 - d. Once the Participant has read for one minute: *Stop. Now let's move on to another passage.*
4. After the timer is complete, Examiner will mark the stopping point with "] "
5. Repeat steps 3-4 with two more "Listening Passage Preview" probes.

VITA

David Michael Castleman was born to David Howard and Leigh Ann Castleman. He grew up in Paducah, Kentucky with his parents and two siblings, Andrew and Jessica Castleman. He attended Murray State University for his undergraduate studies, achieving a Bachelor of Science degree in Psychology with a minor in Sociology in May of 2017. He continued his education at Murray State University, pursuing a Specialist in Education degree in School Psychology, which he achieved in December of 2020. Additionally, David completed all required coursework for BCBA training and began acquiring hours. After completing his internship, David pursued his Ph.D. in School Psychology at the University of Tennessee, Knoxville. He is currently completing an APA internship at the May Institute in Boston, Massachusetts. He will be completing his doctoral degree in 2024, after which he will be pursuing a career in academia at Western Kentucky University. David is immensely grateful to his family, friends, and faculty for their continuous support throughout his academic pursuits.