# AFFECTING STUDENT GROWTH IN READING THROUGH TEXT STRUCTURE STRATEGY INTERVENTION

A Record of Study

by

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# ABSTRACT

High school graduates should be able to read to complete everyday tasks. Without this ability, their quality of life could decline from the lack, a negative mindset, or both. Therefore, educational stakeholders aiding students with reading struggles must find the most effective solutions for these students. Students achieving below-average on reading assessments need appropriate, evidence-based intervention, effective when founded in research, consistent, systematic, and administered by a well-trained, collaborative staff; however, most practices for helping students meet these criteria center on the needs of younger students.

Educators use instructional interventions integrated into their lessons as one effective method for addressing student needs, but it is hard to find the most appropriate intervention. For this record of study, I employed a mixed-methods action research design to explore the impact of the Text Structure Strategy (TSS), an instructional intervention, on student reading comprehension for a participant sample of 111 students. I sought to provide educators with a reasonable, evidence-based, instructional alternative to computerized intervention programs when supporting struggling readers. In this study, students completed an eight-question pre- and posttest to measure reading comprehension before and after the intervention. The exams included five quantitative questions on the assessments, which measured student skills in vocabulary, author's purpose, inference, author's craft, and reading comprehension. In evaluating student skills further, performance tasks on each exam assessed student comprehension in three areas: Main idea, summary, and inferencing. A paired *t*-test analyzing the multiple-choice quantitative data demonstrated the impact of the intervention on student skills. Quantitative analysis of the performance tasks using a holistic rubric characterized students' reading comprehension

significantly grew post-intervention, while qualitative analysis of these tasks using deductive, a priori coding showed how student use of textual cues changed post-intervention. Results indicate the instructional intervention positively impacted student reading comprehension and relevant skills. Secondary educators with students struggling to achieve on reading assessments can integrate this intervention into their lessons to provide students with the instruction they need. To help teachers and learning leaders in my context, I created and distributed a handout overview with information on the purpose and steps to this strategy.

# DEDICATION

To my family who pushes me always to be more than I was yesterday.

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# NOMENCLATURE

| | |
|---|---|
| EOC | End of Course Exam |
| IGC | Individual Graduation Committee |
| LMS | Learning Management System |
| MAP | Measures of Academic Progress |
| NAEP | National Assessment of Educational Progress |
| PD | Professional Development |
| PLC | Professional Learning Community |
| RtI | Response to Intervention |
| STAAR | State of Texas Assessment of Academic Readiness |
| TAPR | Texas Academic Performance Reports |
| TSS | Text Structure Strategy |

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# CHAPTER I

# INTRODUCTION

The ability to read remains one of the most valuable and fundamental skills today. Most professions requiring none to multiple degrees necessitate employees skilled in reading if they are to complete tasks appropriately and accurately. Consequently, educators and researchers across the United States have raised concerns about declining student literacy achievement with renewed fervor since the mid-2000s (Jacobs, 2008). Stakeholders at the high school level especially find the numbers worrisome as students prepare to join society as productive members (Hooley et al., 2013). The national response has been to implement reading drives, such as counting minutes and accelerated reading, and computer programs to inspire younger readers, yet readers struggling at the high school level need more than a prescribed program to be successful. Concurrently, policymakers have presented the response to intervention (RtI) program as an amendment to the Individuals with Disabilities Act (IDEA) of 2004. Response-to-intervention models require teachers provide instructional interventions, which allow for real-time, immediate feedback to help students overcome learning obstacles (Grapin et al., 2019). Teachers, though, are not given clear guidelines on instructional intervention strategies or on how to integrate the practice into the classroom (Preston et al., 2016). Therefore, educators and students alike will benefit from research on a specific instructional strategy targeting reading deficiencies.

## The Context

### National Context

The National Center for Education Statistics (NCES, 2007) defines *literacy* as the reading and writing skills one needs to use printed information to contribute to society. These are

foundational skills needed to function successfully and independently as a working adult. However, in 2012, a disturbing 18% of the national public aged 16 to 65 proved unable to complete these most basic skills, which rose to 19% in 2017 (NCES, 2020). Student data at the national level from schools across the country indicate the number of adults with poor literacy skills will only grow. Twelfth-grade results on the 2019 Nation's Report Card showed 30% of students performed below basic literacy levels, an increase from 28% in 2015 (NCES, 2019b). These numbers continue to rise despite efforts to address the problem.

Growing numbers of Americans unable to read to complete everyday tasks demonstrate a need for action nationwide. Researchers and policymakers in the 1970s established these reading struggles for Americans as a concern for future research (White, 1985; Education Amendments, 1974). As a result, new national programs and concerted endeavors to promote literacy overwhelmed educators and the U. S. educational system. Many of these programs addressed younger grade level needs, such as the Head Start program (Administration for Children and Families, 2019). Research efforts also increased around improving reading outcomes for children.

Working to determine what research is high quality and has a positive impact on students, What Works Clearinghouse (WWC) evaluates published research and indicates if the interventions assessed were efficacious or not. Of the 233 literacy intervention programs the WWC team reviewed as of March 2022, only 29 applied to secondary education (grades 6-12). Out of those 28, 16 pertained to ninth grade, 12 for tenth grade, and seven applied to the eleventh and twelfth grades. Relatedly, data from the last twenty years show students in the fourth and eighth grades achieved limited growth, while twelfth graders demonstrated less proficiency over time (NCES, 2019a, 2019b). Students graduating high school should be able to function in

society. However, despite growth in reading achievement in the elementary grades and eighth grade, high school students in the lower proficiency levels are consistently regressing (NCES, 2019a, 2019b). With the skills of youths and adults falling below basic literacy levels, educational stakeholder and policymaker concentrations must now focus on secondary education.

In addition to the disparity of achievement between grade levels, the overabundance of reading programs produced concerns among educators and researchers on the efficacy of such interventions. When reflecting on a nationwide review conducted during the 2011-2012 school year of reading programs and interventions, Gersten et al. (2017) noted the reading programs introduced to and employed by schools did not use best practices. Meyer and Behar-Horenstein (2015) cautioned against interventions not based on evidence-based practices. In a search conducted in March of 2022 of literacy intervention programs, 50% of identified interventions for grades 9-12 had little evidence of success, according to What Works Clearinghouse (n.d.b). This result echoes a review conducted by Herrera et al. (2016), who found only 12 of the 33 interventions that met What Works Clearinghouse standards as of 2014 had documented positive results. Hooley et al. (2013) found the lack of evidence supporting these programs and poor classroom experiences amplified negative teacher perceptions of reading intervention, which persist in the current educational climate. Brozo (2009) reported it was difficult to convince middle and high school teachers to change instructional practices by incorporating evidence-based literacy practices. Nonetheless, effective, evidence-based reading interventions at the secondary level are needed to change student trajectories.

## Situational Context

The study took place at Brandview[1] High School, where I teach, in a suburban school district on the cusp of a large suburban metroplex in the southern US. The district's student population was approximately 13,000 in the 2019-2020 school year, 48.6% female and 51.4% male. The student body was reported as being 62.1% White, 24.4% Hispanic, 7.1% African American, 1.2% Asian, 0.5% American Indian, 0.3% Pacific Islander, and 4.5% Two or More Races; 63.7% were non-educationally disadvantaged, 36.3% were economically disadvantaged, 9.1% received 504 services, 5.9% were emergent bilingual, previously termed English Learners (ELs), and 10.3% were in the special education program (TEA, 2021b). Across the same groups, Hispanic students accounted for the largest percentage of total enrollment in Texas public schools in 2019-20 (52.8%), followed by White (27.0%), African American (12.6%), Asian (4.6%), and multiracial (2.5%) students; 60.2% were economically disadvantaged, 6.9% received 504 services, 20.3% emergent bilingual, and 10.7% were in the special education program (Du et al., 2020). These numbers pointed toward a district of predominately White students with parallels in the 504 and special education programs to statewide percentages.

### *Brandview High School*

Students at Brandview High School demonstrated a need for additional literacy support. Results from the English I, state-level end-of-course (EOC) exam results and the school district's identified universal screener indicated a need for 37% of the student population to improve literacy outcomes (TEA, 2019; K. Houk, personal communication [Data file], November 11, 2019). State-level reports of EOC data from 2017 to 2019 demonstrate an average of 28% of students did not meet basic expectations of the English I EOC (TEA, 2017, 2018, 2019).

[1] The name has been changed for this document.

Specifically, approximately 28% of students who take the English I EOC each year since 2017 do not meet the minimum passing standard. At Brandview High, administration expected this number to increase as the Fall 2019 MAP results showed 37% of the students performed below average in reading. School leadership believed this increase would be replicated in the EOC results despite concerted efforts to address poor literacy numbers since 2015 (K. Houk, personal communication [Data file], November 11, 2019).

In 2015, this school purchased licenses for the Achieve 3000 literacy program. The administration expected teachers to incorporate the program into their classes in the 2015-2016 school year for all English I and English II EOC retesters. Data compiled by the then academic principal did not show favorable results since only 34% of those students achieved success on state-level exams (Conlon, 2016). The following year, the program was repurposed as the curriculum for a freshman-level reading class, while English I and II teachers had to complete an intensive instruction plan (IIP) to document interventions they tried with unsuccessful students. As a result, some freshman-level students had success, and the English I EOC passing rate increased from 70% to 73%, while the English II EOC passing rate dropped from 77% to 74% (TEA, 2017). Then, the district introduced the NWEA Measures of Academic Progress (MAP) assessments, and administration dropped the literacy program, expecting teachers to become more adept at utilizing MAP data to address gaps in their instruction. However, stakeholders questioned teacher proficiency in using the data when the resulting English I EOC passing rate fell back to 71% (TEA, 2018). In the 2018-2019 school year, the administration did not introduce any new programs, but teacher teams called professional learning communities (PLCs) consistently reviewed MAP data to discuss how to address student gaps. In that same year, a short, 30-minute class called “Flex” was added to the schedule for extra tutoring, and counselors

assigned students to work with an English teacher in groups of fifteen or less. Results were much more promising as the English I EOC passing rate again rose to 74% (TEA, 2019). The 2019-2020 school year maintained this course with the addition of two freshman-level reading classes using a curriculum designed by two reading specialists. The results of these efforts per state-level data are unknown as the Texas Education Agency (TEA) canceled the EOCs during the COVID-19 pandemic. Despite this, a campus goal continued to be increasing student reading achievement. In the 2020-2021 school year, the campus purchased the Lexia PowerUp program for students achieving well below the average on reading per the Winter 2021 MAP reading assessment. These students studied words and practiced foundational reading skills via the computer program with some teacher support during the Flex class. The Spring 2021 EOC results showed a drop in overall success from 74% to 71% (TEA, 2021a), which campus administration considered neither regression nor improvement due to struggles with virtual instruction throughout the year. They did not further disaggregate the data to assess the efficacy of the Lexia PowerUp program. Nonetheless, district administration required teachers to implement 30 minutes of the program weekly into their lessons in the 2021-2022 school year.

Campus administration has focused on student literacy needs over the past several years, making many campus-level efforts to address those needs. The issue of reading achievement remains a central focus of the administration's plans for the future of the campus, with plans to address how teachers can use data to identify appropriate instructional interventions, the goal being to improve all ninth and tenth-grade student reading achievement outcomes on state assessments.

## The Problem

### Relevant History of the Problem

Literacy changed the course of human history. The ability to read and write enabled humans to accomplish more, share more, and more or less reliably communicate regardless of distance (Overmann, 2016). The drive to teach and encourage reading and writing began after the Protestant Reformation in 16th-century Europe (Arnove & Graff, 1987). However, industrialization reduced governmental urgency to conduct programs designed to advance the literacy of the masses. Therefore, educational systems carried the burden until government intervention in the late 19th and early 20th centuries (Arnove & Graff, 1987). These national literacy campaigns occurred in first-world countries as governments realized the benefits of having an educated workforce (Arnove & Graff, 1987).

In the United States, the government acted when literacy proficiency differed among socioeconomic groups following the Civil War in the 1860s and again in the segregated school systems of the 1950s and 1960s (Mixon & Stuart, 2009; Stevens, 1987). The Elementary and Secondary Education Act (ESEA) passed in 1965 required schools to provide remediation for students not meeting proficiency in reading and math. Approximately ten years later, policymakers refined the law to increase school monitoring of literacy needs and added adult literacy programs (Education Amendments, 1974). Reading became the central focus of remediation programs and other educational efforts. Programs such as Head Start were created and promoted within all states and educational agencies. Head Start, then and now, employs professors, pediatricians, psychologists, and other related professions to establish early learning services for disadvantaged preschool-aged children (Administration for Children and Families,

2019). As a result of these national programs, the nation saw dramatic growth in literacy achievement (Campbell et al., 2000). This growth has since stalled (Kirsch et al., 2002).

National results demonstrated regression in literacy achievement despite the programs regulated by the United States government and other entities flooding the educational market. The National Adult Literacy Survey results from the 1992 administration revealed an approximately 30% of respondents read below proficiency in 1992 (Kirsch et al., 2002). In response, the government set the goal for all American adults to be proficient in reading by 2000 (Kirsch et al., 2002). The National Literacy Act of 1991 anticipated this goal and reinforced national adult literacy programs (Kirsch et al., 2002). By 2000, the goal had not been met and lawmakers passed the No Child Left Behind (NCLB) Act of 2001 to update policies for the then-current educational climate. However, when the United States ranked below average in reading on the Programme for International Student Assessment (PISA) in 2012, governmental agencies and political leaders re-evaluated these policies in more depth (Darling-Hammond, 2014).

The NCLB Act of 2001 had implemented two initiatives to promote literacy. These initiatives implemented intervention in the elementary grade levels. In 2009, data from the Nation's Report Card showed an approximate four-point growth in reading proficiency for students in the fourth, eighth, and twelfth grades (NCES, 2009, 2010). Ten years later, fourth and eighth graders continued to improve with an additional one- and three-point growth (NCES, 2019a). However, twelfth graders in the 10th, 25th, and 50th percentiles scored significantly lower than their 1992 counterparts (NCES, 2019b). These results call for immediate attention to avoid the disparities of the 1860s and 1960s.

One intervention type to utilize besides a reading program is an instructional strategy. Teachers integrate these interventions into the lessons rather than removing the student from

class or taking time away from core lessons for an additional program. While instructional strategies have coexisted with the remediation programs since the 1960s, the campaigns have retained the majority of stakeholder and policymaker attention. Therefore, researchers perfecting instructional strategies, such as text structure strategy (TSS), have spent decades exploring the different circumstances in which teachers may use the intervention, as evidenced by varying age groups and delivery of the instruction throughout the years (Meyer, 1975; Meyer et al., 1980; Wijekumar & Beerwinkle, 2018; Wijekumar et al., 2020). This variety of research further demonstrates educators may adapt the strategy to meet student needs in a specific context.

National campaigns to encourage reading and writing have adjusted to encompass the evolving literacy needs of new generations. Nonetheless, the main focus of literacy programs nationwide has been the elementary grades per a search in March 2022 of literacy programs evaluated by What Works Clearinghouse (WWC). As student literacy skills regress in the upper-grade levels, stakeholders should be growing concerned with the number of graduating high school students unable to confidently read general informational texts, such as the instructions for a product (Kirsch et al., 2002). Concurrently, Wilcox et al. (2013), in their study on teacher perceptions of intervention, noted a lack of confidence in teachers when crafting lessons most appropriate for meeting students' needs. Educators should better craft instruction for high school students to target their learning needs so that when they do graduate, these new graduates are adequately able to contribute to society (Hooley et al., 2013), and teachers should be well-prepared to deliver such instruction strategies (Pyle & Vaughn, 2012). Most importantly, the students achieving below grade level will grow from the instructional intervention.

## Significance of the Problem

Secondary education in the U. S. gears instruction toward preparing students to become active, helpful members of society regardless of their future paths (Barnes & Slate, 2013). With the implementation of college, career, and military readiness (CCMR) standards, policymakers emphasize the need for more career-centered education. Stakeholders want students to graduate high school fully prepared to step into society as contributing citizens (Campbell & Kresyman, 2015). Therefore, education tailored to establishing the base knowledge and skills for a specific career path aligns with and acts upon this expectation. Regardless, students cannot be successful if they consistently struggle with basic reading skills.

Data from the early 1990s to 2019 demonstrate some success in national reading achievement, but not for students in the lower percentiles, especially those in upper-grade levels. In fact, since the 1992 administration of the reading portion of the National Assessment of Education Progress (NAEP), 12th grade students in the 10th, 25th, and 50th percentiles have significantly regressed (NCES, 2019b).

Locally, results from the 2019 administration of the state-level exam reflect the 2019 Nation's Report Card as 26% of ninth-grade test-takers did not meet state-literacy standards (NCES, 2019b; TEA, 2019). Fall 2019 data from the district's universal screener also showed 37% of ninth-grade test-takers had below-average reading achievement (K. Houk, personal communication [Data file], November 11, 2019). Literacy continues to prove an area of concern in this district and the nation.

District-level solutions proposed and implemented thus far have focused on efforts outside rather than inside the classroom. Schools have used programs such as Achieve 3000, additional courses, and tutoring time to curve the increasing numbers of students whose literacy

skills fall below the benchmark. Based on the data, the most promising initiatives have at their foundation instructional interventions (Dallas, 2017), as is the case with a 30-minute flex time integrated into the school schedule. However, these interventions outside the classroom exclude students unable to meet with the teacher beyond class time (e.g., students riding the bus or those participating in extracurricular activities). Moreover, extracurricular interventions often deteriorate when teachers with little time to plan the instruction rely on computer programs or pre-packaged lessons and materials (Brozo, 2009; Faggella-Luby & Wardwell, 2011). Educators can adapt integrated instructional interventions to meet student needs when they need the instruction in the classroom rather than after the unit has ended and the instructor has moved past student skill levels (Jefferson et al., 2017; Jeffes, 2016). With the potential for significant, positive results, studies of classroom-based interventions must be conducted at the high-school level to expand the limited body of research in this area of secondary-level literacy.

## Research Questions

The purpose of this study was to determine how integrating Text Structure Strategy (TSS) into the ninth-grade literacy curriculum impacted the reading achievement of ninth-grade students. By collecting quantitative (reading comprehension outcomes) and qualitative (written responses to open-ended inferencing, comprehension, and structural questions) data, I answered the following research questions:

1. What is the difference in reading comprehension outcomes between ninth-grade student pretest and posttest scores following the implementation of the Text Structure Strategy intervention?
2. How does Text Structure Strategy impact student reading comprehension and inferencing skills as indicated by open-ended responses?

3. Using triangulation, do student written responses corroborate the observed change in quantitative pre- to post-intervention reading scores?

## Personal Context

Reading has always been near and dear to my heart. At five years of age, I began sharing what I learned about words with my three-year-old sister. At nine, with the publication of the *Harry Potter* series, my then eight-year-old sister and I competed to see who could read more books. As a high schooler, I lost friends who could not understand why I spent my free time reading. I then began to question why they would view reading so negatively. This concern, paired with my desire to teach, led me to become an English teacher.

### Researcher's Role and Personal History

My career began as the paraprofessional for the then titled English as a Second Language (ESL) department at my current workplace. In this position, I worked with emergent bilingual students on comprehending their lessons. Teachers soon began asking me to work with other students struggling in their classes despite working in a paraprofessional position. After a year, I accepted the position of ESL Coordinator for the school, a position I held for six years before fully transitioning to the head of the English Department at the same school. Currently, I am the department head and lead all reading interventions.

### Journey to the Problem

Even though I recognized the lack of love for reading among my classmates during my own formal educational experiences, it was not really until I worked as both ESL Coordinator and a ninth-grade English teacher in the 2017-2018 school year that I saw how prevalent reading comprehension deficiencies were among freshman-level students. That year, I graduated with my master's degree in Curriculum and Instruction with reading specialization, which I had obtained,

hoping to be a better teacher for my emergent bilingual students. After reviewing data from several district assessments, I noted intermediate-level emergent bilingual students were performing better at reading comprehension and response tasks than students in my freshman-level classes, which was highly concerning. When reading grade-level texts, these students could not identify the main idea or infer meaning from the text. With this being the first year teaching an English I class, I consulted with other English teachers, the then-department head, the English teacher specializing in special education populations, and finally with the academic principal, who observed my English class for my formal teacher observation. Following that observation, the academic principal agreed to split the class into two so more intensive one-to-one instruction could occur. My new partner teacher and I worked well together to craft lessons, despite not being given a reading program, resources on an evidence-based intervention practice, or relevant professional development. As a result, students demonstrated a collective 59% growth from December to May, according to teacher-made test data. Although we were proud of the measured success, this teacher and I realized that more intensive reading interventions would be needed.

Campus administration's response to our concerns was to introduce a computerized program, Achieve 3000, which the What Works Clearinghouse (WWC) stated was effective for grades 2-8. Teachers implemented this program in the 2018-2019 school year for all freshman-level and some sophomore-level English classes with little success. The academic principal conducted several meetings throughout the year with English teachers to determine what efforts with the program they made to meet student needs. Several teachers expressed some offense to these conferences and cited problems with the curriculum and lack of professional development addressing literacy as reasons for the lack of growth in student reading achievement. Feeling frustrated with the lack of positivity and drive to address gaps in student reading comprehension

skills, I requested to move into the English department as a full-time English teacher, where I felt I would have more impact on the issue.

In the 2019-2020 school year, I transitioned to the English department as department head. I also was pulled to teach one section of an intensive reading class and again was told to use Achieve 3000. Regardless of my positive presentation, students had been inundated with such computer-based reading programs from middle school and were consequently unresponsive and borderline defiant when asked to use the program. I then adapted my curriculum to include more interactive, hands-on, and research-based activities addressing student needs, merging these practices with the prescribed intervention program. Students were more responsive and showed some growth on informal assessments before the end of the school year. I did not give the summative assessment due to school closures from COVID-19.

I discovered through this experience as both a reading and English teacher, working with other grade-level teachers, two barriers to providing appropriate reading interventions: the lack of time and a lack of alignment between curriculum and data analysis. Instead of modifying instruction to address potential or identified gaps in literacy skills, administrators expected teachers to take time away from instruction explicitly for intervention without professional development on what that intervention should be. Teachers were told to spend 15 minutes of their class time encouraging students to use computer programs, such as Achieve 3000, NoRedInk, and Quill, to address gaps in student reading comprehension, grammar, and composition skills. In practice, teachers did not budget time for these programs and continued to pace their lessons according to the district-provided pacing guide, leaving no more than one class period for reteaching. Teachers also did not plan reteaching efforts based on appropriate data, using whole-test data (i.e., pass or fail) rather than looking at specific skill areas where students

struggled. During several conversations that year, teachers admitted they asked students to use the planned time for intervention to complete test corrections rather than reteaching the skill. Comparatively, state-level data since 2017 show a consistent approximate 30% of students locally in the ninth and tenth grades did not meet state expectations (TEA, 2021b).

Beginning in 2020 to the recent school-year, I have worked with the district-level curriculum department to align tests with the curriculum, but that only addresses half the problem. Teachers still need an intervention to appropriately address the needs of the students without taking class time away from instruction. Students need appropriate intervention targeting their areas of weakness when they are learning new content. Ninth-grade students achieving below expectations on state assessments need targeted intervention. Through my research, I studied the effectiveness of using one such specific instructional strategy, integrated into the district-provided pacing, as an intervention for ninth-grade students struggling with comprehending grade-level texts.

**Significant Stakeholders**

I collected data for this study from a solitary teacher's classroom; however, all educators with secondary students struggling due to a significant lack of literacy skills can benefit from this action research. Through a review of this study, teachers can learn an instructional intervention's process and impact. Furthermore, this study offers one specific instructional intervention these educators may integrate into their lesson pacing to target students' weak literacy areas. Most importantly, these students benefit from this study as educators learn to adapt instruction to enhance student literacy learning.

Other stakeholders likely to benefit from this study include school-specific and district-level administrators and secondary-level English curriculum coordinators as they work to

address literacy issues indicated by the school's data. Although this ROS focuses on one strategy, I worked to address one of the underlying areas of the problem, deficiencies in reading comprehension. Therefore, administrators supporting their staff in addressing the issue can benefit from understanding the procedures for the intervention and needs when implementing the strategy. Curriculum coordinators further benefit from this understanding by helping teachers integrate the instructional intervention into lessons and by teaching teachers how to understand the relevant data so that the strategy is employed at the most appropriate time and in the most appropriate way.

## Important Terms

*Background Knowledge* - The body of life experiences one uses to make sense of new information (Lent, 2012).

*Diagnostic Assessment* - A formative assessment conducted before a lesson to determine students' skill level and content knowledge prior to instruction (Brookhart, 2010).

*Formative Assessment* - The type of assessment conducted regularly during a lesson to determine student progress in acquiring the skill and in learning the content (Brookhart, 2010).

*Graphic Organizer* - A tool used by teachers and students to visually organize information (Cox, 2020; Jefferson et al., 2017).

*Inference* - The implied meaning derived from a text (Perfetti & Stafura, 2015).

*Intervention* - Any "educational program, product, practice, or policy aimed at improving student outcomes" (What Works Clearinghouse, n.d.a).

*Literacy* - The combined reading and writing skills needed to function as a contributing citizen in society (NCES, 2007).

*Reading Comprehension* - The ability to understand and interpret a text when reading (Reading Rockets, n.d.).

*Signal Words* - Words that help the reader understand the author's organization or flow of thought.

*Struggling Learner* - A student who is consistently achieving below average on assessments.

*Summative Assessment* - The type of assessment conducted at the end of a unit to determine students' skill level and content knowledge after instruction (Brookhart, 2010).

*Text Structure* - The way a text is organized (Wijekumar & Beerwinkle, 2018).

*Tier 1 Intervention* - Specialized instruction integrated into the classroom (Wright, 2007).

*Tier 2 Intervention* - Individualized instruction inside *and* outside the classroom, most often built into tutoring programs (Wright, 2007).

*Universal Screener* - This is an assessment "administered to all students to determine which students are at risk of not meeting academic expectations" (Hickman, 2019).

## Closing Thoughts on Chapter 1

Intervention becomes a priority when student achievement declines. This concept is especially true for the foundational skills students need to be successful members of society. The ability to read and comprehend text falls under this umbrella. If students do not find success in reading, their potential livelihoods could decline, whether from poor literacy, a negative mindset, or a combination thereof. Educators and researchers then are tasked with finding solutions to provide students with the intervention they need to help them overcome obstacles in their learning. Beyond computer programs and intensive tutorials, instructional interventions enable students to stretch and grow their skills when learning new content.

In this action research, I implemented and evaluated one instructional intervention strategy, addressing student reading comprehension deficiencies. Throughout this study, I gathered qualitative student responses and quantitative testing data to measure the effectiveness of the intervention. In Chapter 2, I recount the history of intervention, the components of successful intervention, potential obstacles to intervention, and detail the strategy implemented in this study. In Chapter 3, I further describe the methods of this study, analyze the results in Chapter 4, and discuss subsequent reflections in Chapter 5.

# CHAPTER II

# LITERATURE REVIEW

## Introduction

Conversations amongst educational stakeholders center on student success, questioning which techniques, strategies, and methods best achieve the goal of increasing student academic achievement. Consequently, intervention is the combined effort to aid students with learning deficits, though it is unclear how the intervention occurs in practice. Created to help struggling students receive appropriate instructional support, the Individuals with Disabilities Act of 2004 (IDEA) refers to interventions throughout the statute yet never provides specific structures, leaving the interpretation up to local contexts. Additionally, despite best intentions, trends in reading achievement since 2004 demonstrate a growing gap between low and high achieving performers (National Center for Education Statistics [NCES], 2017). For this study, I employed a specific instructional strategy for intervention purposes in a ninth-grade English I class to evaluate its effectiveness and potential for replication in similar contexts by other high-school-level educators and reading interventionists.

Through this literature review, I aim to summarily consider the evolution of intervention in education leading to its prominence in the 2010s and to provide clarity through a discussion of the various components that define effective instruction. These elements include a need for instructional strategies based on best practices, maintaining consistency, employing systematic and systemic efforts, providing professional development, encouraging collaboration between all stakeholders, ensuring cultural and contextual relevance, and providing opportunities for student choice. I then discuss the instructional foundation for this study and briefly reflect on barriers to

intervention programs and their subsequent solutions as presented in the literature. Afterward, I end the review by addressing a gap in the literature on intervention efforts.

## Relevant History

The concept of learning interventions presumably dates back to the beginning of teaching since no educational system encourages the failure of its students. However, the specialization of literacy intervention, or what prior literature refers to as remediation, gained popularity in the United States in the mid-to-late 1960s. The idea centered on the argument that students with learning disabilities could enroll in the same classes as students without such disabilities and still be successful (Gray & Klaus, 1965). Educational professionals shared concerns over this claim, while researchers validated the integration of special populations into standard classes if the proper supports were in place (Haring & Krug, 1975; White, 1985). Expanding the concept of intervention by focusing specifically on prevention, working with students before they struggled in later years of their education, researchers observed disadvantaged students in preschool and the earlier years of literacy. The resulting studies evidenced the potential benefits and need for intervention before a child transitions from preschool to elementary level classes (Gray & Klaus, 1965; Karnes, 1968). Despite the growing body of research, educational stakeholders continued to question the efficacy of the practice.

Due to the variable nature of educational contexts, questioning the efficacy of intervention meant research must first establish if any intervention would be positively impactful. Early researchers in the 1960s demonstrated conspicuous and significant growth in student achievement following participation in an intervention program (Gray & Klaus, 1965; Karnes, 1968). In a review of case studies, governmental documents, and research from 1937 to 1984, White (1985) reported “data are beginning to accumulate which support the immediate

benefits of intervention" (p. 412), with intentional regard to those with learning disabilities. Abbott and Berninger (1999) further clarified "systematic, short-term" (p. 246) intervention led to the best success. Then, in 2002, the No Child Left Behind (NCLB) Act of 2001 passed into law, part of which specifically called for schools to implement intervention programs into the school's context for students with learning deficiencies. Mesmer and Mesmer (2008) detailed the efficacy of interventions for reading from the 1990s later led to concerted efforts in literacy intervention beginning in the late 2000s following NCLB. From 2000 to 2018, the concept of intervention reached its prominence in education as studies supporting the efficacy of systematic intervention concluded that all students post-intervention made academic gains (Dallas, 2017; Fisher & Frey, 2013; Grapin et al., 2019; Jefferson et al., 2017; Jeffes, 2016). Contextual variability notwithstanding, intervention continued to prove worthwhile though the structures of an effective program remained ill-defined.

## Components of Successful Intervention

In the same way that student needs change with time, over the past 60 years, intervention programs diverged in structure and purpose with a uniting goal of student growth. With the focus on reading interventions and response-to-intervention (RtI) practices, research continued to demonstrate positive implications for the efficacy of an intervention. However, more enlightening are the common themes evident in the literature studying such programs: Best Practices, Consistency, Systematic and Systemic Intervention, Professional Development, Collaboration, Cultural and Contextual Relevance, and Student Choice.

### Best Practices

Best practices are those most effective in achieving the desired outcome, as evidenced by research. Faggella-Luby and Wardwell (2011) observed how using evidence-based strategies as

an instructional intervention, such as explicit story structure teaching, positively impacted students at the middle-school level struggling with reading. Similarly, Jeffes (2016) focused on implementing a research-based reading intervention program for students aged 12 to 15 in a London school, finding the program had positively affected participants with severe reading deficits. The evidence-based and well-researched instructional strategies used as primary factors in each study contributed to the resulting success of each intervention.

These promising results at the younger grade levels are not as prominent in upper secondary schools. Gathering professional stakeholder perceptions of intervention at the secondary level, Sansosti et al. (2010) surveyed principals of grades 6 - 12 from across the United States and used reflective analysis to discern a lack of research-based intervention programs for secondary-level students, also noting this discovery aligns with prior literature. When researching secondary teacher perceptions, King and Lemons (2014) documented similar results as educators felt unfamiliar with intervention even when acting as facilitators. Comparatively, Sanger et al. (2012) implemented a three-tier, research-based, RtI program model centered on literacy growth at a secondary school, measuring staff perceptions of the intervention. Initially skeptical, participants later believed the program to be effective in supporting students struggling with literacy while still voicing concerns over the intervention model (Sanger et al., 2012). Relatedly, Jeffes (2016) found educators often did not rely on research when independently choosing the intervention to facilitate in the classroom, implying a need for a consistent, systematic and systemic program. Despite the limited literature focused on the secondary level, interventions at all grades are most successful when well-researched and evidence-based.

## Consistency

Interventions based on research also need to be consistent rather than one-time events, especially for students with acute deficits (Lovett et al., 2012). Though few studies review secondary-level intervention, without it, students with severe reading deficiencies will assuredly continue to decline in reading achievement versus those who receive some form of consistent intervention, either via an elective course integrated into the student's schedule or weekly tutorials throughout one school year (Pyle & Vaughn, 2012). In a similar study of reading interventions at the elementary level, Dallas (2017) found scheduling a student's classes based on their learning needs and the subsequent appropriate level of intervention intensity, or intervention-based scheduling, best allowed for students to receive the consistent intervention needed without taking time away from core class instruction. In an earlier study providing further clarity on how intervention should be consistent, Linan-Thompson et al. (2007) specifically observed interventions for emergent bilingual students and found these learners needed consistent opportunities to practice new skills. Consistency, in this case, was not limited to a specific length of time but was defined as multiple opportunities recurring throughout the entirety of the student's educational experiences (Linan-Thompson et al., 2007). A better term for consistency in this context would be *repetitive*. When evaluating a consistent instructional intervention completed twice weekly for seven weeks, Ferroni et al. (2019) discovered instruction had significant results in student word recognition skills; they stressed the importance of repetition throughout this intervention. Concurrently, Grapin et al. (2019), monitoring student progress in the three years following a year-long intervention, further documented how immediate student progress in the first year post-intervention was not as evident as in the two years after. This study, therefore, implies the cycle of intervention takes time before the full

impact may be measured (Grapin et al., 2019). Synonymous with repetition, consistency in the intervention should then occur over several events close in time to allow students to repeat and refine their skills.

Although students can grow following shorter interventions, it is necessary to consider how consistency is applied when implementing the program. Linan-Thompson et al. (2007), Pyle and Vaughn (2012), and Grapin et al. (2019) all integrated an intervention within students' schedules for one school year, with Grapin et al. (2019) following up on student achievements via the state reading exam and a yearly administration of the Gates MacGinitie Reading Tests (MacGinitie et al., 2000) for each year in the three years after intervention. Conversely, Ferroni et al. (2019) narrowed the intervention window to seven weeks, noting significant results except for two participants out of 15 who showed negative or limited growth. While the year-long time allowed for more consistency, the seven-week intervention remained successful partly due to its repetition, replicating the intervention twice during the week and then asking students to practice outside of intervention instructional times (Ferroni et al., 2019). Regardless of the length of time in which the program took place, the intervention was successful since it reinforced learning throughout the practice.

**Systematic and Systemic Intervention**

In the same way that intervention is more successful when consistent, it is more effective when supported by all levels of professional stakeholders. Calling for systemic change, Barnes and Harlacher (2008) agreed with schools differentiating the design of the intervention as long as the implementation was system-wide. Johnson and Smith (2011) describe effective intervention integration as a cultural shift where all involved, student to administrator, work together toward academic success. Comparatively, in researching the effects of culturally responsive practices on

interventions, Robinson (2016) asserted how intervention cannot be efficient or effective if not integrated systemically. In a similar study, Jefferson et al. (2017) concentrated on reading intervention for at-risk elementary students, the data for which suggest systematic and differentiated intervention yields significant results in student reading achievement. This conclusion echoes a former study where Bean and Lillenstein (2012) determined literacy intervention must be comprehensive and systemic to be effective. A systemic intervention means the school's culture supports the development and refinement of the program cycle.

Without system-wide support to encourage students and focus the intervention where needed, the program could part from its primary purpose to find little success. When administrators engage in integrating the intervention, more opportunities arise, such as building the intervention into the school schedule. Dallas (2017) observed elementary-level students made significant academic growth "when receiving instruction through an intervention-based schedule design" (p. 112) rather than the standard learning schedule. Moreover, with administrator-level support, teachers can reflect on all relevant data to best identify student areas of need to guide future intervention instruction (Stahl, 2016). Intervention that is both systematic and systemic provides the structure and natural support students need in order to be successful.

**Professional Development**

For an intervention to be most effective, staff from paraprofessionals to administrators need to be confident and well-versed in best practices. Professional development provides the necessary opportunity for teachers and administrators to learn these best practices and later implement intervention effectively and with fidelity (Beecher, 2010; Jeffes, 2016; Myers et al., 2011; Robinson, 2016; Sanger et al., 2012; Schwartz et al., 2012; Wilcox et al., 2013). Furthermore, those involved in facilitating the intervention cycle must be clear when discussing

its parameters and expectations (King & Coughlin, 2016). In an earlier, related study, King and Lemons (2014) observed educators benefited from professional development before and throughout implementation as they increased and then refined their intervention-related knowledge and skills. This observation confirms a conclusion made in an earlier study by Pyle and Vaughn (2012), who established professional development as a necessity for efficient and effective intervention programs. Fisher and Frey (2013), following a review of a successful intervention program at an urban American high school, asserted intervention efforts are not likely to be successful without proper professional development. Additionally, King and Lemons (2014) affirmed a statement made by Johnston (2011) that teaching does not occur in isolation but rather through focused and ongoing development with careful collaboration between educators and specialists. Meyer and Behar-Horenstein (2015) clarified that training should be direct and clear to support all professional stakeholders. Without clarity, over four years of intervention integration, teachers at one Texas high school only grew marginally proficient in responding to intervention (Isbell & Szabo, 2014). Following professional development and when continuously supported, educational stakeholders can better ensure the most effective integration of intervention for student learning.

**Collaboration**

Systemic intervention, with continuous professional development, further requires collaboration between staff. Having observed recursive decision-making for intervention purposes among educators, principals, and district administration at five elementary schools, Bean and Lillenstein (2012) concluded successful interventions are systemic, with collaboration among all school personnel. In effective systems, educators seek information on student contexts

from school counselors, and together they discuss different research-based strategies to best aid students needing a lesson retaught.

Whereas *systemic* indicates all levels of the school system support the intervention, *collaboration*, in this case, reinforces communication between those levels in an effort to refine the intervention. Isbell and Szabo (2014) concurred that purposeful communication between professional stakeholders fosters innovative and effective intervention. Beyond collaborative learning during professional development, Meyer and Behar-Horenstein (2015) agreed that recursive decision-making and collaboration across the various levels of school leadership are vital for interventions to be effective. Collaboration between stakeholders extends communication to a deeper level as all parties process, review, and analyze information to improve the system. Robinson (2016) and Wilcox et al. (2013) contended intervention is unsuccessful without school-wide collaboration. Therefore, intervention is most effective when professional stakeholders collaborate.

**Cultural and Contextual Relevance**

Students benefit when educators collaborate and receive professional development, yet intervention can be more effective when teachers know how to adapt and respond to the needs of their students throughout the intervention. In an article reviewing culture and interventions, Klingner and Edwards (2006) encouraged the integration of diverse contexts to account for the various student perspectives. With concern for equity in intervention programs, Hartlep and Ellis (2012) reviewed national data maps from the National Center for Culturally Responsive Educational Systems, observing an overrepresentation of African Americans but an underrepresentation of Asian Americans in special education programs. Hartlep and Ellis (2012) thus argued the necessity for intervention responsive to diverse cultural and linguistic needs.

Indeed, individualized learning is most effective for struggling students, where educators tailor instruction to support the individual's learning difficulties (Schwartz et al., 2012). Teachers have identified collaboration with all stakeholders, professional development, differentiation, and cultural understanding as vital components for successful interventions (Robinson, 2016). Intervention directed toward the student needs, considering outside contexts, increases student opportunities for success.

**Student Choice**

In addition to the cultural context, the student perspective adds another dimension to intervention programs. Hooley et al. (2013) measured student response to literacy interventions at a semi-urban secondary school in the United States. This study concisely identified the negative perceptions toward interventions in literacy and offered the solution of providing students with clear expectations of proficiency standards to increase student engagement in reading (Hooley et al., 2013). When researching entry and exit criteria for intervention, Brooks and Rodela (2018) corroborated this conclusion and reinforced the concept of student-centered interventions as equitable. Comparatively, Gwernan-Jones et al. (2018) studied reading intervention for students aged 11 to 15 at four schools in England, finding confidence-building and student autonomy as significant factors in enhancing literacy skills. Students taking ownership of their learning proved valuable in increasing student reading achievement (Gwernan-Jones et al., 2018). The opportunity for students to guide and reflect on their understanding increases their focus, which increases the possibility of success in an intervention program.

## Instructional Foundation

To address most if not all components for successful intervention, school districts often prescribe scripted programs advertised in educator communities. However, the rigidity inherent in these programs leaves the need for the cultural and contextual relevancy unfulfilled since the definitions and procedures are not adapted to the local context or in response to student choice (Fuchs & Fuchs, 2017; Gersten et al., 2017). Therefore, researchers diverged to examine specific strategies in similar and different situations, attempting to provide clarity into what can and cannot adapt between the contexts. Prompted by a growing number of students' deficits in reading skills (NCES, 2019a), there is a surfeit of research on reading interventions and instructional strategies, such as Text Structure Strategy (TSS; Meyer, 1975). Teachers then use these instructional tools as best practices when meeting the needs of their students, though not usually in a formal intervention setting.

TSS and similar strategies focus student attention on understanding text structure to help build their critical thinking and reading comprehension skills. Teachers using the TSS instruction specifically require students to learn five expository text structures to help readers categorize and recall important information (Wijekumar & Beerwinkle, 2018). Evaluating the natural use of this strategy by ninth-grade readers, Meyer et al. (1980) utilized an expository pre- and posttest to measure student recognition of signaling words and cues to the text structure. Meyer et al. (1980) confirmed readers with better reading comprehension have better recognition of the text structure. Meyer and Poon (2001) expanded their study to evaluate whether the strategy still proved helpful among various age groups. With a participant group of 56 youths and 65 adults, Meyer and Poon (2001) delivered a nine-hour strategy training before conducting a posttest, with some participants receiving interest strategy training and the others TSS. The results presented

participants using TSS had significantly better comprehension; researchers acknowledged this strategy would increase comprehension skills of struggling readers taught to recognize said structures (Meyer & Poon, 2001). Employing similar instruction teaching students to focus on connectives, or the words indicating transitions between ideas, Welie et al. (2017) measured positive growth in middle-school level students' reading fluency and comprehension skills at three various schools in Amsterdam. In a random trial study employing TSS online at the elementary level, Wijekumar et al. (2020) determined meaningful student growth in reading comprehension among the participants who scored less than the 25th percentile on the pretests. This study applied the strategy in 90-minute, daily lessons over 19 weeks, maintaining consistency while enhancing contextual relevance and student choice by offering student options for the texts used when practicing the strategy (Wijekumar et al., 2020). In each context, TSS proved a valuable tool for educators when working with students to increase their reading comprehension skills. Therefore, the strategy would provide a specific and appropriate instructional best practice component for future reading interventions.

## Cautions and Social Stigma

Due to its long history in education, the average educator does not often positively perceive intervention. Excitement over intervention was tempered by skepticism and by well-known educators, such as Bettye Caldwell, who helped create the Head Start program. In her article rationalizing early intervention, Caldwell (1970) cautioned educators not to overextend their efforts, a warning which Brozo (2009) later repeated. As schools continued to seek programs to address student needs for intervention, the undefined procedures for these programs established wariness amongst the educational community (Hoover, 2010; Hughes & Dexter, 2011). Researchers critiqued the national response to intervention for lack of direction and

guidance on effectively integrating intervention programs into the school system (Fuchs & Fuchs, 2017). In a commentary piece, Gersten et al. (2017) reflected how some students not needing literacy intervention received it and had little or negative growth as a result, per studies on RtI programs nationwide. Gersten et al. (2017) also commented on how little clarification was available for the screening process for intervention programs in most participatory schools. For the newly proposed intervention to overcome this stigma, transparency between all stakeholders is vital to the program's success.

## Gap in the Literature

Intervention as a concept encompasses different variations, schools adapting the process, procedures, and limits to fit the cultural and situational context. This variable nature of intervention requires research to review the potentialities of diverse circumstances, including various age levels. Nonetheless, the literature regarding interventions leans toward younger grades. Returning to when intervention as a topic began to gain researchers' interest, the intent centered on students with learning deficits at the preschool and elementary levels (Gray & Klaus, 1965; Haring & Krug, 1975; Karnes, 1968). This focus led to creating programs such as Head Start, which worked to help families bolster their children's reading skills (Caldwell, 1970). An analysis of more than 300 studies from the 1930s to the 1980s demonstrated a clear and continued focus on early intervention (White, 1985), with a scope narrowing on literacy. Then, reading fluency intervention became the main focal point of research, allowing researchers to extend intervention into upper-elementary grade levels (Abbott & Berninger, 1999). From there, studies on intervention branched into separate areas, from special populations to core content instruction to intervention design, with elementary and middle school grades still at the center of the body of research (Bean & Lillenstein, 2012; Faggella-Luby & Wardwell, 2011; Linan-

Thompson et al., 2007; Pyle & Vaughn, 2012; Schwartz et al., 2012). Recent research continues to emphasize instructional opportunities at the elementary level, refining literacy-based RtI (Dallas, 2017; Ferroni et al., 2019; Grapin et al., 2019; Jefferson et al., 2017; Meyer & Behar-Horenstein, 2015; Robinson, 2016; Gwernan-Jones et al., 2018), some research addressing literacy issues at the middle school level (Jayman et al., 2019; Jeffes, 2016; Myers et al., 2011). The prominent subject of this literature is reading interventions as researchers attempt to define the best practices for literacy instruction for students in elementary grades with severe learning deficiencies. Conversely, the scant research at the secondary level broadly covers RtI, or intervention programs, beginning to discuss how to assist these students idiomatically described as having slipped through the cracks of the educational system (Fisher & Frey, 2013; Isbell & Szabo, 2014; Medina-Garrido & León, 2017; Sanger et al., 2012; Sansosti et al., 2010; Whitford et al., 2013). In terms of equivalence, research reviewing intervention in elementary grades outnumbers studies at the high-school level. In terms of specificity, intervention conducted at elementary and lower-secondary grades is more defined in its procedures and implementation. Contrarily, the literature on intervention in the secondary grades seeks first to acknowledge a real need for intervention at this level.

Reasonably, aiding struggling readers at younger ages increases opportunities for success at later ages. However, not every student receives the help they need when they are younger. In some cases, students may not need help in elementary school but slowly begin to fall behind as they advance grades. This second description mirrors national reading results as the 2019 National Assessment of Educational Progress (NAEP) report demonstrates a continual decline in reading achievement by lower-level performers at the upper-secondary grade levels (NCES, 2019a). For students in high school, intervention programs center on two core areas: Math and

reading, with more attention given to literacy (Brooks & Rodela, 2018; Hooley et al., 2013). Nonetheless, the literature is limited in describing effective intervention at secondary levels. Future studies should specify and clarify intervention in the secondary grades to affirm the best practices and effective programs for students across various circumstances.

## Closing Thoughts on Chapter 2

Everyone learns at their own pace. Sometimes, this means students fall behind their peers. Educators and educational systems must then adapt to respond to the needs of these students, often through in-class instructional interventions or intervention programs. Successful intervention requires consistency throughout the program's timespan to be successful (Dallas, 2017; Ferroni et al., 2019; Grapin et al., 2019). More importantly, educators, administrators, and related staff (i.e., counselors and paraprofessionals) should be well-trained in best practices through professional development, systemically collaborating and working together to refine the intervention within the boundaries of the situational context (Isbell & Szabo, 2014; King & Lemons, 2014). Concurrently, systems should promote opportunities for students to share their voice through choices and to collaborate with educators, which increases student engagement (Brooks & Rodela, 2018; Gwernan-Jones et al., 2018; Hartlep & Ellis, 2012).

In selecting and implementing such intervention, teachers of younger students who struggle in literacy have a plethora of literature upon which to understand best practices, as is evident in this literature review (Dallas, 2017; Ferroni et al., 2019; Grapin et al., 2019; Jefferson et al., 2017; Robinson, 2016; Schwartz et al., 2012); the same is not true for secondary-level educators. Instead, intervention is broad and ill-defined at the secondary level. The literature in this review further details a stigma on intervention programs stemming from unclear expectations for the integration process (Fuchs & Fuchs, 2017; Hughes & Dexter, 2011). Unable

to rely upon numerous research studies, secondary educators draw upon clear concepts from general intervention programs to infer best practices because effective intervention, regardless of grade level, must be founded on best practices as best delineated in available research. In establishing a best practice instructional foundation for conducting reading intervention, teachers can use TSS, where educators teach students how to recognize signals in the text to increase student recall of information and comprehension (Meyer et al., 1980; Meyer & Poon, 2001; Welie et al., 2017; Wijekumar et al., 2020). Secondary educators can ensure success by providing consistent intervention with contextual relevance and support from all stakeholders, from students to administration.

These components of successful intervention are vague in procedure despite being clear in expectation and may appear different in various circumstances. Basing the intervention on an instructional best practice is only the first step for secondary educators who have students needing reading intervention. With finite literature studying interventions at the high-school level, ensuing research must then seek to define intervention with specificity. Through my study, I examine reading intervention at the secondary level using TSS, a specific, evidence-based instructional strategy.

# CHAPTER III

# METHODOLOGY

## Proposed Solution

Students achieving below grade-level expectations on reading assessments need targeted intervention. To naturally address students' needs, teachers must become proficient in implementing instructional interventions (Abbott & Berninger, 1999; Jefferson et al., 2017). Instructional interventions, such as word study (Gwernan-Jones et al., 2018; Jeffes, 2016), reading strategies (Faggella-Luby & Wardwell, 2011; Jefferson et al., 2017), and metacognitive tasks (Gwernan-Jones et al., 2018), have been successful in helping students grow their skills in inclusive, supportive classrooms, allowing the students to learn new content while receiving the instruction they need. For students with minor to severe reading deficiencies, time spent pulled from class could cause students to lose valuable learning time as they may miss core instruction and may fall further behind (Jefferson et al., 2017). However, if teachers implement effective instructional interventions, these students are supported in the classroom by practicing foundational skills while also receiving instruction with their peers. Instructional interventions can be as complex as integrating an educational program across an entire course outline or as simple as using an instructional strategy to boost student understanding of a concept (Abbott & Berninger, 1999; Pyle & Vaughn, 2012). The interventions used, when possible, should have an evidence base for the target students and their needs.

Several students in my ninth-grade English I classes needed support in building their reading comprehension skills. To address these needs, I implemented an instructional intervention known as Text Structure Strategy (TSS; Meyer, 1975) for four weeks in a ninth-

grade English class during the 2022 spring semester to determine the effectiveness of the intervention in that context. I used this strategy concurrently with the lessons delineated in the school's curriculum pacing guide, exemplifying how instructional interventions can integrate with district-level learning expectations to provide students with evidence-based support in building foundational academic skills. For this intervention, I modeled and explicitly taught students the five text structures (Cause/Effect, Comparison, Description, Sequences, Problem/Solution), the related signal words (e.g., *first*, *after*, *similarly*, *conversely*, *cause*, *effect*, *problem*, *solution*), and sentence stems (e.g., "[The topic] has [number] important characteristic(s), such as [this]", "The problem is [this] and the solution is [this]") to scaffold students' ability to write the main idea and summary of passages. I provided students with a copy of the notes reviewing this information. Students then applied their learning when reading district-assigned and student-chosen texts (Wijekumar et al., 2020). I also led the formative activities outlined in the district's pacing guide in conjunction with the focus on text structures. The measures I used in this study aligned with district-level resources, such as the district assessments, to reflect this goal.

## Justification

With the strategy designed to enhance student reading comprehension and critical thinking, research shows that TSS significantly, positively impacts reading comprehension for youth and older adults (Meyer, 1975; Meyer et al., 1980; Meyer & Poon, 2001; Wijekumar & Beerwinkle, 2018; Wijekumar et al., 2020). In an early study, Meyer et al. (1980) examined the impact of the strategy on students' information reading recall and found the students using the intervention consistently recalled more information and had increased reading comprehension. A later study with older adult participants mirrored these findings as adults who employed the

strategy increased their reading comprehension and total recall (Meyer & Poon, 2001). In both studies, researchers explicitly instructed participants on text signaling and text structure, which participants then used to organize their thoughts while reading (Meyer et al., 1980; Meyer & Poon, 2001). Educators using this strategy teach participants the five main text structures to help learners categorize information for later recall (Meyer et al., 1980). Students with reading deficiencies benefit from this strategy as it teaches them to chunk information into manageable pieces while further aiding them in responding to the text using similar structures.

## Study Context and Participants

This study took place at a suburban high school in a ninth-grade English I classroom. As the teacher, I asked all 119 students on my class roster to participate in the study. Students who scored a 207 or 208 on the winter administration of the Northwest Evaluation Association's (NWEA) Measures of Academic Progress (MAP) reading test, the tier 3 intervention range as defined by the district's intervention handbook (Hickman, 2019), were the target group for this study. As such, they were labeled "Target Group" during the data analysis process. However, I broadened the inclusion criteria to include any student on my ninth-grade English I roster at the start of the study. I identified the target group of students when reviewing the scores for all students in my classes and gathered additional formative data for this sample. Students excluded from this study were those not on the roster when I administered the pretest. Included were special populations (e.g., students receiving 504 services, in the special education program, and/or identified as emergent bilingual) and accommodations followed within the body of the lessons. As the researcher, I notified students selected for the study and their parents of the study purpose, instructional strategy, and timeline (see Appendix A). Students and parents had the option to decline participation; none chose to do so.

## Proposed Research Paradigm

In this research, I employed a mixed-methods action research design, which explored the impact of the instruction on student learning quantitatively and qualitatively. Both the quantitative and qualitative analyses adds to this study. Whereas the quantitative analysis objectively demonstrates the change in each student's reading achievement outcomes pre- and post-intervention (Did the student improve their reading comprehension skills?), the qualitative analysis offers insight into how student thinking changed post-intervention. Specifically, the qualitative data measured student evaluative reading comprehension skills: (a) if students relied on the text more or less following the intervention, and (b) whether the intervention impacted the depth to which students understood the text. Did students demonstrate literal understanding of the text, or were they able to make a complex inference?

The quantitative and qualitative strands were conducted concurrently, using the same participant sample and the same open-ended response data, were analyzed separately, and then compared to "produce well-validated conclusions" (Ivankova, 2015, p. 128). This process allowed me to better understand student skills before and after the instructional intervention to determine if the intervention was effective for these students in this context.

The framework driving the study design aligns closely with pragmatic theory. Pragmatism seeks to "provide direction in addressing" problems (Patton, 2015, p. 152), completing this task by focusing on the actions taken. Creswell and Plano Clark (2018) clarify that the pragmatist pursues the design that best addresses a problem. In this study, pragmatism allowed for the dual quantitative and qualitative methods to determine impact of TSS on student learning in this study's context.

### Action Research

In education, all stakeholders rely on the action research cycle to improve and refine the system for effective learning. Action research supports best practices as teachers consistently refine their professional knowledge and skills (Darling-Hammond et al., 2017; Kemmis, 2009). The cycle begins with identifying the problem, collecting relevant data, and analyzing the data from which a plan is constructed and enacted to solve the problem (Grundy, 1994; Mertler, 2019). Continuous implementation and review are vital to the success of action research (Grundy, 1994; Kemmis, 2009). Throughout action research, I consistently reflected and refined or repeated the cycle to ensure the study's intervention continued to address the problem and student needs (Sáez Bondía & Cortés Garcia, 2021). I conducted this study following the cycle process to determine if TSS was an appropriate intervention to address the problem. I and other educators then may use the results to decide the next steps in addressing student needs for those performing in the below-average percentiles on reading assessments.

## Data Collection Methods

I used mixed methods to answer the research questions. This research design included two strands of research: quantitative and qualitative, each strand with its own measures and analysis. In concurrent research, quantitative and qualitative strands are conducted simultaneously and integrated at multiple points (Ivankova, 2015). The measures of this study function as one point of integration with both quantitative and qualitative analysis of open-ended response questions.

### Measures of Reading Comprehension

Before and after the intervention, students were asked to read a grade-level, informational text, and answer eight questions to determine their reading comprehension skill levels. Using

released items from the April 2021 English I State of Texas Assessment of Academic Readiness (STAAR) English I End of Course (EOC) exam, I constructed two forms of the test which were parallel in terms of content, difficulty, complexity, and length (see Appendices B and C). This assessment was the model for my study's tests as it is the measure all ninth-grade students must pass at the end of the year. On each assessment, the five multiple-choice measures addressed vocabulary, author's purpose, inference, author's craft, and comprehension. Three open-ended, short answer response questions modeled after questions on the EOC exam measured reading comprehension (i.e., main idea, summary) and inference. *Inference*, in this case, refers to the student's ability to comprehend the implied meaning within the text. The response questions were performance tasks in which students were asked to identify the text's main idea, construct a text summary, and infer meaning from the text.

***Multiple-Choice Questions***

Reading comprehension was measured on each assessment with the five multiple-choice items addressing vocabulary, author's purpose, inference, author's craft (organization), and students' general understanding of the text (comprehension). Each assessment had one vocabulary item requiring students identify the meaning of a word used in the text (e.g., *mediocre, thwarted*). One item on each assessment asked about author's purpose. Two items, one of which was multiple choice, required inference; the multiple-choice item asked students to make an inference specific to the text (see Appendices B and C). Students were also asked on each assessment to identify how the author organized the text. Each item was worth 20 points up to a 100 total per assessment. The LMS automatically scored the responses to these items.

### *Open-Ended Responses*

Students were also asked to respond in complete sentences to three open-response questions on each assessment. These prompts were molded after reading comprehension (e.g., main idea, summary) and inferencing STAAR English I EOC questions. After reading the text, the prompts tasked students with writing the main idea of a text, a summary of the text, and a response to an inference question about the text. The inference question required students to draw a conclusion based on the text. Each response was analyzed carefully. Students received a score based on a holistic rubric. Their responses were also analyzed qualitatively to classify the type of response given.

**Rubric.** Each open-ended response was scored using a rubric (0 to 3, where 0 was "No Response", 1 was "Needs Improvement", 2 was "Approaching", and 3 was "Mastery"; see Appendix D). There was a separate rubric to score each open-ended question, one for main idea, one for summary, and one for inference. To earn full points for the main idea, students were evaluated for main idea and structure (total points possible 0-6). Students were expected to identify the main idea and write a response reflecting the text structure, which mirrors the instruction provided throughout the study. Students were expected to identify the main idea, the most important details, and to write a response that reflects the text structure (total points possible 0-9). For student responses to the inference question, students were evaluated on their ability to draw a conclusion (inference); present their thesis, the supporting evidence and explanation; and use appropriate academic vocabulary and conventions, and were judged for overall quality (total points possible 0-21). Points for each measure were averaged separately for a holistic score of 0 to 3, "No Response" to "Mastery" to represent student overall skill level per response. For example, student responses to the main idea prompt that scored a 2 on the main

idea portion of the rubric, but a 1 on the structure portion received a final scoring of 1.5, or beginning to "Approach" for the main idea statement item.

Use of the provided TSS sentence stems for structure were not explicitly included in the rubrics as some of the district-provided texts arguably used two of the studied structures. Furthermore, limiting students to one structure or expecting identification of both in four weeks, even with scaffolding, felt inappropriate leading up to the state exam, a pressure-filled time for ninth-grade students. Student identification of the text structure and explanation of why they chose that structure was expected in class discussions and on all assessments.

**Qualitative Classification.** Each student's written response to open-ended questions assessing reading comprehension (i.e., main idea, summary) and inference were also analyzed to determine if the response included the three expected elements: literal comprehension, structural cue, and inference. Literal comprehension was expected for each response as the students were responding to text-dependent questions. Structural cues were expected as students were taught these to help the reader follow the logic in writing, and to connect the student's understanding (literal comprehension and/or inference) to the text. With inference being a student's understanding of implied meaning, students were expected to include their inferred understanding of the text to further develop their written responses.

### *Justification of Instruments*

The multiple-choice assessments objectively and quantitatively measured student reading achievement, which, when compared, clearly demonstrated the impact of the intervention on student reading comprehension. The open-ended prompts, through quantitative analysis, measured student critical thinking skill levels, while qualitative analysis demonstrated how students applied those skills when inferring meaning from a text.

## Procedures

After participants were identified, I sent out a letter of notification to parents and guardians five days before the pretest to allow families the option to opt-out of the study. No student or their guardian requested the student opt-out from the study. Students who enrolled following initial instruction received a review of the notes and scaffolded practice despite not being included in the study.

Central administration in the district required district assessments be administered in the school's learning management system (LMS). Therefore, I administered this study's tests online using the same platform. To standardize the assessment process, I conducted the pretest and posttest assessments at the same time of day. Each assessment was administered in one, 45-minute class period, and a testing script (see Appendix E) was used to ensure the instructions, timing, and context were as similar as possible between pre- and posttest conditions. Students with the extended time accommodation in their IEP or 504 plans received extra time to complete the test. Per district protocol, any student absent on test day was given three school days to make up the exam. Four students were absent for the pretest; two did not complete the exam. The same two were absent for the posttest and did not make up the posttest. An additional three were absent for the posttest, but two out of those three made up the exam within three school days. The third student was out for two weeks and was unable to complete the exam. For both tests, an additional two refused to complete either assessment, another two were unable to complete either assessment, and one unenrolled following administration of the pretest. Of the 119 students on the teacher's roster, 111 completed both pretest and posttest assessments. Following the test's administration, the LMS automatically scored the multiple-choice questions using the released

April 2021 English I EOC test answer key. I reviewed the scores for accuracy. There were no issues found in the automated scores.

### *TSS Intervention*

In the next class period following the pretest, all students received initial instruction on text structures, studying to answer the question, "What are the five text structures?" During the lesson, the teacher modeled how to break down a text to identify the text structure and apply that knowledge when writing a main idea statement or summary. I then gave students a copy of the notes (Appendix F) and asked students to practice identifying the text's structure. As a secondary practice, I also asked students to analyze an article assigned in the district's pacing guide for how the author organized the information.

Students applied the text structure strategy to their district-assigned tasks in the four weeks following the pretest. Though I initially planned the study for six weeks, I adjusted this timeline to four weeks since the original last two weeks coincided with the state of Texas exams. I used formative assessments to guide other adjustments to the study, such as adapting my instruction to include further explanation and revisiting the text structures for students consistently performing below average on formative tasks. In writing the formative assessment questions, I used the study's measures as stems for analysis of district-assigned texts. In the one week where the literature was "student choice" in the district pacing guide, the teacher offered students three different texts to choose from and wrote the questions to parallel study measures. To find these resources, I used a free account to search NewsELA.com for applicable expository texts with the filters: Reading level of grades 8-12 and a high school maturity level. Search terms included "expository" and "informational." I also reviewed top news stories for interest, grade-level appropriateness, and expository text structures.

Throughout the study, lesson structure and class periods (i.e., time of day) remained constant. Class began with an initial task (i.e., bell ringer; the teacher called this task the daily "brain spark") asking students to revise a sentence or two, followed by a daily practice text analysis assignment or a continuation of a previous day's practice. For the daily activities, the teacher asked students to silently read the text and identify the text structure independently before working with a group to write the main idea or summary for the articles. After, students were asked to break down and answer text questions using their new understanding of the text structure. Questions for these activities were modeled after the pretest and posttest assessments but did not deviate from the tasks described in the district's pacing guide. Specifically, when the district pacing guide required questions on author's purpose, then the majority of questions and instruction employed focused on that skill. Class then ended each day with an end task known as an "exit ticket." For the exit ticket, the teacher asked students to write the main idea or a summary of the text read during class, or the teacher asked students to revise a single paragraph. Students with Section 504, special education, or emergent bilingual accommodations, including rephasing of information, chunking information, and extra time, received those accommodations during the study.

During the final week of the study, I administered the posttest (see Appendix C). The exam procedures aligned with those of the pre-assessment. I gave students absent on the initial test date three school days per district policy to make up the exam.

## Data Analysis Strategy

As the researcher, I used the same participant sample and intervention for both quantitative and qualitative strands in this study. I analyzed the data separately before comparing the analyses for convergence or divergence.

**Quantitative Analysis**

The quantitative data originated from two sources: (a) computer scores on the multiple-choice questions, and (b) rubric scores on the open-ended questions. After students completed the posttest in the school's LMS, I downloaded the data by question to input the information into a spreadsheet for analysis. I gave each student a unique identifier to protect student privacy. An English teacher peer and I independently reviewed and were prepared to rescore the data for missing values and errors in data entry if necessary. No missing values were recorded. Resulting scores in the spreadsheet 100% matched the computerized results for both assessments. The inter-rater reliability between my peer and I was 100% for both the pre- and posttest data. Following this review, I scanned the data to remove student responses if the student was unable to complete one or both of the study's assessments. I excluded eight students from the final data report due to missing values. Then, I copied the data for students with complete pre- and posttest inputs to a new tab in the spreadsheet for analysis. After, data for the students within the target group were copied into another new tab for separate analysis.

I used spreadsheet formulas to calculate the overall average scores for each formative and summative assessment. Formulas were also used to determine the average for each skill measured per assessment: Vocabulary, author's purpose, inference, author's craft, and comprehension. After I calculated the changes in pre- to posttest data overall and by skill, I used statistical analysis to complete a paired *t*-test analysis. The paired *t*-test calculated the statistical difference between the pretest and posttest results (Ivankova, 2015). This analysis shows whether the intervention directly impacted reading achievement.

Students responded to open-ended responses concurrently with multiple-choice questions for each assessment. These responses were entered by question but separate from the multiple-

choice response data. There was a separate tab each for main idea, summary, and inference. Per measure, data for students in the tier 3 intervention target group were copied to the bottom of the tab's spreadsheet page for independent analysis. As with the objective data, I included only students with complete data in the final spreadsheet for analysis.

My peer and I then discussed the rubrics for the open-ended response measures and calibrated them using formative assessment responses. After, we independently reviewed and scored the data by question. Once I had established inter-rater reliability and had analyzed the quantitative data, the results were copied to the tab "Metainferences" for comparison against qualitative data analysis results to determine convergence or divergence of results.

**Qualitative Analysis**

Following a quantitative analysis of student written responses, I also analyzed each response using predetermined, deductive coding (Creswell, 2014). Codes used were "literal comprehension," "structural cue," and "inference." *Literal comprehension* in this context is the student's basic understanding of what a text says (Reading Rockets, n.d.). *Structural cues* refer to the signal words used by authors to organize their writing (Wijekumar & Beerwinkle, 2018). *Inference*, as previously defined, is the implied meaning students derive from a text (Perfetti & Stafura, 2015). These codes aligned with the instruction I provided to students as the teacher when I taught them how to use structural cues to identify text structure and how to use that knowledge to compose main idea and summary statements. The three codes were applied to student responses to represent the student's use of the instructional strategy through "structural cue" and the impact of this strategy on comprehension and inferencing. More precisely, the codes "literal comprehension" and "inference" helped to examine whether the student comprehended both the literal and the implied meaning (inference) of a text.

To apply the codes, I reviewed each response to determine if each sentence, or phrases, demonstrated a literal comprehension, used a structural cue, or included a deeper understanding (inference) of the text. For example, when asked on the posttest for the author's purpose in using parenthetical information, one student responded, "To show how much the newspaper was exaggerating just to get more people to come." This response included a literal understanding by referring to the text's focus ("the newspaper"), used a structural cue ("to show" indicates a description text), and an inference ("the newspaper was exaggerating just to get more people to come" which demonstrates the student inferred why the newspaper included a false statement mentioned before the parenthetical information). Similarly, another response to the same question was, "The author included that to tell the truth about how fast the vehicle could go. Media would say it could go 90 mph but in reality could only go 30-20 mph". This response also included literal comprehension ("90 mph" which was explicitly stated in the text), a structural cue ("to tell" which is listed as a cue for description texts), and an inference ("tell the truth" which inferred the media gave a false statement).

Some student responses did not demonstrate all three of the coded concepts. When responding to the same question regarding parenthetical information, one student responded, "To give us further information about what he was talking about." This response included a structural cue ("to give us further information") but did not include specific details demonstrating literal comprehension of the text or that the student inferred meaning from the text. This suggests that this student understood the purpose of parentheses, but not how this punctuation was used specifically in this text provided. Another student responded to this question with, "He wants to make it important to the readers to know that he is serious about his journeys." This response demonstrated a literal understanding (The text was talking about one man's "journeys"), but that

the student incorrectly inferred meaning from the text ("he is serious" which was not relevant to what the text stated or implied). The student understood that the text described a journey but did not understand why the author included the parenthetical information. This process was repeated for every written response per open-ended question for each assessment. See Table 1 for additional, randomly-selected examples of how I applied a priori codes to students' written responses for the open-ended response question: "In paragraph 8, why does the author include parenthetical information?"

**Table 1**

*Randomly-selected Student Responses Qualitatively Analyzed Using A Priori Codes of "Literal Comprehension," "Structural Cue," and "Inference"*

| **Full Response** | **Literal Comprehension** | **Structural Cue** | **Inference** |
|---|---|---|---|
| to show how many people gave him recognition for what he is doing. | what he is doing | to show | recognition |
| To put it into detai of the experience | - | detai | To put it into detai of the experience |
| because they were joking about the car flying by at 90 miles per hour and wanted the readers to know the maximum speed of the car was 30 miles per hour but during good conditions the car would reach 20 miles per hour | maximum speed | - | joking about the car flying by |

**Table 1**

*Continued*

| Full Response | Literal Comprehension | Structural Cue | Inference |
|---|---|---|---|
| To show that the Winton couldn't actually go as fast as people were claiming it could. | the Winton | To show | To show that the Winton couldn't actually go as fast as people were claiming it could. |
| They told us this to show how much longer this trip was going to take and that because the vehicle didn't always work properly the car went slower. | They told us this to show how much longer this trip was going to take and that because the vehicle didn't always work properly | to show | They told us this to show how much longer this trip was going to take and that because the vehicle didn't always work properly the car went slower. |
| To show that people had very high expectations for the speed of a very little (slow car). | To show that people had very high expectations for the speed of a very little (slow car). | To show | high expectations |
| to explain Winton's speed | Winton's speed | to explain | - |
| It showed the redicilous statements made by the newspapers. | - | showed | redicilous statements |
| to exaggerate how slow they were going | how slow | how | exaggerate |
| To move a plot forward and make it known that the miximum of the winton was 30 miles per hour but it avraged 20 miles per hour in the best conditions | the miximum of the winton was 30 miles per hour but it avraged 20 miles per hour in the best conditions | make it known | **[misidentified]** to move a plot forward |

**Table 1**

*Continued*

| Full Response | Literal Comprehension | Structural Cue | Inference |
|---|---|---|---|
| to show that the public is overasadrating. | the public | to show | overasadrating |
| I think the author added this information to show how much of a big deal the trip and vehicles were during that time period to people. | vehicles during that time period | to show how | I think the author added this information to show how much of a big deal the trip and vehicles were during that time period to people. |

After, I analyzed the coded data to determine how students comprehended the text, if students were able to identify and use structural cues, and whether students were able to make basic or complex inferences. A convergent mixed-methods design at times calls for quantifying qualitative data for comparison (Creswell & Plano Clark, 2018). Therefore, I respectively counted the number of students who demonstrated literal comprehension, used a structural cue, and/or shared an inference. I then compiled the analysis for each qualitative measure into a table in the "Metainferences" tab of the spreadsheet.

**Mixed methods**

After I noted the results of the quantitative analysis for participants as a whole and the target student group, I reviewed the qualitative data analysis for patterns across the responses by measure to make reasonable conclusions for the whole and target groups (Creswell, 2014). Once each strand was analyzed, I compared the results of the quantitative measures against the

analysis of the qualitative data to determine if there was convergence or divergence in the data, the extent of the impact of the intervention on student reading comprehension, and documented this in the spreadsheet under the "Metainferences" tab. This comparison allowed me to determine if the qualitative data corroborated quantitative data (Plano Clark & Ivankova, 2016). From this, I made meta-inferences as to the intervention's effectiveness.

## Timeline

This research was determined to be "not human [subject] research" by the Institutional Review Board (IRB) in February of 2021 since the results are situated in a single school context and will not be generalized. I then established the foundation for the research and formally submitted the study for approval from the school administration in January 2022. Approval was granted on February 18, 2022.

While waiting on approval, the district-assigned winter NWEA MAP reading assessment was administered at the end of January. Following that administration and with administrator approval, I collected the data from this assessment to select the participants for the study. After students were selected for the study, I notified parents and guardians on February 23rd of the study's purpose, activities, and the determined timeline.

The study began on February 28th, when I administered the pre-intervention assessment. I reviewed the data that same day with a peer to confirm the need for the intervention before implementing the instruction during class the following day. The intervention continued through class instruction and practice in the four weeks following the pretest, ending the last week of March with the post-assessment.

The data was then reviewed and analyzed in the month of April. A peer instructor completed an external audit in that same month, evaluating the alignment of the research and the appropriateness of the study conclusions.

The timeline is further detailed in Table 2.

**Table 2**

*Timeline of Activities*

| When | Who | What | How |
|---|---|---|---|
| January 2022 | Researcher<br>BHS Academic Principal | Submit request for study with Brandview ISD | I submitted a formal, written request to the BHS Academic Principal. |
| | BISD | NWEA MAP Winter Assessment | BISD teachers administered the exam following normal school procedures. |
| February 2022 | Researcher | Identify participants | I reviewed students' NWEA MAP scores to determine participants for the study. |
| | Researcher<br>BHS Academic Principal | Obtain parent/guardian permissions | I notified participants' guardians of the study. |
| | Researcher | Administer pretest | I administered the pretest in one class setting. |
| | Researcher | Begin study | I integrated the TSS intervention following the completion of the pretest. |

**Table 2**

*Continued*

| When | Who | What | How |
|---|---|---|---|
| March 2022 | Researcher | Continue study | I provided students with opportunities to practice the strategy with district-assigned texts.<br><br>For one week, students were also given the opportunity to choose from three texts one with which to practice the strategy. |
| April 2022 | Researcher | Administer posttest | I administered the posttest in one class setting. |
| | Researcher | Conduct analysis of quantitative data | I independently analyzed quantitative data and conducted a paired *t*-test. |
| | Peer Teacher | Score qualitative data using rubric | I and a peer teacher independently scored pretest and posttest qualitative data to determine inter-rater reliability. |
| | Researcher | Conduct analysis of qualitative data | I independently analyzed the qualitative data using deductive analysis. |
| | Peer Teacher | External audit | I presented data and analysis to the peer teacher to review and conduct an audit of the information. |
| May 2022 | Researcher | Presentation of findings | I composed and presented the analysis and findings to the chairs and committee. |

## Reliability and Validity

Calculations of reliability were used to determine the reliability of scoring of quantitative data. To determine inter-rater reliability of the rubric scores, a peer English teacher with 20 years' experience and I scored 100% of student responses. Agreement was calculated by dividing agreements by total agreements and disagreements then multiplying by 100. Inter-rater reliability for multiple-choice questions were 100%, and for open-ended response data: 95% for the main idea item on both pre- and posttest; for the summary item, 100% on the pretest and 96% on the posttest; and 92% on the pretest and 90% on the posttest for the inference item.

I further established credibility of this data through diligent observation of patterns in student responses. As the researcher, I independently coded the student open-ended responses using deductive coding to describe how the intervention impacted student literal comprehension, use of structural cues, and inference skills as apparent in student written responses. Then, an external audit conducted by a peer affirmed the dependability of the qualitative analysis. The peer, an English teacher with 20 years' experience, reviewed my coding of each pretest and posttest written response for values missed in the coding or misidentified coded values. After discussion, my peer and I agreed with the qualitative analysis.

Another peer well-versed in statistics conducted a separate external audit of the quantitative data and analysis to confirm validity. This peer reviewed the multiple-choice and rubric scores separately and independently calculated the paired *t*-test statistic to confirm accuracy of the math.

Action research validity was established when each step of the process informed the next (e.g., the pretest determined the need and the intervention specifically addressed that need), the

intervention outcome showed growth in student reading achievement, and students were given choices during intervention implementation (i.e., student choice in reading materials).

## Closing Thoughts on Chapter 3

In this study, I proposed to employ the same process used by teachers every day to integrate an instructional intervention that would not disrupt whole class learning and would also not require struggling students to lose class time in favor of other intervention programs. Through this research, I described the procedures for implementation and measured the intervention's impact on student learning, providing a potential and realistic solution for teachers with students scoring below-average in reading achievement.

# CHAPTER IV

# RESULTS

## Introduction

The purpose of this study was to examine how employing Text Structure Strategy (TSS) in a ninth-grade English I class impacted student reading achievement. For this study, multiple-choice reading comprehension and open-ended response data were collected to answer the following research questions:

1. What is the difference in reading comprehension outcomes between ninth-grade student pretest and posttest scores following the implementation of the Text Structure Strategy intervention?
2. How does Text Structure Strategy impact student reading comprehension and inferencing skills as indicated by open-ended responses?
3. Using triangulation, do student written responses corroborate the observed change in quantitative pre- to post-intervention reading scores?

## Presentation of Data

Before and after the intervention, I asked students to complete a pretest and a posttest. Each assessment began with five multiple-choice questions measuring in order: Vocabulary, author's purpose, inference, author's craft, and comprehension. Then, students wrote written responses to three open-ended response questions eliciting student understanding of, in order: Main idea, summary, and inference. I also informally collected formative data parallel to pretest and posttest questioning to measure the progress of the students within the tier 3 intervention

range per the district's intervention handbook (Hickman, 2019). In this section, data are presented by each analysis strand.

Of the 119 students identified for the study, 111 completed both the pretest and the posttest assessments. Four of the eight students not included in the data missed either the pre- or posttest, two students were unable to complete the tests due to being pulled from class for various reasons, one student refused to complete either exam, and one student changed schools mid-study. Three students out of the 111 qualified for the target group for tier 3 intervention.

## Reading Comprehension: Quantitative Results

### *Whole Group*

Students collectively demonstrated growth on the objective measures. Results showed a minimal increase in student vocabulary skills following the intervention. Student objective scores on the multiple-choice items for author's purpose and inference showed students had greater growth in these skill areas. Additionally, multiple-choice data demonstrated positive growth in the students' weakest skill area, author's craft. Student comprehension also increased following the intervention (see Table 3).

**Table 3**

*Average Percent Pretest and Posttest Multiple-choice Reading Comprehension Scores by Construct*

| | Total Score | Vocabulary | Author's Purpose | Inference | Author's Craft | Comprehension |
|---|---|---|---|---|---|---|
| Pretest | 59% | 74% | 59% | 50% | 43% | 66% |
| Posttest | 71% | 75% | 72% | 72% | 59% | 76% |

A comparison of pretest and posttest objective data showed an increase in overall reading achievement and in the areas of vocabulary, author's purpose, inference, author's craft, and general comprehension for the whole group. The paired *t*-test analysis results suggest the increase in scores pre- to posttest is significant (see Table 4). The difference between pre- and posttest scores, $t(110) = -3.51$, $p = .0006$, indicates students had a higher average score on the posttest than on the pretest. The effect size was -.46 (Cohen's *d*), a moderate effect size (Morgan et al., 2020).

Rubric scores for the open-ended response data further demonstrated collective student growth in written main idea statements, summaries, and in making an inference (see Table 5). These student responses collectively showed that when identifying the main idea, students were more specific following the intervention. Students used cues and details from the text to better develop their answers. Refer to Table 6 for example student main idea statements, to Table 7 for written summary statements, and to Table 8 for example student-made inferences.

**Table 4**

*Paired t-Test Results of Comparison of Student Total Objectives Scores for Overall Reading Comprehension at Pretest and Posttest for Whole Group*

| | *M* | *SD* | *t* | *df* | *p* | *d* |
|---|---|---|---|---|---|---|
| Reading Comprehension Outcomes | | | -3.51 | 110 | .0006 | -.46 |
| Pretest | .586 | .254 | | | | |
| Posttest | .706 | .265 | | | | |

**Table 5**

*Average Open-ended Main Idea, Summary, and Inference Response Rubric Scores at Pretest and Posttest*

| | Total Possible Points | Main Idea | Summary | Inference |
|---|---|---|---|---|
| Pretest | 3 | 1.05 | 1.39 | 1.20 |
| Posttest | 3 | 1.33 | 1.26 | 1.35 |

**Table 6**

*Randomly-selected Example Student Responses to Open-ended Main Idea Prompt by Rubric Skill Level at Pretest and Posttest*

| Main Idea | | |
|---|---|---|
| **Skill Levels** | **Pretest** | **Posttest** |
| No Response | i have no clue | - |
| Needs Improvement | How to write a speech | Jackson completed a drive across the continent in 64 days. |
| Approaching | the main idea is how to work on how you speak during your speech and how to come up with different topics to talk about, and ways to talk about the topic. | The main idea was about a challenge and a road trip that would be completed by July 26—63 days, 12 hours, and 30 minutes and many other problems that they'll face. |
| Mastery | This selection is mainly talking about speeches and writings. The author's main focus is that when writing or giving a speech the one thing that person needs to focus on is their main point. Once the person has the key message it is a lot easier. As shown in paragraph 14. "Whether you are going to a breakfast meeting with a potential investor, making a sales talk, or delivering a product presentation, you need to first come up with the key message you want to leave with your audience." | A very creative, Hard journey that was faced with many terrors and such however it was more about why and how they followed the path without road signs and many obstacles in their way they still made it to their destination true it took them A LOT longer than they may have first suspected but, in the end, they did in fact make it |

**Table 7**

*Randomly-selected Example Student Responses to Open-ended Summary Prompt by Rubric Skill Level at Pretest and Posttest*

| Summary | | |
|---|---|---|
| **Skill Levels** | **Pretest** | **Posttest** |
| No Response | Ill be honest idk how to do that :) | i already forgot |
| Needs Improvement | speeches are important to motivate people to do stuff | In this text, it talks about why Jackson accepted the wager. Then, it talks about the challenges they face and how they fixed certain things. |
| Approaching | Its important to identify the message that you are trying to get across to the reader. The author also talks about being able to "articulate my position, my stance, my big idea, in one sentence | The whole summary of the story is the amount of money spent on the road trip and how conditions on the road weren't stable but the car still managed after it broke down luckily they were inventive and adapted to their problems. |
| Mastery | Coming up with a speech can be confusing and hard work, but if you take certain steps, it can be easier. First, pick a topic that you feel very strongly about. Then, make sure that you can articulate your position on the topic in one, descriptive sentence. After that, elaborate on it. | Dr. Horatio Nelson Jackson agreed to a wager that made road-trip history on May 19, 1903. He proposed to drive across the continent within three months, and Jackson was ready to go in only four days. He hired Sewall K. Crocker, a mechanic, to accompany him. they faced many challenges on there travels and many problems regarding their vehicle but the biggest challenge was the road having to move boulders out of the way lakes and streams deep mud, and many more but with some horses help and a phew parts here and there they slowly made their a way to there destination attracting fame everywhere they went. |

**Table 8**

*Randomly-selected Example Student Responses to Open-ended Inference Prompt by Rubric Skill Level at Pretest and Posttest*

| Inference | | |
|---|---|---|
| **Skill Levels** | **Pretest** | **Posttest** |
| No Response | - | um stuff stuff |
| Needs Improvement | ue your brain | to show that the Winton was not very fast |
| Approaching | I think the author uses the term heavy mental lifting because they are stating if you do all of the hard work by thinking about what you want to write also what point you want to make which is hard then it will make writing your speech or paper easier. | To show that the Winton couldn't actually go as fast as people were claiming it could. |
| Mastery | - | The author included that to tell the truth about how fast the vehicle could go. Media would say it could go 90 mph but in reality could only go 30-20 mph |

***Target Group***

A closer examination of the three students identified for tier 3 intervention demonstrated these students grew on their total objective scores of multiple-choice items from pretest to posttest, 67% to 87%. These students also grew their skills in author's craft and comprehension, according to the objective data. There was no change in objective scores for vocabulary, author's purpose, and inference. Additionally, there were no consistent growth trends in formative

assessment results between pretest and posttest except for "author's craft" (see Table 9). Author's craft (i.e., structure) was the main focus of the instruction before the administration of the formative assessments. Therefore, the teacher decided to focus on author's craft since it was the weakest skill on the pretest for this group collectively, and for two of the three individually. Student group performance in this area increased between each objective assessment: pretest, formative assessments, and posttest.

The results of a paired *t*-test with objective overall scores from the target student group demonstrated the difference between pre- and posttest scores, $t(2) = -1.02$, $p = .417$, for students in this group were not significant (significant $p$ value $\leq 0.05$). This result implies insufficient evidence to determine the statistical difference between the pre- and posttest results for the target group. However, the *d* value (-.832) indicates a large effect size. The target group sample consists of three students, which is a small sample size and may have contributed to the skewed result of this paired *t*-test. See Table 10 for details.

**Table 9**

*Average Pretest and Posttest Target Group Scores for Overall Multiple-choice Questions by Construct*

| | Total Score | Vocabulary | Author's Purpose | Inference | Author's Craft | Comprehension |
|---|---|---|---|---|---|---|
| Pretest | 67% | 67% | 100% | 67% | 33% | 67% |
| Formative 1 | 73% | 100% | - | - | 50% | 83% |
| Formative 2 | 67% | 78% | 67% | - | 67% | 58% |
| Posttest | 87% | 67% | 100% | 67% | 100% | 100% |

**Table 10**

*Paired t-Test Results of Comparison of Student Total Multiple-choice Scores for Overall Reading Comprehension at Pretest and Posttest for Target Group*

| | *M* | *SD* | *t* | *df* | *p* | *d* |
|---|---|---|---|---|---|---|
| Reading Comprehension Outcomes | | | -1.02 | 2 | .417 | -.83 |
| Pretest | .667 | .306 | | | | |
| Posttest | .867 | .231 | | | | |

Rubric scores of open-ended responses measuring main idea, summary, and inference skills for students within the target group also improved following the intervention, parallel to the whole group results for these measures. Specifically, students collectively grew their written responses from "Needs Improvement" (scored quantitatively as "1") to "Approaching" (scored as "2") in the areas of main idea and summary. However, tier 3 students demonstrated no growth in their inference ability (see Table 11).

**Table 11**

*Average Open-ended Main Idea, Summary, and Inference Response Rubric Scores for Target Group at Pretest and Posttest*

| | Total Possible Points | Main Idea | Summary | Inference |
|---|---|---|---|---|
| Pretest | 3 | 1 | 1 | 2 |
| Posttest | 3 | 2 | 2 | 2 |

Due to absences and student disinterest, formative open-response data collected was limited. One of the three students completed 50% (one of two) of the formative open-ended responses for main idea and summary. This student demonstrated a mastery understanding of main idea (scored as "3") and had an "Approaching" skill in writing a text summary. However, like their peers in the target group, this student did not complete any open-ended, informal assessment measuring inference skills. Therefore, there was not enough data for a quantitative analysis of this formative response type.

Overall, open-ended responses by students in this target group by rubric skill level show improvement in identifying the main idea (see Table 12). However, two of the three students did not grow their summary writing skills (Table 13), and one of those two had negative growth in making an inference. All students in the target group also made literal inferences before and after the intervention. See Table 14 for details. No student achieved "Mastery," a score of 3, for any area on their written responses to the open-ended measures.

**Table 12**

*Target Group Student Open-ended Responses at Pretest and Posttest for Main Idea Item*

| Main Idea | | | | |
|---|---|---|---|---|
| | **Pretest** | | **Posttest** | |
| *Student* | *Skill Level* | *Response* | *Skill Level* | *Response* |
| 1 | Needs Improvement | the struggle of being a seaker and how they do what they do | Approaching | i think the main idea is to work past your problems |
| 2 | Needs Improvement | It is about a guy who talks about how to start and end a presentation. | Approaching | That Jackson and Crocker, bet that they would beat Oldsmobile, and all the challenges they went through. |
| 3 | Needs Improvement | The main idea of the selection is to give people advice to creat good speeches and inspring texts. | Approaching | The main idea of the text was that a man traveled halfway across the world to prove that cars were an effective way to travel |

**Table 13**

*Target Group Student Open-ended Responses at Pretest and Posttest for Summary Item*

| Summary | | | | |
|---|---|---|---|---|
| | **Pretest** | | **Posttest** | |
| *Student* | *Skill Level* | *Response* | *Skill Level* | *Response* |
| 1 | Approaching | you should clear your head before you start writing. then decide your topic. last figure out your big idea. | Approaching | Dr. Horatio Nelson Jackson agreed to a wager that made road-trip history on May 19, 1903. The only modifications Jackson and Crocker made were to add brighter headlamps and to remove the back seat to pack gear and to hold extra gasoline tanks to the car. Despite the ultimate success of all three trips, the difficulties their drivers faced demonstrated that long-distance automobile travel was impractical. |
| 2 | No Response | I'm too lazy to do this sorry. | Approaching | The story was about, how Jackson and Cocker betted that they would beat Oldsmobile. On their journey, they encountered a bunch of accidents. One of them was they got holes on their tires, but thankfully they were smart and used rope to help air escape the punctured holes. |
| 3 | Approaching | Its important to identify the message that you are trying to get across to the reader. The author also talks about being able to "articulate my position, my stance, my big idea, in one sentence | Approaching | A man named Dr. Horatio Nelson Jackson agreed to a wager to travel across the continent in 3 months to prove that a vehicle is an effective and reliable way of travel. |

**Table 14**

*Target Group Student Open-ended Responses at Pretest and Posttest for Inference Item*

| Inference | | | | |
|---|---|---|---|---|
| | **Pretest** | | **Posttest** | |
| *Student* | *Skill Level* | *Response* | *Skill Level* | *Response* |
| 1 | Approaching | if you want a strong, good start to your writing | Needs Improvement | its telling you how fast there car went |
| 2 | Approaching | The author means, to have a clear focused mind, and to compel notes to figure out the bottom line. | Approaching | To show that people did think it was cool, that an automobile was going that fast. |
| 3 | Approaching | By saying "hevy metal lifting" the Author is saying by doing the hard work at the start you dont have to worry about it later | Approaching | To give more details about the car and what its capabilities are. |

Analysis of the whole group and target group data sets presents collective, positive growth in student reading achievement on objective items measuring: Author's craft (e.g., main idea, details) and comprehension. Whereas students in the whole group also improved on objective items measuring vocabulary, author's purpose, and inference, students in the target group did not.

**Reading Comprehension: Joint Display of Open-ended Response Data**

Student open-ended responses were analyzed quantitatively, and I applied qualitative, deductive analysis to these same responses using a priori codes, "literal comprehension,"

"structural cue," and "inference." Following the coding of the data, I counted the number of students in the whole group who demonstrated literal comprehension per item (main idea, summary, and inference). This process was repeated to count the number of students in the whole group who used structural cues in their written responses, and again to count the number in the whole group who shared an inferred understanding. Doing this transformed the qualitative analysis for comparison with the quantitative analysis (Creswell & Plano Clark, 2018). In this way, quantitative data analysis demonstrated student scores in each assessed skill area, while qualitative data analysis showed how student thinking changed collectively by noting how many students used literal comprehension, structural cues, or inference to develop their written responses.

In the coded, whole group responses, more students used literal comprehension and structural cues to increase their inference skills. More students in the whole group also relied on literal comprehension cues in writing summaries; however, the overall quantitative score did not improve in this area. Data analysis further show students improved their understanding of main idea but did not rely on keywords or phrases when expressing their comprehension. Refer to Table 15 for a joint display of this quantitative score and qualitative count for the whole group open-ended response data.

Focusing on target group data independently, students needing tier 3 intervention used more literal comprehension and structural cues and increased their objective score for summary writing (see Table 16 for more details). This differs from whole group data analysis, which displayed negative growth on the summary item. The whole group data analysis demonstrated, though, that students overall grew their objective score on the open-ended inference response item. Dissimilar from the whole group, the target group had negative growth in the area of

inference despite increasing their use of literal comprehension and structural cues in their written responses. For example, when asked to infer meaning from parenthetical information, students noted miles per hour as "how fast" the car was going, a literal comprehension of the text, and used structural cues, such as “to give” and “to show” but could not identify the purpose of the parenthetical information. No student in the target group inferred the parenthetical information provided context to contradict the comment in the prior sentences.

Both the whole group and the target group improved their understanding of main idea, according to objective scoring of their written responses despite the qualitative analysis demonstrating fewer students used literal comprehension, structural cues, and inferences when writing their main idea (see Tables 15 and 16).

**Table 15**

*Quantitative Rubric Scores for Whole Group Open-ended Responses to Main Idea, Summary, and Inference Items Displayed with Qualitative Counts of A Priori Codes*

| | Total Score/Count Possible | Main Idea | | Summary | | Inference | |
|---|---|---|---|---|---|---|---|
| | | Pretest | Posttest | Pretest | Posttest | Pretest | Posttest |
| Overall | 100% | 35% | 44% | 46% | 42% | 40% | 45% |
| Literal Comprehension | 111 | 93 | 84 | 82 | 90 | 68 | 76 |
| Structural Cues | 111 | 80 | 48 | 69 | 47 | 20 | 81 |
| Inference | 111 | 46 | 32 | 13 | 11 | 75 | 48 |

**Table 16**

*Average Rubric Scores for Target Group Open-ended Responses to Main Idea, Summary, and Inference Items Displayed with Qualitative Counts of A Priori Codes*

| | Total Score/Count Possible | Main Idea | | Summary | | Inference | |
|---|---|---|---|---|---|---|---|
| | | Pretest | Posttest | Pretest | Posttest | Pretest | Posttest |
| Overall | 100% | 33% | 67% | 44% | 67% | 67% | 56% |
| Literal Comprehension | 3 | 3 | 2 | 2 | 3 | 2 | 3 |
| Structural Cues | 3 | 3 | 2 | 2 | 3 | 0 | 2 |
| Inference | 3 | 2 | 2 | 0 | 0 | 3 | 1 |

Whole group student responses to the open-ended questions show students had collective growth in overall comprehension skills following the intervention. Data further show students in the whole group improved inference skills by making literal inferences post-intervention, whereas students in the target group were better able to write summaries. Students in the whole group identified details in the text better post-intervention, but they did not pull the most relevant details for their summary. After the intervention, more students in the whole group also referenced structural cues when making inferences, but the target group further used structural cues to write their summaries. Altogether, students in the whole group better comprehended and inferred meaning from the text following the intervention, while these results imply that students needing tier 3 intervention were better able to identify relevant details following the TSS intervention than the whole group. Overall, students in the target group better understood which text to draw upon and were better able to construct basic inferences post-intervention.

## Summary

Results show students in the larger participant sample and the target group had positive growth in reading comprehension after the intervention. Students in the whole sample had significant growth in overall reading comprehension. Quantitative data analysis for the whole participant group showed positive growth in overall reading achievement, vocabulary, author's purpose, inference, author's craft (e.g., main idea, details), and reading comprehension, main idea, and in written inference skills. The qualitative data analysis demonstrated more students in the whole group used cues from the text to express their understanding of the overall message and structure. For students in the target group, the quantitative, objective data showed group growth in author's craft (i.e., main idea and summary) and reading comprehension skills. Students in the target group demonstrated increased comprehension but were unable to make deeper inferences. However, these students had the largest growth in analyzing the author’s craft. This skill was the main focus of instruction throughout the study.

# CHAPTER V

# CONCLUSIONS

## Summary of Findings

The purpose of the study was to determine if the instructional intervention, Text Structure Strategy (TSS) positively impacted student reading achievement and the related skills of vocabulary, author's purpose, inference, author's craft (e.g., main idea, details), comprehension, and main idea and summary writing. Results indicate students significantly improved overall reading comprehension achievement in terms of vocabulary, author's purpose, inference, and author's craft skills.

### Whole Group Outcomes

Quantitative data analysis of open-ended responses corroborated this growth as students were better at identifying the main idea and more adept at making inferences post-intervention. Following the TSS intervention, students increased their use of literal comprehension and structural cues to develop their written responses. Participants as a whole group did not improve in summary writing pre- to posttest though more students used cues to help compose their responses on the posttest. This result may be due to student perception of the texts as the pretest used an informational text explaining a concept, while the posttest used a historical retelling of an event and its impact on automobile technology, which most students considered a list of facts. With information presented in a way resembling a list, students may have narrowed their focus on structure too much, and therefore missed important details.

### Target Group Outcomes

Objective formative assessment data demonstrated students in the target group did not consistently grow across all assessments, formative and summative, except in the area of author's craft (i.e., main idea, details). This consistency may be due to me, as the teacher, focusing more of the instruction on the author's craft skill during the study since it was the weakest skill identified by pretest data for both the target and whole groups. Half of the instruction was focused explicitly on author's craft.

Pre- and posttest data analysis indicates the target group did objectively grow in reading achievement. Additionally, their skills improved in author's craft and reading comprehension. Quantitative analysis of written response data also showed student improvement in identifying the main idea and writing summaries, and qualitative analysis demonstrated more students used literal comprehension and structural cues in their responses post-intervention. These students did not improve in making inference. This may be due to inferences being a harder skill to grasp, and/or students may have focused too much on the phrasing, "parenthetical information" on the posttest, which may have led them to exclude the context in which that information was placed.

Altogether, the data demonstrate the TSS intervention positively impacted student reading achievement with quantitative and qualitative analysis supporting this conclusion.

## Relation to Extant Literature

### Successful Intervention

The most successful intervention program is based on best practices; is consistent, systematic, and systemic; has well-trained staff who collaborate; is culturally and contextually relevant; and gives students choice and ownership of their learning. Jeffes (2016) employed a singular intervention with a strong research base and noted significant gains by students in

primary reading skills. This study also used an intervention strategy with appropriate research background, and participants in this study demonstrated significant growth in reading comprehension. Additionally, the intervention in this study was consistent, given every class for four weeks. Pyle and Vaughn (2012) explain the intensity of the intervention will vary based on student needs but that students receiving consistent intervention were most successful. Students in this study received base instruction daily, yet the practice and follow-up instruction during each lesson varied by student attendance and needs.

Although the school district's required curriculum mostly determined the literature and practice, the teacher selected supplementary texts culturally and contextually relevant to the students. Schwartz et al. (2012) concluded learning is most effective when tailored to student needs and interests. In this study, texts were chosen based on student skill levels, interests, as well as whether the text would add to the context around the district-required material. For example, if the district-assigned text was about a particular group of people (e.g., the mathematicians at NASA), then the supplementary text also addressed this topic with similar but more relatable information. Students were also given a choice in selecting the text with which to practice the strategy during one week of the study. The options were reviewed for appropriateness by the teacher but were selected based on recorded student interests.

**Instructional Intervention**

I employed the Text Structure Strategy (TSS; Meyer, 1975) as the intervention for this study. The results of this study align with Meyer et al. (1980), who used the same strategy with similar-aged participants. Students who recognized text structures increased their reading comprehension (Meyer et al., 1980). The research design is the most notable difference between this study and Meyer et al. (1980). Whereas the prior study was quantitative, this study gained a

deeper insight into changes in student skills by also collecting qualitative data. Student open-ended responses in this study clarified how student reading comprehension increased. Specifically, students who recognized structural cues were better able to comprehend the text on the literal level and were more capable of using structural signals to make inferences, even if those inferences were basic.

This study further explored the difference by assessment for a targeted group of students. Wijekumar et al. (2020) also reviewed changes in student performance for students who scored below the 25th percentile on the pretest. The target group for this study was students who scored in the tier 3 intervention identification range on the district's universal screener (Hickman, 2019). In this study, students in the target group did increase their reading comprehension and relevant main idea and summary skills; however, they experienced no or negative growth in making inferences. These results mirror the conclusions made by Wijekumar et al. (2020), who noted students in the 25$^{th}$ percentile or below had meaningful growth in their reading comprehension.

## Discussion of Lessons Learned

Administrators expect teachers to employ the appropriate intervention for students struggling to find success in class. However, teachers reasonably labor to individualize learning for twenty or more students in one class period. In my personal history, the solutions provided by campus administration were all computer-based programs, of which students did not take advantage and took class time away from instruction. The use of an instructional intervention better integrates the intervention without taking time away from required instruction.

My school district requires teachers follow a district-wide pacing guide for lessons, which offers very little time for interventions beyond required computerized intervention

programs. During this study, in the teacher role, I did not feel overwhelmed as usual at providing students with the instruction most appropriate for addressing their needs. It is the norm for me to struggle to adapt lessons and personalize learning for each student within the lesson structure and timing set by the district. However, with the instructional intervention, I better focused my instruction on the areas of most need collectively and addressed students' learning needs while remaining aligned with district expectations. I was also better able to see where lessons needed to be adjusted to more effectively help the students falling behind due to absences or a lack of understanding.

Throughout the entire study process, I learned that instructional interventions are valuable tools for teachers, yet most teachers, including myself, are not trained or aware of how to find the best strategy for targeted instruction. This realization leads me to believe instructional leaders and campus administration should help foster such awareness through professional development and in the school-provided resources. Teachers with this knowledge, which now includes me, should share this information with peers to help all educators grow their understanding and ability in planning and delivering the most appropriate instruction for all students.

## Implications for Practice

### In the Context

This study took place in a ninth-grade English I classroom at a suburban high school on the cusp of a larger suburban metroplex in the southern US. Over the past several years, approximately 28% of ninth-grade students at this site (TEA, 2017, 2018, 2019, 2021a) did not meet the basic literacy expectations per English I EOC results. The results of this study show students collectively improved their reading comprehension skills following the intervention. Students who performed within the target area for tier 3 intervention on the district's universal

screener also improved in this area. Therefore, it is reasonable to conclude teachers in this context would benefit from integrating the strategy into their lessons to address the needs of students performing below-average on reading measures. To help familiarize educators with this instructional intervention, I created an informational handout for administrators and instructional leaders to share (see Appendix G). The handout includes the main concepts of the strategy and information for further exploration.

### For the Field of Study

Results of this study indicate the instructional intervention, TSS, positively impacted student reading achievement. Any teacher that has students struggling to be successful due to a lack of literacy skills can employ this strategy in the classroom to enhance the learning for all while also targeting the needs of those struggling learners.

Campus administrators and other instructional leaders seeking to address concerns with literacy achievement would benefit from exploring TSS and other instructional interventions. This intervention would not overwhelm educators or take valuable time/attention away from the required instructional content. Despite knowing teachers can and do sometimes adapt mandated lessons to best benefit their students, there is additional pressure to remain aligned with district-required curricula. Providing teachers with the most relevant instructional intervention lessens the stress by not diverging from the assigned curriculum yet still addressing student learning needs. Furthermore, learning leaders can deliver the most appropriate professional development to help teachers make more effective instructional decisions to best benefit all students.

## Recommendations

This record of study added to the literature by being integrated into a district pacing guide and expected learning standards, and by me, the teacher, who self-taught the TSS intervention

strategy and successfully implemented it in the classroom. Although the results of this study are not generalizable, they suggest the instructional intervention positively impacted student reading comprehension and relevant skills. Specifically, students demonstrated growth in reading achievement within the context of the study and site. Stakeholders would benefit from further research into instructional interventions best suited to student needs within their context.

There are several limitations to this study. First, one teacher implemented the intervention rather than a grade-level or content team, so changes in student skills across a team of teachers were not measured. Future research should explore the impact of the intervention on a larger sample size with more than one instructor delivering the intervention to measure changes in reading achievement.

Second, the sample size in this study for the tier 3 intervention target group was small. It is not uncommon for students to be absent or miss valuable instruction. However, students in the target group for tier 3 intervention were often absent. Only one of the three students was consistently present in class. Future studies should further investigate the impact of the TSS intervention on student reading achievement for students consistently performing below-average on literacy assessments. Lastly, though this study did include qualitative analysis, future studies could further explore the student perspective of instructional interventions and the impact on student thinking.

## Closing Thoughts on Chapter 5

All students should be able to read and write per grade-level expectations. Data, however, suggest significant numbers of students fail to meet those standards locally each year (TEA 2017, 2018, 2019, 2021a) and nationally (NCES, 2019a, 2019b). Teachers then are expected to adjust lessons to aid those students in making appropriate growth. Resources provided to

teachers to accomplish this goal are often computerized programs students will use dedicated time in class to complete, but academic growth from computer inventions alone compared to teacher-led interventions are not as effective (Jacobs, 2008). Other solutions have been pull-out interventions that may not be based in effective practices (Brozo, 2009; Faggella-Luby & Wardwell, 2011). This study attempted to offer teachers another option by exploring the impact of an instructional intervention on student reading achievement.

As the teacher, I integrated the instructional intervention into a ninth-grade English I class daily for four weeks. Students were given initial instruction on five expository text structures and then practiced analyzing a text for vocabulary, author's purpose, inference, author's craft, comprehension, main idea, or summary, depending on the focus of that day's lesson. I aligned instruction with district pacing and content expectations throughout this process. Results of the study imply the intervention positively impacted student reading achievement in all measured areas.

Teachers, who have students achieving below average on reading assessments, would benefit from this research. Campus and local contexts would further benefit from reintroducing the concept of instructional interventions to teachers, training teachers on how to identify and integrate such interventions, and providing staff with research-based strategies. If teachers appropriately identify, integrate, and reflect on an instructional intervention, less time for computerized or out-of-class interventions would be needed. With more effective targeted literacy instruction, students skills will grow and students will find more success on reading assessments.

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# APPENDIX A

## PARENT LETTER

February 23, 2022

Dear Student and Parent/Guardians,

My name is Ashton Hughes. Although many of you know me as a BHS English teacher, I am currently also a graduate student at Texas A&M University. For my doctoral degree, I am conducting research on the effectiveness of instruction called Text Structure Strategy, or TSS. This instruction includes lessons on the five main structures of informational texts and how to organize information for later recall. Past research shows this instruction can lead to an increase in reading comprehension.[1] The goal of this research study is to measure how effective the instruction is for students in English 1.

For this study, students will take a quick pre-test on February 28th to measure their reading comprehension skills. Students will then receive instruction on the five text structures in class, and they will participate in comprehension and recall practice during class time for approximately six weeks. At the end of that time period, students will take a post-test to measure the change in their skills after the TSS instruction. I will collect students' test scores and short answer responses for the study, but student names will be changed to protect student privacy. No student names will be included in my final report submitted to my graduate committee at Texas A&M. I do not perceive any risk from your student's involvement in this study beyond the risks associated with everyday life.

Your student's participation in this study is entirely voluntary. At this time, no action is necessary on your part. Should you choose to, you can withdraw your student at any time during the study without consequences of any kind. However, any data collected before that time will be included in the study.

If you have any questions or concerns throughout this study, or after its completion, please contact:

Ashton Hughes
Teaching, Learning, and Culture Department
Texas A&M University
alhughes@tamu.edu

**Withdrawing Consent**
I have read this cover letter and I understand what is being requested of my student as a participant in this study. I have been given satisfactory answers to my questions. At this time, I wish to withdraw my consent for my student's participation.

_____
Name of Participant's Parent/Guardian (Printed)

_____ _____
Name of Participant's Parent/Guardian (Signed) Date

[1] Meyer, B. J. (1975*). The organization of prose and its effects on memory*. North-Holland; Meyer, B. J., & Poon, L. W. (2001). Effects of structure strategy training and signaling on recall of text. *Journal of Educational Psychology, 93*(1), 141-159. doi: 10.1037/0022-0663.93.1.141; Meyer, B. J., Brandt, D. M., & Bluth, G. J. (1980). Use of top-level structure in text: Key for reading comprehension of ninth-grade students. *Reading Research Quarterly, 16*(1), 72-103. https://www.jstor.org/stable/747349; Wijekumar, K., Meyer, B. J., Lei, P., Beerwinkle, A. L., & Joshi, M. (2020). Supplementing teacher knowledge using web-based intelligent tutoring system for the text structure strategy to improve content area reading comprehension with fourth- and fifth-grade struggling readers. *Dyslexia, 26*(2), 120–136. https://doi-org.srv-proxy1.library.tamu.edu/10.1002/dys.1634

# APPENDIX B

# PRETEST

Read the selection and choose the best answer to each question. Then fill in the answer on your answer document.

## The One Sentence That Will Make You a More Effective Speaker Every Time

by Brenda Barbosa

Inc.Com

1 "Clear writing is clear thinking." My 10th-grade English teacher shared that morsel of wisdom once as I was slogging through a 20-page term paper with no idea where I was going or how to make the points I wanted to make; every word I wrote led me further down a rabbit hole of rambling sentences, incomplete thoughts, and disjointed ideas. It felt like I was writing in circles.

2 If clear writing was clear thinking, then my thinking was as clear as mud. The problem wasn't that I couldn't put words to paper. The problem was I couldn't get those words to make sense. That's because I wasn't clear on my objective. I was trying to say too much and, as a result, I was saying nothing.

3 Many speakers feel this way when they write speeches. They have too many ideas competing for attention and too many themes pulling them in different directions. There's no through-line to hold their arguments together and, so, their content feels jumbled and confused.

4 What's more, they lack a big idea—a powerful insight, perspective, or thought that serves as the backbone of their presentation; the big idea is the spine that holds everything up. In the words of TED curator Chris Anderson, the big idea is a "gift" transferred from the speaker's mind to the audience by way of a compelling talk. It's what separates a memorable speech from a mediocre one.

5 "Anyone who has an idea worth sharing is capable of giving a powerful talk," Anderson writes in his book, TED Talks: The Official Guide to Public Speaking. "The only thing that truly matters in public speaking is not confidence, stage presence, or smooth talking. It's having something worth saying."

6 Without a big idea to light the way, you'll wander aimlessly through draft after draft of your speech until, eventually, you run out of steam; you'll become so tired of going in circles you'll simply want to give up or, worse, you'll decide to "wing it." You'll jot down some notes, throw together a few slides, slap on a title, and call it a presentation. Why short change yourself

like that? Why not give yourself the chance to create something worth saying?

7 By distilling your thoughts into one succinct takeaway—your big idea—you can communicate with power and precision. And your audiences will walk away feeling satisfied and excited, instead

of bleary-eyed and confused. Here's one simple trick to help you cut through the distractions and get to the heart of your message:

**What Is a TED Talk?**

The nonprofit group TED began at a 1984 conference. TED stands for Technology, Entertainment, and Design. TED Talks now address many different topics, including science, business, and global issues, and have been given in more than 100 languages. Speakers cannot receive payment for giving a TED talk, and the speeches may not exceed 18 minutes. Some of the most popular TED talks in recent years have discussed depression, conversation skills, leadership, and creativity.

**Decide and determine**

8 First, decide on the topic you want to focus on (hint: it's usually your area of expertise or passion, i.e. leadership, creativity, communication, etc.). Then, determine what inspires you—or, conversely, what drives you insane—about that topic.

9 You might be a health expert, say, who believes carbs are your friends or a business leader who's fed up with the modern-day definition of success. That's what drove best-selling author and businesswoman Arianna Huffington, for example, to refute the pervasive, and mistaken, belief that burnout is the price we must pay for success.

10 It was the subject of her popular TED Talk, in which she argues that we are in the midst of a sleep-deprivation crisis. Being sleep deprived does not mean employees are more productive; it simply means they're more exhausted. Huffington then goes on to explain why that's a problem and what to do about it.

**Create the single sentence**

11 Once you've settled on your topic and decide where you stand, the next question to ask yourself is: Can I articulate my position, my stance, my big idea, in one sentence? In Huffington's case, after sifting through the data, she was able to distill her message into a single sentence: Only by renewing our relationship with sleep can we take back control of our lives.

12 Distilling your message into a single sentence will make your writing flow better, and make your key points easier to arrange. Think of the single sentence as a lighthouse guiding you through fog. If you become

GO ON

overwhelmed with an abundance of data or competing themes, the single sentence will help you stay on track.

13 It will help inform the choices you make regarding what information to keep and what to set aside in your speech. Any piece of data, story, or anecdote that doesn't jibe with your single sentence will wind up sidetracking and diluting your message.

14 In his book Speak Like Churchill, Stand Like Lincoln, former political speechwriter James C. Humes writes, "Whether you are going to a breakfast meeting with a potential investor, making a sales talk, or delivering a product presentation, you need to first come up with the key message you want to leave with your audience."

15 Let that key message be your North Star. If you can't state your idea in a single sentence, don't give up. Keep at it. For many speakers, this is the hardest part of their speech—and the most critical one.

16 If you do the heavy mental lifting upfront, it will be much easier to craft clear, compelling copy when you sit down to write. As Humes notes, "Make figuring out your bottom-line purpose (your big idea) your first priority."



**1** Which word from the article means "average or uninspired"?

**A** *jumbled* (paragraph 3)

**B** *mediocre* (paragraph 4)

**C** *bleary-eyed* (paragraph 7)

**D** *pervasive* (paragraph 9)

GO ON

**2** What is the primary purpose of this article?

**F** To offer practical advice to people who write and give speeches

**G** To relate personal stories about the author's high-school experiences

**H** To describe well-known speeches and the individuals who gave them

**J** To compare different approaches to making public presentations

**3** What can the reader conclude from paragraph 14?

**A** The author's advice has been followed by great speakers in the past.

**B** A background in sales is helpful when writing an effective speech.

**C** The author's suggestions for writing strong speeches apply in many situations.

**D** Most world leaders rely on professional writers to create speeches for them.

**4** How does the author organize the article?

**F** By presenting topics in chronological order

**G** By comparing different strategies for giving presentations

**H** By listing advantages and disadvantages of one approach to writing speeches

**J** By describing sequential steps toward creating an effective speech

**5** According to the author, when you are deciding on a speech topic —

**A** it is usually best to choose something you care strongly about

**B** the subject itself is less important than your speaking style

**C** you should avoid ideas that have been used too many times

**D** the issue should reflect concerns you share with other people

**6** What is the main idea of this selection?

**7** Write a summary for this selection.

**8** In paragraph 16, why does the author use the term "heavy mental lifting"?

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS
ON THE ANSWER DOCUMENT.


APPENDIX C

POSTTEST

Read the selection and choose the best answer to each question. Then fill in the answer on your answer document.

## 64 Days and $8,000

by Christine J. Cook

Cobblestone

July/August 2013

1 Dr. Horatio Nelson Jackson agreed to a wager that made road-trip history on May 19, 1903. He proposed to drive across the continent within three months. He wanted to disprove the belief that over long distances "the automobile was an unreliable novelty." Although he had learned to drive only a few weeks earlier, Jackson was enthusiastic about the new vehicles. He thought he could succeed where earlier transcontinental trips in 1899 and 1901 had failed miserably.

2 The wealthy young doctor had enough money, time, and optimism for such an adventure. He decided to drive from San Francisco, where he was on vacation at the time, to New York City. After wishing him luck, his wife, Bertha, took the train back East to wait for him at home in Vermont.

3 Jackson was ready to go in only four days. He hired Sewall K. Crocker, a mechanic, to accompany him. Crocker recommended a Winton touring car for the trip. At that time, new cars were preordered directly from the manufacturer. Since a new Winton required several months to complete, Jackson acquired a used 1903 Winton. The car had 1,000 miles and worn tires, but the owner agreed to sell it—for $500 more than he had originally paid.

4 The only modifications Jackson and Crocker made were to add brighter headlamps and to remove the back seat to pack gear and to hold extra gasoline tanks. There were no roadside gas stations in 1903. Jackson had to be prepared to buy large amounts of gasoline wherever it was available. The team was complete when Jackson bought a young bulldog named Bud. With $3,000 to purchase the Winton, $15 for Bud, Crocker's salary, and expenses during the trip (including 800 gallons of gasoline), Jackson spent about $8,000—all for a $50 bet.

5 The summer of 1903 was one of the wettest in memory, and the Winton had no roof or windshield. Large coverings of rubberized material kept off the rain, but they made the interior uncomfortably hot. On dry days, even Bud needed goggles to keep road dust out of his eyes. Virtually everything on the car that could break did at some point, and Jackson and Crocker lost 19 days

GO ON

waiting for parts to be delivered by train. When they had trouble replacing punctured tires, they used wheels wrapped with rope for a while.

6 Perhaps the biggest challenge came from the roads. Paved roads were rare in 1903. Most of the route was made of dirt, sand, or gravel. Boulders had to be moved out of the way in the Sierra Nevadas, a mountain range in eastern California and western Nevada. Important supplies, including Jackson's eyeglasses, bounced out and were lost on the bumpy roads. Several times, horses had to pull the Winton out of mud or streams. But by taking a detour through Oregon, Jackson avoided Nevada's sands, which had thwarted an earlier cross-country attempt, and the worst of the Rocky Mountains.

7 Detailed road maps were not yet available, and signs along the way were almost nonexistent. Jackson stayed close to railroad routes and the Erie Canal, but he still got lost a few times. Once, the team drove for 15 hours to make just 45 miles of progress. Another time, a woman purposely misdirected them past her parents' farm. Like most rural Americans, her parents had never seen an automobile.

8 The Winton attracted attention wherever it went. Soon newspapers reported Jackson's progress. Crowds in small towns along the route turned out to await the automobile's arrival. One newspaper encouraged readers to arrive early for a good view, in case the vehicle flew by at 90 miles per hour. (The Winton's maximum speed was 30 miles per hour, but it averaged 20 miles per hour in the best conditions.)

9 When two expeditions sponsored by automakers Packard and Oldsmobile departed in specially modified vehicles weeks behind Jackson, the media hyped a competition. Now aware of Jackson, the Winton Motor Company offered to provide him financial and logistical support. Jackson declined. He and Crocker still made it to New York first. They arrived on July 26—63 days, 12 hours, and 30 minutes after departing. The Winton's time was three days longer than the Packard's but 13 days less than the Oldsmobile's.

10 Despite the ultimate success of all three trips, the difficulties their drivers faced demonstrated that long-distance automobile travel was impractical. But the publicity they generated spurred a movement to improve the nation's roads. So, in a way, Jackson's trip "paved" the way for America's fascination with road trips!

**1** In paragraph 6, what does the word thwarted most nearly mean?

**A** Defeated

**B** Allowed

**C** Consumed

**D** Released

**2** What is the author's main purpose for writing this article?

**F** To inform the reader about a unique journey at the beginning of the automobile era

**G** To criticize Jackson for wasting funds on a foolish and unnecessary wager

**H** To analyze the best route for a transcontinental trip in the early twentieth century

**J** To argue that Jackson used the best route to reach New York City faster than his competitors

**3** Based on the article, which conclusion can be made by the reader?

**A** Jackson worried about the time it would take him to complete the trip.

**B** Jackson welcomed the challenge of making a never-before-completed trip.

**C** Jackson was annoyed by spectators who intentionally gave wrong directions.

**D** Jackson was concerned about the overall safety of the vehicle and spectators.

**4** How does the author mainly organize the article?

**F** By recounting the various problems that Jackson and Crocker encountered

**G** By citing opinions the public had about traveling in a Winton

**H** By summarizing the reasons Jackson accepted the wager

**J** By describing the different features of the Winton

**5** Which detail best supports the idea that Jackson and Crocker were inventive?

**A** They used wheels wrapped with rope when tires were punctured.

**B** They bought a used Winton instead of buying a new one.

**C** They moved boulders out of the way in the Sierra Nevadas.

**D** They used goggles to protect Bud's eyes from road dust.

**6** What is the main idea of this selection?

**7** Write a summary for this selection.

**8** In paragraph 8, why does the author include the parenthetical information?

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS
ON THE ANSWER DOCUMENT.


APPENDIX D

RUBRICS

## Main Idea Rubric

| | Mastery | Approaching | Needs Improvement | No Response |
|---|---|---|---|---|
| **Main Idea** | Student clearly presents the most accurate main idea of the text. | Student presents an incomplete main idea of the text. | Student implies an inaccurate main idea of the text. | No main idea was identified. |
| **Structure** | The structure of the response completely captures the structure of the text. | The structure of the response reflects the structure of the text but may not fully align with the structure. | The structure of the response does not align with the structure of the text. | No structure was used in the response. |

## Summary Rubric

| | Mastery | Approaching | Needs Improvement | No Response |
|---|---|---|---|---|
| **Main Idea** | Student clearly presents the most accurate main idea of the text. | Student presents an incomplete main idea of the text. | Student implies an inaccurate main idea of the text. | No main idea was identified. |
| **Details** | Student includes the most relevant and accurate details from the text to support the main idea. | Student includes relevant, but incomplete details from the text to support the main idea. | Student includes inaccurate ideas from the text to support the main idea. | No details were provided. |
| **Structure** | The structure of the response completely captures the structure of the text. | The structure of the response reflects the structure of the text but may not fully align with the structure. | The structure of the response does not align with the structure of the text. | No structure was used in the response. |

## Inference Rubric

| | Mastery | Approaching | Needs Improvement | No Response |
|---|---|---|---|---|
| Inference | Student explains an accurate concept from the text that is not explicitly stated. | Student presents an incomplete, but not entirely inaccurate concept from the text that is not explicitly stated. | Student presents an inaccurate or literal concept from the text. | No concept was provided. |
| Thesis | Student clearly presents a concise and accurate claim. | Student presents an incomplete, but not entirely inaccurate claim. | Student presents an inaccurate or unclear claim. | No thesis was provided. |
| Evidence | Student includes 1-2 pieces of the most relevant and accurate evidence from the text to support the thesis. | Student includes 1-2 pieces of somewhat relevant evidence from the text to support the thesis. | Student includes irrelevant or inaccurate evidence from the text to support the thesis. | No evidence was provided. |
| Explanation | Student clearly connects the text evidence to the thesis with fully developed reasoning. | Student connects the text evidence to the thesis with partially developed reasoning. | Student attempts but does not connect the text evidence to the thesis. | No explanation was provided. |
| Vocabulary | Student correctly uses 3-4 appropriate academic vocabulary to enhance their response. | Student correctly uses 1-2 appropriate academic vocabulary to develop the response. | Student correctly uses 1-2 academic vocabulary in the response, but the terms are not appropriate for the response. | Student does not use academic vocabulary in their response. |
| Conventions | Writing has fewer than 3 errors in grammar and punctuation. | Writing has 3-5 errors in grammar and punctuation. | Writing has 5-10 errors in grammar and punctuation. | Writing has more than 10 errors in grammar and punctuation. |
| **Overall Response** | The response was accurate and clearly stated with the most appropriate tone and explored in depth. | The response was accurate and clearly stated with appropriate tone and partial depth. | The response was inaccurate, but clearly stated with appropriate tone. | An unclear or blank response was provided. |

APPENDIX E

TESTING SCRIPT

## Prior to Testing

**Do:** Upload the assessment into the learning management system, Edugence.

## Day of Testing

**Say:** Hi, everyone! My name is Ashton Hughes. I am from Texas A&M University.

**Say:** I am going to ask you to do review some texts today. To start, please go online to Clever and login to Edugence. If your computer is not functioning, please let me know so that I may provide you with a loaner device for this activity.

**Do:** Unlock the assessment for students. Provide a loaner device to students without a computer.

**Say:** You will see at the top of your Edugence Assessment page for this class an assignment titled, "[Pretest / Posttest]." Go ahead and click on that link to review the instructions. Please do not begin the test until I instruct you to do so.

**Do:** Ensure all students are on the appropriate screen.

**Say:** This activity will show you one text with five, multiple-choice questions and three short answer questions about the text. Remember to respond to open-ended questions with the appropriate depth.

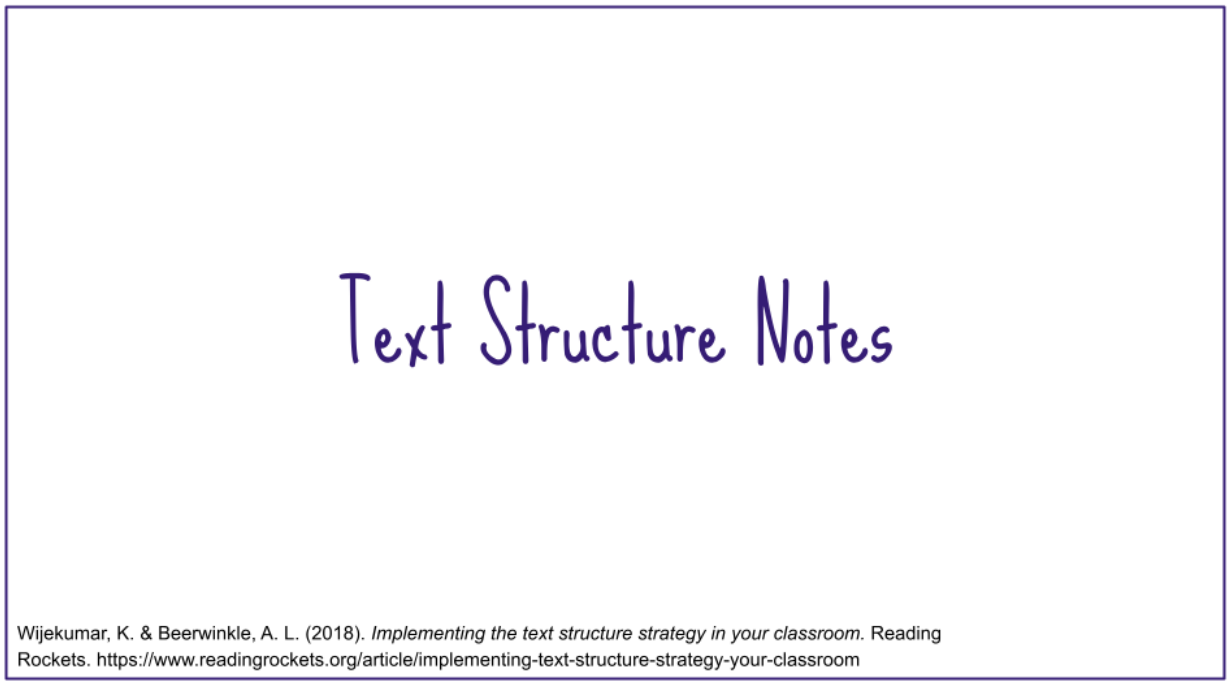
**Say:** For this activity, I cannot help you answer any questions. You may not know the answer to a question. If you do not know the answer, choose the option you think might be the most correct.

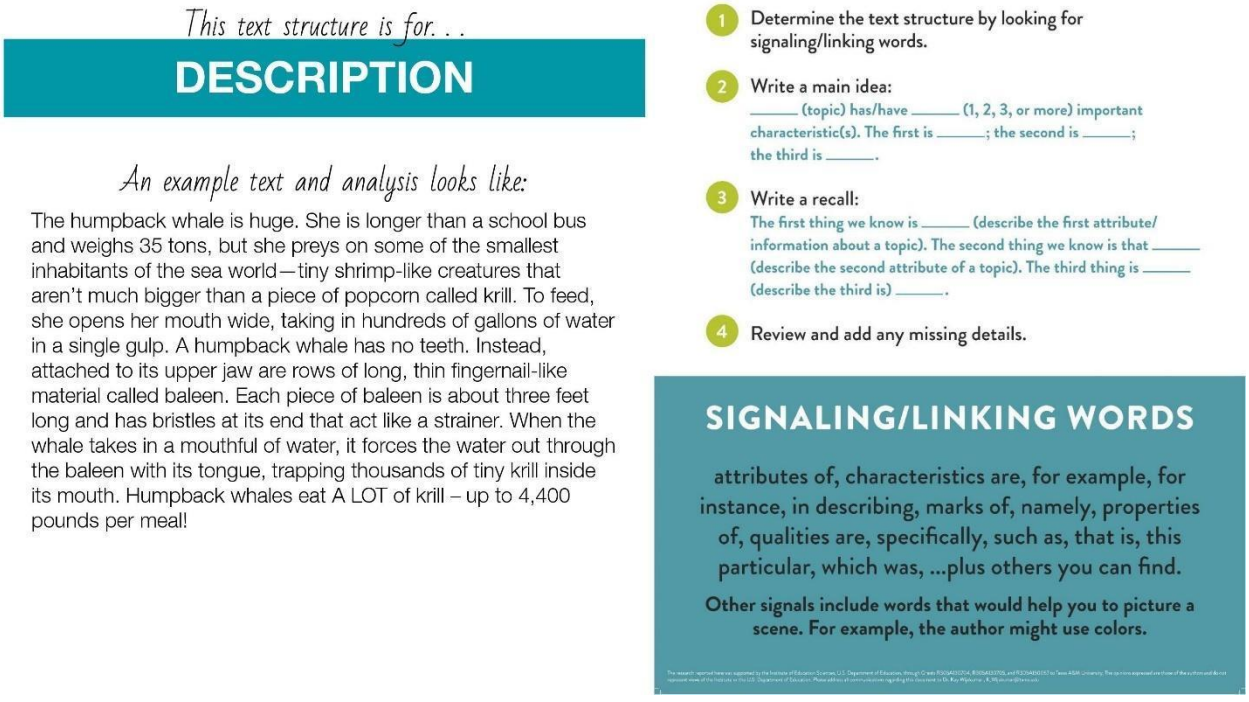
**Say:** You will have the entire class to complete this activity. I will notify you when there are fifteen minutes and again when there are five minutes remaining in class. Are there any questions?

**Say:** While you are working on this activity, I will be quietly moving about the room to ensure you are working on your own. If you need help with the program, please let me know. If there are no more questions, you may begin working.

APPENDIX F

TEXT STRUCTURE NOTES



*This text structure is for. . .*

## SEQUENCE

*An example text and analysis looks like:*

Harry Houdini was born in Hungary in 1874 and moved to Wisconsin when he was four years old. As a young boy, he became captivated by magic when he saw a magician perform. Harry directed his energy to becoming a magician, but some of his first shows were a flop. After five years he almost gave it up. But the "needle trick changed all that. In this trick he swallowed needles and thread and coughed them back up with all the needles threaded through their eyes. Harry was on his way up! Harry went on to perform amazing stunts and tricks including in 1910 escaping out of the mouth of a cannon just before it blew up. No wonder Harry Houdini became a household name. Harry Houdini died on Halloween in 1926.

1. Determine the text structure by looking for signaling/linking words.
2. Write a main idea:
   First, _____ [paragraph(s) stating what happened first in the sequence].
   Second, _____ [paragraph(s) stating what happened 2nd in the sequence].
   Third, _____ [paragraph(s) stating what happened 3rd in the sequence].
3. Write a recall:
   The history (sequence, steps, stages, development, etc.) of _____ has/have (2, 3, 4, 5 or more) important events.
   The first is _____; second, _____; third _____; etc.
4. Review and add any missing details.

### SIGNALING/LINKING WORDS

Later, afterwards, after, later on, then, subsequently, as time passed, following, continuing on, to end, finally, year(s) ago, later that year, in the first place, first, second, third, 1, 2, 3, 4, ..., next, primarily, secondarily, early, before, to begin with, more recently, again, finally, not long after, soon, now, today, after a short while, meanwhile, immediately, last, steps, ...and more – plus look for a series of dates for histories.

The research reported here was supported by the Institute of Education Sciences, U.S. Department of Education, through Grants R305A110704, R305A150375, and R305A150727 to Texas A&M University. The opinions expressed are those of the authors and do not represent views of the Institute or the U.S. Department of Education. Please address all communications regarding this document to Dr. Kay Wijekumar, K_Wijekumar@tamu.edu.

*This text structure is for. . .*

## COMPARISON

*An example text and analysis looks like:*

To a small child, the ocean and the pond seem very much the same. However, there are important differences to point out. To begin with, a pond is a very small body of water. The ocean covers more than half of the earth's surface. Ponds are very shallow, but the ocean is several thousand miles deep in most places. Some green pond plants are rooted in mud on the floor of a pond. Because of the ocean's depth, the sunlight can't reach the ocean's floor, hence no green plants grow there. Ponds contain fresh water, which means there is no salt content. The ocean, though, is the largest body of saltwater on earth. While they are both bodies of water, there are clearly major differences between the ocean and a pond.

1. Determine the text structure by looking for signaling/linking words.
2. Write a main idea:
   _____ and _____ were compared on _____, _____, and _____.
3. Write a recall:
   The first idea is _____ (describes the topic for this idea).
   In contrast (or another signaling word), the second idea is _____ (describes the topic for this idea).
4. Review and add any missing details.

### SIGNALING/LINKING WORDS

instead, but, however, or, alternatively, whereas, on the other hand, and, while, compare, in comparison, in contrast, in opposition, not everyone, all but, have in common, similarities, share, resemble, the same as, just as, more than, longer than, less than, act like, look like, despite, although, just, options, difference, differentiate, different, ...plus others you can find.

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*This text structure is for. . .*

## CAUSE AND EFFECT

*An example text and analysis looks like:*

When batteries are thrown into the trash, they are harmful to the environment. If batteries are not properly disposed of, they can crack or become damaged. As a result, the toxic substances inside the batteries leak, and the surrounding water and soil are contaminated. Likewise, when batteries are incinerated, or burned, the air is contaminated by toxic fumes. Since incineration produces ashes, the ashes contain toxic substances. Over time, the ashes are buried and the toxic substances make their way into the soil and water. Finally, old car batteries are also harmful because they can crack open when they are dropped. If a neighborhood trash collector drops an old battery in the street or driveway, the toxic contents may spill and pose a health hazard for pets and small children. So it is very important to properly dispose of old batteries to protect our environment.

1. Determine the text structure by looking for signaling/linking words.
2. Write a main idea:
   The cause is _____ and the effect is _____.
3. Write a recall:
   The cause is _____ [paragraph(s) includes a description of the cause.]

   The effect is _____ [paragraph(s) include a description of the effects or results].
4. Review and add any missing details.

### SIGNALING/LINKING WORDS

cause, led to, bring about, originate, produce, make possible owing to, by means of, accomplish, by, since, due to, because, in order to, reasons, give reasons for, the reason why, if/then, this is why, on account of, in explanation, effect, affects, so, influenced by, as a result, result from, consequence, consequent, thus, therefore, accordingly, for the purpose of, ...plus others you can find.

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*This text structure is for. . .*

## PROBLEM AND SOLUTION

*An example text and analysis looks like:*

Venice is a very special city in Italy. What makes it special? Venice is almost completely surrounded by water! Venice does have streets and roads like other cities. But Venice also has special waterways called canals. People use boats to move along these canals. The people of Venice have always loved their city. Many people visit Venice to see the beautiful bridges and old buildings. There are hundreds of old houses, famous churches, and lovely fountains. But the city of Venice is facing a problem. The tides are rising. Each day, there are two high tides. Each day, the water rises and covers streets and roads. The water comes up to the windows of buildings. The problem is even worse when there are storms. Storms make tides even higher. The city of Venice could be completely flooded! Scientists have worked to find a solution. They planned a set of 78 steel gates in the water outside of Venice. These gates will be able to open and close. When the water is calm, the gates will be open. But when there are storms, the gates will rise and protect the city. Will the gates work? No one really knows. But the people of Venice hope that these gates will save their city from the high tides.

1. Determine the text structure by looking for signaling/linking words.
2. Write a main idea:
   The problem is _____ and the solution is _____.
3. Write a recall:
   The problem is _____ (paragraph(s) includes a description of the problem and, if known, its cause(s)).

   The solution is _____ (paragraph(s) include a description of the solution and how it gets rid of the cause(s) of the problem(s).
4. Review and add any missing details.

### SIGNALING/LINKING WORDS

**PROBLEM**

problem, issue, question, query, puzzle, trouble, hazard, riddle, and more...

**SOLUTION**

to satisfy the problem, to solve these problems, solution, response, answer, reply, suggestions, and more...

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APPENDIX G

ARTIFACT

# Text Structure Strategy

Text Structure Strategy (TSS) is a well-researched strategy shown to help students improve their reading comprehension.

## How to Use

1. Provide students with initial instruction on all five structures.
2. Model with students while reading a variety of texts:
   - Activate student's prior knowledge
   - Preview the text by looking at vocabulary, headings, and skim the text for structural cue words.
   - Model the skill for that lesson (e.g., main idea, summary, inference, author's purpose)
3. Ask students to practice the modeled skill independently or in small groups with the same or a new text.

## Make It More Effective

Give students graphic organizers when first using the strategy.

Scaffold student response expectations (e.g., give cloze paragraph at first and then transition students into writing their own).

## When to Use

Students have poor reading comprehension and/or students struggle to recall what they've read.

## Valuable Resource

"Implementing the Text Structure Strategy in Your Classroom" by K. Wijekumar and A. Beerwinkle (2018)

- ✓ Research Background
- ✓ Lesson Structure
- ✓ Graphic Organizers
- ✓ Student Response Sentence Stems
- ✓ Video Supplements
- ✓ How to Apply with Various Texts
- ✓ Example Texts
- ✓ Informational Posters for Each Text Structure

## Top Research

Meyer, B. J., Brandt, D. M., & Bluth, G. J. (1980). Use of top-level structure in text: Key for reading comprehension of ninth-grade students. *Reading Research Quarterly, 16*(1), 72-103. https://www.jstor.org/stable/747349

Wijekumar, K., Meyer, B. J., Lei, P., Beerwinkle, A. L., & Joshi, M. (2020). Supplementing teacher knowledge using web-based intelligent tutoring system for the text structure strategy to improve content area reading comprehension with fourth- and fifth-grade struggling readers. *Dyslexia, 26*(2), 120–136. https://doi-org.srv-proxy1.library.tamu.edu/10.1002/dys.1634