Understanding the Correlation between MAZE and Standardized Assessments for High School Students

School of Education

Carson-Newman University

JAMES LARRY ZIEGLER JR.

July, 2017

CARSON-NEWMAN
UNIVERSITY

Dissertation Approval

Student Name/ CNU ID: James Larry Ziegler #0280318

Dissertation Title: Understanding the Correlation between MAZE and Standardized Assessments for High School Students

This dissertation has been approved and accepted by the faculty of the Education Department, Carson-Newman University, in partial fulfillment of the requirements for the degree, Doctor of Education.

Dissertation Committee:

Signatures: (Type and Sign)

Dissertation Chair: Dr. P Mark Taylor

P Mark Taylor

Methodologist Member: Dr. Jessica Chambers

Jessica H Chambers

Content Member: Dr. Joel Barnes

Joel K. Barnes

Approved by the Dissertation Committee Date: July 24, 2017

Abstract

Understanding the Correlation between MAZE & Standardized Assessments for High School Students

James Larry Ziegler, Jr.
Carson-Newman University
July 2017

High schools are facing a growing crisis year after year. Students are continually graduating lacking the foundational skills needed to be success in a post-secondary institution and in the work place. Response to Intervention and Instruction (RTI^2) is a new Tennessee initiative which provides students lacking foundational skills taught in younger grades the opportunity to master these deficits during the school day at varied lengths of time depending on the severity of the deficit. While this initiative is providing the additional support needed, educators in secondary schools need a predictive tool which allows them to predict the success of students on standardized assessments following completion of a course. Oral reading fluency is a curriculum-based measurement often used in elementary grade levels. While the success of using this tool at this level has been significant, the success in middle school has been lacking when compared to elementary students. MAZE has become a measurement tool being used in middle and high schools as the lack of research at these levels leaves educators struggling to find the means to make valid predictions for student success. Previous research suggests MAZE being a valid and effective tool to use at the high school level, but more research and studies must be conducted to prove its validity. Without a valid and effective measurement tool, high school educators cannot make instructional decisions or evaluate their reading instruction to make the needed adjustment to provide students with optimal education and produce college and career ready students.

Table of Contents

CHAPTER 1: PURPOSE AND ORGANIZATION……...6

Introduction and background of study……6

Statement of the problem……7

Purpose of the study/significance of study……..…7

Research questions and null hypothesis……10

Limitations and delimitations……10

Assumptions and definition of terms……11

CHAPTER 2: REVIEW OF RELATED MATERIAL……..13

Introduction……13

Literature Review……...15

Response to Intervention and Instruction at the Secondary Level……..…15

The Need for Reading Intervention and Instruction at the Secondary Level...….18

Successful Reading Intervention and Instructional Strategies……..…..……19

Reading Instructional Strategies……19

Reading Intervention Strategies…….22

Outcomes of Reading Intervention for Student Success……25

Curriculum-Based Measurement Tools…….……25

Oral Reading Fluency and MAZE……26

Oral Reading Fluency Achievement at the Elementary Level ……....27

MAZE and the Need for Implementation at the Secondary Level……33

General Outcome Measurements to Impact Instructional Shifts……...36

Secondary Level Research…….40

Conclusion…….45

CHAPTER 3: RESEARCH METHODOLOGY……...46

Introduction……46

Participants…….47

Instruments…….47

Research Design…….49

Procedures……..49

Data Analysis…….51

Correlation and Research Analysis……..…..52

Limitations……..…...53

CHAPTER 4: FINDINGS…….53

Findings…….53

Demographic Data…….54

TVAAS Projection Level Data……..56

MAZE CBM Data……..57

TCAP TNREADY English 1, English 2, English 3 End of Course Exam Data…...58

Summary……64

Chapter 5: SUMMARY OF THE STUDY…...…..……...65

Introduction……65

Summary of the Study……...65

Summary of the Findings……..67

Discussion……..68

Conclusion…….68

Implications……69

Recommendations for Future Research…….71

Summary...……71

REFERENCES...……..….73

APPENDIX……78

Chapter One:

Purpose and Organization

Introduction and Background of Study

Secondary schools across the United States are facing a crisis of students not having the ability to read basic text which makes the concept of being successful on complex, grade-level text a difficult task. Secondary schools are implementing research-based reading intervention strategies to provide students with the instruction they need to be successful readers in grade-level content. The implementation of reading skills intervention in high school are resulting in the need for an instrument to judge the effectiveness of reading interventions and the growth of a students' reading skills. Many secondary schools are using curriculum-based measures to determine student growth and program effectiveness. One of the most common curriculum-based measures (CBMs) used in high school to determine reading comprehension growth is the MAZE curriculum-based measure. CBMs are becoming one of the most widely used measures to evaluate student achievement in reading and has shown success in many studies that have been conducted on younger students (Codding, Petscher, & Truckenmiller, 2015). The problem concerning MAZE assessments is the validity of judging reading comprehension growth and the appropriateness of being used with high school students. High schools are also using MAZE results to determine the instructional level of students receiving reading interventions. MAZE is used to determine if a student is able to master grade-level content and show proficiency on a state-mandated test. Educators need to use a proficiency scale score on MAZE that will correlate to the ability to be successful on grade-level standardized assessments. The lack of research and data is a concern of using MAZE in the high school setting to determine reading comprehension proficiency.

Statement of the Problem

MAZE curriculum-based measure is being used with high school students who struggle with reading. The Tennessee RTI^2 framework policy requires that students performing well below grade level in reading, math, or writing receive skill-specific interventions and be progress monitored with a nationally normed, research-based assessment. Due to the lack of nationally normed, research-based progress monitoring tools at the high school level, MAZE is being accepted as a suitable progress monitoring tool for high school students who have been identified with reading comprehension deficits. The acceptance of MAZE is based on a research that has been done with elementary and middle-school-aged students. The lack of high school research requires educators to assume that correlations at the elementary and middle school levels will also be present at the high school level. This assumption, if incorrect, could result in failure for students, educators, and schools. The goal of high schools is to graduate students who have the skills to be successful in college or career. If the tool measuring reading comprehension proficiency is not valid, students could be set up for failure. Educators could be misinformed by an invalid assessment, and schools could be graduating students who are not prepared for post-secondary opportunities. Oral reading fluency (ORF) is proven to be an effective method of measuring reading competency for younger students. ORF is the most reliable way to judge the level of mastery of foundational reading skills. ORF does not appear to be an effective measure of reading comprehension for older students (Fore, Boon, & Martin, 2007).

Purpose of the Study/Significance of Study

Research provides many examples of successful uses of curriculum-based measures to measure the progress of students with reading difficulties in elementary and middle schools. For educators to make effective decisions on instructional changes for student success, more research

is needed to determine if MAZE is the most effective tool for schools and districts to use to predict success on standardized assessments for older students (Codding, Petscher, & Truckenmiller, 2015). MAZE and ORF are identified as two of the more valid CBMs for assessing students. ORF curriculum-based measures are tools used at all levels to judge students' ability to reading aloud accurately at an appropriate speed using foundational decoding skills but lacks the ability to evaluate reading comprehension (Espin & Foegen, 1996). The absence of research is the biggest problem concerning the use of MAZE to measure reading comprehension for high school students. The lack of research results in the educators using assessments that may not be reliable. This is a huge concern due to the type of student that is being assessed with the tools. In Tennessee, students receiving interventions are multiple grade-levels below their peers. The only chance that these students have to close the gap is the receiving of high quality interventions that are determined by high quality data. The use of inappropriate data may result in instructional decisions that do not meet the students' needs. The data being used by educators with these high-risk students must be accurate to give the teachers an opportunity to provide effective interventions.

The mandated implementation of Response to Intervention and Instruction (RTI^2) in Tennessee has brought the need of appropriate assessments to the forefront. Instructional time is used each day to provide interventions to students struggling with reading, math, and writing skills. Effective use of instructional time is directly related to the data being used to make intervention decisions. Success in this framework requires essential tools that can provide data teams with the needed data to make decisions that will close the gap for students receiving intervention. Even with the vast amount of research concerning the use of CBMs in elementary and middle schools, questions still persist about the validity of using them to determine skill

growth. Questions persist between the most effective CBM for reading comprehension, ORF or MAZE. Researchers are continuing to explore the assessments to determine the effectiveness of each. The continued research identifies that many educators are still concerned with the validity of using CBMs. This concern, along with the absence of high school specific research, identifies a problem with the use of MAZE as a reading comprehension assessment for struggling readers at the high school level. Throughout the existing research, MAZE continues to be the one tool researchers seem to agree on as the possible tool for predicting success on standardized assessments (Galloway, 2010).

The goal of educators is to provide students with the tools to be successful. Students missing basic skills that are preventing them from being successful on grade-level content are receiving interventions. Intervention assessments are being used to identify student growth and to identify readiness for grade-level content. The state of Tennessee requires all students to take standardized English language arts assessments to determine grade-level proficiency ("2016-2017 Required Tennessee Student Assessments and District Assessments", 2016). The MAZE assessment is used as a formative reading comprehension assessment to determine mastery of the skills needed to be successful on grade-level standards. A strong correlation between MAZE and standardized assessments is needed for the tool to be used in this manner. Little research is available concerning this correlation at the high school level.

An effective formative assessment is needed to determine student growth and grade-level readiness for high school students who struggle with reading. The MAZE is being used with many high school students to determine reading comprehension level, growth, and grade-level readiness. The lack of high school specific research is alarming. The MAZE needs to be studied to determine the appropriateness of its use.

Research Questions/Null Hypotheses

Does the implementation of RTI^2 reading programs for at-risk high school students improve achievement on standardized assessments by using MAZE progress monitoring to drive instruction? The study will explore the use of MAZE as a reading comprehension progress monitoring tool for struggling readers in high school. The study will also explore the correlation between MAZE and Tennessee's Comprehensive Assessment Program (TCAP). The data collected will include the MAZE progress monitoring scores used to judge growth in reading comprehension skills and TCAP scores. The data will be used to explore the effectiveness of using MAZE to determine reading comprehension skills growth and the correlation between MAZE and TCAP. The interaction with participants will include participation in MAZE assessments and TCAP. Scores from participants on MAZE and TCAP standardized tests will be collected and analyzed.

Based on the current research, MAZE does not accurately measure reading comprehension and does not correlate to the TCAP scores for high school students that have been identified as struggling readers.

1. MAZE accurately measures reading comprehension skills growth for high school students that have been identified as struggling readers.
2. A strong, positive correlation exists between MAZE and the English Language Arts Tennessee Comprehensive Assessment Program (TCAP) scores for forty-five high school students from the three TCAP predicted achievement levels.

Limitations and Delimitations

Limitations of the study include several factors that cannot be controlled by the researcher. The availability of research-based interventions will be a limitation of the study. The

schools will have limited funding and will have a limited number of interventions available for use. The attendance of the participants and selected interventions cannot be controlled. Also, the fidelity of implementation of the interventions will be a limitation of the study.

Delimitations of the study can be controlled by the researcher. The students involved in the study will only be from three high schools. Another delimitation will be the type of data sources used. Many information sources will be available to judge reading skills but only MAZE and TCAP will be used in this study. The timeframe of the study will be the spring of a school year.

Assumptions and Definition of Terms

Progress Monitoring. For this study, progress monitoring is defined as the tool given every two weeks to identify student growth using AIMS Web MAZE progress monitoring ("Progress Monitoring", 2016). Progress monitoring measures the growth on the specific skill that a student is identified as having a basic reading skill deficit and is receiving intervention. Progress monitoring results are reported as scale scores.

Maze. For this study, MAZE is a multiple-choice, curriculum-based measurement task that will be used as a progress monitor for students identified as having a reading comprehension skill deficit ("Cloze tasks from aimsweb Maze CBM", 2014). Students complete MAZE while reading silently. The assessment starts with a 150-400-word passage. Following the passage, every seventh word is replaced with three word choices inside parentheses. The student selects the word that is the exact match of the original passage.

Tennessee Comprehensive Assessment Program. For this study, Tennessee Comprehensive Assessment Program is the standardized tests that high school students take to judge proficiency of grade level content. This study will use English 1, English 2, and English 3 TCAP assessments.

Struggling Reader. For this study, Struggling Reader is defined as students that are identified as having a basic reading comprehension skill deficit (Tankersley, 2005). This identification is made by using an Early Warning System as well as the Phonological Awareness Screener Survey (PASS) and Phonics and Word Reading Survey (PWRS). Students identified as struggling readers receive reading comprehension skills interventions and are progress monitored using MAZE.

Reading Interventions. For this study, reading intervention is defined as the instructional strategies and programs used to increase the reading ability of students with basic reading skill deficits ("What Is Reading Intervention?" 2016). Reading interventions occur 30 to 45 minutes daily.

Student Growth. For this study, student growth is defined as the outcomes of students identified as having a reading comprehension skills deficit using the Early Warning System and survey level assessments and AIMS Web MAZE Progress Monitor ("Student-Growth Measures Definition", 2013).

Achievement Gap. For this study, achievement gap is defined as the difference in achievement scores between students identified as having a basic reading skill deficit and students identified as not having a basic reading skills deficit using the TCAP ("Achievement Gap Definition", 2013).

Oral Reading Fluency. For this study, oral reading fluency is a curriculum-based measurement that measures the speed and accuracy of a student's oral reading ("Oral Reading Fluency", 2017). Students are given a grade-appropriate passage and asked to read out loud for one minute. The administrator counts the number of words read correctly to determine the student's oral reading fluency.

Response to Intervention and Instruction. For this study, Response to Intervention and Instruction (RTI^2) is defined as the Tennessee state-mandated initiative of providing reading, math, and writing interventions to students identified as having a basic skills deficit (Gorski, 2016). Response to Intervention and Instruction requires the use of a screening tool and progress monitoring tool to identify students and measure growth.

Chapter Two:

Review of Related Material

Introduction

Secondary schools have been facing a crisis concerning basic reading skills. Research has shown that at least half of middle and high school students do not have the ability to read and comprehend basic text. This dilemma has been effectively addressed at the elementary level but needs major attention in secondary schools (King, Lemons, & Hill, 2012). There has been significant data to support the effectiveness of response to intervention frameworks (Basham, Israel, Graden, Poth, & Wintson, 2010). Both empirical and practical data has existed that demonstrates the effectiveness of intense, specific interventions (Vaughn & Fletcher, 2010). The incorporation of basic skills intervention at the secondary level not only impacts a student's ability to master basic skills, but these interventions have had a direct impact on graduation rates and academic performance (King, Lemons, & Hill, 2012). The mastery of basic skills, especially

literacy has been essential in the process of becoming an independent adult. The work required to develop and implement an intervention program has been necessary for students' future successes (Vaughn & Fletcher, 2010).

While many elementary and middle schools have multiple foundational reading skill assessments available to analyze student achievement and reading instruction, secondary schools have struggled to find a measure that will truly evaluate the absent reading skills facing many students while still maintaining the integrity of the secondary-level rigor of curriculum. MAZE assessments have become widely used in secondary schools as an evaluation measure of reading performance, progress, and the effectiveness of their Tier I, or core, instruction (Galloway, 2010). The MAZE assessment has allowed educators to evaluate older students for reading deficits without the use of primary grade assessments which can seem demeaning. Educators can more easily gain the same information that would be obtained from a primary grades reading assessment using this assessment while older students feel that they are performing normal, grade-level tasks. This evaluation measure would allow students to select a word, phrase, or sentence to fill in sections that have been removed in order to determine reading comprehension and foundational reading abilities (Parker, Hasbrouch, & Tindal, 1992). Unfortunately, most research has been done using this assessment at the middle and elementary level leaving more research needed for secondary grade levels. Due to the lack of evaluative sources for secondary schools, MAZE has become commonly used to determine student performance on state-mandated assessments at the elementary and middle school levels (Fore, Boon, & Martin, 2007). While much research is still needed to be done at the secondary level to determine how to analyze progress in reading comprehension, the ultimate result in determining how to monitor this progress would be a correlation with the improvement of reading skills and achievement on

state-mandated achievement tests (Tolar, Barth, Fletcher, Francis, & Vaughn, 2014). This research would allow schools to improve achievement in all subject areas and provide effective Tier I, or core, reading instruction to students who are struggling, on grade-level, and above grade-level in reading performance. Educators could use this data to adjust instruction to meet students' needs and strive to close the gap in achievement on reading assessments and criterion-referenced achievement tests.

Literature Review

Response to Intervention and Instruction at the Secondary Level.

While the Response to Intervention and Instruction Framework has been developed for several years, Tennessee only within the past decade began studying and ultimately adopting the framework to close the gap for students not achieving high success and at-risk for falling behind in classes. Once the framework was adopted, another component was added shortly after the adoption which would include a closer look into the Tier I, or regular education classroom, to ensure high quality instruction was occurring. The goal of implementing this framework was to increase the rigor of Tier I instruction and enrich the content for higher level learners while also providing the daily support needed to students who were identified at-risk but did not have a learning disability. Secondary schools became interested in interventions when a substantial number of students were predicted to not pass state assessments (Canter, Klotz, & Cowan, 2008). With the use of a universal screening tool, students who were struggling were identified. This allowed high schools to identify students that needed early interventions for math and reading.

Secondary schools across the nation have been using the Response to Instruction and Intervention Framework to meet the needs of students with deficiencies. Decisions have been made pertaining to student deficits using a problem solving approach. The problem has been

identified and then analyzed. This analysis resulted in the development of an intervention program. The program was then monitored (Powers & Mandal, 2011). RTI^2 has been a framework that creates a process of diagnosing, intervening, analyzing, and adjusting. This process contained several tiers that will meet the needs of different students. Students have been placed in tiers based on the level of intensity they need (Friedman, 2010). The goal of RTI^2 has been to help all students. The framework establishes preventative instruction and intervention instead of reactive instruction and intervention. This resulted in positive education outcomes for all students. At-risk students received the interventions they need, accelerated students receive enrichment, and students struggling with grade-level content receive remediation (Basham, Israel, Graden, Poth, & Winston, 2010).

Progress monitoring has been a vital component of RTI^2. Progress monitoring has been the continuous gathering of data to drive intervention. This data has been used to adjust interventions to maximize progress and growth (Powers & Mandal, 2011). Progress monitoring has been a part of the system to ensure that the needs of the student are driving the instruction, not just following a linear path (Friedman, 2010). The data from progress monitoring and universal screening has been used to make data-based decisions. These decisions revolved around the type and intensity of intervention needed. RTI^2 has been a layered system with each layer, or tier, providing more intense interventions (Friedman, 2010). These different levels ensured that students are receiving the type and intensity of intervention they need (Powers & Mandal, 2011).

Most RTI^2 frameworks are based on three tiers. Each tier was focused on supporting the needs of the students at that level (Basham et al., 2010). Tier 1, or core instruction, was received by all students. Research showed that high quality Tier 1 instruction should meet the needs of

80% of students (Basham et al., 2010). An effective instruction and intervention program must have high-quality instruction occurring in the regular education classroom (Friedman, 2010). Quality Tier 1 instruction has been made up of rigorous standards, research-based instructional strategies, universal screening, and supports for all students (Canter, Klotz, & Cowan, 2008). Students that do not make adequate progress in a regular education classroom that has high-quality instruction would receive Tier II interventions. These interventions have been more intense than Tier I and more student specific (Powers & Mandal, 2011). Intervention provided in Tier II was in addition to Tier I instruction and not in place of. A characteristic of a Tier II classroom was small homogenous groups that meet for 20-40 minutes at least four days a week. The interventions used were research-based and monitored for fidelity (Friedman, 2010). Tier 2 interventions occur in a small group setting that is individualized to the student (Canter et al., 2008). If the small group interventions in Tier II are not successful, a student would be moved to Tier III. Tier III interventions were more intense than Tier II. They were more individualized, are often one-on-one with the educator, and they usually meet for longer amounts of time and more day a week (Powers & Mandal, 2011). In Tier III, the interventions were furthered individualized to meet the needs of the student (Canter et al., 2008). Tier III intervention classes were usually smaller and last longer than Tier II. Student data dictated the level of intervention. The data showed which students need the most intense interventions. Students that do not make progress or meet goals in Tier III were evaluated for special education referral (Basham et al., 2010). RTI^2 and the tiers of intensity were designed to give the support needed to move a student back to the regular education classroom without the need of supplemental interventions (Friedman, 2010).

Effective intervention programs like RTI^2 provided a system to give assistance to struggling students before they fail (Canter et al., 2008). In the past, students were allowed to fail

prior to special education referral. Intervention programs allowed supports to be given throughout the process that allow students to be successful (Canter et al., 2008). The RTI^2 model ensured that students are not allowed to progress through schools without repairing skill deficits. Questions were asked and data is collected to ensure that mastery of essential content and skills has occurred (Friedman, 2010). The collection of data and modifying instruction and intervention has resulted in increased student achievement (Powers & Mandal, 2011).

the need for reading intervention and instruction at the secondary level.

As students progressed throughout their education career, they acquired skills and grade-level content which allowed them to show mastery of the grade-level standards being taught by the teacher. While the foundational skills continued to be added to students' working knowledge at each passing grade level, students could fall behind in mastery of skills thus falling behind in grade-level content. Once students reached the high school level, they were expected to apply foundational skills in grade-level content. If skills were missing, students could become unsuccessful. Consequently, students graduated high school lacking the necessary foundational skills to be successful in the work place or in a post-secondary institution. The number of students struggling and not being ready for the workplace or post-secondary institution was increasing proving that the Response to Intervention and Instruction (RTI^2) framework was needed for Tennessee students. Secondary schools were using information from elementary RTI^2 programs to identify at-risk students (Vaughn & Fletcher, 2010). Students identified as at-risk receive targeted interventions that will support their needs. This support helped determine if the deficit is a result of a learning disability or not (Friedman, 2010). Students that received intervention starting early demonstrate growth that is double the typical and growth rates that were above the average (Canter et al., 2008).

Common features of all RTI^2 programs were universal screening, monitoring of student progress, levels of tiered interventions, and data-based decision making (Powers & Mandal, 2011). The universal screener provided data concerning individual students and the effectiveness of core instruction (Basham et al., 2010). It would identify students who are at-risk due to a basic skill deficit (Powers & Mandal, 2011). The data gathered from the screener also gave insight on the quality of core instruction. Research indicated that 80% of students should have their needs met in core instruction. If over 20% of students were identified as at-risk, then it can be assumed there were some deficiencies in core instruction (Basham et al., 2010). Universal screening looked very different in elementary schools than secondary schools. Elementary universal screening was in the form of a test. At the middle school and high school levels, another test were not necessary to screen students. The data collected in elementary grades could be used as a universal screener. This change used data collected over time from many different sources to screen secondary students instead of just one source (Vaughn & Fletcher, 2010).

successful reading intervention and instructional strategies.

reading instructional strategies.

With the RTI^2 Framework having been in place for several years in other states, research has been done on reading intervention and instructional strategies that produced success for students. While intervention and regular education instruction varied in delivery, best practices could be found in both using similar strategies. Typically, these studies were conducted at the elementary and middle school level as there was not enough research for determining success at the high school level.

With the implementation of RTI^2 in Tennessee, most districts, schools, and teachers were looking for a general list of strategies for providing intervention. The need for reading

intervention has only grown stronger as now roughly 70% of middle and high school readers require some form of reading remediation (Snow, 2004). This was especially true in secondary schools where the concept is new, and they have been beginning the initial stages of the framework. For schools who feel there was a need to introduce general intervention strategies initially, there were some that fit the criteria. These strategies were needed as the reading foundational skill standards no longer exist beyond fifth grade due to these skills being embedded into the standards in sixth through twelfth grades and the application of them for student mastery. This is why basic reading skills must be continued to be embedded in the Tier I model as well as ongoing during the Tier II and III interventions ("Assisting Students Struggling with Reading: Response to Intervention (RtI) and Multi-Tier Intervention in the Primary Grades", 2009). All of the research-based strategies below can be used in Tier I core instruction, but they may also be taught more intensely in Tier II and III intervention settings.

During intervention for phonemic awareness, the teacher helped the student recognize sounds from our language. For a student with this deficit, he or she could not identify the sounds associated with the corresponding letters from our writing system. Teachers have incorporated different activities to achieve success for students identified with this deficit. Identification of sounds from the beginning, middle, and end was one way to help students learn the breakdown of sounds (Joseph, 2008). Blending occurred when teachers deliver a string of sounds from a word and has the student(s) blend the sounds together to produce one sound. Segmenting was another strategy teachers can use to help the students' breakdown and identify their sounds. By segmenting, the teacher and/or student(s) "chunk" the word into smaller sounds in order to process the word with more ease. When teachers felt comfortable teaching phonemic awareness skills, they would incorporate them into their everyday class with a systematic approach which

has been proven to show significant gains in struggling readings with a deficit this instructionally low (Tibi, 2010).

After children are born, they grow up following and mimicking the actions of the caregivers. By doing so, they developed skills and actions that reflect what they have learned. In this same sense, parents and teachers have built reading skills by demonstrating and modeling effective reading skills (Joseph, 2008). Choral readings and teacher-led readings have been extremely beneficial for students as they have been able to observe an effective reader. During choral readings, the teacher and students read aloud together and at the same pace for optimal reading success. Teacher-led readings occurred when the students follow along while the teacher reads the passage. Typically, students are asked to follow along with their finger. While this was a great way for students to encounter successful reading skills, teachers also modeled reading proficiency for students at every level. For some students, the extent of this technique was taken down to the most basic skills of reading. For example, when we read, we read from left to right. Students, especially English Language Learners, sometimes needed these basic skills to progress in the transition from skill to skill. While modeling was not always seen as collaborative learning, it was when all factors are considered. When the teacher was modeling or demonstrating effective reading skills and the students were engaged in the learning process, they collaborated to master what proficient reading looked like (Snow, 2004). Students would then be able to model these practices themselves.

Students required effective feedback to improve their reading abilities. Teachers provided prompting, typically verbally, by having a standard form of response. For example, if a student encountered a word that he or she didn't know, the teacher responded by saying, "Let's first break down the sounds of each of the letters represented" (Joseph, 2008). If a student became

accustomed to this method, he or she utilized this technique during silent reading when a problematic word was encountered. This skill encouraged students to self-correct words that they mispronounced. When it came to reading skills, teachers encouraged to correct quickly and purposefully when a student made a mistake. This technique was direct and explicit in its nature (Snow, 2004). Students knew what they did correctly and incorrectly. They were also told how to correct the errors they made.

Most educators were aware that repeated practice with a certain skill ultimately resulted in higher performance which was crucial for intervention; therefore, teachers needed to incorporate frequent practice to readings and the repetition of reading skills in their classroom. While students needed that repetitive practice with specific reading skills, teachers ensured that the skills were being executed correctly each time this skill was practiced (Joseph, 2008). Thus, monitoring was crucial. The intervention program that was selected for intervention played a huge role in this practice. One of the fifteen elements of effective reading instruction required teachers to monitor student progress using formative assessments of skills (Snow, 2004).

Positive reinforcement was crucial in all aspects of teaching. Students needed to be praised when they successfully achieved a task or goal. For example, if a teacher taught a strategy and the student continuously used that strategy during his or her practice, he or she was rewarded promptly and specifically (Joseph, 2008). Students were told specifically which skill they mastered in order to understand what strategy they were using correctly. By doing so, they built cognitive memory to continue this process in future reading practice. If positive reinforcement was occurring, then motivation was built in students. Motivation was one of the optimal ways of helping students achieve success in reading at higher levels (Snow, 2004).

reading intervention strategies.

The next stage of RTI^2 was to provide specific reading interventions to those students who were identified as having skill deficits in one of the main areas of reading. Intensive interventions were explicit and direct and could not be prescribed to a large group for students with an extremely low deficit area. Interventions were specifically designed to address those needs using strategies that allowed the student to be successful (Snow, 2004). Research proved that, when introduced systematically and explicitly, reading intervention provided the most growth and success for students in the Tier I setting (Tibi, 2010).

Beginning able to sort sounds into different groups based on similarities was another activity that benefits students who struggled with basic reading skills. One activity a teacher used is a list or word bank where students were asked to place the different words in groups based on the similar sounds they made (Joseph, 2008). For example, a teacher asked students to find all words that began with the sound /f/. Students then located all words that fit this criteria and placed them in one group. Teachers maintained the same structure when using this technique to introduce any reading skill or a specific sound, letter, or word type in order to provide consistent instruction for students to master the specific skill (Tibi, 2010).

For students who can identify words in context but struggled reading correctly in sentence form or read slowly, fluency was an area of deficit that should be focused on. Teachers provided practice with fluency skills by requiring timed reading to track progress. When a student participated in a repeated reading to develop fluency skills, the teacher provided a text roughly 50 to 200 words in length and followed the student's progress ("Repeated Readings, 2014). If a student began to struggle with a term, the teacher intervened and produced the word within five seconds. A goal was set for students to achieve throughout the school year (Joseph, 2008). One of the biggest predictors of reading success was phonological awareness which

allowed students to develop fluency; therefore, teachers predicted fluency success at an early age to make decisions on who needed intervention (Tibi, 2010).

Many older students struggled with vocabulary and comprehension. Most adolescents have the foundational skills aligned to reading, but several of them lack the ability to produce meaning and make connections to the text due to a small range of vocabulary or lack of prior knowledge. Vocabulary instruction played a vital role in helping students create a wide range of automatic vocabulary (Joseph, 2008). Effective vocabulary instruction also reinforced basic reading skills to aid students when encountering new and unfamiliar words. Teachers who continued to review basic reading skills prepared students to have a "repair strategy" when breaking down new words. Students also found a benefit to additional intervention practices in the Tier I classroom. Teachers pulled from strategies used during intervention to build on those focused skills in the regular education classroom by differentiating lesson pace, content, and question type ("Assisting Students Struggling with Reading: Response to Intervention (RtI) and Multi-Tier Intervention in the Primary Grades", 2009).

There were many models of teaching and learning that showed questioning as a high-level skill. When teachers provided students with the appropriate guiding questions throughout a piece of text, their comprehension levels increased (Joseph, 2008). Students developed questions to allow for deeper knowledge and comprehension of the text. Teachers scaffolded the question types to ensure all students be successful at their personal, instructional level. Questioning activities were more focused to ensure comprehension even for struggling readers by focusing on four comprehension strategies: summarizing, questioning, clarifying, and predicting ("Reciprocal Teaching", 2013).

outcomes of reading intervention for student success.

With existing research already in place, case studies have been shared to showcase the successes for students in schools with different demographics. The goal of reading intervention was clear: to help students read at or above grade-level expectations. Students should be able to encounter and comprehend text without outside instruction. One school in Lebanon, Tennessee has been working intensively to achieve this goal (Humbles, 2013). Winfree Bryant Middle School made it a requirement that all students be provided with some form of reading skills training. Without another option, the buy-in from the students and teachers was extremely high. They entered 551 eighth grade students into the program at the beginning of the school year, and when assessed at the end of the year, 480 of them had made gains. One particular girl made a growth of four years in her reading abilities. Of the total students who entered into the program, which allowed for nine weeks of instruction until grade-level expectations were fulfilled, 228 students were reading below grade level and are now at or above grade level. Another experiment used 140 students and conducted four phonological awareness skills surveys to target student development: initial sound identification, rhyme oddity, syllable deletion, and sound segmentation (Tibi, 2010). The results showed that students' basic reading skills follow a developmental hierarchy; therefore, these skills should be reviewed and practiced throughout their educational career as basic skills are reinforced and new skills are gained. These findings show that there was always time to help students be successful in reading and close the gap where skills have been deficits.

curriculum based measurement tools.

Curriculum-based measures have been used in elementary schools with much success especially when using oral reading fluency measurement tools. Research done with middle school students has not proven enough reliability to support the implementation of a specific

measurement tool to determine a correlation to state assessment achievement. Curriculum-based measures were widely used measures that contained many different tools for assessing everything from oral reading fluency to reading comprehension. The most vital part of implementing curriculum-based measures (CBMs) was in choosing the correct tool to determine the correlation, predictor, or level of achievement on the skill being assessed. School systems found CBM measures to be valid and reliable due to the amount of research supporting the work that has already been done. CBMs have offered over thirty years of research supporting the reliability and validity of the measures that are involved in the tool (Codding, Petscher, & Truckenmiller, 2015). This measurement tool surpassed other measurements as it allows student performance to be measured in a structured, comfortable environment (Codding, Petscher, & Truckenmiller, 2015). Flexibility was a crucial component for instruction when determining missing foundational skills for students. Elementary students have been included in studies using CBMs for reading, mathematics, and written expression that have produced moderate to high correlations with state and national assessments (Codding et al., 2015). In spite of the research and positive reports, CBMs at the secondary level have been ill-advised due to the foundational nature of the reading skills the measurements assess and the lack of validity at the secondary level; however, success at the secondary level was solely dependent on applying basic reading skills for success on grade-level expectations thus requiring a prediction tool to be used in order to predict student achievement and evaluate instructional programs (Codding et al., 2015). Without this predictive tool, secondary educators have no resources for encouraging the development of the missing foundation skills required to be successful on grade-level coursework or criterion-referenced standardized assessments.

oral reading fluency and maze.

When using the CBM measures of reading, oral reading fluency and MAZE have been used in research as possible predictors of reading achievement (Codding, Petscher, & Truckenmiller, 2015). Five studies have examined these two measures for their predictive validity on high stakes testing in middle school and produced high correlations for both measures for state mandated assessments and norm-referenced achievement tests (Codding, Petscher, & Truckenmiller, 2015). This proves why MAZE has been the measure that encourages more research be done at the secondary level in order to provide a valid and predictive measure of student success. These results improved student performance, allowed for instructional practices to be improved upon, and overall educational programs to be evaluated for effectiveness with students from all skill levels.

The analysis of Denton and team members' findings were not as positive as other measures where their reports only produced a moderate correlation between oral reading fluency and MAZE assessments and the Texas Assessment of Knowledge and Skills with oral reading fluency having a stronger correlation than MAZE to the achievement test (2011). Comparatively, Espin and Ticha (2015) conducted a study that evaluated weekly growth with both oral reading fluency and MAZE tasks but found MAZE to produce a stronger predictive validity for performance on state-mandated assessments.

oral reading fluency achievement at the elementary level.

One of the commonly used CBM measures was oral reading fluency. This particular measure was used most frequently in elementary-school-aged students for educators to hear clearly who had a reading foundational skill deficit and needed intervention to repair this deficit as well as who read at or above the grade level and needs enrichment. Oral reading fluency measures were a short, fluency-based measure of a basic reading skill in which the student read a

sample passage for one minute (Fore, Boon, & Martin, 2007). During this time, the student is asked to read aloud from a passage for one minute while the teacher marks any errors in word pronunciation. The correlation between CBM measures, especially oral reading fluency, and state-mandated assessments was determined and studied for elementary and middle grade students but was lacking for high school students. This was mostly due to more studies being done using this measure. During many studies, oral reading fluency had the highest correlation with state-mandated achievement tests for younger students. These results proved why this is one measure that is considered for implementation the most among elementary and middle schools. While this measure has been proven to be valid, there are some downfalls to using this measure versus some of the others. The biggest limitation with oral reading fluency was that it must be given to one student at a time versus whole group delivery. This presented a difficult barrier as most educators do not have the time available to administer this measure to individual students. With time being an issue, educators strived to find other measures that would give them the freedom to deliver the assessment to the whole class or in a small group setting. Using oral reading fluency as a valid and effective way of evaluating the success of elementary students in overall reading success was proven to be effective for younger students (Denton et al., 2011). Results from previous studies provided moderately positive results when comparing the measures of fluency and reading comprehension in which oral reading fluency provides a more accurate predictive measure for comprehension when using passages than when using a set word list. Proving context clues versus simple word lists provided students with the ability to make sense of the word, phrase, sentence, and passage. Studies proved a strong correlation when using these measures for younger-aged students, but the research needed to determine validity for older students is still lacking. Typically, oral reading fluency was measured by requiring students to

read one or more passages for one to two minutes, counting the number of words read correctly, and subtracting the number of words mispronounced during the reading process. The final number was calculated for an oral reading fluency number. This also gave in the form of a number of Words Correct Per Minute (WCPM). Students also read lists of words in isolation rather than a connected passage to determine the oral reading fluency score. The same WCPM would be calculated this way. The one factor to consider when delivering this measure was the instructional level of the child. While a student's grade level may be third grade, the instructional level that the student was successful with may be only second grade level. Educators used this information to gradually increase the student's instructional level through mastery of the skills until the gap is closed and the student can be successful on his or her grade level content.

While fluency became less of an issue as students progressed through grade levels, fluency measurement was still a vital component in evaluating reading comprehension (Codding, Petscher, & Truckenmiller, 2015). As students got older, reading at a descent timed pace was vital in completing norm-based achievement test. This was also crucial for the time constraints put on students when taking their end of the year state-mandated achievement tests. When using oral reading fluency CBMs, both ORF and MAZE proved to be successful as indicators of reading achievement (Codding, Petscher, & Truckenmiller, 2015). Codding's study on Denton and his team found that oral reading fluency was a better predictor of reading comprehension than MAZE for younger students with more research needing to be done in the secondary grades (2015). This missing research has been a continued need for students and educators at the high school level. In order to evaluate oral reading fluency, Codding and team delivered three sets of one-minute, seventh grade passages to the students individually during the testing window (Codding, Petscher, & Truckenmiller, 2015). From this study, students showed gains from fall to

the spring semesters in all of the CBM measures, and the mean rose eleven points for MAZE and 21.19 words correct per minute for oral reading fluency (Codding, Petscher, & Truckenmiller, 2015). The study found that using CBM measures provides a sufficient predictor of success as the average score of the students increase eleven points for students on oral reading fluency, and they acquire more than twenty-one words read correctly per minute. Unfortunately, due to oral reading fluency being removed from the latent factor of reading, the results do not support the conclusion on whether oral reading fluency or MAZE is the better predictor for reading achievement for middle school students (Codding et al., 2015). This leaves more research to be done at the middle school level to produce data that supports the implementation of research on whether oral reading fluency or MAZE is a successful predictor for achievement at the high school level. The correlation when progress monitoring proves to be more reliable when it connects to a measure such as word reading fluency when predicting fluency achievement (Espin & Foegen, 1996). Word reading fluency requires students to ~~just~~ use a group of words from a list to determine words correctly pronounced per minute without the additional assistance of a passage for purpose and organization. When using a fluency measure, progress monitoring can be conducted using word lists and two-passage reading assessments that are delivered on the instructional level, following the instructional timeframe, and three times throughout the school year (Espin et al., 1996). These measures provide the educator with enough information to truly evaluate a student's reading ability to support the success of the student's educational career.

For the use of progress monitoring, slope validity was aligned and produced the biggest correlation when used for an outcome such as word reading fluency when predicting fluency achievement instead of reading comprehension (Tolar et al., 2014). Word reading fluency measures do not give the educator the capacity to truly evaluate comprehension; however, when

given a passage to read correctly then answer questions regarding understanding the passage as whole, the students begin to build comprehension skills. When progress monitoring, fluency measures include word lists and two-passage reading assessments that are delivered on the students' instructional level, following the instructional time frame, and throughout three additional testing sessions (Tolar et al., 2014). Oral reading fluency in relation to passage fluency slope was determine to not be a valid predictor or reading success while oral reading fluency in relation to word fluency was determined to be a valid predictor of reading success (Tolar et al., 2014). Occasionally, students develop the skills required to produce the correct sounds to read a word, sentence, and/or passage, but comprehension is another skill that is harder to master because students must understand the meaning of each word in order to combine the meanings to make sense the of the overall text and possibly understand multiple texts.

Determining a correlation between oral reading fluency and success on state-mandated achievement tests in the secondary grades lacks in many studies (Jenkins & Jewell, 1993). The continued need for it has never left as educators want a predictive method that allows them to adjust their reading instruction to be more effective, provide differentiation to students at the lower, middle, and higher reading achievement levels, and intervene on foundational skills that students have yet to master, the skills needed to be successful on reading achievement tests. To determine the effectiveness of reading instruction, a strong correlation between the number of words correctly read aloud and the achievement on state-mandated criterion-referenced assessments is key (Jenkins et al., 1993). The more words read correctly the higher the probability of achieving on reading assessments that are typically timed. Consequently, oral reading fluency and MAZE shows strong correlations as predictive measures of achievement on state-mandated achievement tests at the lower grade levels (Jenkins et al., 1993). This is why

more research is needed to have the same predictive measures and changes in instructional practices and intervention frameworks at the secondary level.

Doubts have risen regarding read-alouds for one minute in regards to reading proficiency when attempting to evaluate reading comprehension (Wayman et al., 2007). Typically, when students are asked to read aloud, they focus more on the pronunciation of sounds to create words and having adequate voice versus truly understanding the passage being read. Fuchs found that reading aloud was more than just a measurement of decoding but could not find a significant correlation to reading comprehension (Wayman et al., 2007). Decoding is the act of breaking down a word by each individual letter sound then blending the sounds back together to produce a word. While no significant correlation found, the study found that reading aloud is a stronger predictive validity than any other measure for reading comprehension when not assessing for strictly reading speed among elementary school students; however, reading aloud has a lack of research to determine the same success with older students as it has proven with younger students (Wayman et al., 2007). This supports the previous studies that show how an incredible amount of research on read-alouds could be used to determine success for high school students. The outcomes of the study are standard with previous research suggesting that fluency measures are the most consistent for predicting student achievement on reading assessments and evaluating reading instruction to determine success on state mandated assessments for older students (Galloway, 2010). Success on state-mandated assessments is crucial in ~~some~~ states where students' scores are a part of their overall grade for a course and tied to teachers' evaluations and performance pay. Oral reading fluency and MAZE proved to be the two most effective predictors of achievement with oral reading fluency being the better measure for younger aged students

(Galloway, 2010). With these findings, MAZE appears to be the measure that would most closely be able to predict high school student success on grade level content assessments.

Educators can truly evaluate a student's reading fluency through oral reading fluency as it provides a quick evaluation of grade-level reading abilities and previous skills that are mastered during prior school year. Oral reading fluency is a true showcase of a student's overall reading achievement and has proven to be a vital tool in identifying students requiring additional reading assistance and intervention; however, oral reading fluency does not have the evidence to support to predictive validity of reading comprehension in upper grade levels (Brown-Chidsey, Johnson, & Fernstrom, 2005). Research has shown that oral reading fluency is not sensitive enough to measure a students' reading comprehension (Brown-Chidsey, Johnson, & Fernstrom, 2005). Sensitivity on measurements such as oral reading fluency refers to the fact that the students cannot showcase their comprehension or the depth of understanding of a passage by simply reading a passage aloud. Since oral reading fluency typically assesses the student's decoding skills and increases the instructional level with achievement, the Lexile level passages being selected for the student would increase as well. This leaves the area of reading comprehension ~~to~~ still ~~be~~ lacking the research required to prove its validity and effectiveness as a predictive method for high schools. High school reading achievement, based mostly on the evaluation method of the state-mandated end-of-course assessment, is focused primarily on a student's ability to read~~ing~~ a passage or passages and demonstrate an in-depth level of comprehension. Without a sound predictive measure, secondary educators have no tool to improve instructional practices, differentiate instruction, or provide the intervention needed for students to be successful on their end-of-course assessments.

maze and the need for implementation at the secondary level.

Prior to 1970, CLOZE was the most widely used classroom-based measure to monitor the progress of reading skills; however, MAZE was created to improve upon the existing measure to provide assistance to English learners and students who have been diagnosed with having a learning disability, particularly in reading (Parker, Hasbrouch, & Tindal, 1992). Research finds that secondary schools need an effective measure and the data up to that point is lacking. Using a problem-solving approach, MAZE was developed in order to assist with identifying learning difficulties for the child instead of characterizing the problems as the makeup of the child without hope of a measurement tool to improve upon the child's disability and close the gap on the skills missing (Wayman, Wallace, Wiley, Ticha, & Espin, 2007). MAZE is typically included in research due to the strong correlation between achievement in intervention and achievement on state-mandated assessments for elementary and middle schools students and those who have been identified as having a learning disability (Espin & Foegen, 1996). Determining the instructional level of these students gives educators the ability to enhance instruction and provide the support structures needed for the student to be successful on a norm-based achievement test, particularly in reading. While CLOZE is considered to be difficult and testing skills that do not align to those required to improve reading abilities, MAZE provides a multiple-choice variation to the existing assessment (Parker, Hasbrouch, & Tindal, 1992). A measurement tool must be connected to the skills and tasks being performed on grade-level content. Without the connection, the skills are taught and improved upon seem irrelevant and would produce skewed predictive scores. Twenty years of study has been done on the MAZE assessment and reviewed to determine the validity of this reading measure for students who have identified learning disabilities; however, the main research for MAZE is not sufficient with only fourteen published articles and five manuscripts (Parker, Hasbrouch, & Tindal, 1992). For a measure to be

considered valid, more research must be done to support its reliability, especially at the secondary level. By using a measure like MAZE, general education teachers can monitor student progress and identify skill-level deficits while still using resources that are typical for a general education curriculum (Parker et al., 1992). This supports how MAZE can improve the instructional practices of the general education classroom for all students. MAZE is a component of Espin's study due to the extensive amount of evidence identifying this as valid measure of student achievement in reading for elementary and middle school students who have learning disabilities (1996). While MAZE proves to be an immediate improvement over CLOZE and the initial purpose of the assessment, this assessment does not provide adequate reading comprehension success created by cognitive developmental study (Parker, Hasbrouch, & Tindal, 1992). Reading comprehension is still a need for research studies as there isn't enough information to make a sound decision on what tool would provide the best predictor for secondary schools. This assessment tool has the capability of being administered in groups or on the computer which seems to apply more to students in secondary classrooms; likewise, the tool assesses reading comprehension more than oral reading fluency (Wayman et al., 2007). This tool would not be beneficial for students in high school who are missing foundational reading skills that are typically taught in elementary grades such as kindergarten through fifth grade. Research done by Fuchs and Fuchs shows MAZE's sensitivity to changes in results over time and a lesser slope in standard error which makes it easier to identify growth on charts (Wayman et al., 2007).

In order for teachers to use measures to make instructional decisions, the tools being used must prove to be reliable and valid (Wayman et al., 2007). Without the reliability and validity of the tool, the decisions being made are not more effective in changing instruction than those from a survey or educator-to-educator collaboration. Research-based measures need to be used when

supporting instructional change. If the measures being used are to be continuous and frequent in evaluating instructional programs, they would have to be simplistic, effective, diagnostic, and inexpensive (Wayman et al., 2007). Educators must be able to implement the measures without taking away from instructional time, and ease-of-delivery is crucial to maintain classroom management and student engagement. Having a measure that can evaluate improvement in reading skills for students is crucial to providing true evaluations of the response to core instruction (Wayman et al., 2007). By having adequate data, educators can determine students' rates of improvement on skills to improve and help determine changes to be made to the current instructional framework (Espin & Foegen, 1996). Continuous improvement of instructional practices is vital for student achievement and educator growth which encourages overall achievement for the whole school.

general outcome measurements to impact instructional shifts.

General outcome measurements (GOM) require all educators to engage in planning, adjustments, differentiation, and evaluation of their instructional practices by using a small set of procedures (Espin & Foegen, 1996). GOMs include direct, reoccurring assessment of student progress in order to achieve a long-term goal identified by a team of educators (Espin & Foegen, 1996). One of the major components of GOMs is the creation of simplistic steps that educators can use to evaluate the progress being made by students in different content areas (Espin & Foegen, 1996). GOMs function similarly to formative assessments used daily during instruction. Educators can use GOMs to quickly evaluate students' progress and achievement daily, weekly, and over a pre-planned time frame.

Determining the task to be used follows simple criteria: administration and delivery is simple and effective, it originates from classroom resources and content, it is valid and reliable in

order to align to typical Curriculum Based Measures (CBMs) (Parker, Hasbrouch, & Tindal, 1992). CBMs are a standardized system that allows educators to track academic growth and evaluate instructional programs (Fuchs, Fuchs, Hamlett, & Ferguson, 1992). In the late 1980s, CBMs were used most often as a progress monitoring resource only in special education classrooms for elementary grades. With the Response to Intervention and Instruction (RTI^2) becoming a fully implemented system across grade levels, educators for all grades are involved in progress monitoring of their students, especially those who are half a year or more behind on grade level standards. A tool like this has become greatly needed due to the implementation of RTI^2 which eventually created discussion around using this tool more broadly in all grade levels (Wayman, Wallace, Wiley, Ticha, & Espin, 2007). CBM is a procedure for monitoring progress in an academic content area and determining the effectiveness of the general education classrooms in relation to that growth (Wayman et al., 2007). These creates samples that were short in length and identifiers of academic performance (Wayman et al., 2007). These also provided a simplistic tool for educators to use frequently to evaluate students' progress and achievement. These short samples need to have validity and reliability in relation to a more extensive academic program while still maintaining the capability to be delivered frequently (Wayman et al., 2007). CBM's flexibility and effectiveness in reading, when using multiple tools, curriculums, environments, and participants, allows for a fluid system to use for progress monitoring for use with all students in all grade levels (Wayman et al., 2007). In 1970, J.T. Guthrie developed a sentence selection task to allow teachers to evaluate reading comprehension mastery to achieve two goals: determine students' reading comprehension levels and determine the success of the general education comprehension instruction (Parker, Hasbrouch, & Tindal, 1992). Guthrie also conducted a study in the 1970s of an untimed MAZE assessment which

proves to be a valid evaluation of reading comprehension while also predicting reading skill achievement for students with and without learning disabilities (Wayman et al., 2007). The benefit of CBMS is that educators can evaluate continuous goals for students using a set measurement system that can judge the effectiveness of progress over a long-term and short-term time frame also allowing for adjustment to the curriculum in place (Fuchs, Fuchs, Hamlett, & Ferguson, 1992). Goal setting for students, long-term and short-term, is crucial to remaining on track for achievement and the overall success of a student. Goal setting is also vital for educators as they can set individual goals that are differentiated for each student to ensure achievement is possible for every learning need. Timing of the MAZE assessment in conjunction with a CBM structure isn't instilled until the late 1980s and early 1990s (Wayman, Wallace, Wiley, Ticha, & Espin, 2007). Timing needed to score MAZE passages depends on two variables: passage length and word deletion ratios (Parker, Hasbrouch, & Tindal, 1992). Passage length for MAZE consists of one hundred and sixty-five words identified from the student's basal reader (Parker, Hasbrouch, & Tindal, 1992). When determining instructional level, passages of only 100 to 120 words were selected. New York uses an existing graduation requirement assessment, Degrees of Reading Power, in which there is a three hundred twenty-five word MAZE passage. Research on the use of CBMs shows positive results for student achievement and improvement of the educational curriculum being used for this assessment (Fuchs, Fuchs, Hamlett, & Ferguson, 1992). Following the recommend structure of implementation of CBMs is vital in achieving gains and improving instructional practices. CBMs recommend as a procedure using it to enhance the outcomes of the general and special education classrooms. With all of the research available, oral reading fluency proves to be the most valid predictive method for younger students; however, research suggests MAZE is more closely related to reading achievement for

older students as it is more closely connect to reading comprehension than oral reading fluency which is more assessed in middle and high schools versus elementary schools.

In previous years, a student's reading fluency and comprehension is a determining factor for identifying students who are at-risk for achievement on state-mandated reading tests (Denton et al., 2011). While MAZE tasks and reading comprehension proves to be effective tools for predicting success among elementary students on state-mandated achievement tests as foundational reading skills are still being mastered, elementary educators find previous years' achievement scores to be a good supplement for predicting success along with MAZE measurements (Denton et al., 2011). While properly identifying older students who are at risk for not achieving success on state-mandated reading assessment, identifying missing skills and intervening to create mastery of those skills becomes a focus, and research is still greatly needed to ensure the proper identification of these struggling students (Denton et al., 2011). One study is conducted on seventy middle and junior high school students that were all identified as having a learning disability in reading (Fuchs, Fuchs, Hosp, & Jenkins, 2001). Every student is given the recommended testing procedure and the researchers found "criterion validity coefficients (average correlations across the different scoring methods) for the question answering, the recall, and the CLOZE measures were .82, .70, and .72 respectively" (Fuchs, Fuchs, Hosp, & Jenkins, 2001, 12). The coefficient for oral reading fluency was .91. Research shows that oral reading fluency correlates to the capacity to read text and answer questions about the passage to determine reading achievement success. This also proves to have a correlation to the inaccuracies of direct instruction to determine success of reading comprehension as the question types, redundancy of measures, and scoring inconsistencies prove to not be reliable. This study is conducted to evaluate oral and silent reading fluency and reading comprehension for students in

middle grades while using fluency measures to identify students who were at risk of failure on state-mandated reading assessments and required intervention and additional reading support (Denton et al., 2011).

secondary level research.

Secondary-level research has been lacking to provide evidence for the correlation between fluency and comprehension as the results at the elementary level have more research to support the implementation for instructional change; however, Denton studied Fuchs, Fuchs, and Maxwell's report and reports a connection of .91 when comparing oral reading fluency and state-mandated reading achievement tests for students in middle grades who have been identified as having a learning disability (2011). The correlation between oral reading fluency and comprehension shows no signs of increasing the chance of high success as educators promote students to future grade levels, but Denton reviews Jenkins and Jewel's study they monitor this progress for students in grades two through six. In 2011, Shinn, Knutson, Collins, Good and Tilly monitors students in grades three through five (2011). Denton also found in Silberglitt, Burns, Madyun, and Lail's research that conducts a study and found that the correlation for oral reading fluency and achievement on state-mandated tests was lower in grades five, seven, and eight with eighth grade having a smaller correlation than fifth (2011). This study also found that oral reading fluency accounted for a higher percentage of success, 50.4%, in third grade than in eighth grade, 26%, and fluency was the more commonly used measure in seventh grade and beyond versus third grade (Denton et al., 2011). Denton found in the study done in 2008 by Torgesen, Nettles, Howard, and Winterbottom a strong correlation between oral reading fluency and comprehension as measured by the Florida Comprehensive Assessment Test (FCAT) as a tool for predicting achievement for grades four through ten (Denton et al., 2011). When silent

reading fluency uses as a measurement, the results are consistent and provides more mixed reports. The tool of Test of Silent Reading Efficiency and Comprehension proves to have a negative correlation to achievement on the FCAT for students in grades four, eight, and ten (Denton et al., 2011). MAZE assessments proves to have a stronger correlation to achievement on the FCAT in eighth grade but had a negative decline in correlation for tenth grade. With these results being skewed, further research is needed to determine the effectiveness of this predictive tool in the continuous grades and end-of-course assessments for high school students who are receiving intervention. These studies prove that some fluency measures have a stronger correlation to reading comprehension and achievement than other despite which skill of comprehension is being evaluated. Denton's studies have two significant findings in relation to sixth and eighth grade and the correlation between oral reading fluency and reading comprehension: a positive relationship between oral reading fluency and comprehension, but the correlation between oral reading fluency for passage reading for those grades are weaker and does not show significant differences. The MAZE measurement for this study shows weaker results and proves that passage reading fluency was a significantly better predictor for middle grades students' achievement. This study supports the notion that the relationship between oral reading fluency and reading comprehension cannot be measured the same way for younger students as older students. The most adequate form of measurement in predicting success on state-mandated achievement tests continues to be previous years' performance scores for students. While more standard and specific data is being released to teachers, an effective predictive tool would provide the data needed to make instructional decisions and set goals for each individual child and to scaffold the learning process for them to achieve success on state-mandated tests.

For an RTI^2 program to be truly effective, the tools used for progress monitoring should be reliable and valid and provide a clearer understanding of growth and less of an evaluation of success at a single moment as this cannot provide an accurate prediction of success on state-mandated assessments (Tolar, Barth, Fletcher, Francis, & Vaughn, 2014). If the progress monitoring tool is not focused on outcome measures, this would not prove to be a useful tool for predicting success on core content areas or evaluating the progress within the RTI^2 framework (Tolar et al., 2014). To use progress monitoring as a reading outcomes measure, MAZE tasks allow students to provide a missing word to exhibit their comprehension of the topic at hand which allows students' progress to be evaluated using grade-level expectations for reading (Tolar et al., 2014). Few programs prove to be effective in evaluating progress for students in reading comprehension. AIMS slope proves to not be an effective predictor of reading success when strictly looking at achievement during the initial and final AIMS assessment within a school year (Tolar et al., 2014). These findings are consistent with the study conducted by Schatschneider in 2010 who proves that progress monitoring was not a valid tool when measuring reading comprehension and the final progress monitoring measure when oral reading fluency was the probe being used (Tolar et al., 2014). These findings are consistent with the findings from the study done by Kim in 2010 who finds that using the initial progress monitoring results in a successful predictor for younger students, but no correlation was found for older students in middle grades (Tolar et al., 2014). The findings from this study show a strong correlation between progress monitoring and outcome measures to determine the slope of the progress monitoring tool where the program was aligned to all context and controlled for the initial progress monitoring measure (Tolar et al., 2014). Following the studies that have been done so far, no predictive validity is apparent for using progress monitoring measures to determine

success on reading assessments as students have not yet obtained full mastery of skills (Tolar et al., 2014). Progress monitoring tools may be more valid in determining weekly or biweekly successes using a norm-referenced assessment on the skill being instructed upon rather than determining success on standardized assessments evaluating mastery of grade-level content (Tolar et al., 2014).

A MAZE, oral reading fluency, and written retell measure is given to fifty students in sixth grade through eighth grade to measure achievement compared to the Georgia Criterion Referenced Competency Test (Fore, Boon, & Martin, 2007). The students' results show a correlation between achievement on the MAZE and oral reading fluency measures and Georgia's CRCT while MAZE provides an explanation for the most variance in scores. Accountability has become an extensive focus area for schools and now requires educators to find tools that will assist on predicting student achievement using CMBs on state-mandated assessments.

In 2000, Fore examines Pearson's study and that calculates the correlation between each of the measures used in these studies that included comparison between the CBM measures, MAZE, oral reading fluency, and written retell, and the reading assessment of Georgia's Criterion References Competency Test (Fore, Boon, & Martin, 2007). MAZE and oral reading fluency produces a stronger correlation and performance on the CRCT for middle grade students but no distinct correlation was found for written retell and CRCT. Forward selection regression analyses is a tool used to evaluate the variance in the CRCTs and the CMB measures, and the simple regression analyses shows that the MAZE measure was the best predictor as it revealed 19.3% of the variance in CRCT scores. Concurrent validity between multiple CBM measures and the state-mandated assessments in Georgia evaluates and finds the significance between CRCT and CBM measures in agreement with previous research such as Shinn who found

significant correlations between MAZE measurements and student performance on reading assessments. The findings baffles in that MAZE is determined to be a better predictor of achievement than oral reading fluency. Educators find MAZE to be more efficient in delivery as it can be delivered whole-class versus oral reading fluency which must be done one-on-one. Following the research conducts, educators found that results on state achievement is comparable to those when using CBM measures. The resulting data from these studies show the sensitivity of CBM measures and their relationship to accessing students' reading capabilities.

A similar study of three hundred, thirty-five students in grades two to six is conducted to predict student reading achievement on state-mandated assessments using two informal measures: read-aloud and MAZE and teacher autonomy (Jenkins & Jewell, 1993). The achievement on MAZE and achievement assessments does not reveal a decline in students from lower to upper grade levels. While read-alouds have more valid studies than MAZE, in 1990, Guthrie presents a correlation of .82 when comparing the achievement on the CBM measure and state-mandated achievement tests which produced a test reliability of "over .90" (Jenkins & Jewell, 1993, 6). Guthrie's study uses second grade students and a standardized achievement measure to determine that the correlation is not a predictive tool for the younger subjects revealing that the older students could use MAZE as a more valid predictor. While MAZE was originally created as a formative assessment measure to be used during formative instruction, MAZE tasks use latter measures to satisfy standards and can thus be used to determine general reading proficiency.

Consequently, both measures included reveals a correlation to reading achievement on CBM measures and achievement on standardized assessments (Jenkins & Jewell, 1993). The results of the MAZE measurement showed no decline in the results throughout the elementary

grades but merely remained stagnant (Jenkins & Jewell, 1993). The standard deviation on the MAZE measures increased from second grade to sixth grade rising from a level of 4.9 to a level of 11.1 in the fall and to a level of 8.0 to a level of 12.8 in the spring (Jenkins & Jewell, 1993). The increase is expected if both measurements are using the same construct when comparing achievement tests and MAZE performance. Without the increase in the lower grades, this study reveals that MAZE measures are not adequate in predicting reading achievement at lower grades levels and standardized assessments which produces the theory that MAZE is more sensitive to individual differences for younger students than older students.

Another study was conducted using one hundred eighty-four middle school students from an urban area and included thirteen students with learning disabilities by using three CBM measures (Espin & Foegen, 1996). Valid correlations were evaluated on three GOMs and achievement on classroom-performance tasks. The MAZE measure was included in this study due to the existing studies that have been conducted on using this tool as a predictor of student reading achievement in elementary and middle grades including students with disabilities. For the younger students, oral reading fluency and MAZE did not provide significant results to make predictions for achievement on the comprehension assessment, daily assessments, and culminating assessments; however, vocabulary increased the predictability of achievement on content-specific assessments. The findings from this study also conclude that all three GOMs are reliable and valid measurements to predict student achievement, but the vocabulary measure provided more valid data for educators to predict true performance on reading achievement assessments.

Conclusion

Reflecting on the literature provided, intervention is vital in secondary schools to ensure students receive mastery options for all reading and math skills that allow them to be successful in post-secondary opportunities. Across the nation, the RTI^2 framework has been introduced and implemented for secondary schools to provide these interventions to their students. As more data is collected for reading and math interventions at the secondary level, district and school level personnel will be able to make more informed decisions when selecting intervention programs and strategies.

Chapter Three: Methodology

Introduction

The purpose of this study was to determine the correlation between assessments used in high school reading intervention courses for struggling readers and TNREADY English I, I, and III assessments raw scores. High schools have been mandated by Tennessee for many years to provide intervention to students identified as having a skills deficit. Students receiving interventions will be required to be progress monitored using a nationally-normed tool. The results from the formative assessment will be used to make instructional decisions and judge students' mastery of skills. The correlation between progress monitoring assessments and standardized achievement tests will be vital to ensure appropriate instruction. The progress monitoring tool in the study was AIMSweb MAZE CBM. The study correlated the AIMSweb MAZE CBM and the 9^{th}, 10^{th}, and 11^{th} Grade TNREADY English achievement scores. The accountability and rigor placed on secondary students has increased in previous years with current changes being made to Tennessee education and academic standards. Students will be able to decode fluently and comprehend complex text to master these new requirements. Reading comprehension is an essential skill for secondary students to be successful and access

opportunities in the future. The justification for the research, design chosen to implement this study, and the process took to analyze the results was included in this chapter.

Participants

The target group of this study consisted of high school students from three high schools who are enrolled in English I, English II, or English III, totaling 129 students, which was chosen through the convenience and purposive sampling approach. Convenience sampling was used due to students already being enrolled in English I, English II, or English III courses. The sampling was also purposive because participants were selected from each of the three Tennessee Value-Added System performance levels. An equal number, 15, was selected from the low, middle, and high TVAAS performance levels. For this study, the low, middle, and high TVAAS performance levels were defined by the TVAAS projections for each student. The classrooms were the treatment group of the study. The students enrolled in the classrooms received grade-level appropriate, content-specific instruction.

The sites of the study were three public high schools located in southeast Tennessee. The three high schools were located in a rural district with a student population of 4,205 students. The majority of the students participating in the study came from low-socioeconomic backgrounds. Sixty-three and a half percent of the students within the district qualified to receive free or reduced-price lunch. The student enrollment distribution of ethnicity was the following: 5.5% will be African American, 2.5% percent will be Hispanic, 0.6% will be Asian, 0.2% will be Native American, and 91.2 % will be White. Thirteen and nine-tenths percent of students within the district are students with disabilities, and 1.2% are classified as English Learners. The high schools consist of grades nine through twelve.

Instruments

The schools used the AIMSweb MAZE curriculum based measures (CBMs) as a component of their Response to Intervention and Instruction program (RTI^2). The AIMSweb MAZE CBM was used as the formative assessment to judge basic reading ability. For this study, basic reading ability was defined as student performance on the AIMSweb MAZE CBM that measured reading comprehension. The instrument was the AIMSweb CBM probes. The CBM probes consisted of numerous probes identified for use with specific reading skills. A CBM probe was administered the week after students complete the TNREADY English I, English I, or English III end-of-course exam. The instrument measured the student's reading comprehension which is a component of the student's basic reading ability. The AIMSweb CBM probe was on the student's grade level. This allowed the correlation of reading ability on the AIMSweb CBM probe and achievement on the TNREADY ELA assessment. The formative assessment probe was administered in a one to one setting between student and teacher. The students' answers were recorded by the teacher and scored according to the guidelines of the rubric that will accompany the AIMSweb CBM probe. The possible range of scores for a given grade level for this assessment was 1 to 56. The scores received for each question were tallied and was recorded on a table and analyzed. Research shows the AIMSweb CBM probe to be reliable and valid. This probe had an internal, test-retest, and passage equivalence. The teacher received adequate training on the scoring of the instrument and that it had an interrater and expert rater reliability. The AIMSweb CBM probe was valid because it measured what it was developed to measure: decoding skills, fluency, vocabulary, and reading comprehension.

The second instrument was the 9^{th}, 10^{th}, and 11^{th} grade TNREADY English achievement tests. The assessment was administered in a group setting within the regular education English classroom. The assessment occurred between the dates of April 17 and May 10, 2017. The

assessment measured student achievement on the grade level English standards. Question types included writing samples and multiple choice. Students recorded answers in a scoring document provided by the State of Tennessee. Assessments were sent to the Tennessee Department of Education for scoring. Scores from the assessment were received in late May to early June. Scale scores were provided for each student completing the assessment. The scale scores from the TNREADY English test were tallied and recorded in a table. AIMSweb MAZE CBM probe scores and TNREADY English scores were compared and correlation statistics were calculated.

Research Design

This was a quasi-experimental case study that determines the correlation of the AIMSweb MAZE CBM probe and the English I, II, and III TNREADY assessments for high school students. The independent variable was the AIMSweb MAZE CBM progress monitoring probe that was administered to high school students. The dependent variable was the English I, II, and III TNREADY assessment raw scores that serve as a measure of achievement for high school English language arts standards in Tennessee.

Procedures

This study took place in three high schools during the English language arts block in southeast Tennessee with consent from the parents. The students received grade-level appropriate instruction aligned to the Tennessee state academic standards. The students were enrolled and receiving appropriate instruction since August 2016. A total of forty-five students were selected from the three high schools. Fifteen students from each high school were selected with five from each TVAAS projection level. The TNREADY assessments were administered between the dates of April 17, 2017, and May 5, 2017. The assessments were taken within the

regular education classrooms. Schools received student results from the TNREADY English language arts assessment in late May to early June.

The students selected for the study were assessed using the grade-level AIMSweb MAZE CBM probe between May 6 and May 14, 2017. The probe was delivered during the English languages arts class. The 45 selected students were administered the assessment individually by a teacher. After completion of the assessment, the teacher scored the results and record the data in a chart.

In late May or early June, a correlation was done between the AIMSweb MAZE CBM probe and the TNREADY English I, English II, or English III assessment. The focus of the study was to evaluate the correlation between the AIMSweb MAZE CBM and TNREADY ELA assessment for high school students.

Time Period	Activity
April 17th-May 5th	Consent to participate
April 17th – May 5th	Administration of TNREADY English I, English II, and English III End of Course Exams
May 6th – May 14th	Administration of AIMSweb MAZE CBM
May 24th	Receive Results from TNREADY English I, English II, and English III End of Course Exams
June	Correlation of TNREADY Results and AIMSweb MAZE CBM

Data Analysis

Forty-five high school students participated in the study. The following section details the analytical process that was utilized to assess the study's research questions. All statistical tests were conducted at $\mu = .05$.

The research questions were:

1. Is there a strong relationship between the AIMSweb MAZE CBM probe and the TNREADY English I assessments for high school students?
2. Is there a strong relationship between the AIMSweb MAZE CBM probe and the TNREADY English II assessments for high school students?
3. Is there a strong relationship between the AIMSweb MAZE CBM probe and the TNREADY English III assessments for high school students?

The study will explore the following sub-questions:

1. Is there a strong relationship between the AIMSweb MAZE CBM probe and TNREADY English I, English II, and English III end of course exams for high school students that will be identified in the TVAAS performance level high?
2. Is there a strong relationship between the AIMSweb MAZE CBM probe and TNREADY English I, English II, and English III end of course exams for high school students that will be identified in the TVAAS performance level medium?
3. Is there a strong relationship between the AIMSweb MAZE CBM probe and TNREADY English I, English II, and English III end of course exams for high school students that will be identified in the TVAAS performance level low?

The null hypotheses will be that MAZE does not accurately measure reading comprehension skills growth for high school students enrolled in English I, II, and III. The other null hypothesis will be that no correlation exists between MAZE and Tennessee Comprehensive Assessment Program (TCAP) for high school students. The alternate hypothesis will be that MAZE accurately measures reading comprehension skills growth for high school students. The other alternative hypothesis will be that a strong positive correlation exists between MAZE and the Tennessee Comprehensive Assessment Program for high school students.

Correlation and Regression Analysis

Pearson correlations were calculated to determine the pattern of associations for the measures. A correlation was calculated between the MAZE CBM measure and the TNREADY English I, II, and III assessments for the high school grades. The Pearson correlation identified how well related the results of the MAZE CBM measure and the TNREADY English I, II, and III assessments. The linear relationship between MAZE CBM outcomes and TNREADY outcomes was identified by the correlation. The results of the Pearson correlation were between -1.0 and 1.0. A result of 0 identified no linear relationship between the variables. A result of -1.0 to -0.5 and 0.5 to -1.0 identified a high correlation between the variables. Results between -0.3 to -0.5 and 0.3 to 0.5 identified medium correlation between variables. Low correlation corresponded to results of -0.3 to -0.1 and 0.1 and 0.3. A positive correlation scores identified a positive association among variables. In this study, if a correlation greater than zero is found, that indicated that as the MAZE CBM outcome increases or decreases, the TNREADY outcome increased or decreased as well. A negative correlation scores identified a negative association between the variables. In study, if a correlation less than zero is found, that indicated that as the

MAZE CBM outcome increases or decreases, the TNREADY outcome did the opposite. If MAZE CBM outcome increases, the TNREADY outcome decreased.

Forward selection regression analyses was used to determine the amount of variance in the TNREADY English I, II, and III assessments that was explained by the MAZE CBM measure. The primary question in the study focused on the correlation between the MAZE CBM probe and achievement on Tennessee's standardized RLA/ELA assessment. The independent variable in the study was the MAZE probe. The dependent variable was the students' performance on the English I, II, and III TNREADY assessment. The study conducted correlational and regression analyses to examine the correlation of the independent variable to the prediction of the dependent variable. The study compared the MAZE probe to Tennessee's standardized ELA/RLA assessment.

Limitations

The small sample size of this study presented a limitation to the extent that the findings cannot be generalized. The sampling method of convenience and purposive sampling limited generalizability of the findings.

Chapter 4

Findings

As stated in Chapter One, the study determined the correlation between assessments used in high schools reading intervention courses for struggling readers and standardized achievement tests. The study focused on the MAZE CBM reading comprehension assessment and the TCAP TNREADY End of Course Exams in English 1, English 2, and English 3. As outlined in Chapter Three, the data was analyzed using Pearson Correlation statistics in order to answer the research questions guiding the study:

1. Is there a strong relationship between the MAZE CBM probe and the TNREADY English 1, English 2, and English 3 End of Course Exams for high school students?

Sub-questions

1. Is there a strong relationship between the MAZE CBM probe and TNREADY English 1, English 2, and English 3 End of Course Exams for high school students identified in the TVAAS performance level high?
2. Is there a strong relationship between the MAZE CBM probe and TNREADY English 1, English 2, and English 3 End of Course Exams for high school students identified in the TVAAS level medium?
3. Is there a strong relationship between the MAZE CBM probe and TNREADY English 1, English 2, and English 3 End of Course Exams for high school students identified in the TVAAS performance level low?

The findings from the data are presented in this chapter. Following a demographic description of all participants, a summary of the number of participants, a summary of the assessment data, and the findings are presented in terms of research questions.

Demographic Data

Students from a southeast Tennessee district participated in and completed English 1, English 2, or English 3 courses during the 2016-2017 school year. Participants were from three of the districts high schools. One hundred and twenty-nine students participated in the study. Of the one hundred and twenty-nine students, seventy-nine completed English 1, sixteen completed English 2, and thirty-four completed English 3. As table 1 shows, the number of participants at each school varied according to the number of consenting parents and students.

Table 1

Number of English 1 Participants at Each High School in the District

School	Total Participants
A	17
B	5
C	57
Total	79

Table 2

Number of English 2 Participants at Each High School in the District

School	Total Participants
A	5
B	0
C	11
Total	16

Table 3

Number of English 3 Participants at Each High School in the District

School	Total Participants
A	32
B	0
C	2
Total	34

TVAAS Projection Level Data

TVAAS Projection Level data was collected for each participant from the Tennessee Department of Education TVAAS website. The TVAAS Projection Levels are a prediction of how students will perform on Tennessee Comprehensive Assessment Program (TCAP) TNREADY English 1, English 2, and English 3 End of Course Exams. The predictions are

based on students' previous three years TCAP assessments if available. The levels identify the probability that a student would score proficient on the TNREADY End of Course Exams The projections are divided into three groups; high, medium, and low. The high group was predicted to have above a sixty-six percent chance of scoring proficient on the TNREADY English 1, English 2, or English 3 End of Course exam. The middle group was predicted to have between a thirty-four percent and sixty-six percent chance of scoring proficient on the End of Course exams. The low group was predicted to have below a thirty-four percent chance of scoring proficient on the exams.

Commented [JB1]: ?

Table 4 shows the distribution of TVAAS Projection Level data for the participants for each school for the English 1 exam.

Table 4

School	High Projection Level	Middle Projection Level	Low Projection Level	Total Number of Participants
A	7	8	2	17
B	0	3	2	5
C	1	30	26	57
Total	8	41	30	79

Table 5 shows the distribution of TVAAS Projection Level data for participants for each school for the English 2 exam.

Table 5

School	High Projection Level	Middle Projection Level	Low Projection Level	Total Number of Participants
A	2	3	0	5
B	0	0	0	0
4	4	4	3	11
Total	6	7	3	16

Table 6 shows the distribution of TVAAS Projection Level data for participants for each school for the English 3 Exam.

Table 6

School	High Projection Level	Middle Projection Level	Low Projection Level	Total Number of Participants
A	15	14	3	32
B	0	0	0	0
C	0	0	2	2
Total	15	14	5	34

MAZE CBM Data

MAZE CBMs were administered to all participants. MAZE CBM assessments were collected and scored by the researcher. All participants were given the same assessment and followed the same testing parameters. Participants took the assessment in their high school English class during the week of May 15, 2017. MAZE CBM administrators read participants the same set of directions and gave them 3 minutes to complete the measure. All MAZE CBM assessments were graded by the researcher. The minimum score possible was a zero and the maximum possible score was a fifty-six.

Commented [JB2]: ?

Table 7 shows the distribution of the average MAZE CBMs score data for participants enrolled in English 1, English 2, or English 3,

Table 7

Course	MAZE CBM Score
English 1	32.7
English 2	35.4
English 3	31.9

Table 8 shows the distribution of MAZE CBMs score data for participants enrolled in English 1, English 2, or English 3 courses for each TVAAS Projection Level.

Table 8

Course	Projection Level	MAZE CBM Score
English 1	High	41.0
English 1	Medium	34.2
English 1	Low	29.1
English 2	High	38.0
English 2	Medium	32.5
English 2	Low	36.0
English 3	High	37.0
English 3	Medium	28.4
English 3	Low	24.8

TCAP TNREADY English 1, English 2, and English 3 End of Course Exam Data

TCAP TNREADY Raw Scores were collected for each participant from the TDOE RANDA website. All participants took the TCAP TNREADY English 1, English 2, or English 3 End of Course Exam that they completed the high school course for. The assessments were administered on April 25, 26, and 27, 2017. The Tennessee Department of Education released the raw scores the week of May 29, 2017.

Table 9 shows the distribution of the average TNREADY English 1, English 2, and English 3 raw score data for participants enrolled in English 1, English 2, or English 3.

Table 9

Course	TNREADY Raw Score
English 1	27.5
English 2	33.1
English 3	35.8

Table 10 shows the distribution of the average TNREADY English 1, English 2, and English 3 raw score data for participants enrolled in English 1, English 2, or English 3 courses for each TVAAS Projection Level.

Table 10

Course	Projection Level	TNREADY Raw Score
English 1	High	39.5
English 1	Medium	28.9
English 1	Low	20.8
English 2	High	38.7
English 2	Medium	34.0
English 2	Low	24.3
English 3	High	43.4
English 3	Medium	30.7
English 3	Low	21.7

Research Question #1: Is there a strong relationships between the MAZE CBM probe and the TNREADY English 1, English 2, and English 3 end of course exams for high school students?

To answer this question, a Pearson Correlation analysis was performed between MAZE CBM scores and TNREADY English 1, English 2, and English 3 End of Course Exams raw scores for students enrolled in the courses. The purpose for examining MAZE CBM scores and TNREADY raw score was to identify the relationship between the performance on the MAZE CBM and the TNREADY assessments. The reasoning for examining the scores is that many schools uses results from the MAZE CBM to identify a student's ability to comprehend what they read. The ability for a student to comprehend what they read is also measured by the TNREADY English 1, English 2, and English 3 End of Course Exams.

Sub-question #1: Is there a strong relationship between the MAZE CBM probe and TNREADY English 1, English 2, and English 3 End of Course Exams for high school students identified in the TVAAS performance level high?

To answer this question, a Pearson Correlation analysis was performed between MAZE CBM scores and TNREADY English 1, English 2, and English 3 End of Course Exams raw scores for students predicted to have a better than 66% chance of scoring proficient on the English 1, English 2, and English 3 TNREADY End of Course Exam. The purpose for examining MAZE CBM scores and TNREADY raw scores for students identified with a high projection was to identify the relationship between performance on the MAZE CBM and the TNREADY assessments.

The correlation between MAZE CBM and TNREADY English exams for students projected with a high probability of scoring proficient in Table 12 was found to be a positive correlation for each of the three courses. The high projection group in the English 1 course had a correlation of $r = 0.584$. The high projection group in the English 2 course had a correlation of $r = 0.452$. The high projection group in the English 3 course had a correlation of $r = 0.387$. Participants in the English 1 course had the highest correlation at $r = 0.584$, while English 2 and English 3 participants had moderate positive correlations respectively at $r = 0.452$ and $r = 0.387$.

Table 11 shows Pearson Correlation of MAZE CBM and TNREADY English 1, English 2, and English 3 EOC's for High Projection Participants.

Table 11

Course	Pearson Correlation
English 1	0.594
English 2	0.452
English 3	0.387

Sub-question #2: Is there a strong relationship between the MAZE CBM probe and TNREADY English 1, English 2, and English 3 End of Course Exams for high school students identified in the TVAAS performance level medium?

To answer this question, a Pearson Correlation analysis was performed between MAZE CBM scores and TNREADY English 1, English 2, and English 3 End of Course Exams raw scores for students predicted to have a 34% to 66% chance of scoring proficient on the English 1, English 2, and English 3 TNREADY End of Course Exam. The purpose for examining MAZE CBM scores and TNREADY raw scores for students identified with a medium projection was to identify the relationship between performance on the MAZE CBM and the TNREADY assessments.

The correlation between MAZE CBM and TNREADY English exams for students projected with a medium probability of scoring proficient in Table 13 was found to be a positive correlation for English 1 participants and negative correlations for English 2 and English 3. The medium projection group in the English 1 course had a correlation of $r = 0.089$. The medium projection group in the English 2 course had a correlation of $r = -0.539$. The medium projection group in the English 3 course had a correlation of $r = -0.077$. Participants in the English 1 course

had a weak positive correlation at r = 0.089, while English 2 and English 3 participants had negative correlations respectively at r = -0.539 and r = -0.077. The English 2 correlation for students in the medium projection group is significant with a moderate correlation of r = -0.538.

Table 12 shows Pearson Correlation of MAZE CBM and TNREADY English 1, English 2, and English 3 EOCs for Medium Projection Participants.

Table 12

Course	Pearson Correlation
English 1	0.089
English 2	-0.539
English 3	-0.077

Sub-question #3: Is there a strong relationship between the MAZE CBM probe and TNREADY English 1, English 2, and English 3 End of Course Exams for high school students identified in the TVAAS performance level low?

To answer this question, a Pearson Correlation analysis was performed between MAZE CBM scores and TNREADY English 1, English 2, and English 3 End of Course Exams raw scores for students predicted to have a 33% and below change of scoring proficient on the English 1, English 2, and English 3 TNREADY End of Course Exam. The purpose for examining MAZE CBM scores and TNREADY raw scores for students identified with a low projection was to identify the relationship between performance on the MAZE CBM and the TNREADY assessments.

The correlation between MAZE CBM and TNREADY English exams for students projected with a low probability of scoring proficient in Table 14 was found to be a positive correlation for English 1, English 2, and English 3 participants. The medium projection group in

the English 1 course had a correlation of r = 0.164. The medium projection group in the English 2 course had a correlation of r = 0.908. The medium projection group in the English 3 course had a correlation of r = 0.832. Very strong positive relationships existed between the MAZE CBM and TNREADY scores for the low projection group in English 2 and English 3, r = 0.908 and r = 0.833. These relationships are highly significant. English 1 had a weaker positive relationship of r = 0.164.

Table 13 shows Pearson Correlation of MAZE CBM and TNREADY English 1, English 2, and English 3 EOCs for Low Projection Participants.

Table 13

Course	Pearson Correlation
English 1	0.164
English 2	0.908
English 3	0.833

Summary

To summarize, overall there was a positive correlation of r = 0.330 for all participants in English 1, English 2, and English 3. Each course had a positive correlation when looking at all participants together. The relationships were English 1 r = 0.367, English 2 r = 0.129, and English 3 r = 0.558. The strongest positive relationships were the low projection group in English 3 with a correlation of r = 0.832 and the high English 1 projection group with a correlation of r = 0.584. Three groups had negative correlations in the study. The English 2 low and middle projection groups had correlations of r = -0.909 and r = -0.539 respectfully. The English 3 middle projection group had a negative relationship of r = -0.0707. These findings will be discussed in detail in the following chapter.

Chapter 5

Introduction

Chapter 5 presents a summary of the study and conclusions drawn from the data presented in Chapter 4. Chapter 5 includes an implications of the study and recommendations of needed future research in the area of study.

Summary of the Study

Many studies have been done to evaluate the effectiveness of MAZE CBMs as a tool to measure reading comprehension for younger students. The vast majority of studies concerning MAZE CBMs were done in elementary schools. These studies revealed MAZE CBMs as an effective tool to measure reading comprehension and reading ability for students in elementary school. Very few studies mentioned the effectiveness of MAZE CBMs as a measure of reading comprehension for older students. The few studies that were done did not make a correlation between MAZE CBMs and standardized assessments. Limited current research exists that analysis the relationship between reading comprehension assessments and performance on state-mandated assessments.

The purpose of this study was to determine the correlation between assessments used in high schools for struggling readers, MAZE CBM, and TNREADY English I, II, and III assessments raw scores in southeast Tennessee. Correlations did exist between MAZE CBMs and TNREADY English assessments. The correlations varied depending on the course; English 1, English 2, or English 3, and depending on the predictions groups. Some courses and groups had strong positive correlations, while others had very weak positive and negative correlations.

The research questions posed are

1. Is there a strong relationship between the MAZE CBM probe and the TNREADY English 1, English 2, and English 3 end of course exams for high school students?

Sub-questions

1. Is there a strong relationship between the MAZE CBM probe and TNREADY English 1, English 2, and English 3 end of course exams for high school students identified in the TVAAS performance level high?

2. Is there a strong relationship between the MAZE CBM probe and TNREADY English 1, English 2, and English 3 end of course exams for high school students identified in the TVAAS performance level medium?

3. Is there a strong relationship between the MAZE CBM probe and TNREADY English 1, English 2, and English 3 end of course exams for high school students identified in the TVAAS performance level low?

The study statistically analyzed scores from the MAZE CBM and raw scores from TNREADY English 1, English 2, and English 3 end of course exams from three high schools from a southeast Tennessee district. The schools administered TNREADY English exams and MAZE CBM assessments to participants the last week of April and the first two weeks of May, 2017. The Tennessee Department of Education scored and reported the TNREADY English exams raw scores and the research scored the MAZE CBM scores.

Pearson Correlation was used to analyze the relationship between TNREADY English end of course exam raw scores and MAZE CBM scores. This measure was used to show how different courses could result in different relationships between the two assessments. The

correlation also was used to show the relationship of the two assessments for participants predicted to be in the low, middle, and high groups.

Summary of the Findings

1. The study had an overall positive correlation of 0.330. Each course, English 1, English 2, and English 3 also had overall positive correlations. English 1 had a correlation of 0.368, English 2 had a correlation of 0.129, and English 3 had a correlation of 0.558. Overall and each course showed a positive relationship between the MAZE CBM assessment and TNREADY English end of course exams. English 3 had a significantly greater positive correlation between the two assessments than the other two courses.

2. The study revealed relationship discrepancies when the projection groups were analyzed. The low projection group had positive correlations in English 1 and English 3 and a negative correlation for English 2. English 3 had a very strong positive correlation of 0.832 for the low projection group. The middle projection group had a positive correlation in English 1 and negative correlations in English 2 and English 3. The high projection group had a positive correlation for all three courses. The strongest relationship between the two assessments for the high projection group was in English 1 with a correlation of 0.584.

3. The findings of the study identified that overall for each course there was a positive correlation between the MAZE CBM and TNREADY English end of course assessments. The study also identified strong positive correlations for the high projection group for each course. The low and middle projection groups had a mixture of both positive and negative correlations.

Discussion

The study was conducted to learn about the relationship between the MAZE CBM used to assess reading comprehension ability and the TNREADY English 1, English 2, and English 3 End of Course exams for high school students. As stated in Chapter 2, there is a lack of research concerning the relationship between reading comprehension assessments and state standardized assessments at the high school level. The limited research available, did not provide adequate findings to evaluate the effectiveness of the reading comprehension assessments to predict student performance on the end of year state assessments. The study focused on the relationship between a commonly used high school reading comprehension assessment, MAZE CBM, and the state of Tennessee's standardized test, TNREADY English 1, English 2, and English 3. The study discovered a strong positive correlation in English 3 for all students, $r = 0.558$. A moderate positive correlation was also found for specific groups in each course. The high projection group in English 1 and the low projection group in English 3 both had positive correlations above 0.5. A strong negative relationships was found in English 2 for the low projection group. A correlation of $r = -0.909$ was found. A moderate negative correlation was for in English 2 for the middle projection group of $r = -0.539$. The overall group, English 1 and English 2 groups had a weak positive correlation between 0.128 and 0.367. The low and middle English 1 projection groups, the high English 2 projection group, and the high English 3 projection group data revealed a weak positive relationships between the assessments. A weak negative relationship existed in English 3 for the middle projection group. A need still exists for more data and research to truly discover the correlation between MAZE CBM assessments and the Tennessee standardized tests in high school English.

Conclusions

Schools across the United States, specifically Tennessee, are using assessments to make instructional decisions for students. The RTI^2 Framework required reading comprehension assessments to be used to determine the comprehension ability of students. These assessments are used to determine a student's ability to master basic reading skills. At the high school level, very little research exists to support the use or validity of these reading comprehension assessments. Several questions that have arose at many high schools are: What reading comprehension assessment should be used to determine a student's comprehension ability? Which assessment is best for all learners, but also which assessments are best for struggling learners and advanced learners? The problem is that data and research is limited at the high school level concerning reading comprehension assessments and the correlation to standardized assessments. The assessments that drive instructional decisions are very important. The type of instruction a student receives is often dictated by the results of these assessments.

Implications

There is a correlation between the MAZE CBM and TNREADY English 1, English 2, and English 3 End of Course exams. The overall positive correlation demonstrated a positive linear relationship between the two assessments. The data does not allow the use of MAZE CBM results to make instructional decisions and predictions of student performance on the TNREADY English exams. Within the individual English courses, there are mixed reviews concerning the relationship between the two assessments. These mixed reviews make it difficult for educators to use the MAZE CBM as the primary assessment to determine reading comprehension ability for high school students and ability to master grade level content. Overall there was a positive correlation, but several projection groups had negative correlations between the two assessments. These results make it difficult to make decisions on a student's reading

comprehension ability and instructional decisions based solely on the MAZE CBM assessment. This study should encourage teachers to use multiple data points and sources when making instructional decisions.

The Tennessee Department of Education is requiring schools to use reading comprehension probes to determine the reading comprehension ability of high school students. The assessment is administered to all students and instructional decisions are made based on the outcomes. The results are used to determine if a student needs intervention, remediation, or enrichment. The reading comprehension probes are also used to determine progress being made by students receiving intervention. Progress monitoring data is used to determine if a student exits intervention, continues receiving intervention, or screened for special education. The importance placed on the data from these probes makes it paramount that the tool being used is valid. The ultimate goal of all instructional decisions to put students in the best position possible to master grade level content. The use of reading comprehension assessments to determine if a student needs intervention, remediation, or enrichment directly impacts a student's success on state mandated standardized assessments. The study seeked to discover the relationship between the two types of assessments.

This quantitative study explored the relationship between MAZE CBM assessments and the TNREADY English 1, English 2, and English 3 End of Course exams. The literature applied, that MAZE CBMs are a valid and reliable assessment to determine reading comprehension ability for younger students in elementary and middle school grades. The literature also revealed a positive correlation between the MAZE CBM assessment and state standardized assessments. According to the data gathered from the three high schools in this study, there was an overall positive relationship for the two assessments for the three high school

English courses. The data also revealed variance between different courses and projection groups.

Educators should urge more data to determine the validity of MAZE CBMs as a reading comprehension assessment for high school students. The importance placed on these assessments make it necessary for further research to be done to determine the effectiveness of MAZE CBMs and other reading comprehension assessments to determine the reading comprehension ability of high school students. Standardized assessments are not going away in Tennessee. This makes it paramount that instructional decisions are made using valid data. The best decisions must be made for every student to give them the best opportunity to be successful.

Recommendations for Further Research

This study was conducted in three high schools in one southeast Tennessee district. It would be beneficial to repeat this study across the state of Tennessee or across the southeast region of the United States with numerous high schools in multiple districts. This would allow a larger population sample size to be used to see if the findings remain consistent.

The MAZE CBM was the only high school reading comprehension assessment examined in the study. A study should be conducted with the other common reading comprehension assessments used in Tennessee high schools. This study would further the knowledge of different reading comprehension assessments and their relationship to Tennessee's standardized assessments. High schools across Tennessee use different reading comprehension assessments to make instructional decisions for students and research is needed to find the validity of these assessments.

Summary

Chapter 5 concludes this research study. The findings produced a positive correlation overall for the MAZE CBM assessment and Tennessee's high school English assessments. Variance existed within the three courses and the three projection groups. The small sample size and weak to moderate correlations make it unclear of the relationship between MAZE CBM assessments and English TNREADY End of Course Exams for high schools students. Further research is needed to determine the relationship between the two types of assessments.

References

Achievement Gap Definition. (2013, December 19). Retrieved April 02, 2017, from http://edglossary.org/achievement-gap/

Assisting Students Struggling with Reading: Response to Intervention (RtI) and Multi-Tier Intervention in the Primary Grades. (2009, February 1). Retrieved June 10, 2015, from http://files.eric.ed.gov/fulltext/ED504264.pdf

Basham, J., Israel, M., Graden, J., Poth, R., & Winston, M. (2010). A Comprehensive Approach to RTI: Embedding Universal Design for Learning and Technology. Retrieved June 11, 2015, from http://eric.ed.gov/?id=EJ909921

Brown-Chidsey, R., Johnson, P., Jr., & Fernstrom, R. (2005, Summer). Comparison of Grade-Level Controlled and Literature-Based Maze CBM Reading Passages. Retrieved February 22, 2017, from https://www.questia.com/library/journal/1G1-137354755/comparison-of-grade-level-controlled-and-literature-based

Canter, A., Klotz, M., & Cowan, K. (2008, February 1). Response to Intervention: The Future for Secondary Schools. Retrieved June 7, 2015, from http://www.nasponline.org/resources/principals/RTI Part 1-NASSP February 08.pdf

Cloze tasks from aimsweb Maze CBM. (2014). Retrieved April 02, 2017, from http://www.aimsweb.com/assessments/features/assessments/maze

Codding, R. S., Petscher, Y., & Truckenmiller, A. (2015, May). CBM Reading, Mathematics, and Written Expression at the Secondary Level: Examining Latent Composite Relations

Among Indices and Unique Predictions With a State Achievement Test. Retrieved February 22, 2017, from https://www.ncbi.nlm.nih.gov/pubmed/26347201

Denton, C. A., Barth, A. E., Fletcher, J. M., Wexler, J., Vaughn, S., Cirino, P. T., . . . Francis, D. J. (2011, January 13). The Relations Among Oral and Silent Reading Fluency and Comprehension in Middle School: Implications for Identification and Instruction of Students With Reading Difficulties. Retrieved February 22, 2017, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3104321/

Espin, C. A., & Foegen, A. (1996). Validity of General Outcome Measures for Predicting Secondary Students' Performance on Content-Area Tasks. Retrieved February 22, 2017, from http://journals.sagepub.com/doi/abs/10.1177/001440299606200602

Fore, C., III, Boon, R. T., & Martin, C. (2007). Concurrent and Predictive Criterion-Related Validity of Curriculum-Based Measurement for Students with Emotional and Behavioral Disorders, International Journal of Special Education, 2007. Retrieved February 22, 2017, from https://eric.ed.gov/?id=EJ814485

Friedman, E. (2010, November 1). Secondary Prevention in an RTI Model: A Step Toward Academic Recovery. Retrieved June 11, 2015, from http://eric.ed.gov/?id=EJ904699

Fuchs, L. S., Fuchs, D., Hamlett, C. L., & Ferguson, C. (1992, March & april). Effects of Expert System Consultation Within Curriculum-Based Measurement, Using a Reading Maze Task. Retrieved February 22, 2017, from http://journals.sagepub.com/doi/abs/10.1177/001440299205800507

Fuchs, L. S., Fuchs, D., Hosp, M. K., & Jenkins, J. R. (2001). Oral Reading Fluency as an Indicator of Reading Competence: A Theoretical, Empirical, and Historical Analysis.,

Scientific Studies of Reading, 2001. Retrieved February 22, 2017, from https://eric.ed.gov/?id=EJ640702

Galloway, T. W. (2010). Oral Reading Fluency and Maze Measures as Predictors of Performance on North Carolina End-of-Grade Assessment of Reading Comprehension, ProQuest LLC, 2010. Retrieved February 22, 2017, from https://eric.ed.gov/?id=ED516905

Gorski, D. (2016). What is RTI? Retrieved April 02, 2017, from http://www.rtinetwork.org/learn/what/whatisrti

Humbles, A. (2013, Mar 06). School celebrates reading gains. *The Tennessean* Retrived from http://search.proquest.com/docview/1314809883?accountid=33208

Jenkins, J. R., & Jewell, M. (1993). Examining the Validity of Two Measures for Formative Teaching: Reading Aloud and Maze., Exceptional Children, 1993. Retrieved February 22, 2017, from https://eric.ed.gov/?id=EJ463964

Joseph, L. (2008). Best Practices on Interventions for Students with Reading Problems. Retrieved June 7, 2015, from http://www.nasponline.org/publications/booksproducts/bp5samples/1163_bpv66_72.pdf

King, S., Lemons, C., & Hill, D. (2012, April 11). Response to Intervention in Secondary Schools: Considerations for Administrators. Retrieved June 7, 2015, from http://danlane.wiki.westga.edu/file/view/King (Response to Intervention in Sec Schools...).pdf

Oral Reading Fluency. (2017). Retrieved April 02, 2017, from https://www.council-for-learning-disabilities.org/what-is-oral-reading-fluency-verbal-reading-proficiency

Parker, R., Hasbrouck, J. E., & Tindal, G. (1992). The maze as a classroom-based reading measure: construction methods, reliability, and validity. Retrieved February 22, 2017, from http://journals.sagepub.com/doi/abs/10.1177/002246699202600205?journalCode=seda

Powers, K., & Mandal, A. (2011). Tier III Assessments, Data-Based Decision Making, and Interventions. Retrieved June 11, 2015, from http://eric.ed.gov/?id=EJ934703

Progress Monitoring. (2016). Retrieved April 02, 2017, from http://www.rti4success.org/essential-components-rti/progress-monitoring

Reciprocal Teaching. (2013, November 1). Retrieved June 10, 2015, from http://files.eric.ed.gov/fulltext/ED544469.pdf

Repeated Reading. (2014, May 1). Retrieved June 10, 2015, from http://files.eric.ed.gov/fulltext/ED545099.pdf

Snow, C. (2004, July 18). Reading Next: A Vision for Action and Research in Middle and High School Literacy. Retrieved June 7, 2015, from http://carnegie.org/fileadmin/Media/Publications/PDF/ReadingNext.pdf

Student-Growth Measures Definition. (2013, October 11). Retrieved April 02, 2017, from http://edglossary.org/student-growth-measures/

Tankersley, K. (2005). Chapter 1. The Struggling Reader. Retrieved April 02, 2017, from http://www.ascd.org/publications/books/104428/chapters/The-Struggling-Reader.aspx

Tibi, S. (2010). Developmental Hierarcy of Arabic Phonological Awareness Skills. Retrieved June 10, 2015, from http://files.eric.ed.gov/fulltext/EJ890563.pdf

Tolar, T. D., Barth, A. E., Fletcher, J. M., Francis, D. J., & Vaughn, S. (2014, February 1). Predicting reading outcomes with progress monitoring slopes among middle grade students. Retrieved February 22, 2017, from https://www.ncbi.nlm.nih.gov/pubmed/24659899

Vaughn, S., & Fletcher, J. (2010). Thoughts on Rethinking Response to Intervention with Secondary Students. Retrieved June 11, 2015, from http://eric.ed.gov/?id=EJ891855

Wayman, M. M., Wallace, T., Wiley, H. I., Ticha, R., & Espin, C. A. (2007, February). Literature Synthesis on Curriculum-Based Measurement in Reading. Retrieved February 22, 2017, from http://journals.sagepub.com/doi/abs/10.1177/00224669070410020401

What Is Reading Intervention? (2016). Retrieved April 02, 2017, from http://www.teach-nology.com/tutorials/teaching/readingintervention.html

2016-2017 Required Tennessee Student Assessments and District Assessments. (2016). Retrieved April 2, 2017, from http://tn.gov/assets/entities/dcs/attachments/2016-2017_TENNESSEE_STATE_MANDATED_ASSESSMENTS_WEBSITE.pdf

Appendix

Time Period	Activity
April 17th-May 5th	Consent to participate
April 17th – May 5th	Administration of TNREADY English I, English II, and English III End of Course Exams
May 6th – May 14th	Administration of AIMSweb MAZE CBM
May 24th	Receive Results from TNREADY English I, English II, and English III End of Course Exams
June	Correlation of TNREADY Results and AIMSweb MAZE CBM

Table 1

Number of English 1 Participants at Each High School in the District

School	Total Participants
A	17
B	5
C	57
Total	79

Table 2

Number of English 2 Participants at Each High School in the District

School	Total Participants
A	5
B	0
C	11
Total	16

Table 3

Number of English 3 Participants at Each High School in the District

School	Total Participants
A	32
B	0
C	2
Total	34

Table 4 shows the distribution of TVAAS Projection Level data for the participants for each school for the English 1 exam.

Table 4

School	High Projection Level	Middle Projection Level	Low Projection Level	Total Number of Participants
A	7	8	2	17
B	0	3	2	5
C	1	30	26	57
Total	8	41	30	79

Table 5 shows the distribution of TVAAS Projection Level data for participants for each school for the English 2 exam.

Table 5

School	High Projection Level	Middle Projection Level	Low Projection Level	Total Number of Participants
A	2	3	0	5
B	0	0	0	0
4	4	4	3	11
Total	6	7	3	16

Table 6 shows the distribution of TVAAS Projection Level data for participants for each school for the English 3 Exam.

Table 6

School	High Projection Level	Middle Projection Level	Low Projection Level	Total Number of Participants
A	15	14	3	32
B	0	0	0	0
C	0	0	2	2
Total	15	14	5	34

Table 7 shows the distribution of the average MAZE CBMs score data for participants enrolled in English 1, English 2, or English 3,

Table 7

Course	MAZE CBM Score
English 1	32.7
English 2	35.4
English 3	31.9

Table 8 shows the distribution of MAZE CBMs score data for participants enrolled in English 1, English 2, or English 3 courses for each TVAAS Projection Level.

Table 8

Course	Projection Level	MAZE CBM Score
English 1	High	41.0
English 1	Medium	34.2
English 1	Low	29.1
English 2	High	38.0
English 2	Medium	32.5
English 2	Low	36.0
English 3	High	37.0
English 3	Medium	28.4
English 3	Low	24.8

.

Table 9 shows the distribution of the average TNREADY English 1, English 2, and English 3 raw score data for participants enrolled in English 1, English 2, or English 3.

Table 9

Course	TNREADY Raw Score
English 1	27.5
English 2	33.1
English 3	35.8

Table 10 shows the distribution of the average TNREADY English 1, English 2, and English 3 raw score data for participants enrolled in English 1, English 2, or English 3 courses for each TVAAS Projection Level.

Table 10

Course	Projection Level	TNREADY Raw Score
English 1	High	39.5
English 1	Medium	28.9
English 1	Low	20.8
English 2	High	38.7
English 2	Medium	34.0
English 2	Low	24.3
English 3	High	43.4
English 3	Medium	30.7
English 3	Low	21.7

Table 11 shows Pearson Correlation of MAZE CBM and TNREADY English 1, English 2, and English 3 EOC's for High Projection Participants.

Table 11

Course	Pearson Correlation
English 1	0.594
English 2	0.452
English 3	0.387

Table 12 shows Pearson Correlation of MAZE CBM and TNREADY English 1, English 2, and English 3 EOCs for Medium Projection Participants.

Table 12

Course	Pearson Correlation
English 1	0.089
English 2	-0.539
English 3	-0.077

Table 13 shows Pearson Correlation of MAZE CBM and TNREADY English 1, English 2, and English 3 EOCs for Low Projection Participants.

Table 13

Course	Pearson Correlation
English 1	0.164
English 2	0.908
English 3	0.833

Table 14 Shows the Distribution of MAZE CBMs score data for participants enrolled in English 1.

Table 14

Student	MAZE CBM Score
01	31
02	39
03	39
04	49
05	37
06	56
07	44
08	34
09	27
10	33
11	42
12	45
13	16
14	21
15	34
16	24
17	43
18	15
19	37
20	33
21	42
22	40
23	30
24	42
25	39
26	48
27	30
28	32
29	29
30	23
31	28
32	15
33	32
34	21
35	39
36	30
37	38

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

38	25
39	47
40	30
41	27
42	22
43	20
44	24
45	25
46	20
47	27
48	49
49	30
50	18
51	17
52	45
53	54
54	40
55	43
56	39
57	35
58	26
59	48
60	36
61	47
62	36
63	41
64	45
65	37
66	37
67	33
68	15
69	33
70	26
71	23
72	32
73	27
74	36
75	28
76	31
77	30
78	27
79	18

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted …

Table 15 Shows the Distribution of MAZE CBMs score data for participants enrolled in English 2.

Table 15

Student	MAZE CBM Score
01	25
02	20
03	31
04	41
05	38
06	56
07	52
08	43
09	20
10	43
11	56
12	24
13	33
14	23
15	25
16	37

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 16 Shows the Distribution of MAZE CBMs score data for participants enrolled in English 3.

Table 16

Student	MAZE CBM Score
01	37
02	29
03	34
04	27
05	43
06	25
07	24
08	21
09	31
10	35
11	31
12	50
13	17
14	46
15	33
16	35
17	42
18	37
19	33
20	49
21	43
22	41
23	8
24	26
25	28
26	31
27	27
28	14
29	28
30	28
31	39
32	29
33	32

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted Table

34 32

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 17 Shows the Distribution of MAZE CBMs score data for participants enrolled in English 1 with a High TVAAS Projection.

Table 17

Student	MAZE CBM Score
01	49
02	37
03	56
04	44
05	45
06	16
07	43
08	38

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Table 18 Shows the Distribution of MAZE CBMs score data for participants enrolled in English 1 with a Medium TVAAS Projection.

Table 18

Student	MAZE CBM Score
01	31
02	39
03	39
04	34
05	27
06	42
07	21
08	34
09	15
10	42
11	40
12	42
13	39
14	48
15	30
16	32
17	29
18	23
19	28
20	39
21	30
22	47
23	27
24	22
25	24
26	20
27	30
28	45
29	54
30	40
31	39
32	35
33	48
34	47
35	41
36	45
37	15

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...
Formatted ...

38	26
39	32
40	36
41	27

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2"

Table 19 Shows the Distribution of MAZE CBMs score data for participants enrolled in English 1 with a Low TVAAS Projection.

Table 19

Student	MAZE CBM Score
01	33
02	24
03	37
04	33
05	30
06	15
07	32
08	21
09	25
10	30
11	20
12	25
13	27
14	49
15	18
16	17
17	43
18	26
19	36
20	36
21	37
22	37
23	33
24	33
25	23
26	27
27	28
28	31
29	30
30	18

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Table 20 Shows the Distribution of MAZE CBMs score data for participants enrolled in English 2 with a High TVAAS Projection.

Table 20

Student	MAZE CBM Score
01	31
02	41
03	56
04	43
05	24
06	33

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 21 Shows the Distribution of MAZE CBMs score data for participants enrolled in English 2 with a Middle TVAAS Projection.

Table 21

Student	MAZE CBM Score
01	25
02	20
03	38
04	52
05	23
06	37

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 22 Shows the Distribution of MAZE CBMs score data for participants enrolled in English 2 with a Low TVAAS Projection.

Table 22

Student	MAZE CBM Score
01	43
02	20
03	56
04	25

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 23 Shows the Distribution of MAZE CBMs score data for participants enrolled in English 3 with a High TVAAS Projection.

Table 23

Student	MAZE CBM Score
01	37
02	29
03	34
04	43
05	21
06	31
07	50
08	46
09	33
10	35
11	42
12	37
13	33

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 24 Shows the Distribution of MAZE CBMs score data for participants enrolled in English 3 with a Middle TVAAS Projection.

Table 24

Student	MAZE CBM Score
01	27
02	25
03	24
04	31
05	41
06	26
07	28
08	31
09	27
10	14
11	28
12	28
13	39

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 25 Shows the Distribution of MAZE CBMs score data for participants enrolled in English 3 with a Low TVAAS Projection.

Table 25

Student	MAZE CBM Score
01	35
02	17
03	8
04	32
05	32

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 26 Shows the Distribution TCAP TNReady raw score data for participants enrolled in English 1.

Table 26

Student	TCAP TNReady Raw Scores
01	28
02	35
03	30
04	44
05	41
06	39
07	41
08	31
09	28
10	24
11	26
12	42
13	37
14	31
15	28
16	21
17	42
18	26
19	22
20	21
21	33
22	35
23	16
24	32
25	28
26	33
27	33
28	34
29	35
30	30
31	36
32	12
33	24
34	21
35	27
36	30
37	27

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

38	15
39	29
40	23
41	28
42	29
43	24
44	33
45	21
46	30
47	24
48	16
49	28
50	17
51	16
52	28
53	31
54	28
55	33
56	30
57	27
58	22
59	27
60	20
61	35
62	21
63	30
64	34
65	18
66	22
67	21
68	31
69	22
70	25
71	21
72	30
73	23
74	33
75	19
76	23
77	23
78	26
79	16

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted …

Table 27 Shows the Distribution TCAP TNReady raw score data for participants enrolled in English 2.

Table 27

Student	TCAP TNReady Raw Scores
01	38
02	39
03	43
04	41
05	30
06	39
07	29
08	22
09	27
10	39
11	23
12	31
13	31
14	36
15	24
16	38

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 28 Shows the Distribution TCAP TNReady raw score data for participants enrolled in English 3.

Table 28

Student	TCAP TNReady Raw Scores
01	52
02	41
03	38
04	30
05	43
06	31
07	23
08	42
09	37
10	33
11	32
12	45
13	14
14	44
15	43
16	41
17	41
18	43
19	50
20	42
21	50
22	13
23	18
24	34
25	39
26	41
27	30
28	23
29	37
30	34
31	32
32	42
33	35
34	25

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Table 29 Shows the Distribution of TCAP TNReady raw score data for participants enrolled in English 1 with a High TVAAS Projection.

Table 29

Student	TCAP TNReady Raw Score
01	44
02	41
03	39
04	41
05	42
06	37
07	42
08	30

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 30 Shows the Distribution of TCAP TNReady raw score data for participants enrolled in English 1 with a Middle TVAAS Projection.

Table 30

Student	TCAP TNReady Raw Score
01	28
02	35
03	30
04	31
05	28
06	26
07	31
08	28
09	26
10	33
11	35
12	32
13	28
14	33
15	33
16	34
17	35
18	30
19	36
20	27
21	29
22	28
23	29
24	33
25	30
26	28
27	28
28	31
29	28
30	28
31	30
32	27
33	27
34	35
35	30
36	34
37	31

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

38	25
39	30
40	33
41	26

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 31 Shows the Distribution of TCAP TNReady raw score data for participants enrolled in English 1 with a Low TVAAS Projection.

Table 31

Student	TCAP TNReady Raw Score
01	24
02	21
03	22
04	21
05	16
06	23
07	12
08	24
09	21
10	15
11	23
12	24
13	21
14	24
15	16
16	17
17	16
18	33
19	22
20	20
21	21
22	18
23	22
24	21
25	22
26	21
27	23
28	19
29	23
30	23
31	16

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Formatted ...

Table 32 Shows the Distribution of TCAP TNReady raw score data for participants enrolled in English 2 with a High TVAAS Projection.

Table 32

Student	TCAP TNReady Raw Score
01	43
02	41
03	39
04	39
05	31
06	39

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 33 Shows the Distribution of TCAP TNReady raw score data for participants enrolled in English 2 with a Middle TVAAS Projection.

Table 33

Student	TCAP TNReady Raw Score
01	38
02	39
03	30
04	29
05	30
06	38

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 34 Shows the Distribution of TCAP TNReady raw score data for participants enrolled in English 2 with a Low TVAAS Projection.

Table 34

Student	TCAP TNReady Raw Score
01	22
02	27
03	24

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 35 Shows the Distribution of TCAP TNReady raw score data for participants enrolled in English 3 with a High TVAAS Projection.

Table 35

Student	TCAP TNReady Raw Score
01	52
02	41
03	38
04	43
05	42
06	37
07	45
08	44
09	43
10	41
11	41
12	43
13	50
14	42
15	50
16	42

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 36 Shows the Distribution of TCAP TNReady raw score data for participants enrolled in English 3 with a Middle TVAAS Projection.

Table 36

Student	TCAP TNReady Raw Score
01	30
02	31
03	23
04	32
05	13
06	34
07	39
08	41
09	30
10	23
11	37
12	34
13	32

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Table 37 Shows the Distribution of TCAP TNReady raw score data for participants enrolled in English 3 with a Low TVAAS Projection.

Table 37

Student	TCAP TNReady Raw Score
01	33
02	14
03	18

Formatted: Line spacing: single

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Line spacing: single, Numbered + Level: 1 + Numbering Style: 01, 02, 03, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 2.25"

Formatted: Normal, Line spacing: Double, No bullets or numbering