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Examining the Relationship Among Middle School Students' Performance on the TNReady Assessment, District Checkpoints, and Teacher-Assigned Grades

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by

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ABSTRACT

Examining the Relationship Among Middle School Students' Performance on the TNReady Assessment, District Checkpoints, and Teacher-Assigned Grades

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The purpose of this nonexperimental, quantitative study was to determine if there is a significant correlation among teacher-assigned grades (TAG), district checkpoint scores (CP), and student scale-scores on TNReady tests. The focus was on 1,445 seventh and eighth grade students who were enrolled at a middle school in northeast Tennessee during the academic years of 2017-2018 and 2018-2019, specifically for the content areas of English Language Arts and mathematics. The second purpose of this study was to examine any moderating effects of the categorical variable, students with disabilities (SWD) status, on the correlations among the district and state assessments and students' final teacher-assigned grades in math and English Language Arts. Sixteen research questions served as the framework of the study. Data were analyzed using Pearson's correlation coefficients.

Results of the analysis revealed that there were significant correlations among teacher-assigned grades, district checkpoint scores, and student-scale scores on TNReady tests for both math and English Language Arts for seventh and eighth grade students at this middle school during the 2017-2018 and 2018-2019 school years. These correlations were all positive and strong for the general population for both years and both content areas with the values of r ranging between .61 and .89. In general, the results suggest that high scores in any area are associated with high

scores in the other two areas. These positive high correlations for the overall population acknowledge the efforts of the school and district to align its teaching practices and district assessments with one another along with the state assessments. The study also concluded that there were not significant effects of the categorical variable of students with disabilities status (SWD) on the correlations.

DEDICATION

I would like to begin by giving thanks to my Lord and Savior who makes all things possible. I dedicate this work to you God. His unending grace, love, and blessings have allowed me to succeed in this journey that was not in my original plans but in His.

To my husband, Jon, you have always encouraged me in my dreams and decisions. Thank you for the many sacrifices and contributions you always make. You never complain, always love, provide our family with strength and balance, and are a constant support. I thank God every day that He blessed me with you!

To my children, Jake and Lucy, who too have sacrificed throughout this journey. I love you both with all of my heart and I am so encouraged by your hearts, souls, and eagerness for knowledge. My hope is that you will be lifelong learners and never become stagnant in personal growth. I pray you always know that you are deeply loved, you always walk in faith, and you always take care of one another.

To my mother, you are an angel on Earth. You love like only a mother can and I cannot begin to thank you for the things you have done to help get me here. They are as endless as your love and I will forever be grateful. Your selflessness is something that I do not think I could ever duplicate but I hope that my children will one day think of me as I do you and know that their mother is that one person who would do anything in the world for them, anytime, anywhere.

To my father, who taught me about self-discipline, sacrifice, hard work, and his love for Jesus. You always wanted more for us than you had and I find it ironic to have such little formal education, you are one of the most intelligent people I have ever known and definitely the wisest. You are still our source for guidance, direction, and a resource for so many things. I always want to make you proud but more importantly, you always make me want to be a better person.

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Chapter 1. Introduction

Students receive academic feedback in multiple ways as noted by Goldstein and Fernandez (2019). Some of the formal methods of feedback for middle school students include teacher-assigned grades, district assessment scores, and state assessment scores. All three are important measures of student learning and achievement and should be consistent with one another. The New York State Education Department (2013) pointed out that students, parents, and educators are often frustrated however, when students have received great grades on midterms and report cards, yet they get significantly lower scores on benchmarks or state assessments. This leaves many parents, students, teachers, administrators, and other stakeholders wondering if this is a phenomenon simply due to a high proportion of students with test anxiety during high-stakes assessments, if it a case of grade inflation by classroom teachers, or if it is because the classroom curriculum and rigor does not match that of the tests. This could also be a result of what Bloome et al. (1989) discussed as *procedural display*. Students and teachers will take part in procedural display to send the message that they are engaged in acquiring academic knowledge when they are instead moving through and completing the lesson without any substantive engagement in the content. They are rather producing a performance that results in a grade.

The disparity in teacher-assigned grades and students' performance on state assessments has been thoroughly documented through academic research (Brennan et al., 2001; Brookhart et al., 2016; Conley, 2000; Guskey & Jung, 2012). In their reviewed literature of 100 years of research on grades, Brookhart et al. (2016) reflected on the high number of studies available that have revealed across various contexts and nationally that grades and standardized test scores consistently correlate near 0.5. Nevertheless, both Dittmar (2005) and Bowers (2007) found more significant correlations between grades and state assessment in some schools but not others. Bowers noted that while he extended his research quantitatively to include a cluster analysis of correlations, it was missing the qualitative data that could provide the differences in the correlations between the schools (Warsen, 2013).

The National Research Council (2014) acknowledged that an effective assessment system should include a diverse set of internal and external assessments that each serve to achieve complementary purposes of the content objectives. Teacher-assigned grades and standardized test scores should primarily be based on the same sets of standards for each grade level and content area and therefore they should be closely aligned with one another. However, standardized tests are the more objective measures and teacher-assigned grades tend to be the more subjective measures that may vary by class and by school. As such, it is important for schools to determine if there is a significant correlation between these important measures.

Problem Statement

Tennessee Comprehensive Assessment Program (TCAP) is the state's required end-of-course assessments for grades 3-8 according to the Tennessee Department of Education (2019). These assessments are administered in accordance with the *Every Student Succeeds Act* (ESSA) of 2015 and Tennessee Code Annotated (TCA) 49-1-602 related to district and school accountability. The purpose of these tests is to assess student skills related to the Tennessee state standards for each content and grade level. Raw data are provided to the districts at the end of the school year and are used to calculate a student's final grade. State law T.C.A. 49-1-602 requires TCAP scores to be included as 10% of a student's grade in grades 3-8 for English Language Arts (ELA), math, science, and social studies if the data are available to the district at least five instructional days before the last school day for students. Scale score reports and performance reports are sent to school districts, along with student reports at a later date.

Paige et al. (2019) explained that state assessment scores and data are very important to educators, students, and parents for many different reasons. Educators are extremely invested, as Tennessee has value added models included in polices and laws that link high-stakes employment decisions and educator evaluations to these student test scores. The scores also play a significant part in school funding, combined with the fact that educators have invested so much into their students and they want to see these students experience success on their assessments. Students' grades are impacted by the inclusion of their TCAP score into their report card grades and in addition, scores play a role in placements, self-esteem, parent expectations, self-worth, inclusiveness, pride, and overall confirmation of their academic learning throughout the year (Simpson, 2016). Parents want their children to do well on state assessments for many of the same reasons. This includes that these assessments play a role in their child's grades, academic placements, self-esteem, self-worth, and their child's anxiety level regarding school. Parents also want to ensure that the time preparing for tests and testing is worth the lost instructional time. Furthermore, these high-stakes assessments have consequences for their child's teacher and school and parents often use the results from such tests to confirm the teacher-assigned grades they have seen throughout the year.

Local district assessments fall under the category of interim assessments. In this particular district that was researched, interim assessments are given at the end of the first three 9-week grading terms and during the investigation period, were designed through PowerSchool Assessment and Analytics. PowerSchool (2019) describes itself as a web-based instructional improvement system (ISS) which provides assessments, content, and reports that are aligned to standards and which can be used to analyze student achievement. District checkpoints were constructed through PowerSchool's Assessment and Analytics platform either from a bank of pre-written items that were written and curated by professional writers to align with the rigor and depth of the content standards or by questions that were built by the district curriculum coaches using the system. Administrators controlled items so that those used for district checkpoints were not accessible to teachers, as they utilized Power Test in their classroom as a formative assessment tool throughout the year to administer low-stakes assessments throughout their units of study. District checkpoints were given for both English Language Arts (ELA) and mathematics within this particular district for grades 2-8 and these assessments were aligned to the Tennessee State Standards by subject and grade level. Grades 3-8 checkpoints were administered online and second grade checkpoint assessments were administered on paper.

Beaulieu (2009) reported that benchmark assessments, such as district checkpoint tests for ELA and mathematics, should be valid predictors of how students will perform on their end-of-course state assessments in those respective content areas, and should serve to prepare students for high-stake state assessments in those same subject areas. The students' achievement levels on benchmark assessments and state assessments should further reasonably align with their achievement levels in those content area course grades in their respective schools. While much research has been done on the correlation between teacher-assigned grades and standardized state assessment, little research has been done to examine the relationship among teacher-assigned grades, standardized state assessments, and district interim assessments. Furthermore, there is minimal research that has investigated the relationship among district interim assessments, state assessments, teacher-assigned grades while also comparing subgroups including socioeconomic status and students with disabilities. Without a better understanding of the strength of these relationships it will be difficult to change the pattern of disconnect between state and federal policy and how classroom teachers assess learning on a daily basis and translate that assessment into grades.

Purpose of the Study

The purpose of the nonexperimental, correlational study were to determine if there was a significant correlation among teacher-assigned grades (TAG), district checkpoint scores (CP), and student scale-scores on TNReady tests. TNReady assessments are a part of the TCAP for grades 3-8 (Tennessee Department of Education, 2019). The focus was on 1,445 seventh and eighth grade students who were enrolled at a middle school in northeast Tennessee during the academic years of 2017-2018 and 2018-2019. The content areas that were looked at included mathematics and English Language Arts. The study did not include students who completed Algebra I as their math course since they did not take the 8th grade TNReady assessment for math and instead took the Algebra I EOC. Second, the study examined any moderating effects of the categorical variable on the correlations among the district and state assessments and students' final teacher-assigned grades in math and English Language Arts. The categorical variable used in the study, which contributes to a school's AYP rating as mandated by NCLB (2001), was students with disabilities (SWD) status.

Research Questions

This study investigated the following research questions.

Research Question 1: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2017-2018 school year?

Research Question 2: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2017-2018 school year for students with disabilities?

Research Question 3: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2018-2019 school year?

Research Question 4: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2018-2019 school year for students with disabilities?

Research Question 5: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2017-2018 school year?

Research Question 6: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2017-2018 school year for students with disabilities?

Research Question 7: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2018-2019 school year?

Research Question 8: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2018-2019 school year for students with disabilities?

Research Question 9: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2017-2018 school year?

Research Question 10: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2017-2018 school year for students with disabilities?

Research Question 11: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2018-2019 school year?

Research Question 12: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2018- 2019 school year for students with disabilities?

Research Question 13: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade math for the 2017-2018 school year?

Research Question 14: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade math for the 2017-2018 school year for students with disabilities?

Research Question 15: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade math for the 2018-2019 school year?

Research Question 16: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade math for the 2018-2019 school year for students with disabilities?

Definitions of Terms

This section serves as a reference for terms used throughout this dissertation that may require understanding of selected vocabulary.

Checkpoint – The school district's interim assessment for grades 3-8, which are aligned to the Tennessee State Standards by subject and grade level, are called district checkpoints. Checkpoints are administered online at the end of the first three 9-week grading terms. There are typically 30 items per checkpoint and the questions per standard are proportionate to the number of standards covered for that particular assessment. District math coaches create checkpoints through Power Test and students take the test through the same platform. Questions that are aligned to grade-level standards are selected from a question bank by district math coaches and then are reviewed to ensure that they are appropriately aligned before final selection on the checkpoint. The curriculum coaches also build additional questions and neither these types of question nor the questions from the question bank are accessible to the teachers prior to being placed on the district checkpoints.

Interim Assessment – According to Herman (2017), interim assessments fall somewhere between formative and summative assessments and are administered by schools and districts periodically throughout the school year. The data from interim assessments are used at various levels including classroom, school, and district, to assess programs, examine the level of individual student learning, determine placements, and to measure growth against various standards of measurement.

Standardized Tests – Kaukab and Mehrunnisa (2016) defined a standardized test as a test that is consistent in scoring all test-takers who take the test with the same questions and who are allotted the same time to take the test. The requirement is that all variables are controlled, thereby allowing for relative comparisons of student performance.

Tennessee Comprehensive Assessment Program (TCAP) – According to the Tennessee Department of Education (2019), TCAP is Tennessee's testing program and it includes TNReady assessments in English language arts, mathematics, science, social studies, as well as alternative assessments such as Multi-State Alternative Assessment (MSAA) and TCAP-Alternate (TCAP-Alt), for students with special needs.

Teacher-Assigned Grades – According to Brookhart et al. (2016), teacher-assigned grades refer to "symbols assigned to individual pieces of student work or to composite measures of student performance on student report cards" (p. 803).

TNReady Assessment – The Tennessee Department of Education (2019) described TNReady as part of the TCAP for grades 3-8. TNReady assessments are designed to assess student understanding of the Tennessee state standards for each content and grade level assessed.

Delimitations

Several delimitations were associated with this study.

1. The study excludes students who were enrolled in Algebra I during the 2018-2019 school year.
2. Only those students who completed the TNReady State Assessment and the district checkpoints for the entire school year were used in the study.

3. Data from only one school district in Tennessee were used.
4. Transferability is limited to educators in schools with similar size and demographics.
5. Quantitatively, correlations are not indicative of a causal relationship. Therefore, if connections among teacher-assigned grades, checkpoint assessments, and TNReady assessments are strong, weak, or absent, this will not explain the causality but will only allow for the researcher to accept or reject that the relationship exists. The factors behind that relationship would require additional research.
6. For the 2018-2019 SY, quick scores were received in time from the Tennessee Department of Education and therefore were included as 15% of a student's final teacher-assigned grade for Q2 in both mathematics and ELA.

Limitations

Several limitations were associated with this study.

1. Subjectivity of teacher-assigned grades in math courses.
2. Subjectivity in teacher-assigned ELA courses.
3. Subjectivity and objectivity of TNReady Assessment.
4. Objectivity of the district benchmark assessment.

Overview of the Study

Chapter 1 of the study provides the introduction, the statement of purpose, research questions, significance of the study, definitions of terms, limitations and delimitation of the study, and a general overview. Chapter 2 presents a review of the existing literature that is relevant to the topics of teacher-assigned grades, standardized tests, and local district assessments. Chapter 3 includes the methodology of the study, which involves the research methods and procedures used to conduct the analysis. Chapter 4 will present the findings and offer a review and analysis of the acquired research data. Chapter 5 will provide an in-depth discussion of the research findings, conclusions, and recommendations for further research and implementation.

Chapter 2. Literature Review

This chapter presents a summary of the literature related to teacher assigned grades, including various grading systems and practices. Chapter 2 moreover explores and summarizes the research related to standardized assessments and local district assessments. Existing research conducted on the alignment of teacher-assigned grades and standardized test scores is also discussed.

Teacher-Assigned Grades

Many teachers assign grades based on students' academic knowledge, achievement, behavior, effort, participation, and perseverance. Bowers (2016) stated that teacher-assigned grades have been shown as one of the most powerful predictors of positive student outcomes. These outcomes include successful transitions from middle school to high school and high school to college, as well as graduations from high school and college. Brookhart et al. (2016) reported that a high degree of inconsistency and subjectivity in how each teacher determines grades for individual students. Accordingly, another teacher would have a difficult time duplicating each of those grades, even if they had the same data in hand. This leads many to label teacher-assigned grades as weak in comparison to scientific standards, lacking validity, and an unreliable educational measurement.

Educators have applied a number of long-standing practices to their grading systems. Hanover Research (2011) showed that the most common grading system found in American schools is one that assigns students varying numbers of points for various achievement levels. Different assignments receive a score based on a scale of 0-100. In this point-based system, an "A" is typically reserved for scores between 90-100, a "B" for those scores between 80-90, a "C" for those scores between 70-80, a "D" for those scores between 60-70, and an "F" for those scores below 60. Student scores on individual assignments are recorded throughout the term and then averaged together at the end of that term to calculate the final grade. In another study, Guskey (2013) revealed that this point-based system also often depends on how a given teacher or school requires grades to be weighted and can be subject to other factors such as weighting of tests, homework, or other categories; district requirements for grades of a certain percent or higher only to be recorded; or non-academic factors such as conduct, participation, and effort.

Teachers frequently use assignments to assess students' knowledge of material regarding the course and defined material (Hanover Research, 2011). Depending on the question and the content being assessed, there is also subjectivity that can come into play with the assessments used for grading. For example, given a math assignment with exercises that have only one solution, those questions can easily be scored as correct or incorrect. However, when questions are open-ended, such as essay type questions, it makes it much more difficult to grade achievement.

Hanover Research (2011) reported that grading students on behavioral factors, such as conduct and effort, is also a very prevalent practice that has been widely accepted in the teaching world. This includes factors such as attendance, homework completion, poor academic integrity, and turning in assignments on time. Those teachers who use the aforementioned factors then effectively use grades as both motivators and penalizations.

Teacher expectations and character judgments have also been shown to influence students' grades, especially when teacher judgment is more of a factor in student grades and there is more subjectivity required in the grading practice. One study conducted by Zoeckler (2007) of high school English teachers found that student performance is not as easily converted into grades in English classes. English classes have many assignments that have a large range for acceptable answers and therefore require subjective feedback from the teacher, leaving the grading of the assignment more ambiguous. This includes essays, journal assignments, short answer questions, and term papers. All such assignments require a teacher's judgment and his or her feelings about the students' work can impact the grading of each response and assignment. One teacher may give a grade of "B" on an assignment and another teacher may feel that it is worthy of a "C". Therefore, writing intensive classes, such as English, can be problematic when assigning student grades based on classroom performance. Zoeckler further found that teachers also consider a student's character when assigning grades. For example, if a student who they considered of "good" moral character were borderline failing, many teachers would pass that student but may not pass a student who was borderline or who they considered of "bad" moral character.

Another grading system used and described by the International Affairs Office (2008) was based on a pre-established formula and concerned a percentage of students within a class or group who will be assigned each grade is known as the norm-referenced grading system. Students will typically work individually on assignments but are in a competition with their peers to achieve a standard of performance that will put them in a grade range that they are aiming for. For example, a grading policy may be in place that only allows for the top 10% of students to receive a grade of excellent. Therefore, in a class of 100 enrolled, only 10 students would receive that grade of A (Excellent). The next 20% of the class would receive a grade of B (Good), then the next 30% would receive a grade of C (Average), the next 20% would receive a grade of D (Poor), and the bottom 20% of the class would receive a grade of F (Failing). Norm-referenced grading is meant to separate the best performers of a group of individuals who tend to be generally equal in ability. In situations where not all students can advance due to limited placements, jobs, or other controlling factors, norm-referenced systems are often used. This type of grading is also often referred to as "grading on a curve" because of the formulaic characteristic that it carries.

Another system recognized by the International Affairs Office (2008) is the pass-fail grading system. These system types are often used in cases where there is a high degree of subjectivity in evaluating student work. This includes in schools and courses such as those involving fine arts and music, those which have no commonly accepted customary gradations such as independent studies, or where the decisive requirement includes hitting a particular level of standard, such as with a practicum or professional examination. Melrose (2017) revealed that the benefits found of pass-fail grading include exerting positive influences on learning by supporting students' psychological wellbeing and health, reduction of competition among students, and an increase of students' intrinsic motivation to learn by allowing them to pursue areas that are of interest and relevance to them instead of solely focusing on tested content and information. Melrose also found that those who object to pass-fail grading claim that its negative features include that it does not provide accurate feedback regarding the specific learning objectives which were mastered and those which need improvement, as well as the claim that for some students, pass-fail grading means that they will only give forth the bare minimum needed to pass.

Standards-based grading is one more commonly accepted grading practice. Hany et al. (2016) explained that standards-based grading (SBG) includes a teacher providing the students with the academic standards or goals for a course, evaluating if students met those standards, and then communicating those outcomes to the students and guardians. Each of the standards is course specific and can take on various forms.

Townsley and Buckmiller (2016) further revealed that standards-based grading is centered upon three principles. The first principle is that grades must have meaning. These letters, marks, or indicators that represent grades should relay to students and parents a child's strengths and weaknesses, while also separating out any non-academic behaviors. The second principle is that classroom-grading systems need to include numerous opportunities for students to establish their academic understanding based on feedback. Third, standards-based grading is aligned on dividing academic indicators from extraneous factors such as extra credit and completion of homework.

Benefits demonstrated through the use of standards-based grading and reported by Hochbein and Pollio (2016), included stronger correlations between grades and standardized test scores. Teachers reported delivering superior lessons as a result of focusing their preparation on how to teach rather than what to teach, a focus on depth of student understanding over extensiveness of the content, and the universal use of grades provided timely information for all students. Other advantages of standards-based grading included enhanced consistency and reliability of grading practices, which provides opportunities to improve the efficiency and effectiveness of academic performance. Furthermore, standards-based grading has been shown to help minimize academic opportunity gaps, reduce the unfair influence of a student's social network, and enable teachers to identify deficiencies that students may have in regards to certain competencies. This isolated identification allows for targeted remediation, which is not as lengthy and allows the students to return to their prior academic placements much faster.

Rado (2016) explained that one of the disadvantages of standards-based grading is that results from traditional practices limit the ability of grades to inform decisions. Parents are so accustomed to the traditional grading system of A, B, C, D, and F that often they are resistant to changing to a standards-based grading system. Hochbein and Pollio (2016) likewise pointed out that parents also become extremely concerned about the role that a standards-based report card will play on their child's class rank or honor roll and therefore do not accept standards-based grading. Parents argue that there are too many categories in the standards-based report card and as a result, it is difficult to understand and comprehend. In addition, the adoption and use of standards-based grading in some areas has been hazy and ambiguous to the point that it has complicated matters and does not serve as a concrete model for this grading system that could be replicated or followed by others.

Hanover Research (2011), through a vast review of the literature, confirmed that there is no single grading practice that has been recognized as the established primary standard. Rather, teachers have a tremendous extent of choice in deciding how to compute grades and what elements to include into those grades. Feldman (2019) pointed out that as a result of this subjectivity and methods uninformed by research or best practices, many of these traditional grading practices result in grades that offer ambiguous or imprecise information to students, parents, and postsecondary institutions. Information and data unrelated to student's academic proficiency, such as the ability to interact harmoniously with others, attendance, effort, and behavior, are often compressed into a single numerical average and letter grade equivalent. This makes it often impossible for anyone to distinguish a pupil's particular strengths and areas of development in each aspect from a final grade, which renders the grade puzzling, indistinguishable, and possibly invalid.

Conventional grading practices are also frequently distorted by indirect class, gender, and racial biases as was shown through Feldman's 2019 research. Such biases have been considerably documented regarding the disproportionate disciplinary actions taken in schools against students of color, low socioeconomic status, and those designated as students with disabilities (SWD). These biases have been found to extend to grading, as seen when teachers assess students on subjectively interpreted behaviors in those areas of participation or effort and to their perceptions and judgments of those behaviors that are influenced by the teacher's class, gender, and race. For example, in some classrooms where the teachers are white, it was found that students of African-American race were rated as "poorer classroom citizens" than their white peers and were thus more apt to receive a lower grade for such behaviors because of the teacher's biased perceptions. Styron and Styron (2012) noted that minority students, low-income students and secondary English speaking students could have increased gaps in academic knowledge also because of the disciplined and repetitive training they sometimes receive when placed in remedial courses based on their low performance on standardized tests.

Casalaspi (2016) described another effect of the subjectivity in conventional grading practices, grade inflation. Grade inflation is defined as an artificial increase in grades over a period of time as a result of assessments that are too easy or teachers who are too lenient in grading. Grade inflation occurs when high marks are awarded for mediocre work, thereby overstating the real learning that has occurred. Gershenson (2018) confirmed that there are many teachers who do not assign grades that conform to objective measures of student performance, and this can not only harm students and schools, it can harm the larger educational system. However, grade inflation has received little attention from policymakers despite the fact that researchers have documented the mismatch between school grades and external measures of students learning for decades. As an example, as high school grade point averages (GPAs) have been growing, SAT, ACT, and NAEP scores have remained stationary, strongly suggesting that classroom standards have dropped. Specifically, the 2009 NAEP High School Transcript Study conducted by Nord et al. (2011), found that between 1990 and 2009, high school graduates' average GPAs increased nationally to a 3.00 from 2.68. Similarly, Godfrey (2011) found that average GPAs increased between 1996 and 2006 by 0.26 points while SAT scores remained constant. Yet, another study by Woodruff and Ziomek (2004) found that between 1991 and 2003 grades were inflated by 12.5%. However, Casalaspi (2016) stated that in 2013 it appeared that grade inflation had started to stabilize.

There are several consequences of grade inflation according to Gershenson (2018). To begin, grade inflation may raise an undesirable sense of complacency, which causes an underinvestment in education and prevents students from achieving their full potential. Second, grade inflation causes some students to be promoted to successive grades and even acceptance to postsecondary institutions for which they may not be academically prepared. As a result, many of these students will struggle and will be at risk for dropping out. Grade inflation also misleads schools and employers who use grades as recognition of ability and content mastery as they consider students for admission slots and scholarships. Fourth, grade inflation can amplify and exacerbate racial gaps in educational success when it happens inconsistently across school types and pupil populations. Studies have shown that recent gains in GPA have been centralized in those schools which have a greater population of white students and those of higher socioeconomic status. Additionally, grade inflation causes families to have a false sense of security that everything is good at school, regardless of any reform that may need to occur or trouble that is happening. Finally, parents are more apt to ignore systemic mediocrity and therefore report positive school satisfaction scores when their child's grades are strong.

Standardized Tests (Summative Assessment for Accountability)

A standardized test is defined by Kaukab and Mehrunnisa (2016) as a test that is given to all test-takers in a consistent manner, including the same questions for each test-taker, the same allotted time to take the test for each test-taker, and scoring the test in the same way for every test-taker. The requirement is that all variables are controlled, thus allowing for relative comparison of students' performance. The format of standardized tests can be multiple choice so that the tests can be scored efficiently, true-false questions, short-answer questions, or essay questions. Standardized tests are also intended to fit varying scenarios depending on what is intended to be measured or evaluated.

Özturgut (2011) reported that standardized testing appears to have originated in China during the Sui Dynasty in 605 B.C, when government agencies would have citizens who were applying for government jobs first take exams. The jobs were then assigned according to test scores, from assessments related to military strategy, revenue and taxation, geography, Confucian philosophy, poetry, civil law, and agriculture. There were various levels of assignments within the government and tests were designed based on these levels. Additionally, each degree had a specific content knowledge that was required for that degree. Kaukab and Mehrunnisa (2016) confirmed that the French psychologist, Alfred Binet, is probably considered to be the pioneer of the modern standardized testing concept. Binet is credited with developing a test for intelligence that was later advanced and became the Stanford-Binet Intelligence Test. American schools began conducting oral tests in 1845, which sparked Horace Mann to approach the Boston Public School Committee and request that written tests be introduced to students. These written, objective tests were aimed at providing unbiased results regarding the quality and level of teaching in urban schools and to compare the schools and teachers. The tests were highly successful and this in turn led to written testing for students being introduced in the majority of cities across the United States. Additionally, this also gave rise to the creation of the New York Regents Exams in 1965.

Kaukab and Mehrunnisa (2016) reported that the United States Army was next to begin using standardized tests in the form of their Mental Tests. These aptitude tests were used to assess soldiers joining the Army during World War I but they required a tremendous amount of work to assess manually. It was in 1936 that the first automatic test scanner was developed by IBM and was able to detect marks made by special pencils on the paper. It was this innovation that would eventually lead to bubbling answers on a scanning sheet.

The Scholastic Aptitude Test (SAT) and American College Testing (ACT) are the most widely recognized standardized tests today as confirmed by Kaukab and Mehrunnisa (2016). The SAT originated by College Board in 1926 and the first test had a mix of 315 questions, which assessed vocabulary and basic math, and test-takers had 90 minutes to complete the exam. By 1930, the SAT had evolved into a dual part assessment that is currently employed with Verbal and Math sections. It was nationally accepted as the standard entry test for universities for all high school qualifiers by the end of the Second World War and remained in this same form until 2005. After 75 years, the analogies section was replaced with a creative writing section. Similarly, the ACT, which was developed in 1959 as a competitor of SAT, also tests English, math, readings, and the knowledge of scientific facts and principles.

Dee and Jacob (2011) reported that the modern testing movement in the United States began in 1965, when President Lyndon Johnson enacted the Elementary and Secondary Education Act (ESEA). ESEA included accountability and testing provisions aimed at raising standards and making education more equitable. When President Reagan’s National Commission on Excellence in Education released their report titled *A Nation at Risk: The Imperative for*

Educational Reform in 1983, this fueled reform efforts for even stricter accountability measures. Included in the report were warnings that there was a crisis in the United States educational system and there was a need to raise academic standards to a level that was internationally competitive and to increase testing for stronger accountability.

According to Dee and Jacob (2011), President George W. Bush signed The No Child Left Behind Act (NCLB) into law on January 8, 2002. NCLB required annual testing in reading and mathematics for grades 3 through 8, with mandated annual benchmarks to claim Adequate Yearly Progress (AYP) on statewide reading and mathematics tests by schools, school districts and states. Schools and districts that fail to show adequate AYP must have corrective action plans developed and implemented to assist them. Sanctions can be severe enough to include replacing the school's principal, reconstituting the teaching staff, a state takeover of the school, or the school simply closing. NCLB further required that all US students be 100 percent proficient on state reading and math tests by 2014. As a result, ProCon (2018) revealed that annual state spending on standardized tests increased from $423 million pre-NCLB to nearly $1.7 billion in 2008, equating to a 160% increase.

According to Onosko (2011), President Barack Obama signed into law the American Recovery and Reinvestment Act (ARRA) in 2009. ARRA was intended to fuel the economy, boost job creation, and invest in critical sectors, one of which was education. Part of ARRA provided $4.35 billion for the Race to the Top Fund, which encouraged states to compete for extra funding based on the strength of their student test scores. As a result, states began to embrace the educational reforms set forth by the Race to the Top Act in their pursuit of the monetary incentives; however, this led to some schools *teaching to the test* or even more dubious practices such as cheating.

Accountability testing has some limitations for stakeholders according to Styron and Styron (2012). One particular disadvantage felt by many educators is that there are multiple levels on which to gauge student learning and achievement and standardized testing happens to only be a single measurement. Students possess diverse testing and learning styles, and so it is extremely unreliable to apply a solitary standardized test score to determine student growth and learning such as student readiness, tracking, screening, and grade retention. While it should be one type of considered assessment, other qualified assessments should also be performed before making any decisions regarding the aforementioned. Such additional assessments might include general school year assessments, qualitative assessments, and portfolio-based assessments.

Standardized testing has been shown to negatively impact minority students, low-income, and secondary English speaking students as reported by Styron and Styron (2012). These students are often misplaced into remedial courses based on their low performance on standardized tests to where only they receive disciplined and repetitive training, which can result in even greater gaps between these students and their peers in academic knowledge. Additionally, college admissions are often highly influenced by standardized tests scores, thereby adding another negative effect of standardized testing on these subgroups. To deepen the achievement gap even further for the secondary English-speaking, minority, and low-income students, teachers often omit critical thinking instruction and practice in place of more vocabulary and drill-and-practice instructional strategies that emphasize recall of information to prepare for standardized testing. As a result, not only does this prevent such students from developing those essential critical thinking skills, it often results in lower standardized test scores, as those critical thinking skills are essential for assisting them in doing well in many parts of these assessments.

Nichols and Berliner (2007) found reports and research indicating that high stakes testing has also been associated with an increase in the amount of cheating by students, teachers, administrators, and school districts. This is an example of Campbell's Law, which states that, "the more any quantitative social indicator is used for social decision making, the more it will distort and corrupt the very social processes it is intended to monitor" (p. 1). The pressure that teachers and parents place on students to do well has also led to a decrease in student motivation and interest in learning, observed Styron and Styron (2012). This can be extremely detrimental to student engagement and therefore inhibit student learning both inside and outside of schools.

Bracey (2009) stated that while the original intent of the National Assessment of Educational Progress (NAEP) was to describe what students know and did not know, it has since become prescriptive. In being descriptive, it was meant to give an indication of the general health of our nation's education. However, in becoming prescriptive, it became about what students should know and categorized them in various achievement levels. Opponents assert that the methods used for creating those achievement levels are faulty and the levels demand irrationally high performance. Additionally, such groups as the U.S. Government Accounting Office, the National Academy of Education, and the National Academy of Sciences have criticized NAEP for the methods it takes in creating the achievement levels, the demands it places for students to reach these levels as being irrationally high, and the uncorroborated results. However, the United States Department of Education has continued to allow these faulty levels to be used until something better is developed, and that has yet to happen. Bracey and others have speculated that perhaps this is because such low student performance is of political benefit to school critics. Thomas (2013) discussed three ways that testing serves to reinforce market-based power dynamics rather than providing data for reforming education in the pursuit of social justice. The first was testing individual students and utilizing the data to identify teacher quality on an individual level produces a focus on the individual that strengthens disciplinary objectives. Second, testing sustains the hierarchy of power by creating achievement gaps, classifying those gaps, and relegating these gaps below the ordered level of standard. Third, testing marks poverty and inequality, but cannot get rid of them. However, they are both perpetuated when the data is misused.

Furthermore, Styron and Styron (2012) stated that standardized testing has been linked with a narrowing of the curriculum as the focus on reading, writing, math, and science has taken priority. This has been at the expense of music, foreign languages, art, and social studies, especially in the lower grades, because these are non-tested content areas although they are extremely important in helping students develop into well-rounded individuals and maturing physically, spiritually, mentally, and socially. The National Council of Teachers of English (NCTE, 2014) also stated that there tends to be subject-specific narrowing found in those tested content areas as these teachers focus more heavily on the skills and concepts that will be assessed on the standardized tests. For example, ELA teachers are required to focus heavily on the literacy skills like comprehension that will be measured on the standardized tests because reading is more prominent, but this comes at the expense of other important skills such as high-order critical reading and writing.

Conversely, Kaukab and Mehrunnisa (2016) noted that there are numerous benefits of standardized testing for stakeholders. To begin, standardized tests help to identify strengths and weaknesses of students in relation to district, state, or national averages of students who are of similar age and grade level. Second, Columbia University (2013) showed that because the results of these high-stakes tests become public record, they establish accountability of teachers and schools and those teachers and educational institutions who are consistently not performing up to certain levels of expectations can be subjected to disciplinary measures and further evaluated. Third, it has improved time management in education by honing in on learning outcomes of certain parts of the curriculum and objective areas for the teachers. Kaukab and Mehrunnisa (2016) showed that standardized testing allows comparisons to be made across schools, districts, and provinces in relation to the level of and achievement of students. It also permits students who move or switch schools to be able to do so without being ahead or behind their peers as they transition to different schools or districts in the same grade level. Advocates argue that standardized tests are objective in nature and as a result, they are scored either by computers or by individuals who do not have contact with the students. Furthermore, as an increased measure to remove bias and as an added benefit, these assessments are developed only after several phases of review by experts and intense scrutiny to remove any such bias.

Local District Assessments

According to Herman (2017), local district assessments fall under the category of interim assessments and are known as benchmarks, checkpoints, and other various district specific titles. Interim assessments are described as being somewhere in between summative and formative assessments, are administered by a school or district periodically throughout the school year, and for which scores are aggregated for use at various levels including classroom, school, and district. The National Research Council (2002) explained that some school districts employ interim assessments that have either been created by the district or have been commercially developed. These are used to assess their own programs, examine the level of individual student learning to determine placements, or to measure their growth against national standards. Some districts choose to make these assessments high stakes and so are associated with vital outcomes for students, teachers, or schools. Such outcomes could come in the form of grade level promotions, bonuses for schools, salary allocations, additional staff, resources to assist low-performing schools, and financial rewards for improvements in student outcomes.

The National Research Council (2002) pointed out that interim assessments measure what students have learned within a particular course or time period, which puts different challenges on the content that teachers have to teach. Additionally, the conditions and type of the content tested may fluctuate extensively between each assessment. One test may allow students to use a calculator and another may not; one assessment may stress mastery of mathematical terms while another may stress mastery of mathematical concepts; one may be comprised of mostly multiple choice questions and another may consist of multiple select and short answer type questions.

Bambrick-Santoyo (2010) described interim assessments as the most important tests of data-driven instruction, as they give standards a well-defined definition of the level of rigor required to be successful. Bambrick-Santoyo added that when applied appropriately, interim assessments are one of the most prevailing drivers of academic excellence. Applied appropriately includes assessments serving as a transparent starting point for teaching. They are written prior to instruction so that teachers are able to see them in advance as they define the roadmap for teaching. Interim assessments must be common among all grade-level students and administered four to six times per year. They must also be aligned to state assessments and college readiness exams in content, length, format, and rigor. When applied appropriately, interim assessments are aligned to the instructional sequence of clearly defined grade-level and content area expectations so that teachers are delivering what will be assessed. In addition, interim assessments should continuously reassess previously taught standards.

Bambrick-Santoyo (2010) also provides seven benefits of appropriately applied interim assessments. The first advantage is that interim assessments serve as guides for instruction because they define the standards and provide the map for rigorous teaching and learning. Second, they identify weaknesses throughout the school year and as a result, provide improvements in teaching as teachers respond to those needs. Third, interim assessments create real benchmarks that allow for classroom strengths and areas of development to be identified and addressed methodically. Fourth, interim assessments help to hold teachers and administrators accountable for the results of student learning all year long. Interim assessments also enable school leaders and teachers to visibly see student improvement through the data. The sixth advantage of interim assessments is that they measure student understanding without teacher support. Finally, interim assessments prepare students for high-stakes assessments used by the state to measure academic achievement. PowerSchool (2019) reported that after the Tennessee Department of Education implemented new online summative tests for ELA and mathematics for grades 3-11 beginning in the 2015-2016 school year, there were districts within the state looking to find alternatives to the programs they were currently using. PowerSchool provided a case study regarding one large school district within the state that re-evaluated their formative assessment testing. In doing so, they sought out enhanced methods through PowerSchool Assessments and Analytics to better prepare their students and teachers for this new online format, provide their educators with resources that they could use to easily create assessments and generate analytics, and thereby help them to guide their instruction more effectively.

Herman and Baker (2005) discussed six principles that should be used to measure the value of interim assessments. These include alignment, fairness, utility, feasibility, diagnostic value, and technical quality and determine interim assessments' ability to deliver accurate information regarding student progressions and feedback that can be valuable in improving instruction. In regards to alignment, this includes alignment with state standards and assessments. Herman (2017) added that alignment with goals meant to serve by delivering users the data they need to take expected action, alignment with school learning goals, and alignment with curriculum sequence and pacing across the district or school.

The fairness principle, according to Herman and Baker (2005), refers to a benchmark test providing an accurate assessment of diverse subgroups. Questions go through rounds of reviews, analyses, and tests to ensure that they do not contain any biases, stereotypes, negative images, and that they are fair. In addition, students are provided with the appropriate accommodations for their specific needs based on their individualized education plans. Utility refers to the degree that users find the assessment results significant and find them useful as a tool to improve teaching and learning. Feasibility means that the assessments should provide a return that is worth the time, effort, and money invested in them. Interim assessments should be of high diagnostic value, meaning that they report the performance levels of students, why they are performing at certain levels, and diagnostic actions to take next. Technical quality is the test's ability to provide accurate and reliable results regarding student performance.

Alignment of Teacher-Assigned Grades and Standardized Test Scores

According to Great Schools Partnership (2015), learning standards are one of the most influential issues in today's public education and affect every aspect of our educational system, including high-stakes standardized testing, the concepts and skills that students are taught in the classroom, and the professional development that teachers require to be effective. The standards movement has also brought some important conversations to the forefront regarding the alignment of teacher-assigned grades, district interim assessments, and state assessments and the importance of collaborations amongst the local schools, school districts, states governments, and federal governments and the goals set forth by all of these bodies. The National Research Council (2014) acknowledged that an effective assessment system should include a diverse set of internal and external assessments that each serve to achieve complementary purposes of the content objectives. Because teacher-assigned grades and standardized test scores are based on the same sets of standards for each grade level and content area, it would make sense that they are aligned with one another. However, that is not always the case. It is therefore important to find out if there is a correlation among district assessments, state assessments, and teacher-assigned grades to ensure that they are all aligned and supporting the ongoing instruction and assessment of students in the grades and content areas for which they are designed.

The disparity in teacher-assigned grades and students' performance on state assessments has been thoroughly documented through academic research (Brennan et al., 2001; Brookhart et al., 2016; Conley, 2000; Guskey & Jung, 2012). Guskey and Jung (2012) reported that it also continues to remain an issue that keeps parents, educational leaders, and other stakeholders alike quite worried. It is important that students, teachers, parents, administrators, and other stakeholders be aware if teacher-assigned grades, district interim assessments, and state assessments are aligned and if so, to what degree.

Teachers and administrators are beginning to come together and speak out about testing and teaching, reported Beaulieu (2009). The educational world is seeing that along with the emphasis on standards-based instruction, that curricula is being aligned and instructional focus is being tightened as a result. They are in agreement that if the classroom is to be a reflection of local and state standards of instruction, then the classroom should also reflect student achievement on those same standards assessments. Many esteemed researchers in the educational field such as Guskey (2015), Marzano (2000), O'Connor (2017), and Reeves (2016) have expressed their beliefs that grades should reflect academic knowledge as strongly as possible and that the ultimate goal in grading should be that teacher-assigned grades strongly correlate with standardized test scores. If so, this correlation would communicate what the student has academically mastered.

In their reviewed literature of 100 years of research on grades, Brookhart et al. (2016) reflected on the considerable number of studies available that have revealed across various contexts and nationally that grades and standardized test scores continually correlate near 0.5. A correlation of 0.5 is neither very strong nor very weak for making an argument about the relationship between grades and standardized test scores. Nevertheless, both Dittmar (2005) and Bowers (2007) found some significant correlations between grades and state assessments in some schools, but others such as Warsen (2013) did not. However, as Brookhart and McMillan (2019) reported, little research has been done to examine the extent to which teacher-assigned grades, standardized test scores, and interim assessments are related. Furthermore, there is little research to examine the extent to which grades, test scores, and special education status (SWD) are related and to what extent grades may be a fairer or a more "just" assessment that does not vary as strongly by SWD or the special education status of the student as do standardized assessments.

Chapter 3. Methodology

This chapter presents a summary of the methodology designed and applied to answer the research questions about the relationship among middle school students' performance on the TNReady Assessment, local district assessments, and teacher-assigned grades in a northeast Tennessee school district for English Language Arts and mathematics. This chapter explains the research design, participants, instrumentation used, data collection procedures applied, and the data analysis.

The purposes of the proposed study were to determine if there was a significant correlation among teacher-assigned grades (TAG), district checkpoint scores (CP), and student scale-scores on TNReady tests. The focus was on seventh and eighth grade students who were enrolled at a middle school in northeast Tennessee during the academic years of 2017-2018 and 2018-2019. This study focused on the content areas of math and English Language Arts (ELA). The study did not include students who completed Algebra I as their math course, as they did not take the 8th grade TNReady assessment for math and instead took the Algebra I EOC. Second, the study examined any moderating effects of the categorical variable on the correlations among the district and state assessments and students' final teacher-assigned grades in math and English Language Arts. The categorical variable used in the study that contributes to a school's AYP rating as mandated by NCLB (2001) included students with disabilities status (SWD).

This study utilized a nonexperimental, quantitative, correlational research design. This design was selected because the variables were not manipulated and there was not a treatment or intervention for the participants involved in the study. The data collection instruments included ELA and math scores from the TNReady state assessment and district checkpoints. Additionally, final teacher-assigned grades for the year in the same content areas were also collected and examined. Each of these tools were collected for 7^{th} and 8^{th} grade students who attended the school during the 2017-2018 and 2018-2019 school years. These scores and grades were taken from a pre-existing student database and were given to the researcher after connective relations were completed and student names replaced with randomized numbers by the school administrator to protect the identities of the subjects involved.

Research Questions

The following research questions and corresponding null hypotheses were considered during the study.

Research Question 1: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7^{th} grade ELA for the 2017-2018 school year?

H_O1: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7^{th} grade ELA for the 2017-2018 school year.

Research Question 2: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7^{th} grade ELA for the 2017-2018 school year for students with disabilities?

H_O2: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7^{th} grade ELA for the 2017-2018 school year for students with disabilities.

Research Question 3: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2018-2019 school year?

H_O3: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2018-2019 school year.

Research Question 4: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2018-2019 school year for students with disabilities?

H_O4: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2018-2019 school year for students with disabilities.

Research Question 5: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2017-2018 school year?

H_O5: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2017-2018 school year.

Research Question 6: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2017-2018 school year for students with disabilities?

H_O6: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2017-2018 school year for students with disabilities.

Research Question 7: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2018-2019 school year?

H_O7: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2018-2019 school year.

Research Question 8: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2018-2019 school year for students with disabilities?

H_O8: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2018-2019 school year for students with disabilities.

Research Question 9: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2017-2018 school year?

H_O9: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2017-18 school year.

Research Question 10: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2017-2018 school year for students with disabilities?

H_O10: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2017-2018 school year for students with disabilities.

Research Question 11: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2018-2019 school year?

H_O11: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2018-19 school year.

Research Question 12: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2018- 2019 school year for students with disabilities?

H_O12: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2018-2019 school year for students with disabilities.

Research Question 13: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade math for the 2017-2018 school year?

H_O13: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8^{th} grade math for the 2017-2018 school year.

Research Question 14: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8^{th} grade math for the 2017-2018 school year for students with disabilities?

H_O14: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8^{th} grade math for the 2017-2018 school year for students with disabilities.

Research Question 15: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8^{th} grade math for the 2018-2019 school year?

H_O15: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8^{th} grade math for the 2018-2019 school year.

Research Question 16: Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8^{th} grade math for the 2018-2019 school year for students with disabilities?

H_O16: There are no significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8^{th} grade math for the 2018-2019 school year for students with disabilities.

Population

The study included students who attended a middle school in northeast Tennessee during the school years of 2017-2018 or 2018-2019 and who took the TNReady Assessment for ELA and Math, as well as the district's interim assessment checkpoints. The focus school is the only middle school for this northeast Tennessee school district, which served 8,019 students during the 2018-2019 school year. Minority enrollment for the school district was 28% of the student body (Public School Review, 2019). In the 2017-2018 school year, there were 1,193 students enrolled at the middle school and 1,206 students for the 2018-2019 school year. The population of the school was approximately 28.3% Black, Hispanic, and Native American. For the 2018-2019 school year, approximately 34.4% of students were classified as economically disadvantaged, 3.4% classified as English learners, and 10.4% were considered students with disabilities (Tennessee Department of Education, n.d.). The sample only included those students who completed the three district checkpoint assessments for each school year, that school year's state assessment, and received teacher-assigned grades for math and ELA. Students who were enrolled in Algebra I for the 2018-2019 school year were excluded from the study because they did not take the TNReady 8th grade math assessment and instead took the Algebra I EOC. Transferability will be limited to those schools with similar size and demographics.

Instrumentation

The researcher used existing test scores from the TNReady Assessment test and the district checkpoint tests. In addition, year-end teacher-assigned report card grades were used to gather seventh and eighth grade student's academic performance data in English language arts and mathematics. The TNReady test is part of the Tennessee Comprehensive Assessment Program (TCAP) for grades 3-8 and is administered in accordance with Every Student Succeeds

Act (ESSA) of 2015 and T.C.A 49-1-602. According to the Tennessee Department of Education (2019), TNReady tests are administered each spring during a four-week state-mandated testing window and are designed to assess student understanding of the Tennessee state standards for each content and grade level. Times for each section and content vary.

Questar and Educational Testing Service (ETS) (2018) reported that there is validity evidence for the TNReady Achievement (ACH) tests in each of the following processes: item development, standard setting, scaling, equating, reliability, and quality control. Validity of the scoring process starts with verifying the accuracy of the scoring keys and this verification ensued at numerous stages during the test development and execution process. Item response theory models provide a source for the ACH assessment scores and item fit statistics were calculated for each administration of a field test or operational test item. Item fit was examined during the construction of the tests and any items that display misfits were cautiously inspected before they were placed on the test. Additional evidence of the fit for the IRT model resulted from dimensionality analyses. IRT models for each ACH assessment in Tennessee presumed that the domain being measured by the test was reasonably unidimensional. Item-total correlations, which is the correlation between an item and the total test score, were also high. Overall, the ACH assessments are appropriately scored and those scores can be generalized to the universe score. However, the empirical evidence is not as strong for inferences. Questar and ETS stated that additional studies are required to confirm arguments for implying, especially for those inferences regarding the state's accountability program and its ability to make a positive effect on student proficiency and accountability without resulting in unintended negative consequences.

Because the TNReady is a single administration assessment, Questar and ETS (2018) relied on the coefficient alpha for internal consistency reliability estimation. Internal consistency estimates provide an estimate of reliability based on the consistency with which students respond from test to test and as such, these estimates give a suggestion of the impact of content sampling on scores and an index of the homogeneity within test items. Similarly, the standard error of measurement (SEM) articulates the lack of reliability in terms of the reported score metric. In other words, the SEM is an estimate of how much score variation would be expected if the student were to be tested numerous times with comparable forms of the test. The SEM is useful for measuring the extent of errors happening on a test. ELA coefficient alphas for 7th and 8th grade ranged from 0.86-0.88 and SEM's ranged from 3.28-3.37. Math coefficient alphas for 7th and 8th grade ranged from 0.88-0.91 and SEM's ranged from 3.16-3.27. Another useful measure when student scores are provided in different performance levels is the conditional standard error of measurement (CSEM) and is used to quantify the precision of a test at different points along the score scale. Statistically, at every ability point, the test information function is inversely proportional to the square of the CSEM and for Tennessee assessments; this association was applied in order to calculate the CSEM for each attainable scale score point. Classification consistency and classification accuracy were also calculated for the AHM using the computer program RELCLASS. Because the test was a single administration of one test form, the RELCLASS program estimates decision accuracy and decision consistency. Decision accuracy is the extent to which the classifications of test takers based on their scores on the test form agree with the classifications made on the basis of the classifications that would be generated if the test scores were perfectly reliable. Decision consistency is the agreement between these classifications based on two non-overlapping, evenly challenging forms of the test. Classification consistency analyses for the ACH tests for both 7th and 8th grade ELA and math ranged from 0.68-0.75 and classification accuracy ranged from 0.77-0.82. Test speediness was also measured, as it is considered a threat to validity and reliability. By inspecting the percentage of students who do not respond to the last items in each section of the assessment, this can provide an indication of the degree to which the assessment was speeded. It was determined that the omission rates for the ACH tests were between 0-2% in most cases and therefore the ACH tests were not deemed as speeded.

Interim assessments were given at the end of the first three 9-week grading terms and were designed through PowerSchool Assessment and Analytics for the research period of school years 2017-2018 and 2018-2019. According to PowerSchool (2019), they provide assessments, content, and reports which are aligned to standards and which can be used to analyze student achievement. District checkpoints were constructed through PowerSchool's Assessment and Analytics platform either from a bank of pre-written items that were written and curated by professional writers to align with the rigor and depth of the content standards or questions were built by the district curriculum coaches using the system. Administrators control items so that those used for district checkpoints were not accessible to teachers, as they utilized Power Test in their classroom as a formative assessment tool throughout the school year to administer low-stakes assessments as they taught throughout their units of study. District checkpoints were given for both ELA and mathematics within this particular district in grades 2-8 and these assessments were aligned to the Tennessee State Standards by subject and grade level. Grades 3-8 checkpoints were administered online and second grade checkpoint assessments were administered on paper. Time limits for each assessment varied based on the content area and grade.

Final Year End grades in 7^{th} grade and 8^{th} grade ELA and math, which were teacher-assigned and used in the school transcripts for the 2017-2018 and 2018-2019 school years from each student in the sample, were also included. Because of their subjectivity, lack of accuracy and consistency, and non-academic factors that have been well-documented with research (Brookhart el al., 2016; Casalaspi, 2016; Feldman, 2019; Gershenson, 2018; Guskey, 2013; Hanover Research, 2011; Zoeckler, 2007) regarding teacher-assigned grades both within and between schools, there is often a question about the validity and reliability of these measures.

Data Collection

Permission to conduct the study was obtained from the researcher's Educational Leadership and Policy Analysis Dissertation Committee, school district level leaders, and East Tennessee State's Institutional Review Board (IRB) prior to collecting any data. Employees within the school system provided the data. The data provided for this study included a randomized number to replace students' names, ensuring anonymity. The data set includes students' TNReady scale scores for ELA and math, checkpoint assessments scores for ELA and math, and year-end grades for ELA and math. The set included two years of data, including information from the 2017-2018 school year and the 2018-2019 school year for students who were in 7^{th} and 8^{th} grade for both years. The reports also included special education status of each student. The study presented minimal risks to participants as the data collection procedures and connective relations were not completed by the researcher. Instead, they were completed by employees within the school system so that students' identities were protected.

Data Analysis

Data analysis for this quantitative study was performed using the Statistical Package for Social Sciences (SPSS) software program. The data outputs for SPSS were used to determine the strength of the relationship and statistical significance for each research question and corresponding null hypothesis using a series of Pearson product-moment correlation coefficients (r).

Chapter Summary

This chapter presented the purpose of the study, research questions, null hypotheses, research design, target population and sample, procedures, instruments, and ethical considerations that were taken in this study. This study was a quantitative study that sought to determine if there were significant correlations among teacher-assigned grades (TAG), district checkpoint scores (CP), and student scale-scores on TNReady tests for a particular middle school in northeast Tennessee during the academic years of 2017-2018 and 2018-2019, with a particular focus on the content areas of English Language Arts and mathematics. Additionally, the study examined any moderating effects of students with disabilities status (SWD) on the correlations among the district and state assessments and students' final teacher-assigned grades in math and English Language Arts. The sample included 1,445 students and excluded any students who did not have all included data points. Data were collected from district supervisors and school administrators and were provided to the researcher after being demarked so that students could not be identified during or after analysis. Data analysis for this quantitative study was performed using the Statistical Package for Social Sciences (SPSS) software program. The data outputs for SPSS were used to determine the strength of the relationship and statistical significance among students' TNReady scale scores, checkpoint assessment scores, and teacher assigned grades using a Pearson product-moment correlation coefficient (r).

Chapter 4. Findings

This study was conducted to determine if there was a significant correlation among teacher-assigned grades (TAG), district checkpoint scores (CP), and student scale-scores on TNReady tests for both mathematics and English Language Arts (ELA) for 1,445 seventh and eighth grade students enrolled at a middle school in northeast Tennessee during the 2017-2018 and 2018-2019 school years. Additionally, the study also examined any moderating effects of the categorical variable of students with disabilities status (SWD) on the correlations among the district and state assessments and the students' final teacher-assigned grades for these content areas.

Data analysis for this quantitative study was performed using the Statistical Package for Social Sciences (SPSS) software program. The data outputs for SPSS were used to determine the strength of the relationship and statistical significance among students' TNReady scale scores, checkpoint assessment scores, and teacher assigned grades using a Pearson product-moment correlation coefficient (r). All data were analyzed using the 0.05 level of significance.

Analysis of Research Questions

Research Question 1

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2017-2018 school year?

H_O1: There are no significant correlations among teacher – assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2017-2018 school year.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades (M = 83.57, SD = 12.04), TNReady scores (M = 343.47, SD = 30.67), and the district checkpoint scores (M = 69.08, SD = 18.35) for 7th grade ELA for the 2017-2018 school year. The results of the correlational analysis found that all three correlations were statistically significant ($p < .01$) and ranged from .63 to .85. As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2017-2018 school year. High scores in all areas were associated with high scores in the other two areas. Table 1 shows the descriptive statistics and Figures 1-3 show the simple scatterplots of the results.

Table 1.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 7th Grade ELA for the 2017-2018 School Year

Variable	n	M	SD	1	2
1. CP Average	427	69.08	18.35	–	
2. Teacher-Assigned Course Grades	427	83.57	12.04	.67**	–
3. TNReady Scale Scores	427	343.47	30.67	.85**	.63**

**p < .01

Figure 1.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 7th Grade ELA for the 2017-2018 School Year

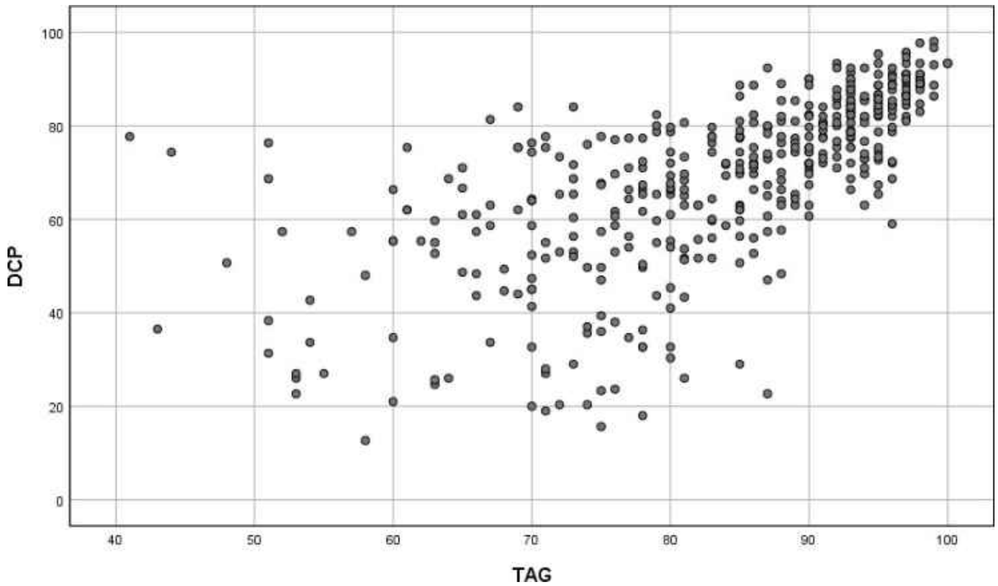


Figure 2.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 7th Grade ELA for the 2017-2018 School Year

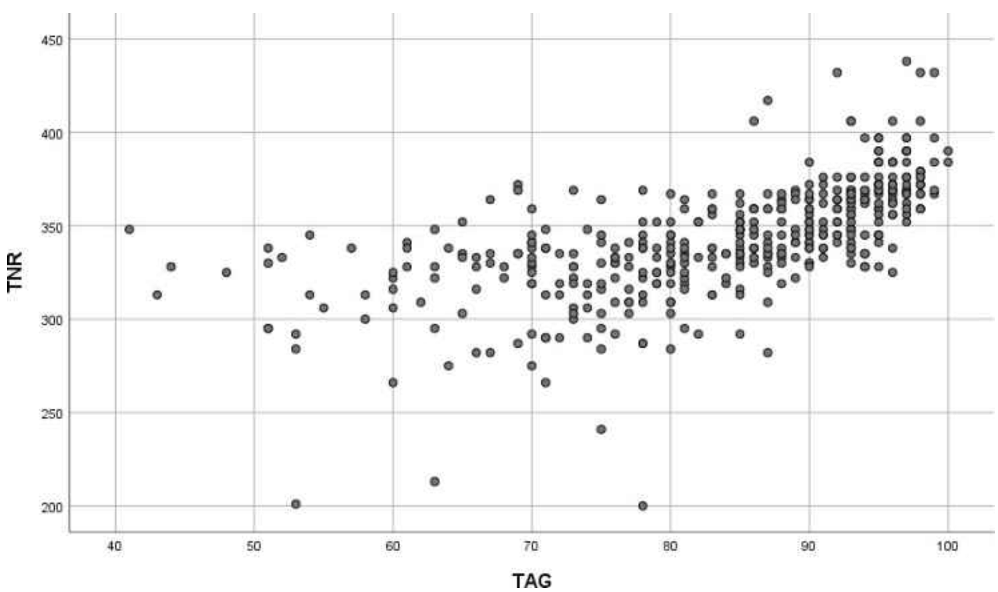
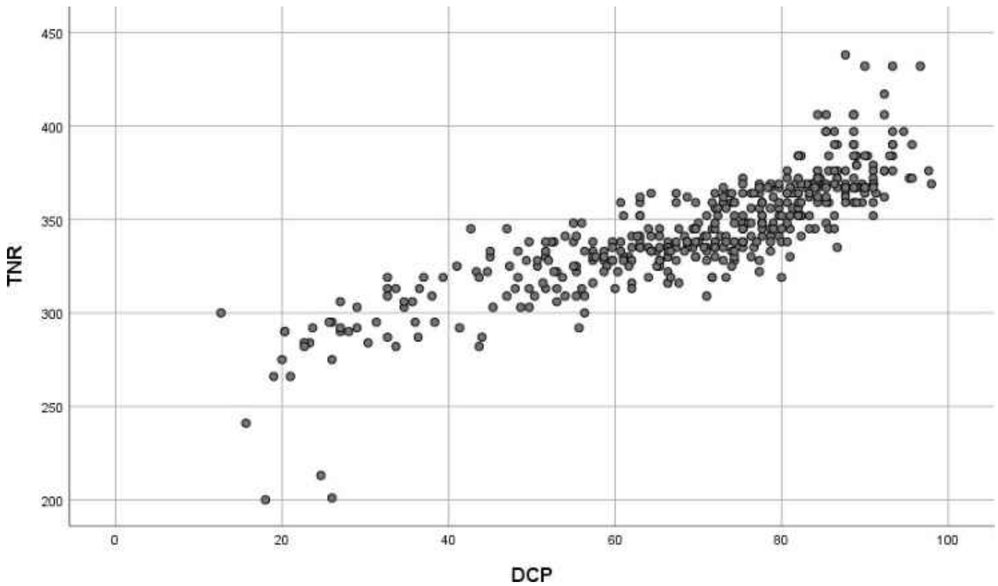


Figure 3.

District Checkpoint Scores (DCP) and TNReady Scores (TNR) for 7th Grade ELA for the 2017-2018 School Year



Research Question 2

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2017-2018 school year for students with disabilities?

H_O2: There are no significant correlations among teacher- assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2017-2018 school year for students with disabilities.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades (M = 75.09, SD = 10.50), TNReady scores (M = 302.91, SD = 30.67), and the district checkpoint scores (M = 39.99, SD = 20.39) for 7th grade ELA for the 2017-2018 school year for students with disabilities. The results of the correlational analysis found that all three correlations were statistically significant ($p < .01$) and ranged from .59 to .74. As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2017-2018 school year for students with disabilities. High scores in all areas were associated with high scores in the other two areas. Table 2 shows the descriptive statistics, and Figures 4-6 show the simple scatterplots of the results.

Table 2.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 7th Grade ELA for the 2017-2018 School Year for Students with Disabilities

Variable	n	M	SD	1	2
1. CP Average	33	39.99	20.39	–	
2. Teacher-Assigned Course Grades	33	75.09	10.50	.61**	–
3. TNReady Scale Scores	33	302.91	30.67	.74**	.59**

**p < .01

Figure 4.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 7th Grade ELA for the 2017-2018 School Year for Students with Disabilities

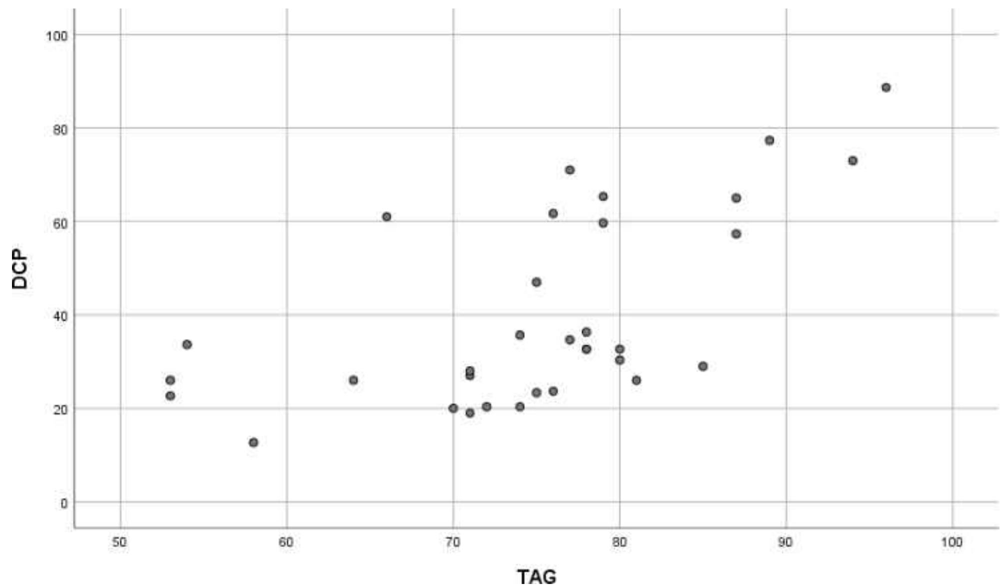


Figure 5.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 7th Grade ELA for the 2017-2018 School Year for Students with Disabilities

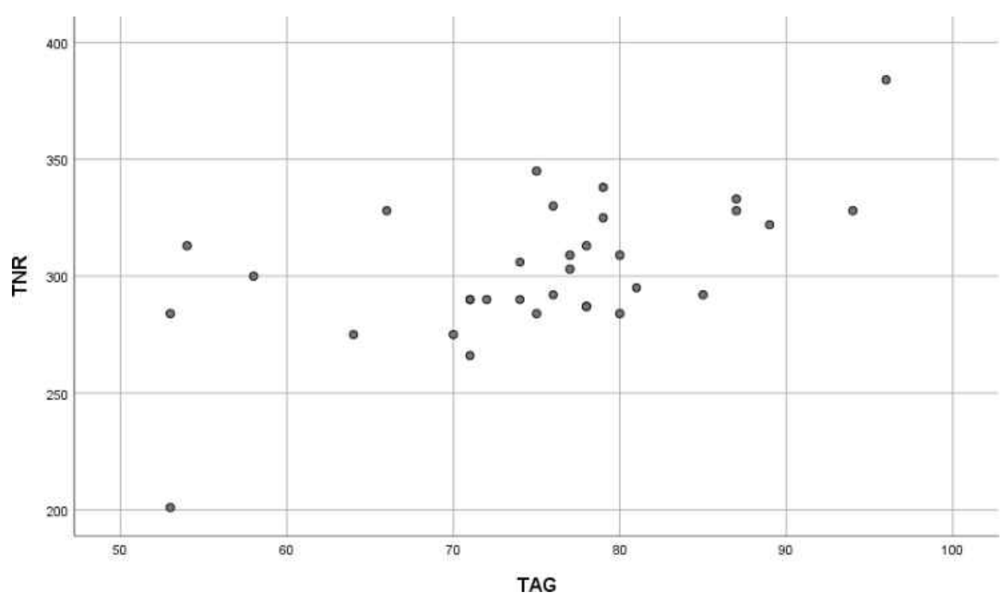
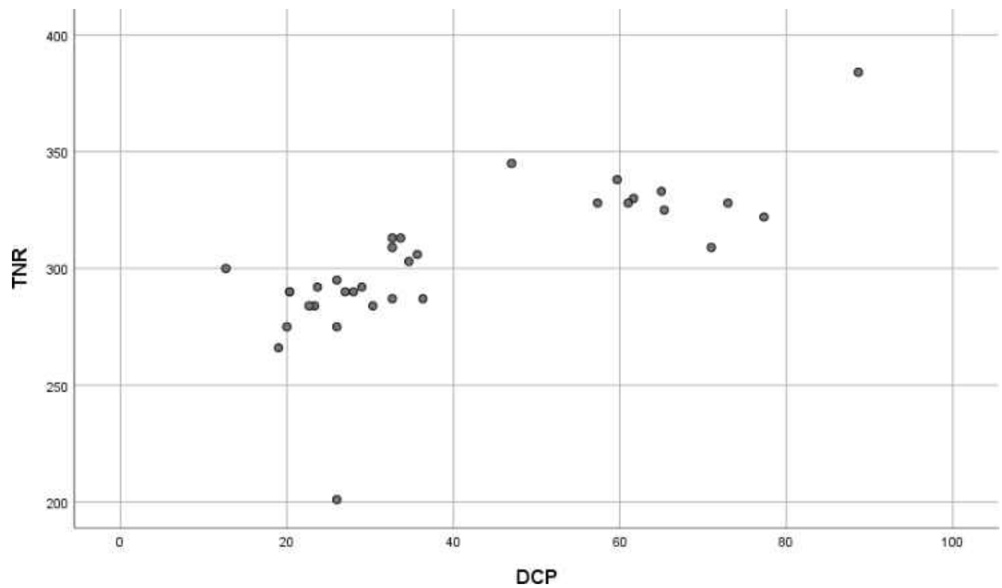


Figure 6.

District Checkpoint Scores (DCP) and TNReady Scores (TNR) for 7th Grade ELA for the 2017-2018 School Year for Students with Disabilities



Research Question 3

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2018-2019 school year?

H_O3: There are no significant correlations among teacher – assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2018-2019 school year.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades ($M = 84.78$, $SD = 11.00$), TNReady scores ($M = 340.87$, $SD = 28.48$), and district checkpoint scores ($M = 66.88$, $SD = 18.25$) for 7th grade ELA for the 2018-2019 school year. The results of the correlational analysis found that all three correlations were statistically significant ($p < .01$) and ranged from .65 to .83. As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2018-2019 school year. High scores in all areas were associated with high scores in the other two areas. Table 3 shows the descriptive statistics, and Figures 7-9 show the simple scatterplots of the results.

Table 3.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 7th Grade ELA for the 2018-2019 School Year

Variable	n	M	SD	1	2
1. CP Average	486	66.88	18.25	–	
2. Teacher-Assigned Course Grades	486	84.78	11.00	.69**	–
3. TNReady Scale Scores	486	340.87	28.48	.83**	.65**

**p < .01

Figure 7.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 7th Grade ELA for the 2018-2019 School Year

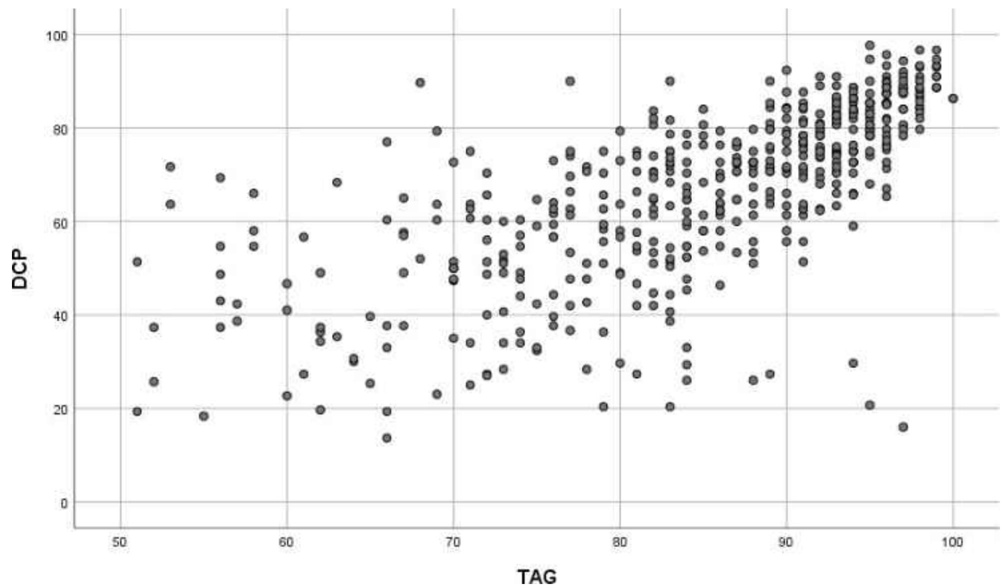


Figure 8.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 7th Grade ELA for the 2018-2019 School Year

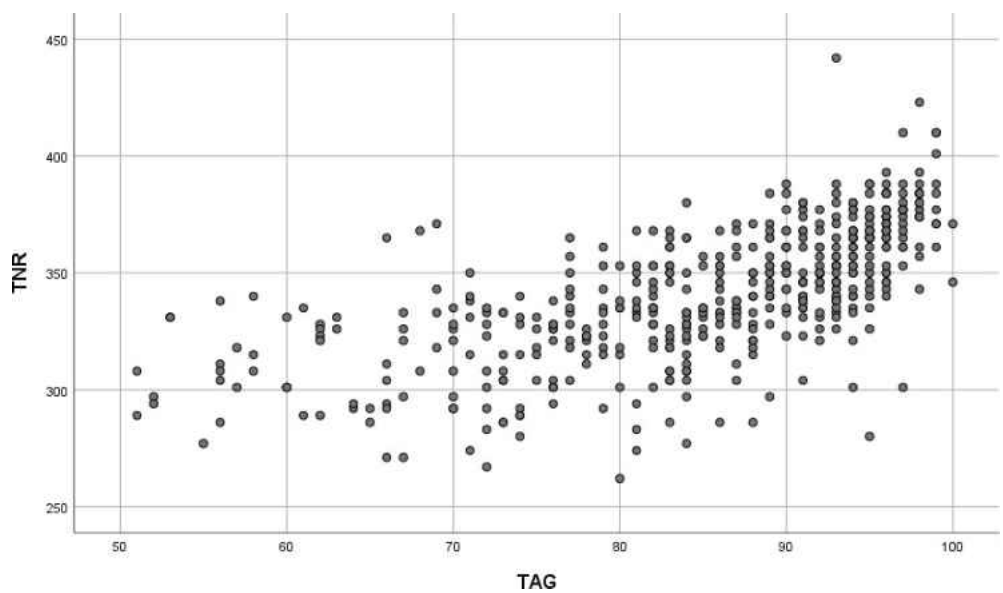
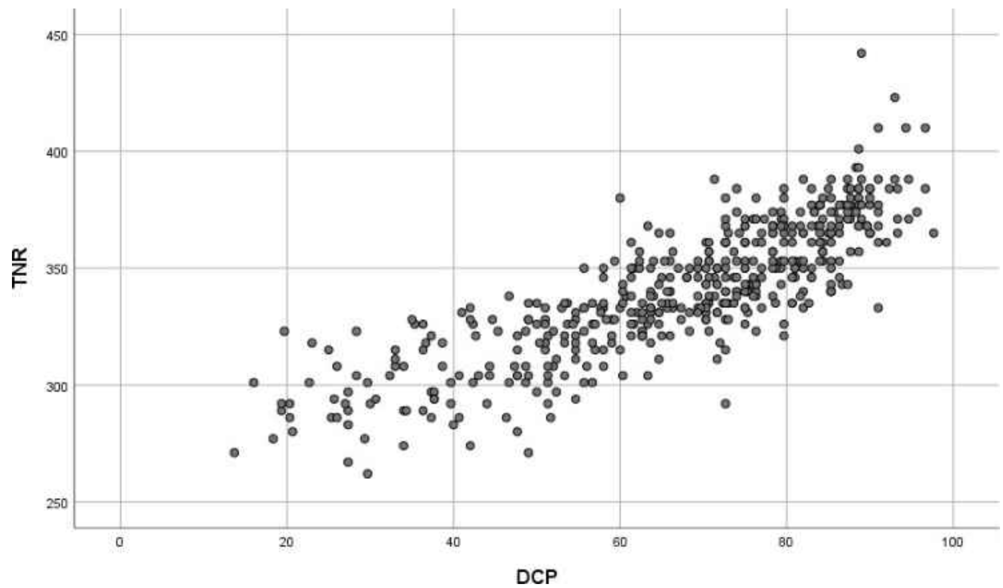


Figure 9.

District Checkpoint Scores (DCP) and TNReady Scores (TNR) for 7th Grade ELA for the 2018-2019 School Year



Research Question 4

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2018-2019 school year for students with disabilities?

H_O4: There are no significant correlations among teacher- assigned course grades, TNReady scores, and district checkpoint scores for 7th grade ELA for the 2018-2019 school year for students with disabilities.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades ($M = 74.74$, $SD = 8.85$), TNReady scores ($M = 305.59$, $SD = 25.55$), and district checkpoint scores ($M = 41.05$, $SD = 16.13$) for 7th grade ELA for the 2018-2019 school year for students with disabilities. The results of the correlational analysis found that the correlation between TNReady scores and district checkpoint scores was the only one of the three correlations that was statistically significant ($p < .01$) with a value of .60. The correlation between TNReady scores and teacher-assigned course grades was not significant with an r-value of .12 nor was the correlation between district checkpoint scores and teacher-assigned grades with an r-value of .33. As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship between teacher-assigned course grades and TNReady scores for 7th grade ELA for the 2018-2019 school year for students with disabilities. High scores in teacher-assigned course grades were associated with high TNReady scores. Table 4 shows the descriptive statistics, and Figures 10-12 show the simple scatterplots of the results.

Table 4.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 7th Grade ELA for the 2018-2019 School Year for Students with Disabilities

Variable	n	M	SD	1	2
1. CP Average	34	41.05	16.13	–	
2. Teacher-Assigned Course Grades	34	74.74	8.85	.33	–
3. TNReady Scale Scores	34	305.59	25.51	.60**	.12

**p < .01

Figure 10.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 7th Grade ELA for the 2018-2019 School Year for Students with Disabilities

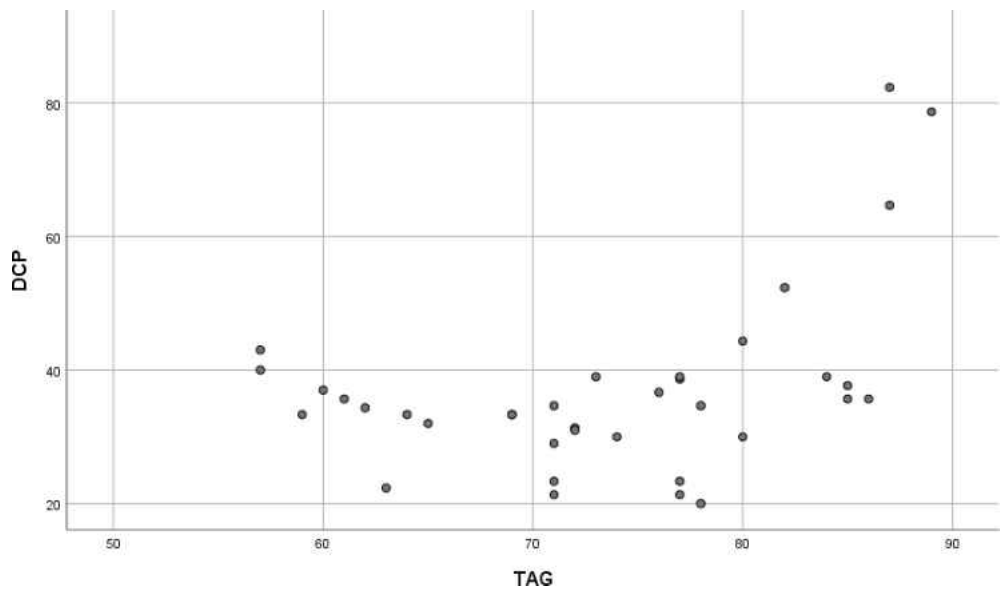


Figure 11.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 7th Grade ELA for the 2018-2019 School Year for Students with Disabilities

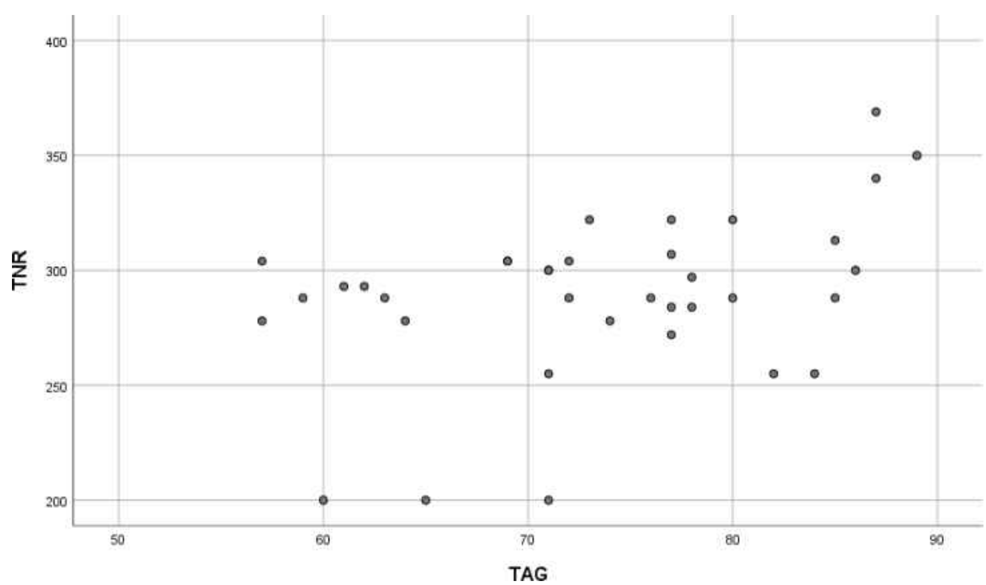
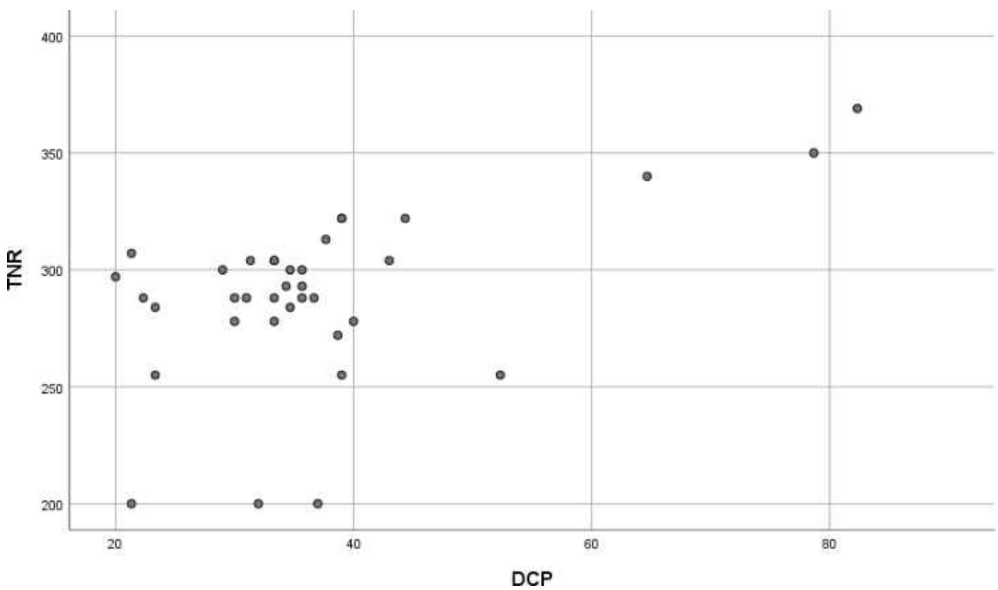


Figure 12.

District Checkpoint Scores (DCP) and TNReady Scores (TNR) for 7th Grade ELA for the 2018-2019 School Year for Students with Disabilities



Research Question 5

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2017-2018 school year?

H_O5: There are no significant correlations among teacher – assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2017-2018 school year.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades ($M = 86.62$, $SD = 11.50$), TNReady scores ($M = 341.52$, $SD = 29.86$), and district checkpoint scores ($M = 66.79$, $SD = 15.73$) for 8th grade ELA for the 2017-2018 school year. The results of the correlational analysis found that all three correlations were statistically significant ($p < .01$) and ranged from .61 to .84. As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2017-2018 school year. High scores in all areas were associated with high scores in the other two areas. Table 5 shows the descriptive statistics, and Figures 13-15 show the simple scatterplots of the results.

Table 5.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 8th Grade ELA for the 2017-2018 School Year

Variable	n	M	SD	1	2
1. CP Average	435	66.79	15.73	–	
2. Teacher-Assigned Course Grades	435	86.62	11.50	.62**	–
3. TNReady Scale Scores	435	341.52	29.86	.84**	.61**

**p < .01

Figure 13.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 8th Grade ELA for the 2017-2018 School Year

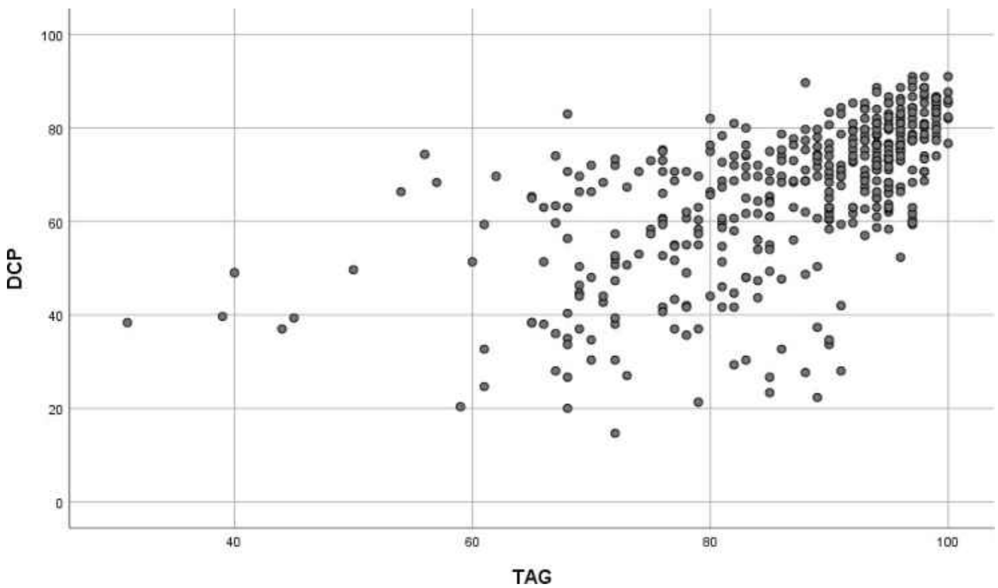


Figure 14.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 8th Grade ELA for the 2017-2018 School Year

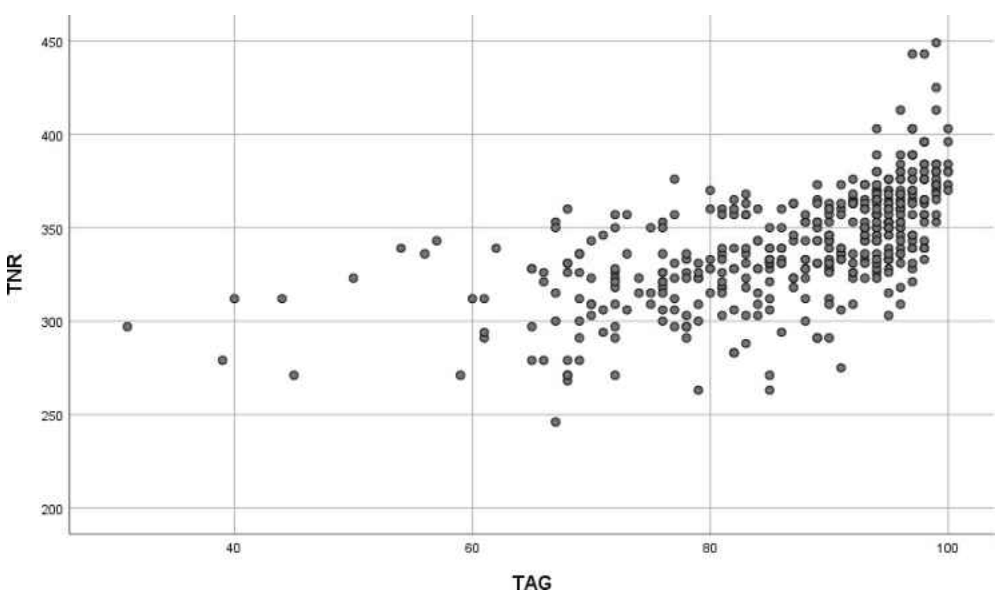
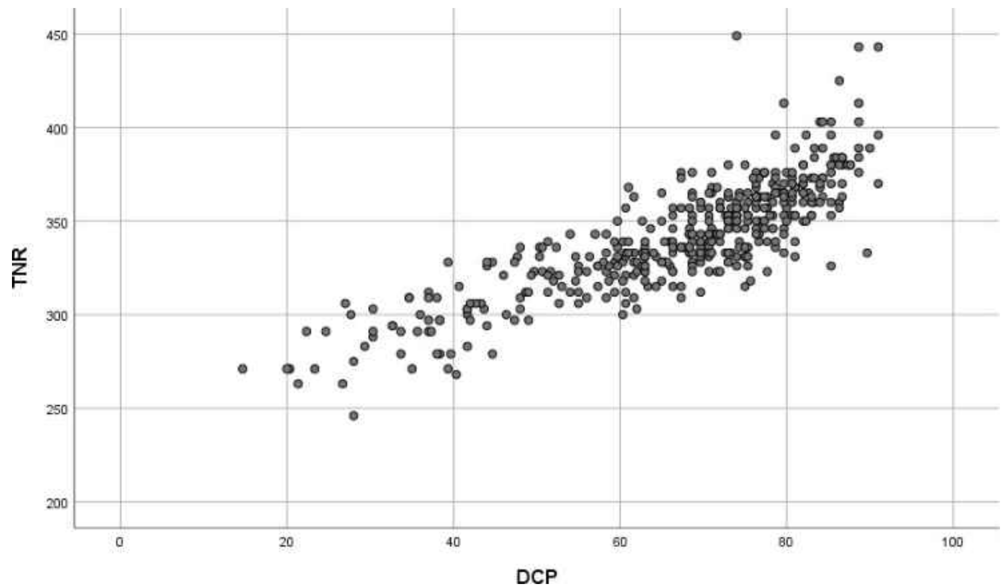


Figure 15.

District Checkpoint Scores (DCP) and TNReady Scores (TNR) for 8th Grade ELA for the 2017-2018 School Year



Research Question 6

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8^{th} grade ELA for the 2017-2018 school year for students with disabilities?

H_O6: There are no significant correlations among teacher- assigned course grades, TNReady scores, and district checkpoint scores for 8^{th} grade ELA for the 2017-2018 school year for students with disabilities.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades (M = 76.26, SD = 10.99), TNReady scores (M = 296.23, SD = 23.42), and district checkpoint scores (M = 39.94, SD = 15.13) for 8^{th} grade ELA for the 2017-2018 school year for students with disabilities. The results of the correlational analysis found that two of the three correlations were statistically significant and ranged from .25 to .79. The correlation between district checkpoint scores and TNReady scores was significant at .79 ($p < .01$) and the correlation between teacher-assigned grades and TNReady scores was significant at .35 ($p < .05$). As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship between TNReady scores and district checkpoint scores and a moderate positive relationship between TNReady scores and teacher-assigned grades scores for 8th grade ELA for the 2017-2018 school year for students with disabilities. There was not a significant correlation between teacher-assigned scores and district checkpoint scores. High scores in teacher-assigned TNReady scores were associated in high district checkpoint scores and teacher-assigned course grades. Table 6 shows the descriptive statistics, and Figures 16-18 show the simple scatterplots of the results.

Table 6.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 8th Grade ELA for the 2017-2018 School Year for Students with Disabilities

Variable	n	M	SD	1	2
1. CP Average	35	39.94	15.13	–	
2. Teacher-Assigned Course Grades	35	76.26	10.99	.25	–
3. TNReady Scale Scores	35	296.23	23.42	.79**	.35*

*p < .05
**p < .01

Figure 16.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 8th Grade ELA for the 2017-2018 School Year for Students with Disabilities

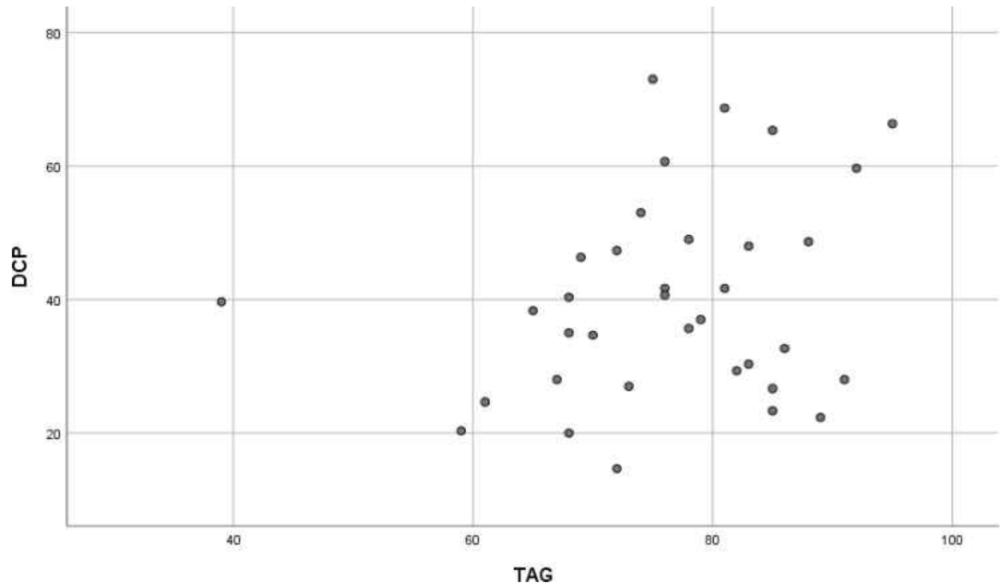


Figure 17.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 8th Grade ELA for the 2017-2018 School Year for Students with Disabilities

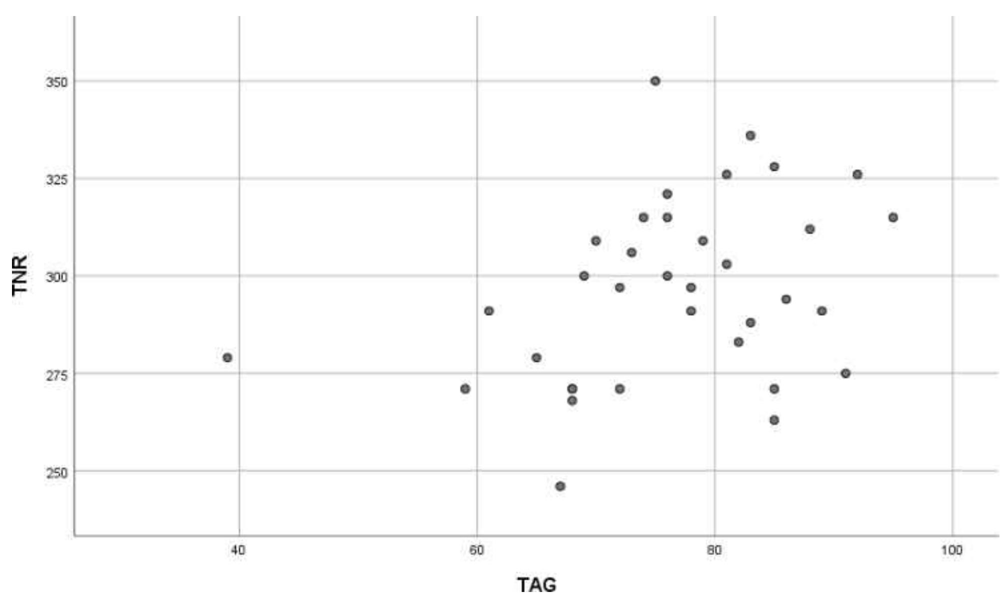
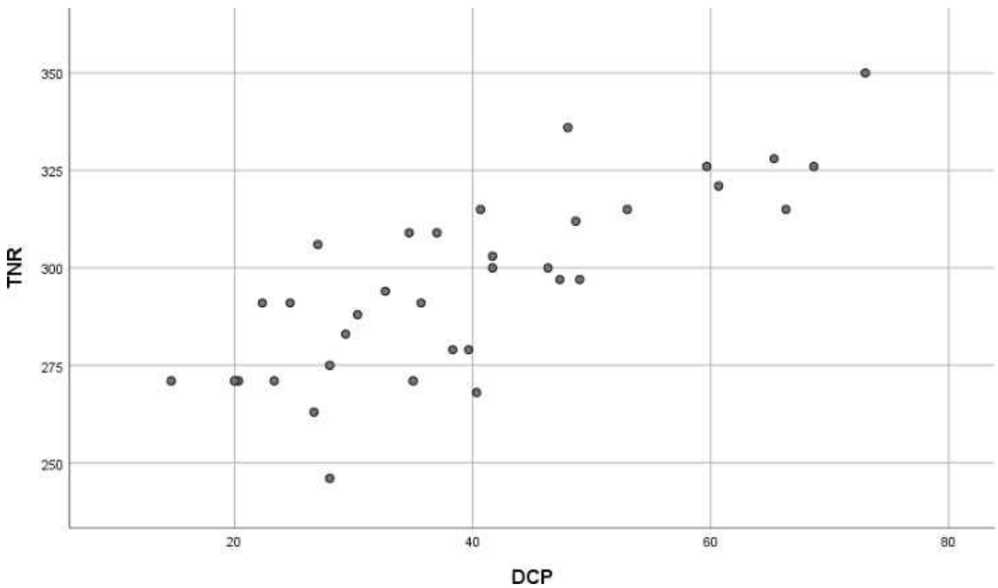


Figure 18.

District checkpoint scores (DCP) and TNReady scores (TNR) for 8th grade ELA for the 2017-2018 school year for students with disabilities



Research Question 7

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2018-2019 school year?

H_O7: There are no significant correlations among teacher – assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2018-2019 school year.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades ($M = 84.21$, $SD = 13.74$), TNReady scores ($M = 340.10$, $SD = 34.44$), and district checkpoint scores ($M = 69.33$, $SD = 17.84$) for 8th grade ELA for the 2018-2019 school year. The results of the correlational analysis found that all three correlations were statistically significant ($p < .01$) and ranged from .64 to .83. As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship between teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2018-2019 school year. High scores in all areas were associated with high scores in the other two areas. Table 7 shows the descriptive statistics, and Figures 19-21 show the simple scatterplots of the results.

Table 7.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 8th Grade ELA for the 2018-2019 School Year

Variable	n	M	SD	1	2
1. CP Average	465	69.33	17.84	–	
2. Teacher-Assigned Course Grades	465	84.21	13.74	.64**	–
3. TNReady Scale Scores	465	340.10	34.44	.83**	.68**

**p < .01

Figure 19.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 8th Grade ELA for the 2018-2019 School Year

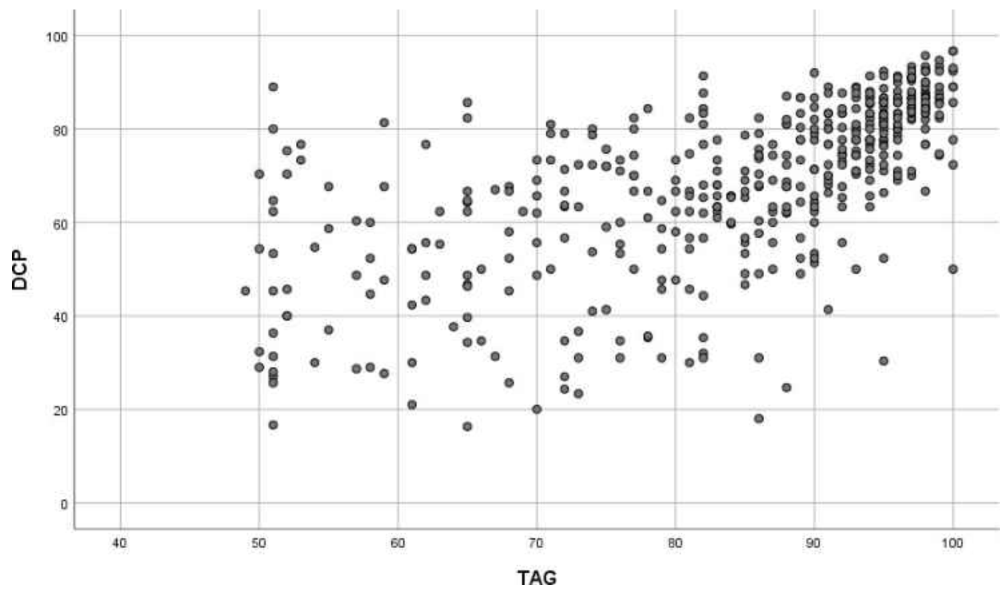


Figure 20.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 8th Grade ELA for the 2018-2019 School Year

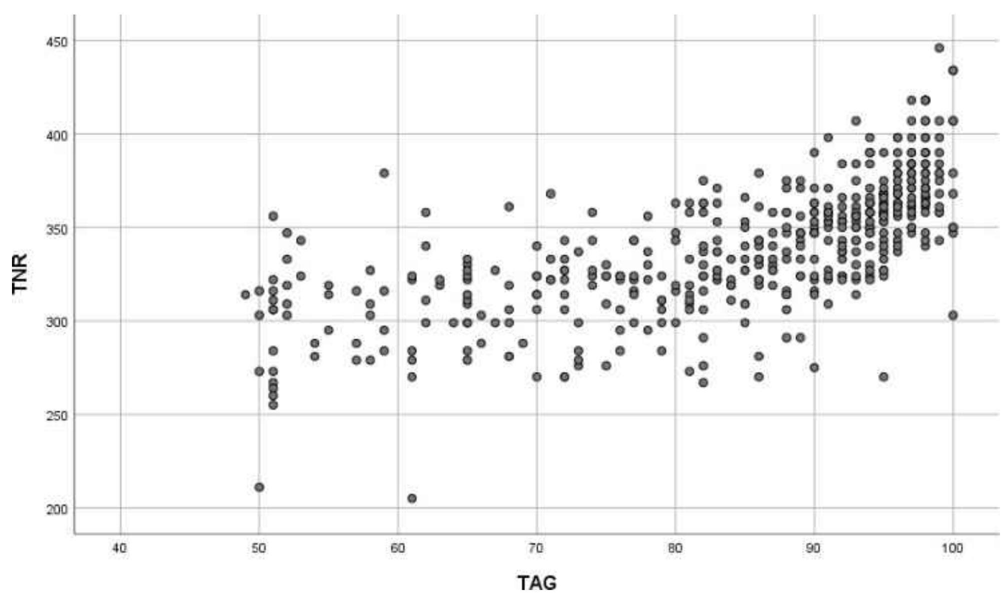
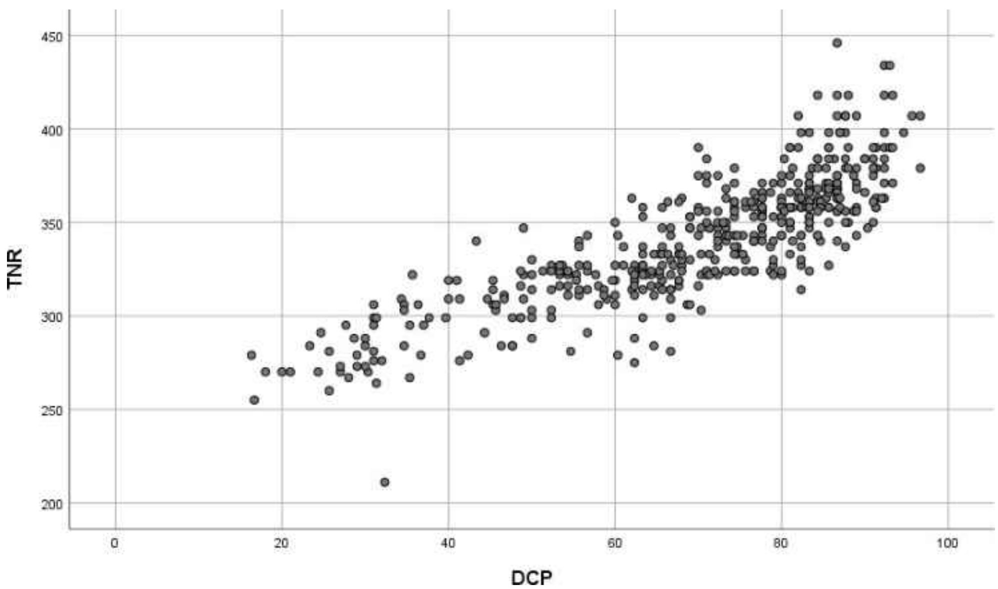


Figure 21.

District Checkpoint Scores (DCP) and TNReady Scores (TNR) for 8^th^ Grade ELA for the 2018-2019 School Year



Research Question 8

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2018-2019 school year for students with disabilities?

H_O8: There are no significant correlations among teacher- assigned course grades, TNReady scores, and district checkpoint scores for 8th grade ELA for the 2018-2019 school year for students with disabilities.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades (M = 71.68, SD = 13.40), TNReady scores (M = 296.55, SD = 32.69), and district checkpoint scores (M = 44.63, SD = 18.87) for 8th grade ELA for the 2018-2019 school year for students with disabilities. The results of the correlational analysis found that all three correlations were statistically significant ($p < .01$) and ranged from .44 to .78. As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship between TNReady scores and district checkpoint scores and moderate positive relationships between teacher-assigned course grades and district checkpoint scores and TNReady scale scores and district checkpoint scores for 8th grade ELA for the 2018-2019 school year for students with disabilities. High scores in all areas were associated with high scores in the other two areas. Table 8 shows the descriptive statistics, and Figures 22-24 show the simple scatterplots of the results.

Table 8.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 8th Grade ELA for the 2018-2019 School Year for Students with Disabilities

Variable	n	M	SD	1	2
1. CP Average	40	44.63	18.87	–	
2. Teacher-Assigned Course Grades	40	71.68	13.40	.44**	–
3. TNReady Scale Scores	40	296.55	32.69	.78**	.48**

**p < .01

Figure 22.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 8th Grade ELA for the 2018-2019 School Year for Students with Disabilities

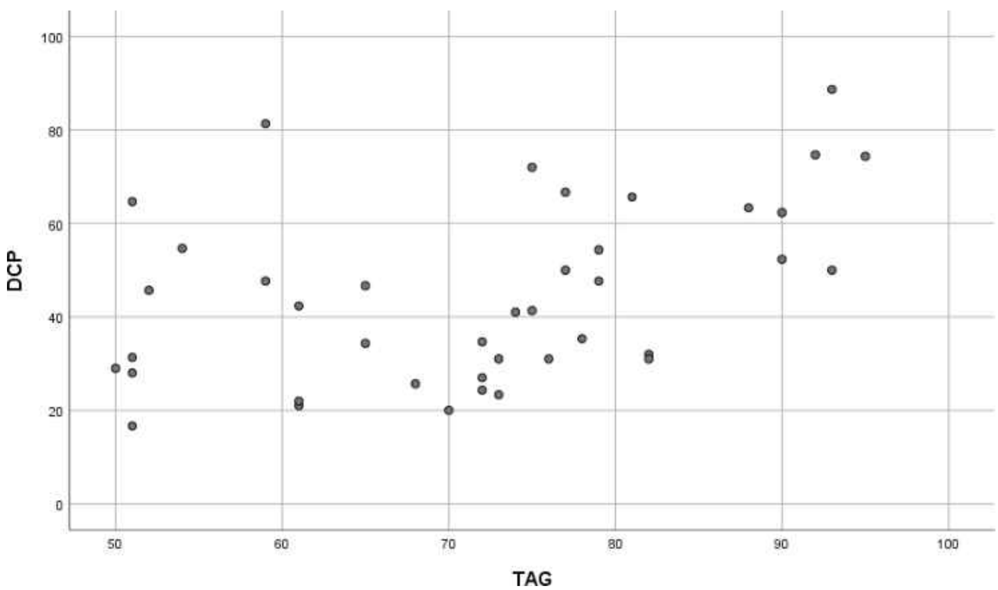


Figure 23.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 8th Grade ELA for the 2018-2019 School Year for Students with Disabilities

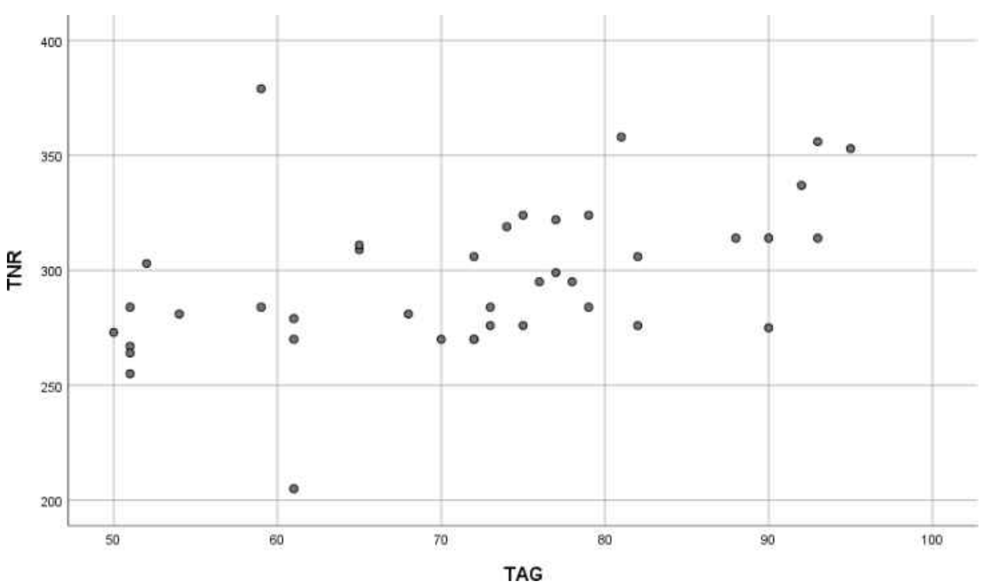
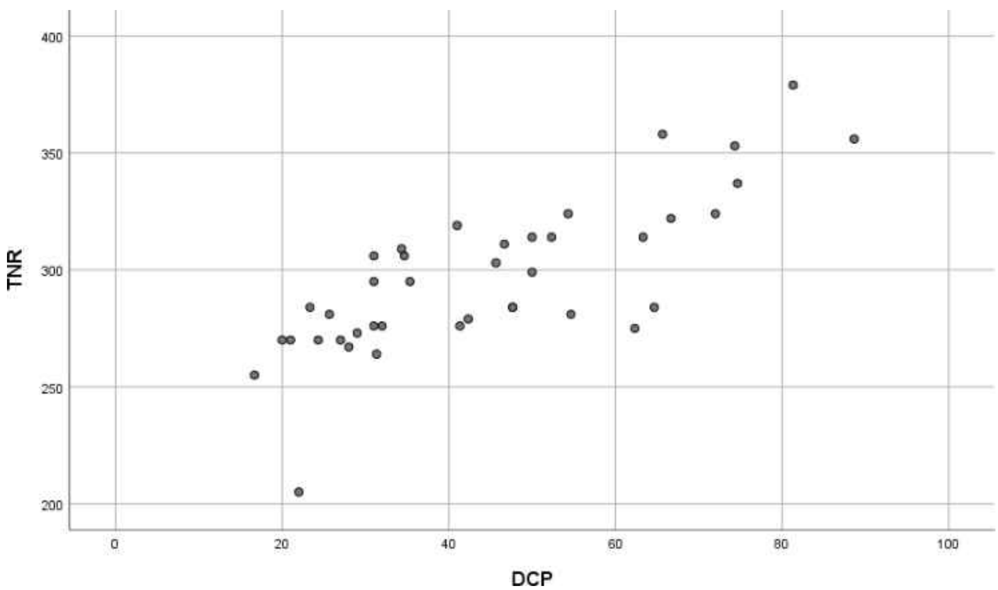


Figure 24.

District Checkpoint Scores (DCP) and TNReady Scores (TNR) for 8th Grade ELA for the 2018-2019 School Year for Students with Disabilities



Research Question 9

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2017-2018 school year?

H_O9: There are no significant correlations among teacher – assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2017-18 school year.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades ($M = 84.92$, $SD = 12.09$), TNReady scores ($M = 346.14$, $SD = 41.81$), and district checkpoint scores ($M = 66.96$, $SD = 15.92$) for 7th grade math for the 2017-2018 school year. The results of the correlational analysis found that all three correlations were statistically significant ($p < .01$) and ranged from .70 to .79. As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2017-2018 school year. High scores in all areas were associated with high scores in the other two areas. Table 9 shows the descriptive statistics, and Figures 25-27 show the simple scatterplots of the results.

Table 9.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 7th Grade Math for the 2017-2018 School Year

Variable	n	M	SD	1	2
1. CP Average	433	66.96	15.92	–	
2. Teacher-Assigned Course Grades	433	84.92	12.09	.70**	–
3. TNReady Scale Scores	433	346.14	41.81	.79**	.77**

**p < .01

Figure 25.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 7th Grade Math for the 2017-2018 School Year

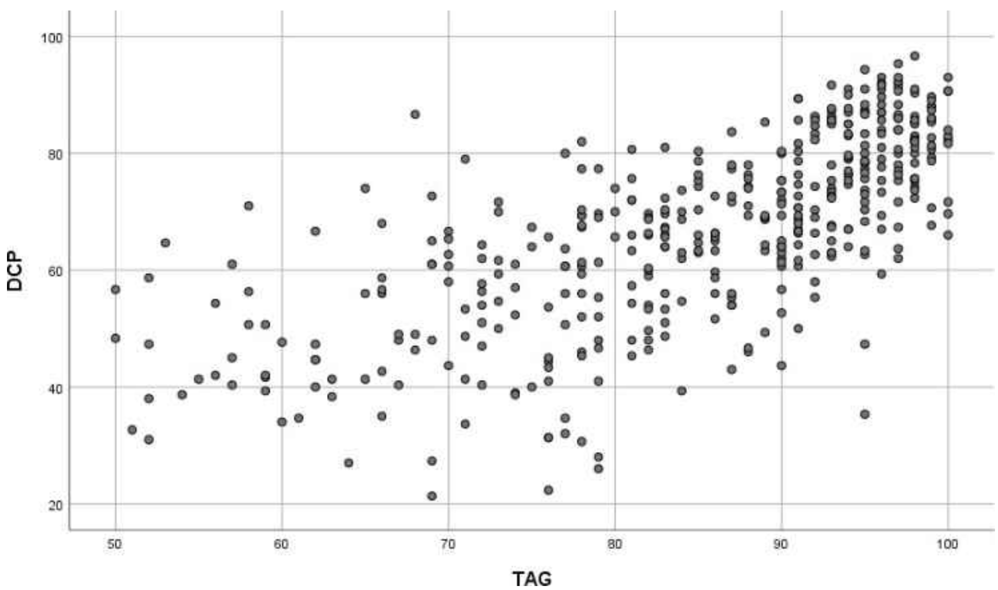


Figure 26.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 7th Grade Math for the 2017-2018 School Year

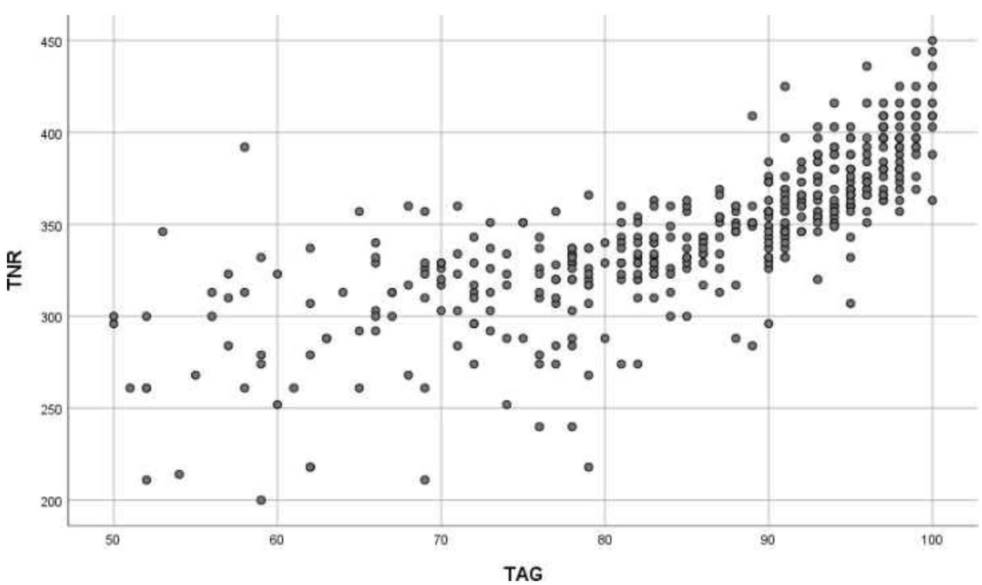
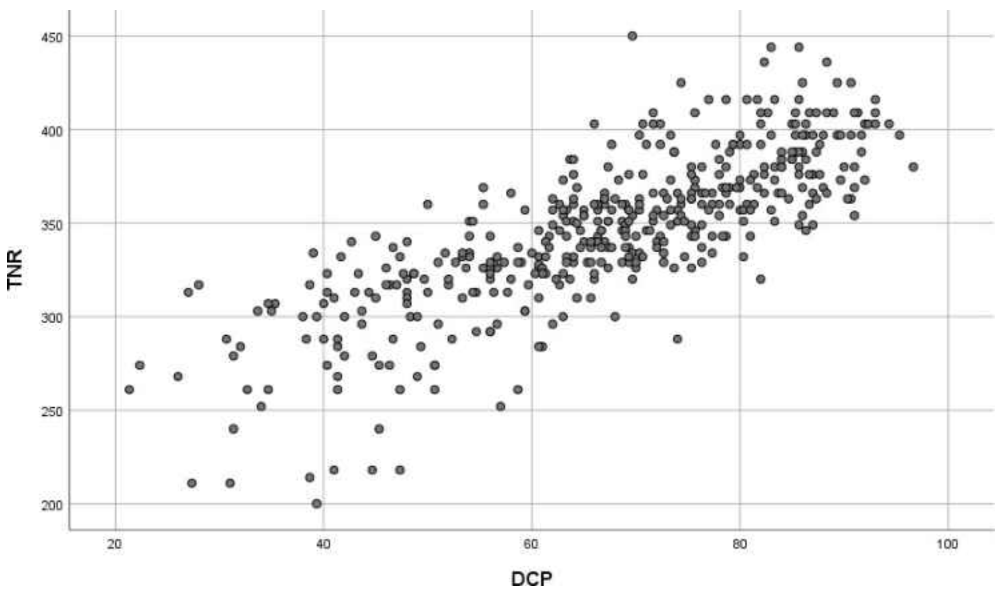


Figure 27.

District Checkpoint Scores (DCP) and TNReady Scores (TNR) for 7th Grade Math for the 2017-2018 School Year



Research Question 10

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2017-2018 school year for students with disabilities?

H_O10: There are no significant correlations among teacher- assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2017-2018 school year for students with disabilities.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades (M = 76.72, SD = 13.45), TNReady scores (M = 297.75, SD = 45.03), and district checkpoint scores (M = 49.39, SD = 15.69) for 7th grade math for the 2017-2018 school year for students with disabilities. The results of the correlational analysis found that all three correlations were statistically significant ($p < .01$) and ranged from .56 to .73. As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2017-2018 school year for students with disabilities. High scores in all areas were associated with high scores in the other two areas. Table 10 shows the descriptive statistics, and Figures 28-30 show the simple scatterplots of the results.

Table 10.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 7th Grade Math for the 2017-2018 School Year for Students with Disabilities

Variable	n	M	SD	1	2
1. CP Average	32	49.39	15.69	–	
2. Teacher-Assigned Course Grades	32	76.72	13.45	.56**	–
3. TNReady Scale Scores	32	297.75	45.03	.73**	.63**

**p < .01

Figure 28.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 7th Grade Math for the 2017-2018 School Year for Students with Disabilities

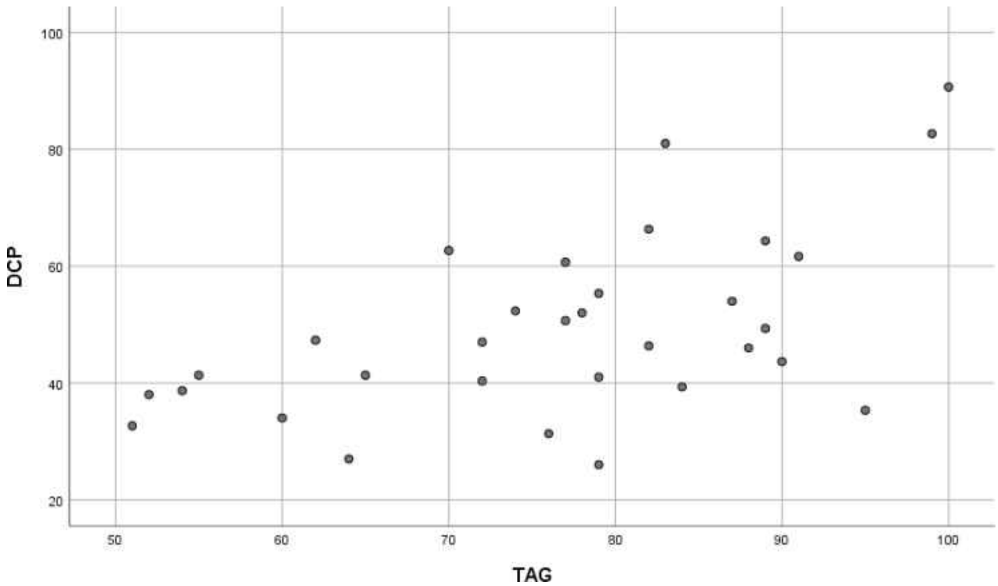


Figure 29.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 7th Grade Math for the 2017-2018 School Year for Students with Disabilities

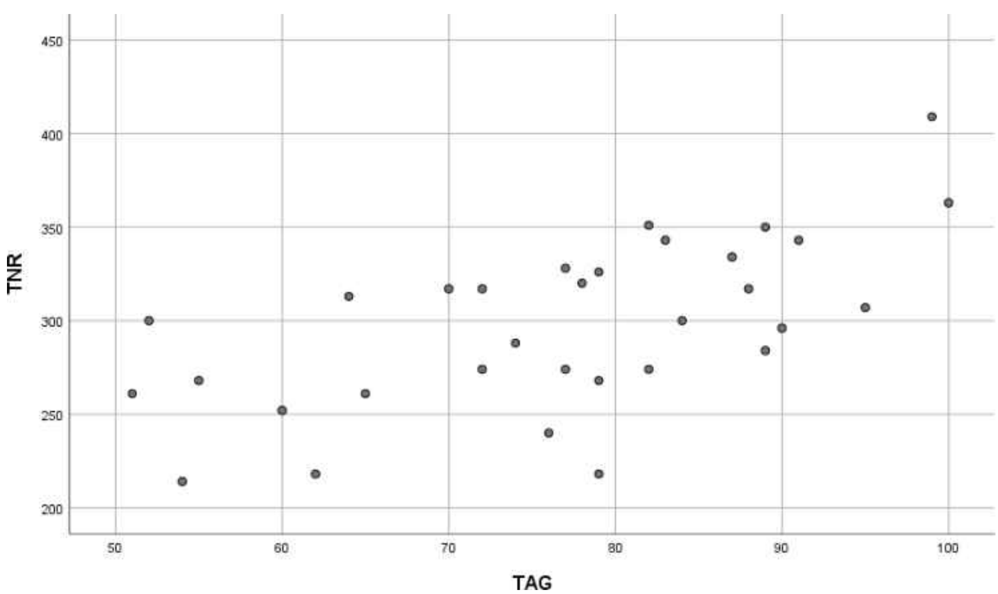
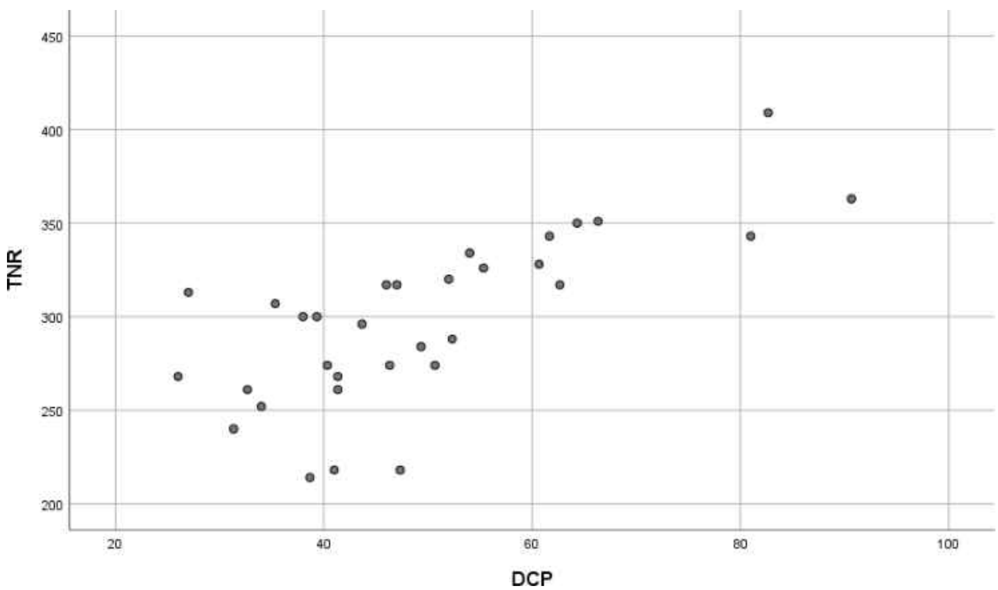


Figure 30.

District Checkpoint Scores (DCP) and TNReady Scores (TNR) for 7th Grade Math for the 2017-2018 School Year for Students with Disabilities



Research Question 11

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2018-2019 school year?

Ho11: There are no significant correlations among teacher – assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2018-19 school year.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades ($M = 84.29$, $SD = 12.46$), TNReady scores ($M = 344.75$, $SD = 39.70$), and district checkpoint scores ($M = 68.12$, $SD = 19.91$) for 7th grade math for the 2018-2019 school year. The results of the correlational analysis found that all three correlations were statistically significant ($p < .01$) and ranged from .78 to .88. As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2018-2019 school year. High scores in all areas were associated with high scores in the other two areas. Table 11 shows the descriptive statistics, and Figures 31-33 show the simple scatterplots of the results.

Table 11.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 7th Grade Math for the 2018-2019 School Year

Variable	n	M	SD	1	2
1. CP Average	477	68.12	19.91	–	
2. Teacher-Assigned Course Grades	477	84.29	12.46	.81**	–
3. TNReady Scale Scores	477	344.75	39.70	.88**	.78**

$^{**}p < .01$

Figure 31.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 7th Grade Math for the 2018-2019 School Year

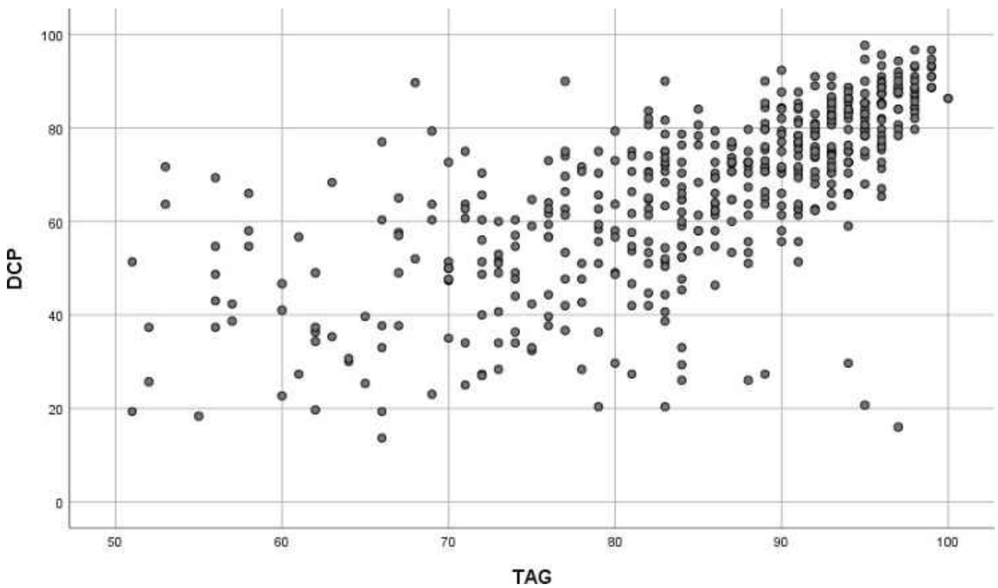


Figure 32.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 7th Grade Math for the 2017-2018 School Year

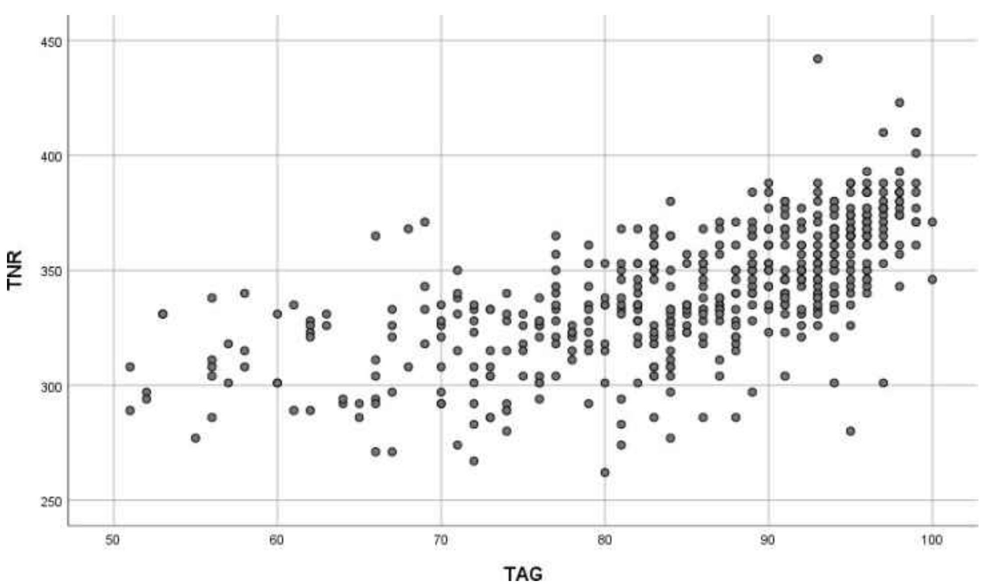
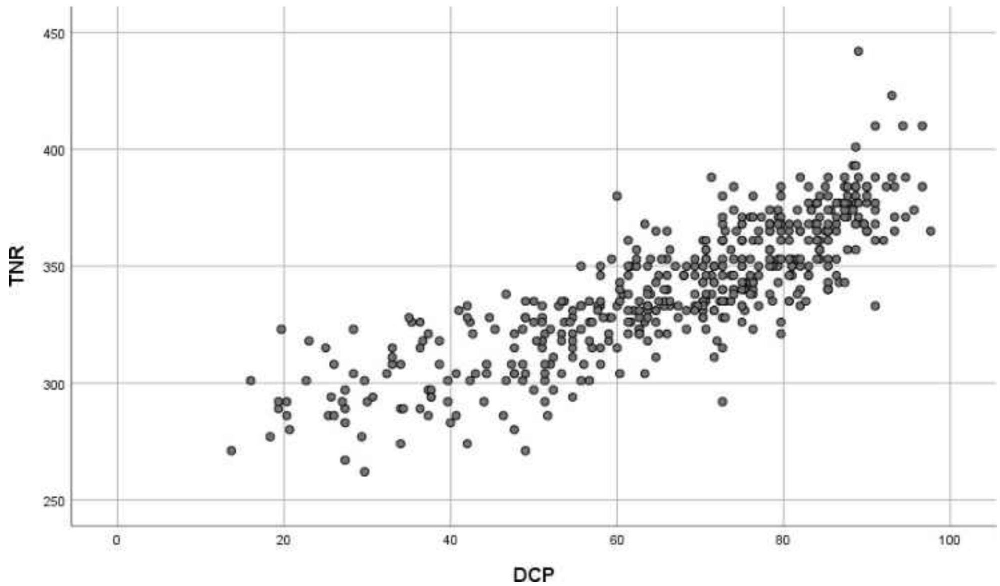


Figure 33.

District Checkpoint Scores (DCP) and TNReady Scores (TNR) for 7th Grade Math for the 2017-2018 School Year



Research Question 12

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2018-2019 school year for students with disabilities?

H_O12: There are no significant correlations among teacher- assigned course grades, TNReady scores, and district checkpoint scores for 7th grade math for the 2018-2019 school year for students with disabilities.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades (M = 73.50, SD = 9.19), TNReady scores (M = 289.19, SD =36.33), and district checkpoint scores (M = 36.98, SD = 13.74) for 7th grade math for the 2018-2019 school year for students with disabilities. The results of the correlational analysis found that all three correlations were statistically significant. The correlations between district checkpoint scores and TNReady scores and that between district checkpoint scores and teacher-assigned grades were significant ($p < .01$) at .53 and .43 respectively. The correlation between TNReady scores and teacher-assigned grades was significant at .41 ($p < .05$). As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship between TNReady scores and district checkpoint scores and a moderate positive relationship between teacher-assigned grades and both district checkpoints and TNReady scores for 7^{th} grade math for the 2018-2019 school year for students with disabilities. High scores in all areas were associated with high scores in the other two areas. Table 12 shows the descriptive statistics, and Figures 34-36 show the simple scatterplots of the results.

Table 12.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 7^{th} Grade Math for the 2018-2019 School Year for Students with Disabilities

Variable	n	M	SD	1	2
1. CP Average	36	36.98	13.74	–	
2. Teacher-Assigned Course Grades	36	73.50	9.19	.43**	–
3. TNReady Scale Scores	36	289.19	36.33	.53**	.41*

*p < .05
**p < .01

Figure 34.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 7th Grade Math for the 2018-2019 School Year for Students with Disabilities

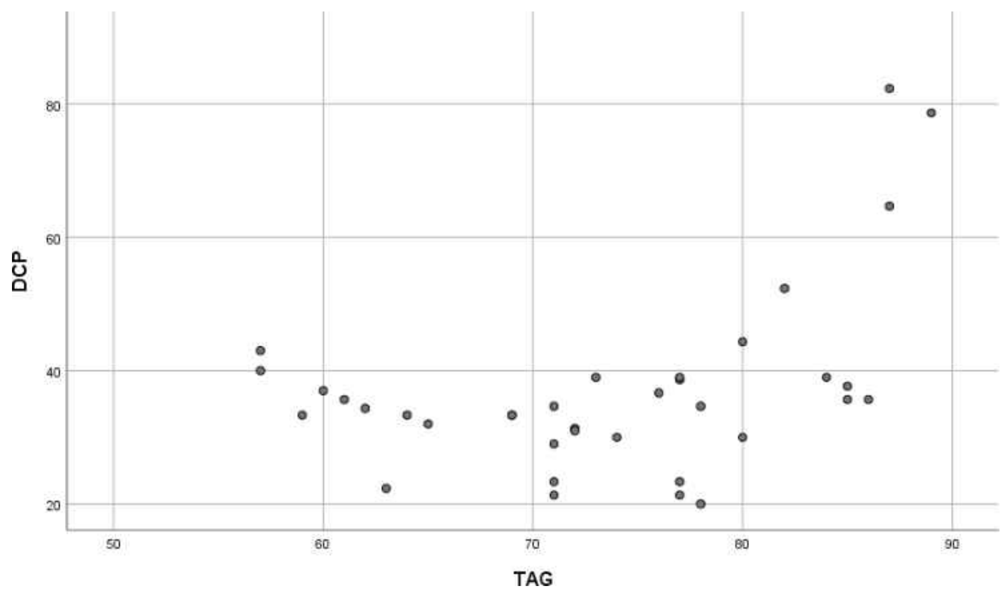


Figure 35.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 7th Grade Math for the 2018-2019 School Year for Students with Disabilities

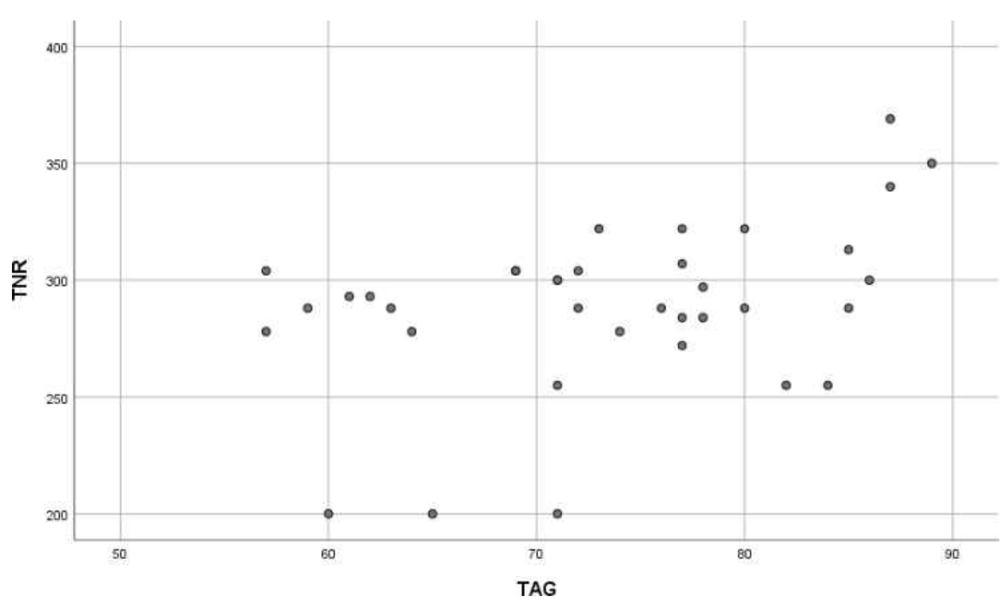
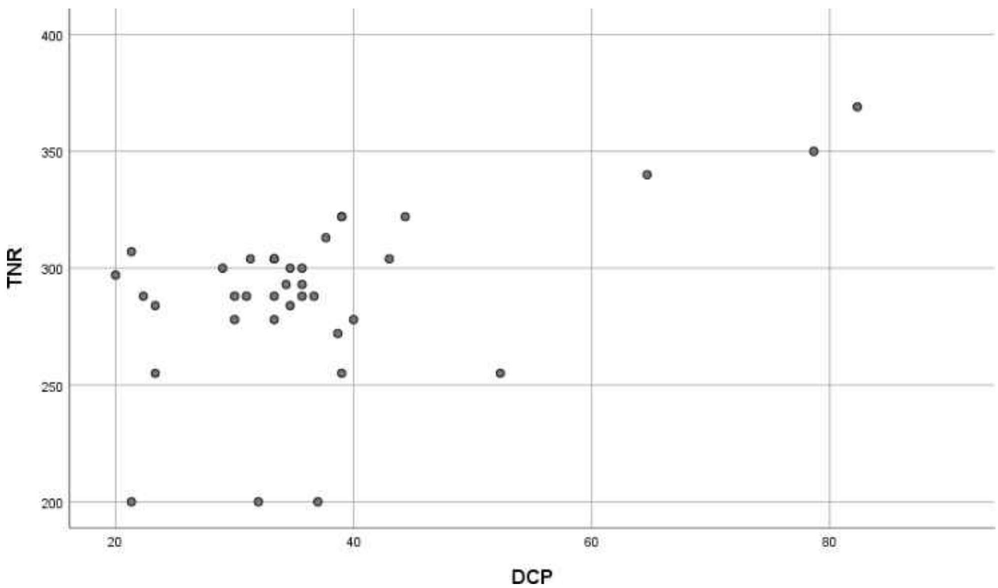


Figure 36.

District Checkpoint Scores (DCP) and TNReady Scores (TNR) for 7th Grade Math for the 2018-2019 School Year for Students with Disabilities



Research Question 13

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade math for the 2017-2018 school year?

H_O13: There are no significant correlations among teacher – assigned course grades, TNReady scores, and district checkpoint scores for 8th grade math for the 2017-2018 school year.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades ($M = 87.73$, $SD = 10.04$), TNReady scores ($M = 341.15$, $SD = 29.74$), and district checkpoint scores ($M = 71.35$, $SD = 19.25$) for 8th grade math for the 2017-2018 school year. The results of the correlational analysis found that all three correlations were statistically significant ($p < .01$) and ranged from .64 to .78. As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade math for the 2017-2018 school year. High scores in all areas were associated with high scores in the other two areas. Table 13 shows the descriptive statistics, and Figures 37-39 show the simple scatterplots of the results.

Table 13.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 8th Grade Math for the 2017-2018 School Year

Variable	n	M	SD	1	2
1. CP Average	441	71.35	19.25	–	
2. Teacher-Assigned Course Grades	441	87.73	10.04	.78**	–
3. TNReady Scale Scores	441	341.15	29.74	.76**	.64**

**p < .01

Figure 37.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 8th Grade Math for the 2017-2018 School Year

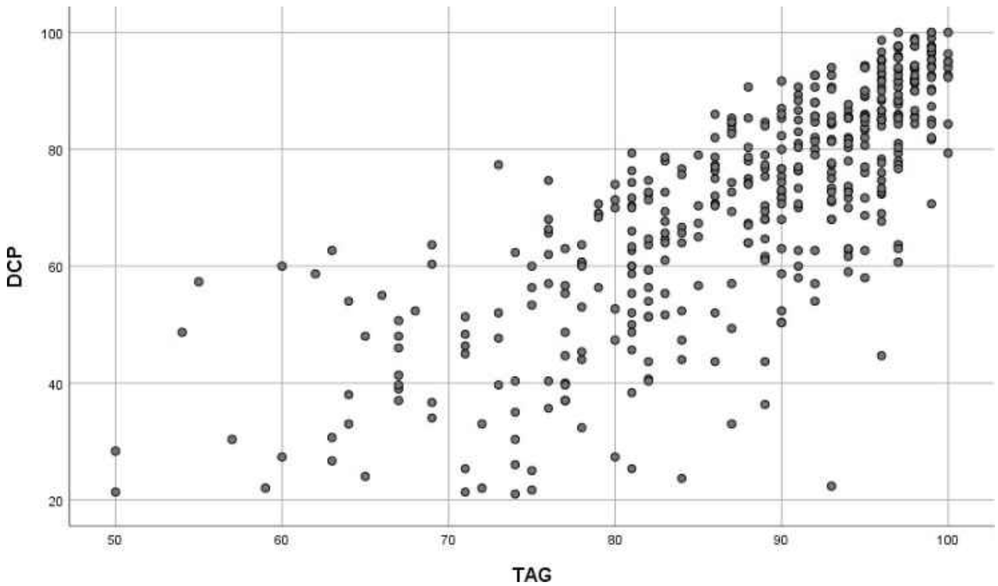


Figure 38.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 8th Grade Math for the 2017-2018 School Year

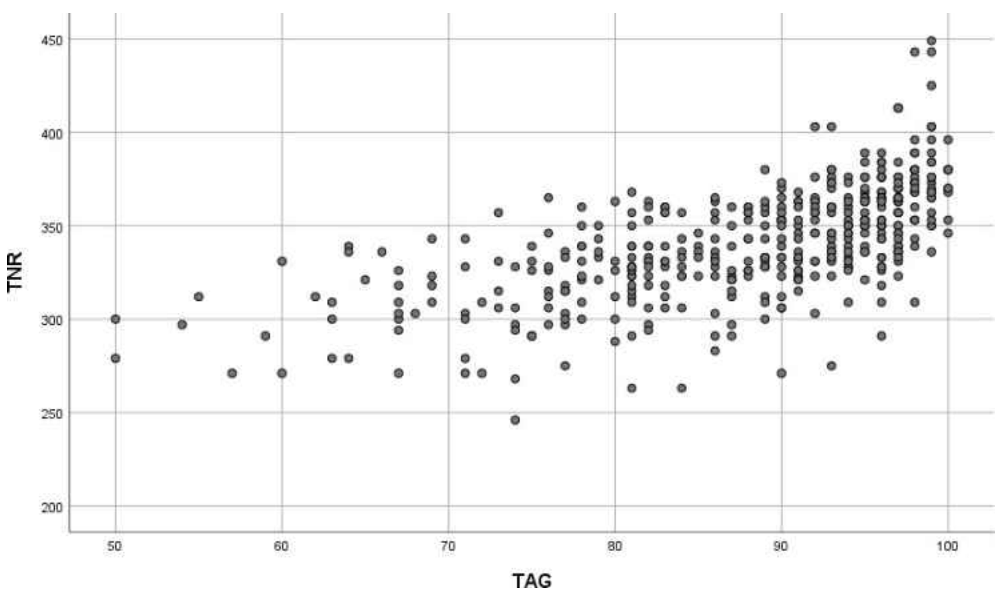
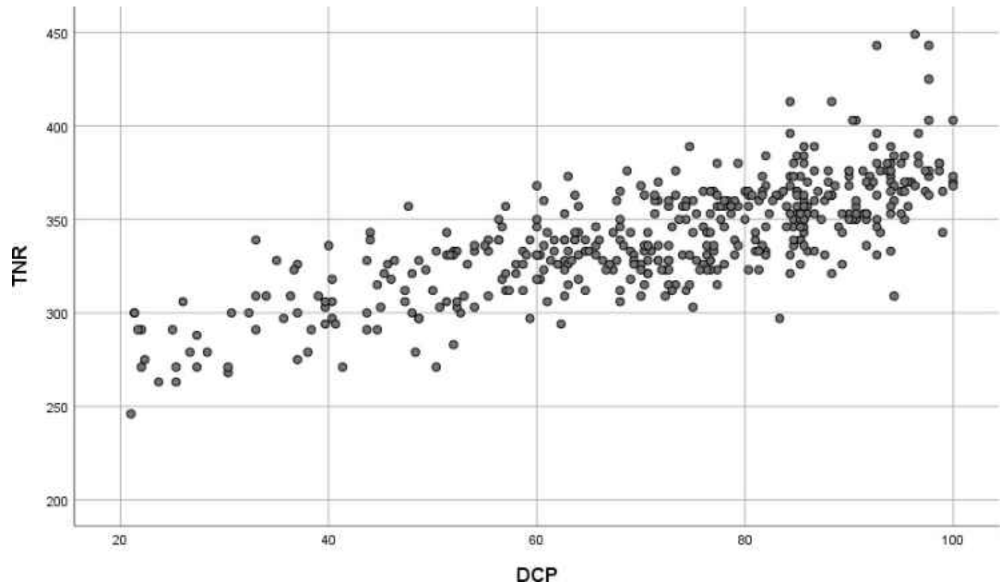


Figure 39.

District Checkpoint Scores (DCP) and TNReady Scores (TNR) for 8th Grade Math for the 2017-2018 School Year



Research Question 14

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade math for the 2017-2018 school year for students with disabilities?

H_O14: There are no significant correlations among teacher- assigned course grades, TNReady scores, and district checkpoint scores for 8th grade math for the 2017-2018 school year for students with disabilities.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades (M = 77.76, SD = 10.96), TNReady scores (M = 297.95, SD = 23.58), and district checkpoint scores (M = 45.12, SD = 19.92) for 8th grade math for the 2017-2018 school year for students with disabilities. The results of the correlational analysis found that all three correlations were statistically significant. The correlations between district checkpoint scores and TNReady scores and that between district checkpoint scores and teacher-assigned grades were significant ($p < .01$) at .71 and .62 respectively. The correlation between TNReady scores and teacher-assigned grades was significant at .38 ($p < .05$). As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship between teacher-assigned course grades and district checkpoints and district checkpoints and TNReady scores for 8th grade math for the 2017-2018 school year for students with disabilities. The relationship between TNReady scores and teacher-assigned course grades for 8th grade math for the 2017-2018 school year for students with disabilities was moderately positive. Table 14 shows the descriptive statistics, and Figures 40-42 show the simple scatterplots of the results.

Table 14.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 8th Grade Math for the 2017-2018 School Year for Students with Disabilities

Variable	n	M	SD	1	2
1. CP Average	37	45.12	19.92	–	
2. Teacher-Assigned Course Grades	37	77.76	10.96	.62**	–
3. TNReady Scale Scores	37	297.95	23.58	.71**	.38*

*p < .05
**p < .01

Figure 40.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 8th Grade Math for the 2017-2018 School Year for Students with Disabilities

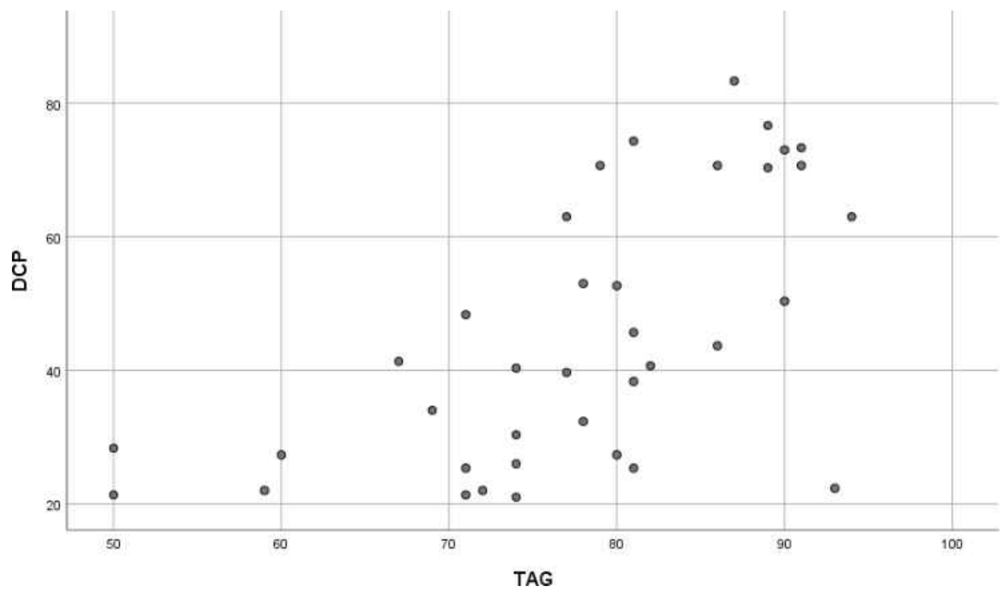


Figure 41.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 8th Grade Math for the 2017-2018 School Year for Students with Disabilities

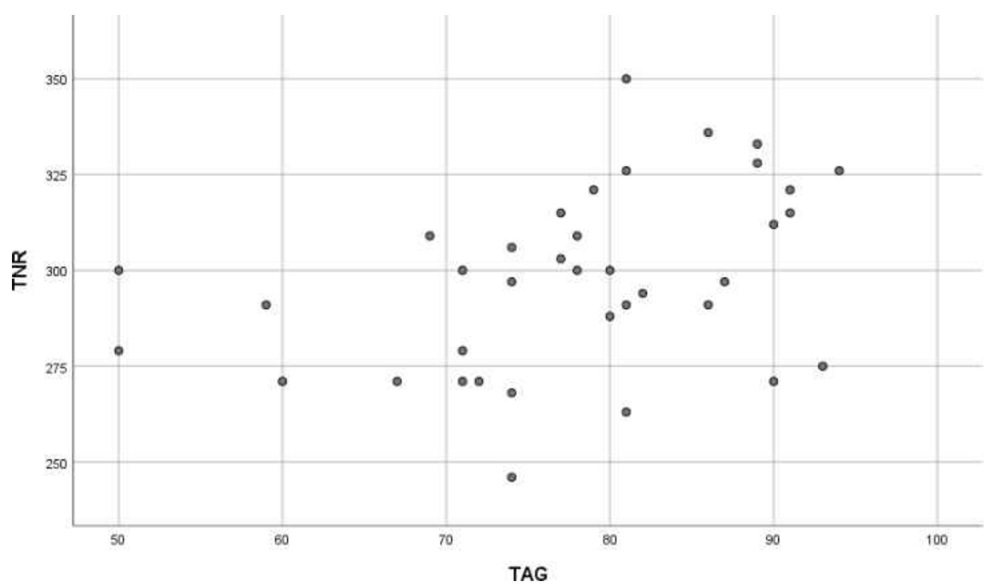
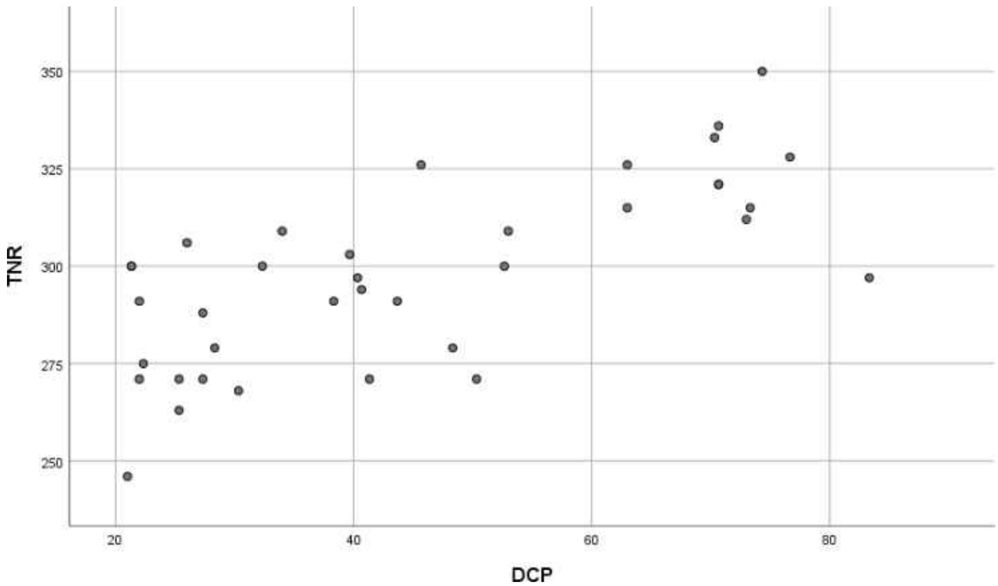


Figure 42.

District Checkpoint Scores (DCP) and TNReady Scores (TNR) for 8^{th} Grade Math for the 2017-2018 School Year for Students with Disabilities



Research Question 15

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8^{th} grade math for the 2018-2019 school year?

H_O15: There are no significant correlations among teacher – assigned course grades, TNReady scores, and district checkpoint scores for 8^{th} grade math for the 2018-2019 school year.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades (M = 82.55, SD = 12.18), TNReady scores (M = 334.20, SD = 45.28), and district checkpoint scores (M = 68.14, SD = 21.58) for 8^{th} grade math for the 2018-2019 school year. The results of the correlational analysis found that all three correlations were statistically significant ($p < .01$) and ranged from .76 to .89. As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade math for the 2018-2019 school year. High scores in all areas were associated with high scores in the other two areas. Table 15 shows the descriptive statistics, and Figures 43-45 show the simple scatterplots of the results.

Table 15.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 8th Grade Math for the 2018-2019 School Year

Variable	n	M	SD	1	2
1. CP Average	390	68.14	21.58	–	
2. Teacher-Assigned Course Grades	390	82.55	12.18	.82**	–
3. TNReady Scale Scores	390	334.20	45.28	.89**	.76**

**p < .01

Figure 43.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 8th Grade Math for the 2018-2019 School Year

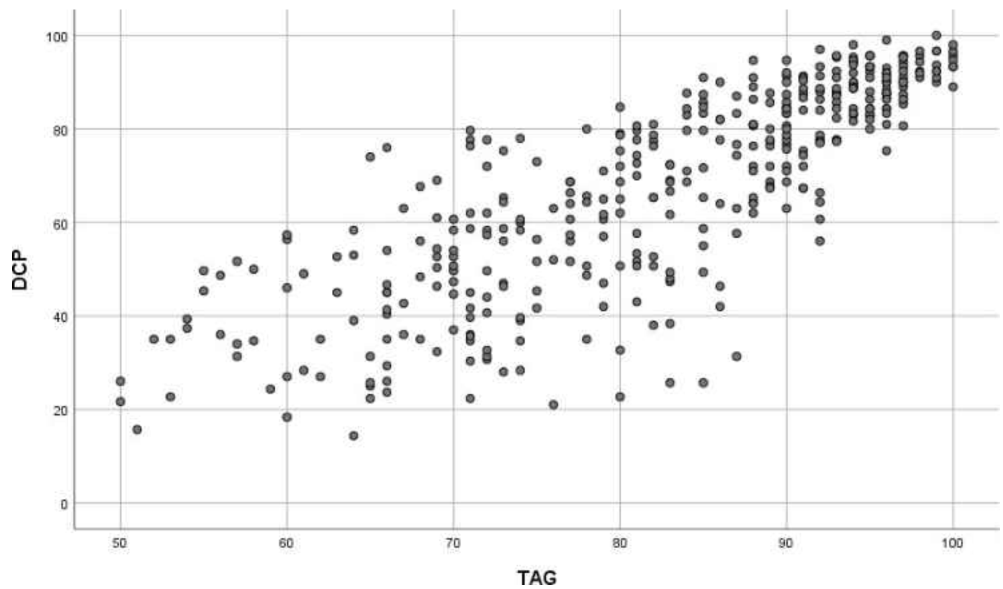


Figure 44.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 8th Grade Math for the 2018-2019 School Year

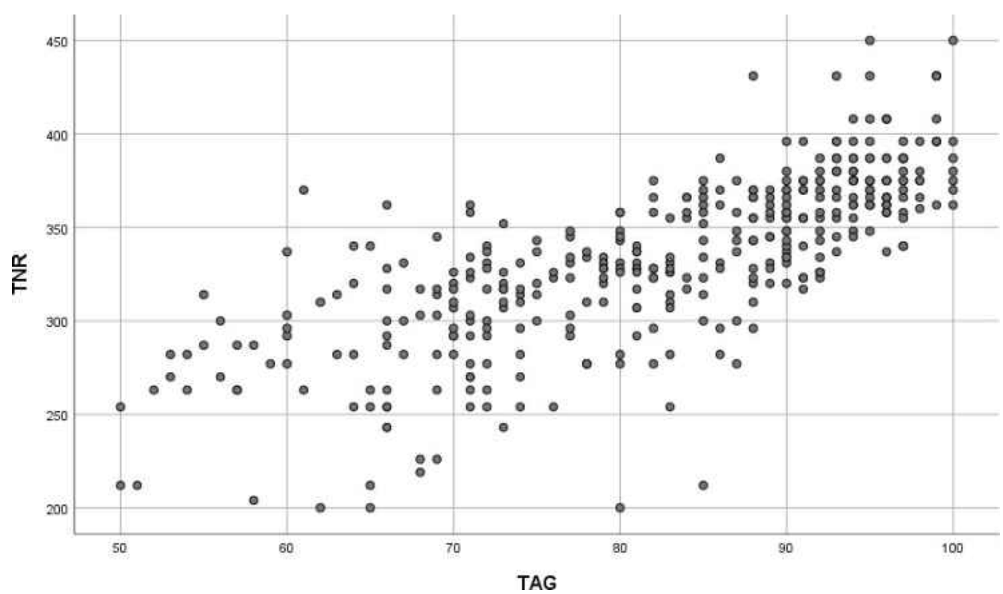
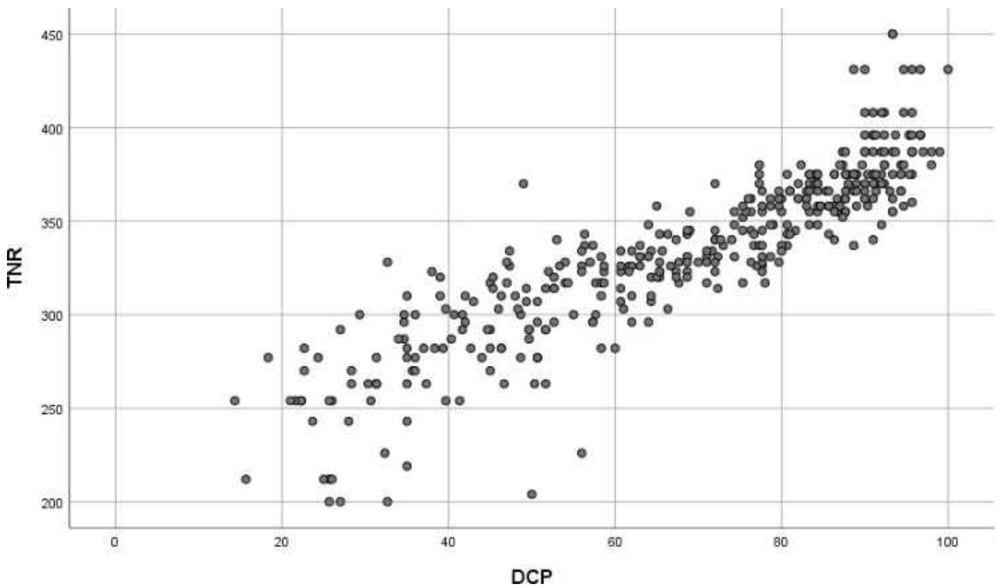


Figure 45.

District Checkpoint Scores (DCP) and TNReady Scores (TNR) for 8th Grade Math for the 2018-2019 School Year



Research Question 16

Are there significant correlations among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade math for the 2018-2019 school year for students with disabilities?

H_O16: There are no significant correlations among teacher- assigned course grades, TNReady scores, and district checkpoint scores for 8th grade math for the 2018-2019 school year for students with disabilities.

A Pearson product-moment correlation examined the relationship among teacher-assigned course grades ($M = 72.77$, $SD = 10.27$), TNReady scores ($M = 281.83$, $SD = 49.27$), and district checkpoint scores ($M = 44.27$, $SD = 22.00$) for 8th grade math for the 2018-2019 school year for students with disabilities. The results of the correlational analysis found that all three correlations were statistically significant ($p < .01$) and ranged from .61 to .80. As a result, the null hypothesis was rejected. This analysis indicated a strong positive relationship among teacher-assigned course grades, TNReady scores, and district checkpoint scores for 8th grade math for the 2018-2019 school year for students with disabilities. High scores in all areas were associated with high scores in the other two areas. Table 16 shows the descriptive statistics, and Figures 46-48 show the simple scatterplots of the results.

Table 16.

Descriptive Statistics and Correlations for Teacher-Assigned Course Grades, TNReady Scores, and District Checkpoint Scores for 8th Grade Math for the 2018-2019 School Year for Students with Disabilities

Variable	n	M	SD	1	2
1. CP Average	35	44.27	22.00	–	
2. Teacher-Assigned Course Grades	35	72.77	10.27	.64**	–
3. TNReady Scale Scores	35	281.83	49.27	.80**	.61**

**p < .01

Figure 46.

Teacher-Assigned Course Grades (TAG) and District Checkpoint Scores (DCP) for 8th Grade Math for the 2018-2019 School Year for Students with Disabilities

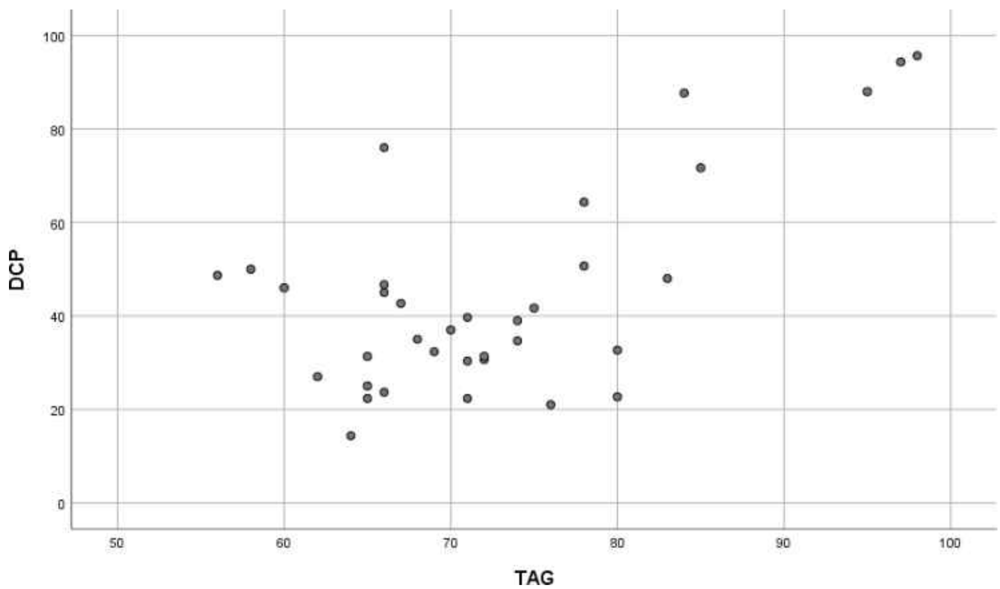


Figure 47.

Teacher-Assigned Course Grades (TAG) and TNReady Scores (TNR) for 8th Grade Math for the 2018-2019 School Year for Students with Disabilities

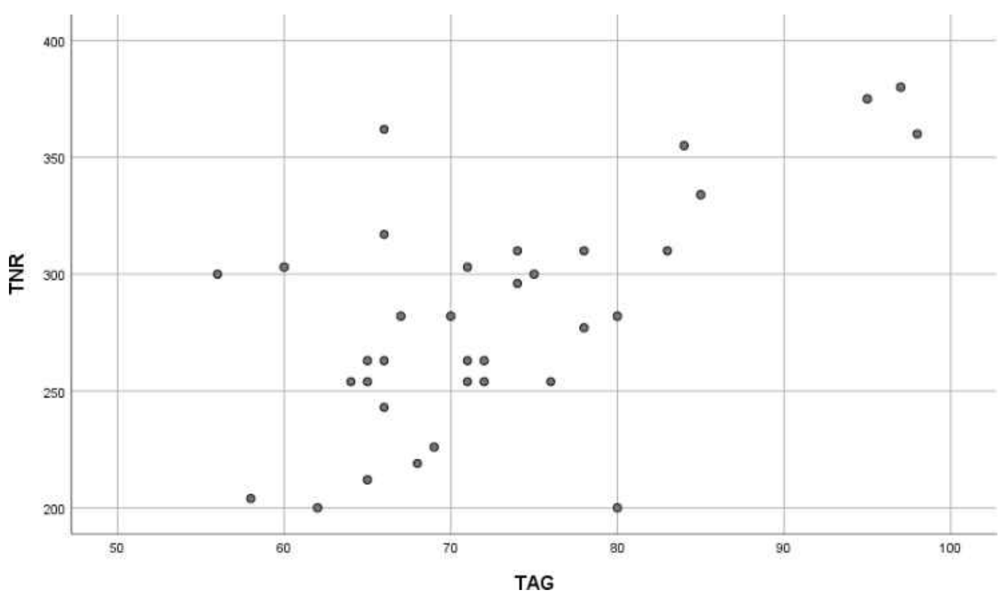
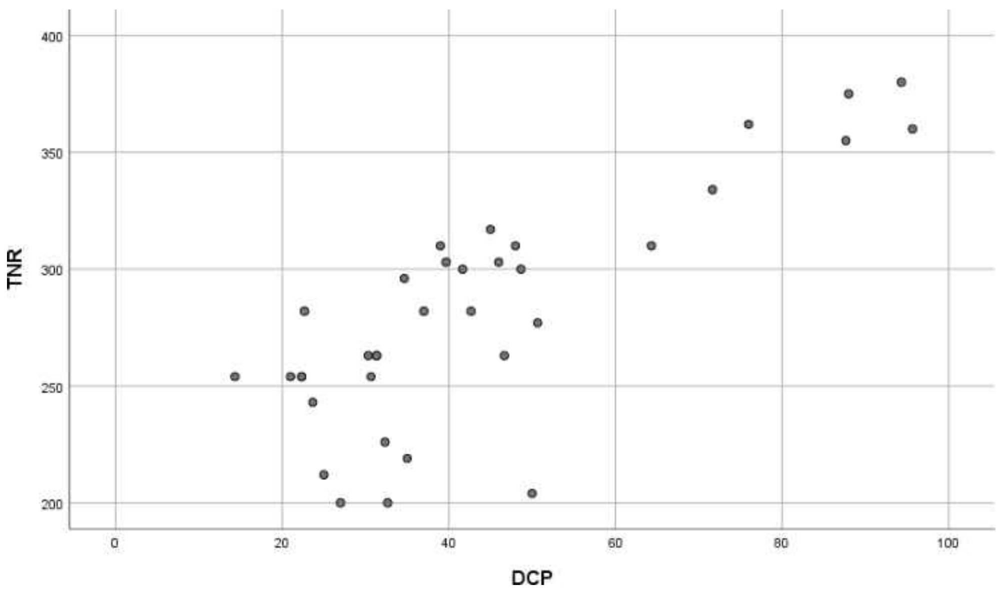


Figure 48.

District Checkpoint Scores (DCP) and TNReady Scores (TNR) for 8th Grade Math for the 2018-2019 School Year for Students with Disabilities



Chapter Summary

The purpose of this study was to determine if there was a significant correlation among teacher-assigned grades (TAG), district checkpoint scores (CP), and student scale-scores on TNReady tests for both mathematics and English Language Arts (ELA) for 1,445 seventh and eighth grade students enrolled at a middle school in northeast Tennessee during the school years of 2017-2018 and 2018-2019. Additionally, the study also examined any moderating effects of the categorical variable of students with disabilities status (SWD) on the correlations among the district and state assessments. Sixteen research questions examined correlations among teacher-assigned grades, district checkpoint scores, and student scale-scores on TNReady tests. Each question had a corresponding null hypothesis, which was tested by computing Pearson correlation coefficients. Significant positive correlations were found among teacher-assigned grades, district checkpoint scores, and student scale scores on TNReady tests for all but two of the research questions, and for those two research questions, there was at least one significant correlation found among the three. During the 2018-2019 school year, there was only a significant positive correlation found between TNReady scores and district checkpoint scores for the 7th grade ELA SWD population and there were only significant correlations found between TNReady scores and district checkpoints and TNReady scores and teacher-assigned grades for the 8th grade ELA SWD population during the 2017-2018 school year.

Chapter 5. Summary, Conclusions, and Recommendations

The purpose of this quantitative study was twofold. The first objective was to determine if there was a significant correlation among teacher-assigned grades (TAG), district checkpoint scores (CP), and student scale-scores on TNReady tests for both mathematics and English Language Arts (ELA) for 1,445 seventh and eighth grade students enrolled at a middle school in northeast Tennessee during the 2017-2018 and 2018-2019 school years. The second purpose of this study was to examine any moderating effects of the categorical variable of students with disabilities status (SWD) on the correlations among the district and state assessments and the students' final teacher-assigned grades for these same content areas.

Chapter 5 summarizes and reviews this correlational study related to its goals, empirically based research related to this study, and the current findings of this study. Additionally, means to apply these research findings to practice and implications are presented. Finally, recommendations for future research are also offered.

Summary of Results

Teacher-assigned grades (TAG), district checkpoint scores (CP), and student scale-scores on TNReady tests were collected from district supervisors and school administrators and provided to the researcher after being demarked so that students could not be identified during or after analysis. Only those students who had all data points for the school year were included in the study. Data analysis for this quantitative study was performed using the Statistical Package for Social Sciences (SPSS) software program. The data outputs for SPSS were used to determine the strength of the relationships and statistical significance among students' TNReady scale scores, checkpoint assessment scores, and teacher assigned grades using Pearson product-moment correlation coefficients (r) for all sixteen research questions.

The results of this study showed that there were significant correlations among teacher-assigned grades (TAG), district checkpoint scores (CP), and student-scale scores on TNReady tests for both mathematics and English Language Arts (ELA) for seventh and eighth grade students at this middle school during the 2017-2018 and 2018-2019 school years. These correlations were all positive and strong for the overall population for both years and both content areas with values of r ranging from .61 to .89. In general, the results suggest that high scores in any area are associated with high scores in the other two areas. These positive high correlations for the overall population acknowledge the efforts of the school and district to align its teaching practices and district assessments with one another along with the state assessments. The study also concluded that there were not significant effects of the categorical variable of student with disabilities status (SWD) on the correlations, although there were two research questions where only one or two significant correlations where found among the three. First, during the 2018-2019 school year, it was found that there was only a significant positive correlation found between TNReady scores and district checkpoint scores for the 7th grade ELA SWD population. The correlation between TNReady scores and teacher-assigned grades and that between district checkpoints and teacher-assigned grades were not significant. Second, there were only significant correlations found between TNReady scores and district checkpoints and TNReady scores and teacher-assigned grades for the 8th grade ELA SWD population during the 2017-2018 school year. The correlation between district checkpoints and teacher-assigned grades was not significant.

The National Research Council (2014) emphasized that effective assessment systems include diverse internal and external assessments that serve complementary purposes to measure content objectives and should closely align with one another. Beaulieu (2009) also reported that benchmark assessments, such as these ELA and math district checkpoints studied, should be valid predictors of how students will perform on their year-end state assessments in those respective content areas, and should therefore serve to prepare students for such high-stakes assessments. This research showed that there was a correlation between year-end assessment scores and district benchmark assessment scores and thus based on the information in this study, the district checkpoints can be used by teachers within the district, grade levels, and content areas studied to drive instruction in the classroom and to prepare for TNReady assessments. Transferability will be limited to those schools with similar size and demographics.

The disparity in teacher-assigned grades and students' performances on state assessments has been well documented through academic research (Brennan et al., 2001; Brookhart et al., 2016; Conley, 2000; Guskey & Jung, 2012). Beaulieu (2009) reported that teachers, administrators, and many others in the educational world have agreed and spoken out regarding testing and teaching and their beliefs that if the classroom is a reflection of local and state standards of instruction, then so should student achievement on those same standards assessments. Guskey (2015), Marzano (2000), O'Connor (2017), and Reeves (2016) recommended that teacher-assigned grades and standardized test scores should strongly correlate because that would demonstrate what students had academically mastered. Based on the calculated correlation coefficients, it appears that teacher assigned grades are aligned with state assessments for the district in this study. As such, these correlations would suggest that the two are strongly aligned and thus the grades accurately communicate academic mastery of the state standards for some students, as the teacher-assigned grades and standardized test scores are reflections of and based upon those standards.

Brookhart and McMillan (2019) stated that there is little research available to examine the extent of the relationship among teacher-assigned grades, interim assessments, and standardized test scores. The results of this research revealed that for this particular group of students during the academic years of 2017-2018 and 2018-2019, there was a strong positive correlation for the overall population among the three variables. The values of r had a magnitude between 0.63-0.85 for 7th grade ELA, 0.61-0.84 for 8th grade ELA, 0.70-0.88 for 7th grade math, and 0.64-0.89 for 8th grade math. These results suggest that the district checkpoints can be used to enhance the teaching and learning cycle, to improve instructional design, and make data-driven instructional decisions. This can have a greater impact on the speed at which students learn, identify gaps in learning, and prepare for the high-stakes, summative state assessments for students in 7th and 8th grade ELA and math.

While there were significant correlations for all of the research questions that looked specifically at only students with disabilities within this population, they were not as strong in several cases as the same content areas and years for the overall population. The values of r for 7th grade ELA were between 0.12-0.74, 0.25-0.79 for 8th grade ELA, 0.41-0.73 for 7th grade math, and 0.38-0.80 for 8th grade math students with disabilities population (SWD). Again, there was only a significant positive correlation found between TNReady scores and district checkpoint scores for the 7th grade ELA SWD population and there were only significant correlations found between TNReady scores and district checkpoints and TNReady scores and teacher-assigned grades for the 8th grade ELA SWD population during the 2017-2018 school year. Inconsistencies, when observed, were between the teacher-assigned grades and district assessments or teacher-assigned grades and TNReady scores, whereas the TNReady and district checkpoint correlations tended to remain strong and positive from the overall population to the SWD population.

Recommendations for Practice

School districts should regularly analyze interim assessments for their ability to indicate student progress in real time when it can still have an effect on student achievement (Bambrick-Santoyo, 2010). Interim assessments are typically given at regular intervals, such as at the end of each six-week or nine-week grading period, and measure student development on particular standards and goals. Therefore, these assessments can be used to identify trends in any learning gaps and in turn be used to inform planning, instruction, and differentiation by district coaches and classroom teachers.

Additionally, school districts should analyze their feedback methods to ensure that classroom assessment practices provide timely and useful feedback to improve learning (Zaleski, 2015). Descriptive feedback needs to be specific and directly related to students' performance on a learning activity or assessment. When conferencing with students, it is important to separate descriptive feedback from grading so that the students are encouraged to focus on the feedback and therefore be more apt to improve on their learning. This feedback should focus on the students' strengths, areas of need, misconceptions, and guide learning as students are given strategies that allow them to build on these strengths, develop these areas of need, and clear up misconceptions. It is imperative that feedback allow students to see how they are progressing towards mastering the content or task and that they are provided, with opportunities for self-reflection to direct and reinforce continued learning. As a way to reinforce and reflect on this feedback, an often-suggested practice is to provide students with opportunities to correct or redo their work after they have received feedback. Furthermore, it is also a recommended practice to share, when appropriate and needed, feedback with parents or guardians so that they understand the feedback, next steps, and can support their student's learning at home.

Another recommendation for practice, which was documented by Garrison and Ehringhaus (2013), is to involve students in the assessment process. Involving students in the formative assessment process has been shown to increase students' motivation to learn. Involving students requires that they assess their own learning and can also encompass students being resources to their peers. Teachers must first establish a classroom environment that ensures students that the teacher cares for their development. Teachers also have to identify goals for learning, establish achievement measures, create assessment items that will demonstrate if learning has occurred, and provide students with descriptive feedback. Descriptive feedback provides students with an awareness of what they are doing well, connects to classroom learning, and delivers detailed suggestions for how to get to the next level of learning progressions. Once teachers have routinely done these things in their classrooms effectively, students are able to establish and set goals for themselves. They are able to see where they are in the learning process, where they need to be, and an effective course for getting to the learning goal.

Additionally, interim assessments must be applied appropriately. Bambrick-Santoyo (2010) stated that when done so, they are drivers of academic excellence and can be one of the most important components of data-driven instruction. Districts and schools must employ interim assessments to define the standards and provide the outline for rigorous instruction and learning. Post-assessment results should be used to identify strengths and areas of development throughout the year as teachers respond to those needs and make adjustments in their teaching. Interim assessment data need also be used to measure student improvement throughout the year. Zaleski (2015) stated that interim assessment analysis will likely look different for many students. The analysis could suggest that some students are ready to move on or deepen their learning beyond the standards of the grade. It may suggest for others that they require more support and that may be offered through re-teaching, presenting the material in a different way, additional learning activities to further enhance comprehension, or peer engagement to cultivate understanding. It is also important to allow students a voice in planning follow-up activities that will support further learning after first clearly identifying the purpose of the plan. Teachers must also use these assessment results to design future lessons that will offer efficacious learning opportunities for both their current students as well as future students.

Moreover, classroom assessment practices must be properly differentiated to meet the specific educational needs of all students so they can best demonstrate their learning (Zaleski, 2015). Students with disabilities receive various types of educational services to meet their learning needs, which may include modifications, accommodations, and alternative assessments. It is important that teachers provide modifications, accommodations, or alternative assessments that are appropriately differentiated for a student on an ongoing basis in the classroom for each of their assessments. This often requires working with support staff to create and provide these appropriate assessments for students with disabilities. Differentiating the assessment process may require assessments that are much different from their grade-level peers so that the students are appropriately challenged and their learning needs are addressed. In addition, it is important that grading procedures be modified for students with disabilities so that they accurately follow their individual education plans. When possible, it is also suggested to involve the parents or guardians of each student in the decisions about what accommodations and modifications are most effective for their child, their goals, and ongoing progress. State and district assessments do not offer teachers the flexibility of modifying assessment scores for students with disabilities on standardized assessments, so it is a good practice to discuss with parents or guardians any discrepancies there may be between these scores and classroom grades that can be modified according to students individual education plans.

Recommendations for Further Research

One area that further research should be concentrated on is how teachers grade students with disabilities in the classroom. During the 2017-2018 school year, there was not a significant correlation between teacher-assigned grades and district checkpoints for students with disabilities in 8th grade ELA and only a positive weak correlation between teacher-assigned grades and TNReady scores. Additionally, during this same year, there was only a positive weak correlation observed between teacher-assigned grades and TNReady scores for students with disabilities in the 8th grade math. In the 2018-2019 school year, there was not a significant correlation between teacher-assigned grades and district checkpoints, nor for teacher-assigned grades and TNReady scores, for students with disabilities in 7th grade ELA. There were only positively moderate correlations observed between teacher-assigned grades and district checkpoint scores, and teacher-assigned grades and TNReady scores, for both the 8th grade ELA students with disabilities group and the 7th grade math students with disabilities group. However, for all of the aforementioned, the overall populations for the same years and content areas had positive strong correlations.

This area requires further and more precise data in order to determine whether irregularities exist in school grading policies based on students with disabilities and if so, how much. Feldman (2019) reported on the biases that have been considerably documented regarding grading in special populations, including students with disabilities because of teachers assessing students on subjectively interpreted behaviors like participation or effort. Casalaspi (2016) described another effect that occurs with this subgroup, which effects the subjectivity in conventional grading practices, and that is grade inflation. It is important to determine to what degree, if any, grade inflation accounts for perhaps any artificial increase that might occur in teacher-assigned grades, which could overstate the real learning that has occurred or that does not match up with the standards being assessed on the district checkpoints and end-of-year state assessments. An area of further study should focus on how grading inflation, grading biases, and special accommodations such as redo's and modifying grades may affect the correlations among standardized tests and teacher-assigned grades and interim assessments and teacher-assigned grades.

The study does not address specific grading practices and policies of the teachers who assigned the teacher-assigned grades for the 7^{th}-grade and 8^{th}-grade ELA and math courses in this research. This area involving specific teacher grading practices and policies would be an area for further study and could examine the factors that teachers utilize regularly in the classroom to assess, weight, and compute students' grades. This information would need to be obtained through qualitative methods such as interviews, surveys, and questionnaires and could provide substantial information regarding the correlations among teacher-assigned grades, interim assessments, and state assessments.

Further research needs to explore the relationship of district assessments and the subparts of the TNReady Assessment to compare student performance on the same standards. The district checkpoints provide information about specific standards for each content area and therefore, the data may show stronger relationships with the respective subparts of the TNReady Assessment. As a result, these correlations could offer information that is more detailed so that instruction and interventions needed for these areas could be effectively identified and targeted.

The data from this study only examined correlations and moderating effects of students with disabilities for ELA and mathematics for 7th grade and 8th grade students at one middle school in the state. The study should be replicated and expanded to include science and social studies to reflect the overall curriculum and any correlations among the respective teacher-assigned grades, district checkpoint scores, and TNReady scale scores. Furthermore, it would be a good idea to expand the study to include additional grades and districts across the state to see if the results are similar and to increase the generalizability of the population.

The study examined the moderating effects of one categorical variable on the correlations among the district and state assessments and students' final teacher-assigned grades in math and English Language Arts. That categorical variable, which contributes to a school's AYP rating as mandated by NCLB (2001), was students with disabilities (SWD) status. Extended or further research should include additional categorical variables such as gender, race, and socioeconomic status to determine if there are any moderating effects on the correlations among the district and state assessments and students' final teacher-assigned grades in math and English Language Arts.

Conclusion

According to Great Schools Partnership (2015), learning standards are one of the most influential issues in today's public education and affect every aspect of our educational system, including the skills and concepts students are taught in classrooms, high-stakes standardized testing, and the professional development that teachers are required to have. The standards movement has initiated some essential dialogues concerning the alignment of teacher-assigned grades, district interim assessments, and state assessments and the significance of local schools, school districts, state governments, and federal governments to collaborate with one another. The

National Research Council (2002) explained the importance of effective assessment systems including diverse internal and external assessments that are meant to accomplish complementary goals of the content objectives. Even though teacher-assigned grades, standardized test scores, and district assessments are based on the same sets of standards for each grade level and content area, they are not always aligned with one another. Therefore, it is important to determine if there is a correlation among the three to ensure that they are aligned and supporting the ongoing instruction and assessment of students in the grades and content areas for which they are designed.

This study was designed to determine if there was a significant correlation among teacher-assigned grades (TAG), district checkpoint scores (CP), and student scale-scores on TNReady tests. It included 1,445 seventh and eighth grade students enrolled in a middle school in northeast Tennessee during 2017-2018 and 2018-2019 for both ELA and math. The second goal of the study was to examine any moderating effects of the categorical variable, students with disabilities, on the correlations among the district and state assessments and students' final teacher-assigned grades in these same content areas. Results from this study revealed that there were significant correlations among teacher-assigned grades (TAG), district checkpoint scores (CP), and student-scale scores on TNReady tests for both mathematics and English Language Arts (ELA) for seventh and eighth grade students at this middle school during the 2017-2018 and 2018-2019 school years. These correlations were all positive and strong for the general population for both years and both content areas with the values of r ranging between .61 and .89. In general, the results suggest that high scores in any area are associated with high scores in the other two areas. These positive high correlations for the overall population acknowledge the efforts of the school and district to align its teaching practices and district assessments with one another along with the state assessments. The study also concluded that there were not significant effects of the categorical variable of students with disabilities status (SWD) on the correlations.

Overall, this suggests that the three measures of student learning are aligned, which can be reassuring to students, teachers, parents, administrators, and other stakeholders who in the past have reportedly shown concern about the disparity among the three (Guskey & Jung, 2012; New York State Education Department, 2013). As previously stated, even though teacher-assigned grades, standardized test scores, and district assessments are based on the same sets of standards for each grade level and content area, they are not always aligned with one another. Therefore, it is important to determine if there is a correlation among the three to ensure that they are aligned and supporting the ongoing instruction and assessment of students in the grades and content areas for which they are designed. The results of this study can also be added to the limited research available investigating the relationship among district interim assessments, state assessments, and teacher-assigned grades looking specifically at subgroup comparisons including students with disabilities. As more data and understanding are obtained about the strength of these relationships, it will be easier to implement changes in the way teachers assess learning each day in their classrooms and interpret that assessment into student grades or other alternative models. More importantly, such research will help to ensure that this group of students has equitable and quality learning and grading practices to help narrow the achievement gap.

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