Andrews University

Digital Commons @ Andrews University

Dissertations   Graduate Research

2020

High Stakes Testing and School Characteristics: A Comparative Study

Kelsey M. Dailey
Andrews University, castle@andrews.edu

Recommended Citation

ABSTRACT

HIGH STAKES TESTING AND SCHOOL CHARACTERISTICS:

A COMPARATIVE STUDY

By

Kelsey M. Dailey

Chair: Anneris Coria-Navia, Ed.D.

ABSTRACT OF GRADUATE STUDENT RESEARCH

Dissertation

Andrews University

School of Education

Title: HIGH STAKES TESTING AND SCHOOL
        CHARACTERISTICS: A COMPARATIVE STUDY

Name of researcher: Kelsey M. Dailey

Name and degree of faculty chair: Anneris Coria-Navia, Ed.D.

Date completed: November 2020

Problem

The purpose of this quantitative, correlational study was to better understand the relationship between the 2016 Grade 10 ISTEP+ English passing rate and 2018 graduation rate amongst 290 Indiana high schools and the following variables: school size, average SAT reading score, percentage of students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students.. The results of the research may further evaluate how 2016 school characteristics are related to the Grade 10, 2016 ISTEP+ English which may suggest future revision of the ISTEP+ English to remove bias or how the test is used.

Method

This study used both regression and correlation to analyze school data. Regression provided an opportunity to predict and explain the relationship amongst multiple variables (Creswell, 2013, p. 358). In this study, a regression analysis was used to identify which 2016 school characteristic variables have the most impact on the 2016 ISTEP+ English passing rate and 2018 graduation rate.

Results

This study examined the explanatory value of the 2016 ISTEP+ English passing rate in predicting the 2018 graduation rate as it is related to the 2016 school characteristics. The seven school characteristics predicted 57% of the variance in the 2016 ISTEP+ and 40% of the variance in graduation rate. When controlled for the seven school characteristics, the 2016 ISTEP+ English passing rate only accounted for 2.5% of the variance found in the 2018 graduation rate. In all, four of the seven school characteristics were especially strong predictors of ISTEP+ English passing rate and graduation rate: average SAT reading score, percent of free or reduced lunch students, percent of English Language Learner students, and percent of special education students.

Conclusions

This concludes that the 2016 Grade 10 ISTEP+ English passing rate may not be an appropriate predictor of the 2018 graduation rate because it may be influenced by the 2016 school characteristics and therefore, possibly contaminated by outside variables.

suggesting that the ISTEP+ English should be reconsidered as a graduation requirement. This study provided data on the association between the ISTEP+ English and school characteristics. Although this data provided some answers regarding the ISTEP+

English and graduation rates, it raised some other questions to further research in this area. Additionally, research on variables which occur inside of the home such has poverty, trauma, abuse and so forth would be interesting to consider alongside their relationship to high stakes testing. The findings particular to this study suggest that more research should be performed on other school characteristics. Additionally, stakeholders should be aware of the characteristics that can increase or can decrease student achievement on tests like the ISTEP+ English like minority ethnic group status, special education student status and students who identify as English Language Learners.

Andrews University

School of Education

HIGH STAKES TESTING AND SCHOOL CHARACTERISTICS:
A COMPARATIVE STUDY

A Dissertation Proposal

Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

by

Kelsey M. Dailey

November 2020

HIGH STAKES TESTING AND SCHOOL CHARACTEISTICS:
A COMPARATIVE STUDY

A dissertation presented in partial fulfillment
of the requirements for the degree Doctor of Philosophy

by

Kelsey M. Dailey

APPROVAL BY THE COMMITTEE:

_____   _____
Chair: Dr. Anneris Coria-Navia   Dean, School of Education

_____
Methodologist: Dr. Jerome Thayer

_____
Member: Dr. Larry Burton

_____   _____
External Examiner: Dr. Melinda Higginson   Date Approved

Dedicated to my husband, David.

"You found me just in time."

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

Background of Study

High stakes testing remains one of the most controversial issues in education today. *No Child Left Behind's* (2001) initial purpose was "to ensure students in every public school achieve important learning goals while being educated in safe classrooms by well-prepared teachers" (Yell, 2010, pg. 181). Although the original efforts of the *No Child Left Behind Act* (2001) were meant to produce a fair and equitable way to measure student achievement in America, results were justifiably flawed (Ladd, 2017, pg. 464). In 2011, Oregon researchers and authors Harris, Smith & Harris wrote, "This is an actual emergency. Our schools are under attack, and with them, the future of our young people. What's more, this assault isn't being perpetrated by some foreign power bent on our destruction…This assault is coming from within" (p.1). As of 2020, this emergency is still very real for schools. With the reauthorization of the *Elementary and Secondary Schools Act* (ESSA), commonly referred to as *Every Student Succeeds Act*, in 2015, at the time of this research it was far too early to predict what the outcome would be for schools with the implementation of new state plans in 2018 (Ladd, 2018, p. 467).

Under policies like *NCLB* (2001) and *ESSA* (2008, 2015) the government played a major role in the makeup of states' curriculum in order to meet the demands of high stakes testing and as of 2020, the federal government will still maintain a major role, but we can only hope that its role will be far more positive and constructive than it has been under NCLB" (Ladd, 2018, p. 467). Diane Ravitch, an educational policy analyst and a research professor at New York University's Steinhardt School of Culture Education was once a U.S. Assistant Secretary of Education and advocate for standardized testing as an accountability measurement for schools (2016). Ravitch now argues, "The testing regime is destroying education. It is driven by politicians who think that tests make students smarter and by educrats who fear to think an independent thought" (2016, Ravitch).

After examining the initial outpour of data post 2001 NCLB, researchers found that there were some advantageous aspects to the increase in high stakes testing across the nation. The Center on Education Policy, a national independent advocate for public education and more effective public schools (2006) monitored student data for several years post NCLB and found that schools were focusing more attention to things like curriculum alignment and how to analyze test scores in order to "inform decisions about improvement strategies, improvement in the quality and quantity of professional development for teachers" (Jennings & Rentner, 2006, p. 110). The data itself was useful; many schools found that they were able to report findings, identify needs groups and achievement gaps and students taking reading and math assessments were showing improvement according to the 2006 study (Jennings & Rentner, 2006, p. 110-111). Beyond

the school data, high stakes tests also provided researchers with a plethora of data to consider.

The Center on Educational Policy also found disadvantages to high stakes testing. The study highlighted distress amongst educators, low teacher morale and stress in both faculty and administration. Many stakeholders expressed concerns in the accountability requirements for subgroups of students and the ability to meet NCLB criteria by 2014 (Jennings & Renter, p. 110). Additionally, seventy one percent of reporting districts took time away from other subjects (Jennings & Renter, 2006, p. 112) to find time necessary for studying reading and math. Since NCLB, increasing instructional time on tested subjects at the expense of other subjects, also known as curriculum narrowing, has been a common trend (Au, 2009, Battley-Fabre, 2011; Berliner, 2011; Duke & Block, 2012, Meier & Knoester, 2017; Au Pavia, 2012).

Grant Wiggins (2002, 2006), nationally recognized assessment expert, has spent more than twenty-five years of his career in assessment and curriculum reform. In 2002, Wiggins claimed that as a result of NCLB 2001, tests "provide woefully sketchy and delayed feedback, on tasks that do not reflect real achievement. Approaches to testing and reporting, in fact, unwittingly cause impoverished, not rich and creative, "teaching to the test" items" (Wiggins, p. 1). Since NCLB 2001 and 2008 ESSA, accountability data is still required from states (ESSA, 2015). According to a 2014 survey of 1500 PreK-12 teachers', forty-five percent have considered leaving the profession because of state standardized testing alone (Walker, 2014, p.1). Additionally, "forty-two percent of the surveyed teachers reported that the emphasis on improving standardized test scores had a "negative impact"

3

on their classroom while only fifteen percent claimed the impact was "positive" (Walker, 2014, p.1). Although research has demonstrated that standardized testing should not be considered as the only measure for student achievement, states continue to use tests as high stakes assessments, often deciding if a student is able to graduate high school (Harris, Phillip, Harris & Smith, 2013, Wolfer, 2017).

Gerald W. Bracey (2009), a previous educational researcher for the National Education Policy Center at the University of Colorado, which supports a democratic deliberation on educational policy, wrote in his piece "A Use of Tests I Could Support" how the standardized test in the 1930's was commonly used to "provide information to teachers about student needs." Tests were strictly designed to do one thing and were never meant to be "instructionally sensitive." It was Bush's 2001 *No Child Left Behind* education reform act (NCLB, 2011) which expanded the popularity of achievement-based testing and their common uses today. Critics of the standardized testing movement agree; it is time for a change. The information and inferences which test scores can provide is limited and it is up to educators to determine how far we want them to go (Harris et al., 2011, p. 34).

In the state of Indiana, test reform has been a topic of debate for many years (Hagopian, 2014). The *End of Course Assessment* (ECA) was the first version of the current test, the *Indiana Statewide Testing for Educational Progress*, more commonly known as the ISTEP+. The test was originally created to measure student progress on criteria mandated by national achievement benchmarks set in place by the *No Child Left Behind Act* of 2001 (NCLB, 2011). Once *NCLB* (2001) was operative, educators and test developers quickly reengineered curriculum in an effort to ensure students were meeting

state standards (Goodwin, 2006). The Indiana Department of Education explained, "the assessment requirement for graduation can be met in three ways: (1) Pass the *English 10* and *Algebra I End of Course Assessments* OR the Grade 10 ISTEP+ English in English/Language Arts and Mathematics. (2) Fulfill the requirements of the Evidence-based waiver. (3) Fulfill the requirements for the Work-readiness waiver" (IDOE, 2018). The state of Indiana's graduation requirement explains that passing the examination is an indicator for career and college readiness amongst all students (IDOE, 2016).

  Some Indiana teachers have felt tremendous pressure to achieve positive student ISTEP+ scores because meeting a specified criterion could result in paid bonuses (Segal, 2012). In 2015, the Indiana House Education committee approved a measure which spared teachers from a deduction in performance pay as a result of low base scores on the 2015 ISTEP+ English (Associated Press, 2016). Since test cut scores were established in 2010, several changes have been made to the testing windows and structure of the exam (IDOE, 2015). The date in which the test is administered has changed from early September to March with a second test administration again in April (McInery, 2016). Currently, each test takes about a week to administer and many educators claim to spend a majority of the year preparing for the test (McInery, 2016). The rising pressure surrounding test preparation has resulted in several cases of test tampering (Adams, 2014, Carden, 2018, Segall, 2012). If schools do not meet the state requirements for passing, students do not graduate and schools are held accountable (IDOE, 2016). The current testing requirements have created a stressful environment and disruption for Indiana educators and administrators alike.

Statement of the Problem

Standardized testing is currently a fact of life for education in American schools. However, while educators and parents communicate about the academic success of students, there is very little discussion on how or why standardized testing remains as one of the single most important measures of a child's academic achievement success. In 2014, Phi Delta Kappa/Gallup, a poll service reflecting U.S. opinion about public education since 1969, produced a poll stating that "68% of surveyed parents reported that they were skeptical that standardized tests helped teachers know what to teach" (Meier & Knoester, 2017, p. 2). Parents post-2001 NCLB feel less confident in what standardized testing can achieve for students. Jonathon Wolfer, elementary principal and author of "The Testing Backlash" writes, "Standardized testing in public schools has proven over the last 15 years to be an expensive and ineffectual exercise" (Wolfer, 2017, p. 26). In 2013, the National Research Council, which helps to produce reports that shape policies and advance the pursuit of science, engineering, and medicine reported that:

> Contrary to popular assumptions about standardized testing, the tests do a poor job of measuring student achievement…Studies indicate that standardized tests reward superficial thinking and may discourage more analytical thinking. Additionally, because of the small sample of knowledge that is tested, standardized tests provide a very incomplete picture of student achievement. (Harris, Phillip, Harris & Smith, 2013, p. 33-45)

The current system often supports using single measures like a standardized test as a primary indicator for student achievement and "scores don't provide very much useful information for evaluating a student's achievement, a teacher's competency, or the success of a particular school or program" (Harris et al., 2011, p. 33). To accurately provide

meaningful feedback with standardized test scores teachers would need a variety of measures and analyses along with the proper training to accurately make inferences about what those scores actually mean to their students and their teaching.

In the state of Indiana, students are required to pass the ISTEP+ English in order to prove student achievement and to graduate from high school. Only students with waivers can opt out of the test. To obtain a waiver, students must complete the following: first take the ISTEP+ every time it is offered, complete any extra help sessions offered each year by the school, maintain a school attendance rate of 95 percent or better, have at least a "C" average over the course of their high school career in the courses required to graduate, get a written recommendation from the teacher(s) in the subject area(s) not passed, as well as one from the school principal, and show proof that the academic standards have been met, whether through other tests or classroom work. (IDOE, 2011). The ISTEP+ English does not account for student differences, such as the locality of a student or background (Poulsen & Hewson 2014, p. 32). Meijer and Knoester (2017) write, "Although different schools and teachers often have different missions and emphases, they are required to use the same tests, for which the content and cut-off scores are not determined in a broadly democratic way" (p. 8). Indiana's high stakes test does not currently measure achievement that is based on local needs. Furthermore, it does not account for demographics, cultural differences, and life experiences that could have major implications on student achievement as documented by previous researchers (Hattie, 2009, 2011, 2013, 2018).

Student achievement and even student performance in schools has been linked to several influences found within the classroom and even a student's home life (Hattie 2009,

2011, 2013, 2018). John Hattie (2009) a researcher from the Melbourne Educational Research Institute primarily focuses his work on student achievement. His (2009) meta-analysis is regarded as some of the most valuable research on student achievement to date. Hattie (2009) has spent many years asking the question, what matters to student achievement? In his 2009 work, "Visible Learning" Hattie studied over 80,000 pupils and more than 800 meta analyses. Another resource to consider when measuring student achievement in the classroom is classroom teachers. Teachers have often been asked to teach to a prewritten curriculum which was aligned to a state standardized test. Oftentimes, classroom teachers are unable to defend individualized student growth or necessary redirection of their students (2014, p. 32).

Some questions still remain. How are students being prepared for their post-graduation goals? How should class time be allocated? There has been some debate in how much class time should be spent on test preparation. If educators do allot class time for test prep, how much? In a 2014 *National Council of English Teacher's* (NCTE) policy briefing titled, "How Standardized Tests Shape and Limit Student Learning," NCTE attempted to answer some of these questions while exposing how Indiana's ISTEP+, particularly the English Language Arts Assessment for Grade 10, is in fact "narrowing the curriculum, and thereby, limiting student learning" (NCTE, 2014, p. 1). In years since 2001's NCLB, curriculum has shifted so much that teachers ultimately have very little autonomy in their curriculum decisions. According to several studies, the increase in high stakes testing has resulted in a greater instructional focus on test preparation or coverage on test materials which has led to a more narrowed and unbalanced curriculum (Au, 2009, Battley-Fabre,

2011; Berliner, 2011; Duke & Block, 2012, Meier & Knoester, 2017; Au Pavia, 2012). One study found that teachers lose between 60 to 110 hours of instructional time in a year due to "test and the institutional tasks that surround it" (NCTE, 2014, p. 1). Stakeholders argued that teachers are often required to "use prepared materials which they did not develop, and which may not address the needs of actual students in their classes" (NCTE, 2014, p. 1). Indiana educators had access to its online database of test preparation and assessment guidance but were offered no direction as to how much time to spend on these materials, how to implement, or when to introduce the curriculum. This creates major differences in classroom instruction, from educator to educator, school to school, and district to district (NCTE, 2014, p. 1). The lack of direction immediately becomes an issue of instructional validity due to the lack of congruence in what is being taught in Indiana classrooms across the state.

This study sought to contribute to the body of research on high stakes testing. Although a considerable amount of research has been completed on high stakes testing to date, limited research has been performed on the Grade 10, ISTEP+ English and student achievement at the state level. This study sought to evaluate the Grade 10, Language Arts, ISTEP+ English and its relationship to the 2016 school characteristics which might suggest revision of the ISTEP+ English test itself (to help reduce bias) or revise how the test is used. After examining the current research surrounding high stakes testing there was a clear gap in data in comparing the ISTEP+ English and school characteristics like minority ethnic group students and free or reduced lunch status at the local level. Test results had already been strongly correlated with race and class and therefore provided "scientific"

justification for racial and class inequalities in society and in schools (Au, 2007, 2009, 2011; Berliner, 2011; Giordano, 2005; Knoester & Au, 2015; Knoester & Parkison, 2017; Kohn, 2000; Meier, 2002; Meier & Wood, 2002; Nichols & Berliner, 2007; Sacks, 1999 as cited in Meier & Knoester, 2017, p. 8). Moreover, it was important for policymakers to understand the consequences of political directives as they are an important aspect in advancing education at the state levels. Therefore, an examination of this research has the potential to benefit any stakeholder in the fields of assessment or education.

Research Questions

The following research questions guided the study and generated the need for testing:

1. What is the relationship between a school's 2016 Grade 10 ISTEP+ English passing rate and the following 2016 school characteristics?

    a) school size

    b) average SAT reading score

    c) percentage of students passing advanced placement (AP) exams

    d) percentage of special education students

    e) percentage of free or reduced lunch students

    f) percentage of English Language Learner students

    g) percentage of minority ethnic group students

2. What combination of 2016 school characteristics best predicts a school's 2016 Grade 10, ISTEP+ English passing rate?

10

3. What is the relationship between schools 2016 Grade 10 ISTEP+ English passing rate and 2018 graduation rate?

4. What is the relationship between the 2018 graduation rate and each of the 2016 school characteristics variables?

5. What combination of 2016 school characteristics best predicts a school's 2018 graduation rate?

6. What is the relationship between schools 2016 Grade 10 ISTEP+ English passing rate and 2018 graduation rate when controlled for 2016 school characteristics?

Purpose of Study

The purpose of this quantitative, correlational study was to better understand the relationship between the 2016 Grade 10 ISTEP+ English passing rate and 2018 graduation rate amongst 290 Indiana high schools and the following variables: school size, average SAT reading score, percentage of students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students. The results of the research may further evaluate how 2016 school characteristics are related to the Grade 10, 2016 ISTEP+ English which may suggest future revision of the ISTEP+ English to remove bias or how the test is used.

Rationale

This study focused to better understand the relationship between the 2018 graduation rate, Indiana's 2016 Grade 10, ISTEP+ English passing rate, and a collective group of the 2016 school characteristics.

There are commonly two ways to measure student growth and achievement in Indiana English classrooms to date—classroom grades and the English ISTEP+. The ISTEP+ English test serves as a high stake, standardized test and is administered to all students in the state of Indiana in grade 10 (IDOE, 2016). Grades, however, are not standardized measures and therefore are not considered high stakes. The scores on the ISTEP+ English are reviewed and are comparable between classrooms and teachers to serve as an objective measure of achievement (IDOE, 2016). These tests are a reflection of how much of the material was presented in class and how well the student learned the test criteria (Goodwin, 2006). Standardized tests are comparable between student, teacher, classroom, and even district. However, tests like the ISTEP+ English serve as only a snapshot of what a student knows on the given day of the test compared to other possible measures from a student's day to day operations. For example, end-of-course grades are used as a measure for students and parents and are an aggregate assessment of the state standards over the course of time. Some argue the subjectivity of teacher assigned grades and therefore do not consider them a reliable measure of student achievement (Marzano, 2006, p. 345).

Theoretical Framework

Several conceptual frameworks were researched in preparation for this study. The theories included support that student learning assessment is a complex, yet robust process. Many theories on student learning assessment have surfaced over the years in an attempt to bolster student success and assess the whole child. Wiggins and McTighe (2005) argue that students best learn when an authentic assessment is present in student learning (2005, p. 21). An authentic assessment experience presents students with an array of challenges found in the best instructional activities which organically become a part of the central experience in learning (p. 23). Although there are many frameworks educators can choose, Hirsch (1999) maintains that if there were indeed a "right" answer to the question surrounding assessment of student learning, education would have adapted to it by now (Eisner, as cited in Flinders & Thornton, 2009 p. 334). To fully understand why student learning assessment requires an understanding of the whole child and not only a single measure, an analysis of original curriculum leaders is paramount.

Pragmatism and Social Efficacy

Curriculum studies pioneer, John Dewey, (1916) was one of the main proponents for social efficacy and pragmatism throughout the early to mid 1900's (as cited in Flinders & Thornton, 2009, p. 37). Dewey believed that education had become entirely too technical for student learning. He claimed, "Education, therefore must begin with a psychological insight into the child's capacities, interests, and habits" (as cited in Flinders & Thornton, 2009, p. 39). Dewey felt that at its core, education should be an individual's opportunity to gain insight in order to "employ his own powers in activities that have meaning" (Dewey,

13

1916, p. 203). Therefore, pragmatism lent itself as a solution to the needs of Dewey's

students. Pragmatism could assess the social conditions and values dominating everyday

life and "reconnect philosophy with the mission of education-for-living (philosophy as "the

general theory of education") (Dewey, 1930, p. 157-58). Furthermore, the way in which

Dewey thought student learning should be assessed was to never compare student to

student. Dewey (1916) argued, "Imposing an alleged uniform general method upon

everybody breeds mediocrity in all by the very exceptional. And measuring originality by

deviation from the mass breeds eccentricity in them (Dewey, p. 203). Dewey maintained

that testing in particular,

> Represents a procedure that in the name of science sinks the individual in a
> numerical class; judges him with reference to capacity to fit into a limited number
> of vocations, ranked according to present business standards; assigns him to a
> predestined niche; and thereby does whatever education can do to perpetuate the
> present order. (1922, p. 62)

Dewey supported assessing the social interactions and happenings of everyday life as a

cornerstone in his own experimental logic throughout the entirety of his career. Franklin

Bobbitt, (2009) another proponent of social efficacy in student learning, argues that

curriculum should be made up of a range of experiences, both undirected and directed by

the facilitator (as cited in Flinders & Thornton, 2009, p. 17). Curriculum within Bobbitt's

epistemology includes assessments of the whole student, more than just their ability to read

and write (2009, p. 18). Kliebard (1975), in his article, "The Rise of Scientific Curriculum-

Making and its Aftermath" reaffirms Bobbitt's (2009) claim, "Education is primarily for

adult life, not for child life. Its fundamental responsibility is to prepare for the fifty years of

adulthood, not for the twenty years of childhood and youth" (1924, p. 8). Education, in

other words, consists in preparing to become an adult and there is probably no more crucial notion in the entire theory (as cited in Flinders & Thornton, 2009 p. 53).

Progressive Education

Progressive education is yet another methodology similar to pragmatism and social efficacy. Progressive education is a dynamic, transactional view of learning and focuses on the interests of students and is less likely to require standardized testing (Kridel, 2010, p. 689). Educational researcher, Dr. Craig Kridel (2010) claims that within a traditional progressive classroom one will commonly find a "child-centered education." Progressive education focuses on a child's interests and the pedagogical approach of "learning by doing" and "fostering creative expressions" (Kridel, 2010, p. 689). Educational expert, Alfie Kohn (2008) supports progressivism because students are able to spend more time thinking about ideas than memorizing facts or practicing skills (2008, p.1). In progressive education, students are invited to help direct their own learning and are not only more likely to enjoy what they are doing but to do it better (Kridel, 2010, p. 689, Kohn, 2008). Assessment in the progressive classroom incorporates both "active learning" and "deep understanding" (Kohn, p. 2, 2008). As Kohn (2008) notes, "education tends be organized around problems, projects and questions…students play a vital role in helping design the curriculum, formulate the questions, seek out (and create) answers, think through possibilities, and evaluate how successful they, and their teachers have been" (Kohn, p. 3).

Constructivism in Education

Other constructs of curriculum, similar to progressive education, also incorporate strategies based around deep understanding and active learning. One of these paradigms is constructivism. Yilmaz (2008) states that, "constructivism postulates that knowledge cannot exist outside our minds; trust is not absolute, and knowledge is not discovered but constructed by individuals based on experiences" (p. 62). Within the constructivist model, the focus on social cultural context and the individual provides more freedom to students within the classroom and supports the student in acting as sole agent in the process of "constructing and reconstructing meaning" (Richardson, 1997, p. 4). Students are encouraged to consider different approaches to everyday problems and to explore more than just one way of solving them leading to self-discovery and skill building (Yilmaz, p. 63, 2008). This method is much more applicable to the real-life than more standard forms of education. An assessment model applying constructivist construct can be found in "Project-Based Learning" (PBL). PBL originally derived from Dewey's idea of "learning by doing" mentioned in his 1897 work *My Pedagogical Creed*. Within this assessment construct, "students gain knowledge and skills by working for an extended period of time to investigate and respond to a complex question, problem, or challenge" (BIE, 2016).

If student success is a goal for every student, educators must assess students in a way that supports the entire intellectual growth of a child and not a one size fits all approach. Therefore, these theories provide the required theoretical framework from which to explore why using a single high stakes test may not be an appropriate measure for the

complex, whole student. It is essential that the influence of the home and school also be represented in the overall understanding of student achievement.

Definition of Terms

There are several terms important to the understanding of the study. The following terms represent those necessary to fully gage the study as operationally defined:

Adequate Yearly Progress. AYP designations for Indiana school corporations and schools are determined by student achievement and participation rates on the Indiana Statewide Testing for Educational Progress-Plus (ISTEP+) in English/language arts and mathematics; student attendance rates (for elementary and middle schools); and high school graduation rates (for high schools). Under NCLB, schools must make AYP in all student groups in order to meet AYP. The goal of NCLB was for all students to achieve proficiency in English/language arts and mathematics by 2014 (IDOE, 2016, p. 1).

Every Student Succeeds Act. "*Every Student Succeeds Act* (ESSA) is a reauthorization of the *Elementary and Secondary Education Act of 1965*. It reduces the federal role in education accountability decisions by eliminating many prescriptive requirements set forth by the *No Child Left Behind Act* (NCLB) and allowing states greater leeway in designing their own accountability systems. ESSA requires that states establish student performance goals, hold schools accountable for student achievement, and include a broader measure of student performance in their accountability systems beyond test scores. It also eliminates NCLB's specific list of corrective actions and required school improvement strategies. In its place, ESSA allows districts to design and implement their

17

own turnaround plans for low-performing schools. See below for answers to the most essential accountability questions" (ASCD, 2015).

High Stakes Testing. Achievement tests that have specific, serious, consequences attached to their results. (Great Lakes Center for Education and Practice, nd).

*No Child Left Behind Act of 2001.*The No Child Left Behind (NCLB) legislation mandates the *development* of curriculum standards and tests to measure student proficiency against those standards. NCLB also requires public reporting of assessment results by school and by predetermined groups of students within each school (2001).

Standards. Standards are expectations set by each state regarding the curriculum to be taught and learned in each subject area (The Education Trust, n.d.).

Standardized Tests. Standardized tests are scientifically normed and oftentimes, machine- graded instruments administered to students and adults under controlled conditions to assess capabilities, including knowledge, cognitive skills and abilities, and aptitude. They are used extensively in the U.S. education system at all levels to assist with admissions, placement, and counseling decisions. Some of these tests include a written portion that is hand-graded (2016, IDOE, np).

Assumptions of the Study

The following assumptions were present in this study:

1. Students with similar skill sets performed similarly on standardized tests.

2. The reports supplied by the Indiana Department of Education (IDOE) contain accurate information.

18

Delimitations of the Study

The following delimitations were present in the study:

1. This study was delimited to high schools. Thus, elementary schools were not within the scope of the study and therefore were not eligible. The sample of high schools was determined after eliminating schools out of a possible population of 432 high schools. Data were obtained from a total of 432 public, private and charter high schools in Indiana. In order to participate in the study, the high school's population must have had at least 50 students in grades 9-12 in the year 2016 and at least 10 graduates in the year 2018. High schools were also eliminated if they were missing any data from the dependent variable, 2016 ISTEP+ English in grade 10 or 2018 graduation rate. Schools were also eliminated from the dataset if they were missing data in the independent variable, average SAT reading score. These variable requirements brought the number of eligible participating high schools down from 432 schools to 290 schools.

2. The study is delimited to the state of Indiana, as the 2016 ISTEP+ English is only administered in the state of Indiana.

3. The state of Indiana decided to use 2016 ISTEP+ English passing rate from Grade 10 to qualify students for graduation in 2018 and therefore those were the 2016 ISTEP+ English passing rates used within the study for data collection.

4. The variables chosen for this study were delimited to the variables available in the
   Indiana Department of Education Database at the time the study was conducted and
   do not take into consider local objectives.

CHAPTER 2

A REVIEW OF THE LITERATURE

An Introduction

The purpose of this quantitative, correlational study was to better understand the relationship between the 2016 Grade 10 ISTEP+ English passing rate and 2018 graduation rate throughout 290 Indiana high schools and the following variables: school size, average SAT reading score, percentage of students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students. The results of the research may further evaluate how 2016 school characteristics are related to the 2016 ISTEP+ English which may suggest future revision of the ISTEP+ English to remove bias or how the test is used.

This chapter serves as an overview of standardized testing and learning in English Language Arts classrooms. This information has been compiled from empirical studies, secondary research and previous data collections. The first section of this review outlines a brief history of standardized testing and highlights major shifts in federal educational policies. The second segment focuses on high stakes testing. The third component focuses

on the selection of 2016 school characteristics which might predict student achievement within this study and the previous work surrounding those topics. Finally, the last section of the review considers the 2016 ISTEP+, its origins, tools for instruction, strengths and weaknesses.

Historical Antecedents of the ISTEP+

In 1965, Lyndon B. Johnson signed the *Elementary and Secondary Education Act* (ESEA) which for the first time "established federal funding for public education combined with a federal policy specifically to support educational opportunities for students from high poverty communities" (Cross, 2004; Jennings, Renter, & Kober, 2002 as cited Forte, 2011, p. 76). The purpose of ESEA was to ensure educational benefits to all children and to fund secondary and elementary education in hopes that "student achievement would increase in challenged schools" (Forte, 2001, p. 78, "NCL Behind," 2001, p. 1). As a result of ESEA, the federal government required states to test every student as a condition of receiving the ESEA funding (Forte, 2001, p. 77).

In 1981, President Ronald Reagan commissioned the National Commission on Excellence or NCEE (1983) to collect and analyze research pertaining to the quality of American schooling in Kindergarten through post-secondary education. In 1983, the NCEE published their findings, *A Nation at Risk*. This served as a thorough critique on America's schools and claimed that,

> Our society and its educational institutions seem to have lost sight of the basic purposes of schooling, and of the high expectations and disciplined effort needed to attain them. This report, the result of 18 months of study, seeks to generate reform of our educational system in fundamental ways and to renew the Nation's commitment to schools and colleges of high quality throughout the length and

breadth of our land. (1983, p.1)

According to educational researcher M. Henniger, (2004) the two most crucial changes in education as a result of *A Nation at Risk* were, "higher standards for students and higher standards for teacher preparation programs" (as cited in Jones, 2009, p. 2). The report also outlined concerns in teaching methodology, curriculum development, expectations for student's success and educator classroom management skills (NCEE, 1983). Ultimately, the report blamed the educational system for America's decline and forewarned of an economic and social crisis unless immediate changes were made in American schools (Kleibard, 2004, Pinar, 2012).

The use of standardized testing became easier and more efficient with the advancements in the grading machine which made it possible to test a wider range of students in a shorter amount of time (Kliebard, 2004, p. 42). The standardized testing pioneer policy, *The Massachusetts Educational Reform Act of 1993* mandated testing all students and changed "the curriculum frameworks to be all encompassing." The act also called for the curriculum to "be of sufficient detail to guide the promulgation of student assessment instruments" (Rossman, 1994, p. 2). More states soon followed because of the common standards and statewide accountability programs (Rossman, 1994, p. 3).

In September of 1995, Secretary of Education, Richard Riley, reauthorized the ESEA in the *Improving America's Schools Act* (1995). The reauthorization gave states the right to assess students and attach accountability to state funding from federal programs. Accountability was an idea that policy makers used to create a more "industrial approach to schooling" by defining "the value of all our educational efforts strictly in terms of test

23

scores and so makes increasing those scores the primary goal of our schools" (Harris, et al. 2011, p. 13). This idea became even more apparent in the most invasive educational reform act to date, President Bush's *No Child Left Behind* (Harris, et al., 2011, p. 13). *The No Child Left Behind Act* (NCLB) passed 91-8 and immediately went into effect (Hursh, 2006, p. 173). NCLB (2001) required all states to develop a common assessment plan in order to determine whether schools were meeting "adequate yearly academic progress" also known as AYP. NCLB's (2001) testing and accountability movement was created to improve education "especially for those who have historically been disadvantaged, including students of color and students living in poverty" (2006, p. 174). NCLB (2001) held schools accountable by requiring programs to track "student outcomes from test scores to attendance to graduation rates" (2006, p. 175). In 2015, President Obama signed *Every Students Succeeds Act of 2015* as an effort to recognize the states' difficulty in reaching the goals set by NCLB (2015, ESSA). The act eliminated the prior state requirements in meeting AYP benchmarks and replaced it with the following criteria: state mandated testing in reading, math and science, English learner proficiency, reporting of graduation rates and at least one non-academic measure (ASCD, 2015).

The purpose behind ESSA was to create a "better law that focused on the clear goal of fully preparing all students for success in college and careers" (2015, ESSA). In alignment with the law, states like New York took advantage of the opportunity to use an alternative test. This component of the act was known as "opting out." According to NYC Opt Out, a "coalition of parents concerned about the impact of high-stakes testing on New York City's schools, children, and teachers" all parents need to do is write a letter or email

to their principal letting them know that they intend to "refuse" the tests on behalf of their child (NYC Opt out, 2019). According to the New York State Education Department, in 2015, more than twenty percent of all students in the state of New York opted out of the state standardized test (NYSED, 2016).

<div align="center">High stakes Testing to Date</div>

Although ESSA (2015) created testing alternatives and opt-out scenarios, 43 states still require high-stake testing to graduate as of 2018 (www.fairtest.org). There are commonly two types of tests found in a high school classroom, 'high stakes' and 'low stakes.' Low stakes tests are primarily used to assess academic achievement and to compare individuals and school performance. Low stakes will often gauge student performance on learning outcomes as checkpoints. A study performed by James Madison University (2010) found that low stakes tests are not as incentivized for students, meaning that the scores on low stake tests are rarely inaccurate and can be considered as a true measure of student knowledge and effort (Barry, Horst, Finney, Brown, & Kopp, 2010).

Competency-based education differs from other educational theories in that learning is both individualized and specialized. Rather than a course or a module, every individual skill or learning outcome, known as a competency, is a single unit. A general idea of competency-based learning describes education as "an ongoing sequence of particular interactions that are systematically designed to approach and approximate performance standards." (Burns, 1973, p. 31). Students must master the competency to move onto the next unit (Burns, 1973, p. 32). Competency based testing became popular in the 1960's-80's and was believed to be "graduating vast armies of utter illiterates" and thus,

lawmakers began the search for a standardized measure that would also ensure competency (Harris et al., 2011, p. 104). After the initial shock of the 1983 report, *A Nation at Risk*, educators began to minimize their use of competency testing. It was replaced with the "test-driven pursuit of high standards" (Harris et al., 2011, p. 104). Pushback from competency-based educators resulted in the adaption of a concept widely known as "authentic assessment" (Wiggins, et al., 2004). Performance, or authentic assessment tasks, would evaluate "students on a task and in a setting as close to its real-world counterpart as possible (Harris, et al., 2011 p. 104). Wiggins (2004) explained that authentic assessment holds the student's power to be "performers" within their knowledge and that traditional tests, tend to reveal only whether the student can recognize or "plug in" what was learned out of context. This may be as problematic as inferring driving or teaching ability from written tests alone (Wiggins, 1990). Huddleston & Rockwell (2015) claimed that the origins of high stakes testing are "as old as public education itself "(p. 33). These methods date back to at least 1845 in the work of Horace Mann with American immigrants. Mann believed,

> That a common, public school system would provide them with the tools they needed to succeed. Mann argued that standardizing the curriculum and instruction among common schools would help address the challenges faced by swelling enrollments and a diverse student body. (Smith, 1934, 2002 as cited in Huddleston & Rockwell, 2015, p. 33)

Tests are often considered "high stakes" because "results are commonly perceived by wide array audiences including students, teachers, administrators, parents, or the public (Madaus, 1988, p. 33). These test results are also interpreted to make important decisions

that immediately and directly affect students and schools (Madaus, 1988, p. 33). In the state of Indiana, the high stakes test is a requirement to graduate high school.

Standardized or "high stakes" testing remains the most "efficient" way to assess student engagement and achievement and since NCLB (2001), grading and assessing students based on ability has increased significantly (Marzano, 2011). Advocates of accountability or high stakes testing argue that high stakes tests raise academic standards and hold educators accountable for meeting criterion set forth by the state (Heubert & Hauser, 1999, Marzano, 2014).

Those who oppose the standardized testing movement like author Alfie Kohn (2000) and educational policy analyst, Diane Ravitch (2006) feel that standardized tests are not an adequate measure on how well schools, teachers, or students perform. Critics of the standardized testing often find that standardized measures only offer a snapshot of a student's ability. The tests also cannot account for student growth or determine the depth of what students understand (Whitenack & Swanson, 2013, Samuel & Suh, 2012). Some argue that a single data point of student success like a high stakes test is not a proper way to assess student achievement and more, that a standardized test is not the appropriate tool to measure the multifaceted area of achievement. Harris, Smith, & Harris in their 2011 book, *The Myths of Standardized Tests* write,

> [The] most important reason scores cannot tell you whether or not a school is good or bad is that schools are not the influence on test scores. Other factors such as the educational attainment and educational goals of parents have a great impact on students' performance. (p. 44).

27

The United States Department of Education (DOE) has required state funded schools to describe how they will attempt to close the achievement gap, ensuring that all students from all backgrounds and capabilities meet the state academic standards. According to the Department of Education, Schools must produce annual state and school district report cards that inform parents and communities about state and school progress. Schools that do not make progress must provide supplemental services, such as free tutoring or after-school assistance; take corrective actions; and, if still not making adequate yearly progress after five years, make dramatic changes to the way the school is run. (NCLB, 2001)

In 2011, the accountability requirements in NCLB assured that goals set by a state would meet the 2014 date to "close the achievement gap" which required one hundred percent of students passing (NCLB, 2001). All measurable data including student tests, student achievement, and student grades were required to appear on school report cards. This information would then be computed to communicate how well schools were performing to the state standards and the accountability requirements mandated by NCLB (NCLB, 2011). The methods behind accountability were maintained by state standards, which were identified and created through NCLB. While classroom grades were determined by the teacher, they often were measured using unstandardized methods (Kohn, 2010, np). Researchers Hardegee (2012) & Guskey (2011) both discuss the range in grading practices amongst teachers. Educators commonly used subjective measures to determine classroom grades for their students such as: aptitude, effort, punctuality, participation, and even behavior. Additionally, test grades can be confusing for students

and parents when an educator chooses to grade students from participatory sets rather than testing objectives (Hardegee, 2012 & Guskey, 2011).

The main goal communicated by NCLB's was to ensure that all students of every background and capability received "a fair, equitable, and significant opportunity to obtain a high-quality education and reach minimum proficiency on challenging state academic standards and state academic assessments" (NCLB, 2001). Since 2015, the rigid requirements of the NCLB have been replaced with new criteria to measure schools, *Every Student Succeeds Act* (ESSA, 2015). With ESSA, every three years, states must submit the accountability system (testing and other non-academic criteria) to determine if schools are "in need of improvement" (ASCD, 2015). States must also include the lowest-performing five percent of all state schools and schools when one or more subgroups are underperforming and high schools in which the graduation rate is below sixty seven percent (ASCD, 2015).

<div align="center">Indiana's High Stakes Test</div>

In 2011, the state of Indiana proposed a revision of their previous high stakes test, the End of Course Assessment (ECA). This test proposal included a new high stakes test from the Pearson Company known as the *Indiana Statewide Testing for Educational Progress* or ISTEP+ (ISTEP, 2011). The state of Indiana stated that the Purpose of the End of Course Assessments is,

> To measure student achievement in the subject areas of English/Language Arts and Mathematics. The Indiana Statewide Testing for Educational Progress (ISTEP's) are criterion-referenced assessments developed specifically for students completing their instruction in Algebra I or English 10. (IDOE, 2011)

In 1999, the state of Indiana passed *Public Law 221* which allowed state authorities to intervene in schools failing to meet benchmark requirements (IDOE, 2011). After the implementation of NCLB, this would now allow state officials to intercede in matters concerning school achievement regardless of the *Public Law 221 bill* (NCLB, 2001). The Department of Education could also now monitor education efforts in order to ensure every school in Indiana was meeting graduation requirements (IDOE, 2011). The goal for each Indiana student in grade 10 is to pass the ISTEP+ exam as a graduation requirement in the state of Indiana (IDOE, 2011). Furthermore, Indiana provided instructional goals or guidance to educators as to how much instructional time or assessment should be spent on each English Language standard of the course (IDOE, 2016, p. 3).

Strengths of ISTEP+ continue to be that it is an easily scored, standardized exam. Feedback is also returned within the same school year. Although in recent years, such feedback has been delayed by Pearson. In 2018, the Indy Star reported, "Pearson, the testing company that administers ISTEP+, reported issues involving the grading of a graphing question on the 10th-grade math test and another problem with other student responses in grades 3-8 and 10" and thus were unable to report scores (Cavazos, 2018). Aside from the inconsistency in reporting, the timing of the test has changed from a single test administration to two testing windows. The instructional and assessment guidelines for the ISTEP+ declared that, "The Grade 10 ISTEP+ test is a domain-based test, rather than an end of course assessment. In other words, the Grade 10 ISTEP+ test is administered during specified testing windows…" (IDOE, 2016, p. 1). Although every 10th grade student takes the exam and must pass it, test dates have been changed from the end of the course to a

two-part examination, one part each semester. Furthermore, not every element of the standards is addressed, although the instructional guidelines recommend that educators assess all of the standards in different formats if not done so within the ISTEP+.

The main weakness found within ISTEP+ (2015) is the content priority versus the approximate instructional time recommended within the exam. The ISTEP+ (2016) assessment resources for educators can be found on the IDOE website and include test sample questions and test blueprints outlining aspects of the multiple-choice portions and the essay questions. The state of Indiana also provides links to instructional tools for educators. Most of these tools are pedagogical pieces informing curriculum design and test tips geared towards student success on the ISTEP+ exam (ISTEP+, 2015). A WebEx recording and accompanying PowerPoint presentation can be found providing additional training along with outlines of test training for a larger group of educators at each grade and content level. Lastly, the website includes English/Language Arts rubrics, rubric guidelines, and editing checklists pertaining to the written portions of the ISTEP+ exam (IDOE, 2015).

<center>Contributors to Achievement</center>

In his 2000 work, "The Case against Standardized Testing" Alfie Kohn defended that standardized tests did not supply the objective measures that they once intended to. He wrote, "In real life, plenty of people need to be convinced that these tests do not provide an objective measure of learning or a useful inducement to improve teaching, that they are not only unnecessary but highly dangerous" (p. 1). Issues like test invalidation, cheating, and other matters of integrity easily are encountered when testing results are aligned to teacher

<center>31</center>

ability or student strengths. Diane Ravitch, author and federal policy maker was once a proponent for the standardized testing movement. In her 2010 book, "The Death and Life of the Great American School System" Ravitch explained why she has since left the NCLB initiative and is now an activist against the standardized testing movement. Ravitch (2010) argued that standardized tests provide inadequate measures of the abilities of students and are used to unfairly judge an educator's performance (Ravitch, "Opt Out 2016"). Ravitch also maintains that high stakes tests are supporting the wrong facets of education all together. One of Ravitch's main arguments is that education does not focus on molding the whole child. Ravitch hoped that education would one day ask questions like, "What is a well-educated person? What knowledge is of the most worth? What do we hope for when we send our child to school?" (p. 230). Her hopes are that education will begin to shift and eventually focus on the elements of education which impact a child's life for fifty years rather than fifty minutes. Ravitch (2010) wrote,

> "Our schools will not improve if we expect them to act like private, profit seeking enterprises. Schools are not businesses; they are public good. The goal of education is not to produce higher scores, but to educate children to become responsible people with well-developed minds and good character." (p. 227-28)

John Hattie (2009) renowned researcher and director of Melbourne Educational Research Institute focuses his work on researching and analyzing meta analyses on student achievement. His work is considered to be some of the most valuable research on student achievement to date. Hattie determined that Cohen's d, an effect size of d = 0.40 is the most appropriate measure for educational data in his study in over 800+ meta analyses. Robert Slavin from John Hopkins school of Education and critic of Hattie's work concluded that,

Part of Hattie's appeal to educators is that his conclusions are so easy to understand. He even uses a system of dials with color-coded "zones," where effect sizes of 0.00 to +0.15 are designated "developmental effects," +0.15 to +0.40 "teacher effects" (i.e., what teachers can do without any special practices or programs), and +0.40 to +1.20 the "zone of desired effects." Hattie makes a big deal of the magical effect size +0.40, the "hinge point," recommending that educators essentially ignore factors or programs below that point, because they are no better than what teachers produce each year, from fall to spring, on their own. In Hattie's view, an effect size of from +0.15 to +0.40 is just the effect that "any teacher" could produce, in comparison to students not being in school at all. ("John Hattie is Wrong," np).

Using the "hinge point" and analysis of statistical data, Hattie (2009) articulated what factors impact student achievement and more, what factors do not impact student achievement (p. 228). Some of Hattie's (2009) most important findings were that teacher feedback is one of the most effective methods in advancing student achievement while other variables like, moving between schools and students' feeling disliked were found to be detrimental to student achievement. Applying Hattie's (2009) work, other variables that have been used in the classroom to predict achievement can also be analyzed and their results proved to be useful within this study: The following variables were adapted from Hattie's work as possible contributors to achievement: school size, average SAT reading score, percentage of students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students.

The Student and Environment

Hattie's (2009) study confirmed that students must "have a positive view of their own racial group, and that educators do not engage in the language of deficit theorizing" (p.

33

57). While minority status served as an important variable to analyze due to the current lack of data on student achievement. One study performed by the American Youth and Policy Forum notes that "high stakes testing hurts low-income and ethnic minority students and is linked to high drop-out rates among these groups" (Orfield, Edley, Kornhaber, Resnick, McNeil & Natriello, 2000). The study found that African Americans and Hispanics were "three to four times as likely to be held back than whites (Orfield et al., 2000).

The vast amount of research surrounding English Language Learners and achievement on students in the high school often offers conflicting opinions. In a recent meta-analysis reviewing high-stakes testing and English Language Learners in the United States, researchers Acosta, Garza, Hsu, Goodson, Padron, Goltz & Johnston (2019) found several instances of factors which would systematically affect an English Language Learner's test performance (Acosta, Garza, Hsu et al, pg. 327, 2019). Others have concluded that high stakes tests are inappropriate for English Language Learners and their continued use for high stakes decisions that have adverse consequences (Solorzano, 2008, Wright & Choi, 2006). Hattie did not offer achievement research on students receiving English Language Learner services.

Free or reduced lunch (SES) is "an individual's relative position in the social hierarchy and directly relates to the resources in the home" (Hattie, 2009, p. 61). SES lends itself as the notable indicator for student achievement with an effect size of d= .57 from Hattie's 2009 study. In Hattie's more recent meta-analysis in 2018, the effect size went down to d= .52 but remained as a notable contributor to student achievement. Hattie noted that the effect size of SES was most influential during a student's pre-school and early

years of schooling because of studies performed like the Hart and Risley study (1995). The

1995 research showed that students growing up in a lower SES spoke on average 2.5

million words while students growing up in a higher SES spoke around 4.5 million words

(p. 4). Hattie (2009) wrote,

> This demonstrates a remarkable difference in what students bring to school. The
> lack of resources, the lower levels of involvement and teaching and schooling, and
> the lesser facilities to realize high expectations and encouragement, and the lack of
> knowledge about the language of learning may mean that students from lower SES
> groups start the schooling process behind others. (p. 62)

An aspect to consider is that these studies also indicated that SES level was much more

critical at the school level than at the individual level. Hattie noted White's (1982) meta-

analysis on the correlation between SES level and student achievement. White's (1982)

study signaled the importance of "distinguishing between effects based on aggregated units

(such as SES of the school) versus the effects based on the individual level (such as the

SES of the student)" with the aggregate school effect of d = 0.73 and student d = 0.55

(Hattie, 2009, p. 62). Similarly, a 2014 study performed in North Carolina found a strong

correlation between free and reduced lunch students and low student achievement scores on

end of course assessments in math, reading and biology alike (Morales & Charles, 2014).

Considering the school apart from the student is not the only instance where this variable

should be evaluated. In Hattie's research he found that school size had a d = 0.43 on

student achievement. Hattie (2009, p. 62) Stekelenburg (1991) and Ready, Lee, and Welner

(2004) all argue that school size should optimally be around 600-900 students to have

positively affect student achievement (p. 80).

Ability Grouping

Hattie's work confirmed that a child's background and homelife is directly related to achievement (2008, p. 41). Hattie and Hansford's 1982 study found an average correlation of r= 0.51 between measures of intelligence and achievement with a significant effect size, d= 1.19, indicating that "prior school grades are the best predictor for academic success" (p. 41). In Hattie's 2009 meta-analysis he found an effect size d= 0.67 which rose to d= .94 in his 2018 study (Hattie, 2018). Hattie's 2009 work was based on 17 meta-analyses, 3,607 studies and 387,690 people and ranks quite high in standard error with 0.098. Marzano (2000, 2003, & 2011) maintains that formative assessments, direct feedback, and teacher-assigned grades are all products of effective grading practices as long as they are explained and addressed with the student in a timely fashion. Many researchers have discovered that grading practices vary widely from teacher to teacher (Reeves, 2004). Educators commonly base pedagogical instruction preferences on opinions and without a research-driven rationale (Cox, 2011; Guskey & Bailey, 2001; Zoeckler, 2007).

Grouping and labeling students based on ability and curricula components is still a debated issue for both parents and educators. Although these variables do not necessarily predict achievement as an outcome, they do relate to how teachers differentiate student treatment and instruction (Hattie, 2009, p. 124). Hattie's study suggests that labeling students produced a positive effect size of d= .61 out of 79 different studies. Findings showed that labeling allowed for educators to differentiate instruction. However, it should be noted that positive images from educators are also important in the classroom. Hattie's

updated 2018 meta-analyses found that when students feel disliked it has a negative impact on student achievement with a d = -0.19 effect size.

Ability grouped and gifted students should also be considered differently according to data. Hattie indicated that only when high ability tracks are provided with a fast-tracked curriculum that they see the positive effect of d= .49. When high ability students are grouped with gifted students and do receive the same curricula, the effect size is not significant. Accelerated students are another alternative to the "special classes" as Hattie defined them. Accelerated programs allow students to work alongside their peers on "learning tasks that match their abilities" (Kulik & Kulik, 1984, p. 84). By studying accelerated learning programs, researchers Kulik & Kulik found "accelerated students surpassed the performance of non-accelerated students of an equivalent age and intelligence by nearly one grade level" with an effect size of d= .88 (p. 84). In Hattie's two meta-analyses he found in 37 different studies that acceleration amongst students contained a positive impact on achievement with an effect size of d= .88.

Hattie (2009) also considered groups who had been previously "categorized in special education and non-specialty education" and found that such a distinction could also affect student achievement (p. 42). In a study performed in 1985, researchers Kavale and Nye measured how learning disabilities influence achievement in the "linguistic, neuropsychological, and social/behavior domains" (Hattie, 2009, p. 43). Their findings concluded that no matter what the disability, each should be studied on its own. The study also deduced that any disability made an impact on the learner and ability grouping (2009, p. 43). Additionally, mainstreaming is another concept closely associated amongst students

with special needs. Mainstreaming is best defined as, integrating students with disabilities "students with disabilities should be integrated with their non-disabled peers to the maximum extent possible and certainly placed in the least restrictive environment" (Hattie, 2009, p. 95). The classroom is often more inclusive and provides an opportunity for social justice for all students. Hattie's (2009) study found that mainstreaming in the classroom did not have a negative or positive effect on student achievement with the effect size of d= .27 (p. 95). This could be because it is much easier for educators to differentiate the lesson while maintaining the subject matter. Additionally, Hattie reported the effect sizes for the impact of small group learning on achievement of d= .47, indicating that smaller group learning allows for teaching to be varied, challenging, and accommodating for all student needs and levels of ability within the smaller groups rather than in larger classrooms (p. 95).

Effects of Testing

When a high stakes test is attached to the curriculum, an educator will inevitably be forced to change their instructional methods or assessments. In their book "The Myths of Standardized Tests" Harris, Smith and Harris (2011) argued that teachers spend an excessive amount of time on test preparation and that it may actually be harmful to indicators used to measure student achievement within a standardized test (2011, p. 96). Harris et al., (2011) explained how

> 80 percent of teachers use 20 percent of their time in test preparation and when 28 percent of teachers report spending more than 60 percent of their time preparing for the state tests, how accurate is the test's reading of student achievement? (p. 96)

Within Hattie's study, he found that although repeat testing is a particular measure of feedback it is only beneficial to teachers. Moreover, it only becomes beneficial to teachers if the feedback is used to modify their instructional methods (2009, p. 178). Hattie (2009) discovered that the effect size of frequent testing was not significant to student achievement with a neutral effect size of d= .34. Jaekyung Lee (2008) from the State University of New York at Buffalo also studied the effects of statewide high stakes testing and test-driven accountability policies on reading achievement in the US. Lee's (2008) study revealed that there was not a positive significance with a d= .0.29 effect size for reading and more, Lee determined that there is a d= 0.03 effect size in high schools indicating that there was little to no impact from state driven accountability policies on reading or math achievement in high stakes testing. Lee's (2008) study concluded that there was no evidence to support that the more statewide adoptions of policies aligning student achievement to standardized testing practices would benefit the student or result in higher student achievement (p. 622). Since the rise of high stakes, educators have devoted extra instructional time to teach test taking and, in some cases, "coaching" students to take tests like SAT and ACT's (Hattie, 2009, p. 179). Hattie (2009) defined the term "coaching" within his research "to refer to a wide range of test preparation activities carried out in order to improve test scores" (2009, p. 179). Researchers Rebecca DerSimonian and Nan Laird (1983) conducted a study on how coaching may affect the average SAT reading score and their findings supported "a positive effect of coaching on average SAT reading score" however, "the size of the coaching effect from the matched or randomized studies appeared too small to be practically important" (Hattie, 2009, p. 179).

CHAPTER THREE

METHODOLOGY

The purpose of this quantitative, correlational study was to better understand the relationship between the 2016 Grade 10, ISTEP+ English passing rate and 2018 graduation rate amongst 290 Indiana high schools and the following 2016 school characteristic variables: school size, average SAT reading score, percentage of students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students. The results of the research may further help evaluate how 2016 school characteristics are related to the 2016 ISTEP+ English which may suggest future revisions to the ISTEP+ English removing bias and how the test is used.

General Introduction

The purposes of chapter three are to explain the following: the sample population selected for this study; instrumentation used for the collection of data; methods, materials, and procedures used to collect the data; and finally, the selection and use of statistical procedures employed in the analysis of collected data.

Population and Sample

The study was conducted using data provided by the Indiana Department of Education. For this study, the independent variables (2016 school characteristic variables) were used as a way to understand if there is a relationship between the dependent variables, 2016 ISTEP+ English in grade 10 and graduation rate for the year 2018 graduates.

The data obtained for the use of this study was housed and maintained by the state of Indiana in the Department of Education (IDOE) online databases. Files containing necessary data on the dependent variables, 2016 ISTEP+ English and 2018 graduation rate and the 2016 school characteristic variables, school size, average SAT reading score, percentage of students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students, were uploaded from the IDOE website and saved onto the researcher's computer. The state of Indiana has compiled a readily available, robust database of assessment reports. Within this database, data can be found on 2016 ISTEP+ English testing from grades 3-10, statewide school grades, corporation and school 2016 ISTEP+ English results, statewide student performance reports, advanced placement results, alternate and modified assessment results, attendance rates per corporation and school, enrollment data including enrolment by grade level population, minority status, free/reduced price meal status, special education and English Language Learner data, gender, disaggregated 2016 ISTEP+ English results, school directories, graduation rates, high ability enrollment, Indiana College Readiness reports, International Baccalaureate results by school, Public transfer reports, SAT and

ACT results by corporation and by school, and prior year 2016 ISTEP+ English data going back to 2010.

After consideration of what variables should be included within the study based off of previous literature reviews and meta-analyses conducted by Dr. John Hattie (2008), the files from the ISTEP+ English desegregated data for the years 2016 and 2018, and all ISTEP+ English school data for the year of 2016 were selected for use. Some variables were combined from the 2016 AP files, graduation rates for the year 2018, enrollment data for the year 2016, and SAT data for the year 2016 through SPSS syntax. After selecting variables from the multiple files in the Indiana Department of Education database, the files were downloaded to the researcher's computer and uploaded into SPSS to be further reorganized into one larger, merged file. From there, SPSS syntax was used to compile the variables together into a larger SPSS file for further analysis.

To ensure that an appropriate sample was taken from the population there were a possible 432 schools to choose from the Indiana database. Data were obtained from a total of 290 public, private, and charter high schools in Indiana. In order to participate in the study, the high school's population must have had at least 50 students in grades 9-12 in the year 2016 and at least 10 graduates in the year 2018. High schools were also eliminated if there were missing any data from the dependent variables, Grade 10, 2016 ISTEP+ English or 2018 graduation rate and independent variable, average SAT reading score. These variable requirements brought the number of eligible participating high schools down from 432 schools to 290 schools. In this study, the researcher used school characteristic data from the 2016 school year and graduation rates from the 2018 school year. Students taking

the ISTEP+ English in 2016 would be the graduating class in 2018. This included students

in Indiana from grades 10, both male and female, from various economic backgrounds and

abilities. The data capturing method was used to acquire data from every member of the

population to more comprehensively inform the results of this study and will more

accurately yield information for all subgroups of the population (Fraenkel et al., 2015).

Research Design

This study used both regression and correlation to analyze school data. Regression

provided an opportunity to predict and explain the relationship amongst multiple variables

(Creswell, 2013, p. 358). In this study a regression analysis was used to identify which

variables indeed have the most impact on the 2016 ISTEP+ English passing rate and 2018

graduation rate. The correlational design was used to predict how a variable can predict the

rate of another.

2016 ISTEP+, English

The first dependent variable, 2016 ISTEP+ English in Indiana was a high stakes

test. Indiana students in grade 10 must pass the 2016 ISTEP+ English by the second

semester of their senior year in order to graduate high school (IDOE, 2010). The ISTEP+

English is a standardized, high stakes assessment given to students in grades 3-10. Students

who do not pass the exam after the February testing window in grade 10 have the

opportunity to retake the exam in grade 11, in both the fall and spring semester, and again

in grade 12, in the fall and spring semesters, totaling to five opportunities to pass the exam

before graduation. Additionally, students who do not pass can qualify for a waiver if they

meet the following criteria as mandated by the state,

Take the graduation exam in each subject area in which you did not achieve a passing score at least one time every school year after the school year in which you first took the examination. Complete any extra help sessions offered each year by the school to prepare for the graduation examination retests. Maintain a school attendance rate of 95 percent or better over the course of your high school experience (excused absences are not counted against your attendance rate). Have at least a "C" average, over the course of your high school career, in the courses required for graduation. Satisfy any other state and local * graduation requirements. Get a written recommendation from the teacher(s) in the subject area(s) not passed, as well as one from the school principal, and show proof that the academic standards have been met, whether through other tests or classroom work. (IDOE, 2011)

As of the graduating class of 2018, schools may now apply for waivers for ten percent of the student body. If a school goes above the ten percent threshold, they must complete a 'Graduation Waiver Remediation Plan' to show how interventions are being implemented throughout the school to limit and reduce the number of waivers the following year (IDOE, 2018). Subsequently, students participating in the waiver program and required to retake the ISTEP+ during their junior and senior year may not be counted towards a school's 10-12 (grade) improvement score which is a "bonus" found in the accountability component towards the growth domain score which is attached to teacher bonuses for the year.

Validity of ISTEP+

According to Bloomberg and Vlope (2016), the primary purpose to conduct educational research is to form valid conclusions about the variables under study (p. 161). Bloomberg and Vlope (2016) also state that if the research is valid, "it clearly reflects the world being described" (p. 162). The conclusions concerning validity based off from this study were determined on the research design. The design of the study was constructed to determine if there is indeed a relationship between the 2016 school characteristic variables

and 2018 graduation rate and the 2016 ISTEP+ English passing rate, which are used to measure student achievement in the state of Indiana. The state of Indiana had developed the ISTEP+ English to identify achievement, meet federal mandates, benchmarks, and other criteria maintained by the Indiana Department of Education (IDOE). While there are no quantitative influences within the 2016 ISTEP+, validity is maintained through the IDOE by providing schools with test implementation manuals.

The development of these tests is not discussed with others and schools do not receive the ISTEP+ English test materials until only days before the examination. The IDOE states that to be in accordance of NCLB (2001) and the ESEA Flexibility Waiver (1999) "test administrators must be accurate and methodical in test preparation and administration, as well as in reporting student demographic characteristics" (IDOE, 2016). Additionally, according to the ESSA the state must provide evidence of achievement and test development to the Department of Education by year 2018. That state of Indiana indicates,

> The Indiana Department of Education, in collaboration with a statewide network of educators and partners, will draft a plan describing how Indiana will meet the requirements of ESSA. Indiana has chosen to submit its ESSA plan to the U.S. Department of Education on September 18, 2017 (IDOE, 2016).

David Goodwin, Superintendent of the Metropolitan School District of Steuben County claims that the creation of the test was based off a need for a more "performance-based approach" the current government at the time of the test development coined this as Performance Based Accreditation. The system is based off of effective school's actual research and data provided to the state. Goodwin writes, if School A was doing well in the

area of student achievement, and School B was not, there must be something going on in School A that was not taking place in School B" (Goodwin, 2006, np). The idea behind this concept was to identify what the "best practices" were in high performing schools and implement those in underperforming schools. To ensure this crucial step, the ISTEP+ was created. The use of the Performance Based Accreditation fell away several years ago due to issues with holding every school at the same level of accountability which ultimately disregarded differences in socioeconomics and student ability. Indiana then developed a law known as *PL-229* in 2001 (IDOE). This was ultimately Indiana's school improvement plan. The law is a basic compliance to the NCLB (2001) and the accountability test for NCLB (2001). Many argue that the time of year the test administered is not beneficial to some groups of students, primarily, low-socioeconomic and ELL and therefore, the Grade 10, ISTEP+ English should not be used a high stakes test. The State Board of Education spokesperson, Marc Lotter claimed, "The experts found that the test was valid, they also found issues with the test" (McInery, 2016, np). Lotter (2016) also commented that although there may be some issues within the test the information concerning the validity study of the Grade 10, ISTEP+ English is indeed valid. The Indiana Board of Education has also released that,

> There are a number of ways in which the validity of the ISTEP+ English assessment program could be examined. In early discussions, over 25 potential studies were identified. However, not all of these potential studies are of the same importance, either for review of the 2015 ISTEP+ English program, or for planning for the ISTEP+ English in the future. (Roeber & Briggs, 2016, p. 6)

Consequently, the question of validity of the 2016 ISTEP+ English (now known as the ISTEP+ English assessment program) should not be up for concern. All state mandated

testing is maintained and by the State of Indiana and continues to do so. In the state of

Indiana ISTEP+ English test scores are considered a more recent instrument constructed by

the Indiana Department of Education. Both variables, 2018 graduation rates and 2016

ISTEP+ English passing rate theoretically measure the same construct–student

achievement.

<div align="center">2018 Graduation Rate</div>

The second dependent variable, 2018 graduation rate, is defined by the State of

Indiana as follows: The Indiana State Board of Education adopts course and credit

requirements for earning a high school diploma. Current course and credit requirements

went into effect for students who entered high school in the fall of 2012 (Class of 2016).

Students have the option of earning an Indiana Diploma with the following designation(s):

a) General;

b) Core 40;

c) Core 40 with Academic Honors (AHD); or

d) Core 40 with Technical Honors (THD) (IDOE, 2018).

Graduation rates have been a constant measure of a schools' success. Since 2010, the

National Center of Education Statistics has been gathering data in order to measure the

success of our schools. In the 2015-16 school year, the Center released the following

statement concerning graduation rates,

> This indicator examines the percentage of public high school students who graduate
> on time, as measured by the adjusted cohort graduation rate (ACGR). State
> education agencies calculate the ACGR by identifying the "cohort" of first-time
> 9th-graders in a particular school year. The cohort is then adjusted by adding any
> students who transfer into the cohort after 9th grade and subtracting any students

who transfer out, emigrate to another country, or die. The ACGR is the percentage of students in this adjusted cohort who graduate within 4 years with a regular high school diploma. The U.S. Department of Education first collected the ACGR in 2010–11. (2018, National Center for Education Statistics)

In the state of Indiana, school budgeting from the state is partially impacted by the graduation rate along with school population, students who receive free or reduced lunch, and students who graduate with honors and students who have disabilities (Sugimoto, 2016). Therefore, ensuring schools graduate the most students as possible is important for budgeting.

School Size

The independent variables, also known as the 2016 school characteristics, within the study are as follows: school size, average SAT reading score, percentage of students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students. All of these variables were considered to be useful in the study partly because of Dr. John Hattie's meta-analyses on student achievement in his work, *Visible Learning* (2008). The first independent variable, school size has been proven to show an impact on student achievement as population goes up with an effect size of *p=0.43* (Hattie, 2008, p. 62). This study wanted to also consider the relationship between school size and a school's 2018 graduation rates or 2016 ISTEP+ English results.

SAT

The second independent variable was the *SAT* (scholastic aptitude test) and can best be defined as "a national college admissions examination" (www.collegeboard.org). This examination consists of multiple-choice questions and often includes an essay with a scoring point scale of 1600. The math and reading sections each have scores between 200 and 800 (www.collegeboard.org).

Advanced Placement

The third independent variable in the study was the *AP, or Advanced Placement* population for each school. Advanced Placement qualifications have somewhat shifted over the years but now can be distinguished as, students who want to take advantage of college credit earning courses that are geared toward future potential. Any student can be considered AP as long as they complete the enrollment forms and take the PSAT test (collegeboard.org). The number of students taking AP classes has increased since 2007 with only 23.9 percent enrolled in at least one course. Now, 37.7 percent of all students are considered AP by enrolling in one course (Jaschik, 2018).

Special Education

The fourth independent variable was the percentage of students in special education who are students who qualify for special education services. In the state of Indiana, the students who can be considered special education are those who have applied for services and who have been granted an Individualized Educational Plan, also known as an IEP.

English Language Learner

The fifth independent variable in the study was the percentage of English Language Learner students. Students who qualify as an English Language Learner in the state of Indiana are those who qualify for the services. More than 112,000 students speak a language other than English within the home and 275 languages are represented within Indiana schools (IDOE, 2018). Of these students, 50,000 or 5% have been "formally identified as English Language Learners due to limited proficiency in speaking, listening, reading, and writing academic English" (IDOE, 2018). Students are identified as English Language Learners through a series of tests beginning with the "Home Language Survey" also known as the HLS. The HLS is a legally binding document and is completed only once during a child's Indiana academic career, upon their first enrollment (IDOE, 2018). After the test students who qualify for services then take the WIDA (World-class Instructional Design and Assessment) or W-APT (WIDA-Access Placement Test) which are both proficiency tests used in Indiana schools. If the student scores below "proficient" on the placement test (a 5.0 overall score) the student is considered to be an English Language Learner.

Free or Reduced Lunch

The next independent variable of the study was students who qualify for *free or reduced lunch*. This study uses "free or reduced lunch" status as a proxy for socioeconomic status or *SES*. By guidelines for the federal program, those who meet the income criteria provided by the state of Indiana may fall under Reduced Price Meals or Free Meals (IDOE, 2018). To apply for these services households must complete an application which is

available to all homes. Some of the information required from families is whether or not they participate in any of the following programs, SNAP (food stamp), Medicaid, or TANF (Temporary Assistance for Needy Families). Some families may be asked to provide information about income and earnings (IDOE, 2018).

<div align="center">Minority Ethnic Group Students</div>

The final independent variable in the study was percentage of minority ethnic group students. Indiana recognizes the following groups as minority ethnic groups on the identifiers in the ISTEP+. American Indian, Asian, Black, Hispanic, Multiracial, Native Hawaiian or Other. Students could also choose not to supply the information if they so please.

<div align="center">**Data Collection**</div>

The method of data collection used in this study is secondary data. Secondary data (existing data or ex-post facto data) is data that was collected, recorded, or left behind (Creswell, 2013, p. 482). The researcher was presented electronic copies of the secondary data from the Indiana Department of Education's online database and all data was maintained under password on the researcher's personal computer. All student identifying information had been previously scrubbed from 2016 ISTEP+ English passing rate. The state of Indiana houses all of the 2016 ISTEP+ English data from 2006 onward. Within these files, the researcher was able to extract the dependent variables 2016 ISTEP+ English passing rate and 2018 graduation rates, from the files and merge them into a single SPSS file. The researcher only selected high schools due to the grade 10 criteria and from there,

selected only schools with at least 50 students in grades 9-12 and at least 10 graduates in the year 2018. Schools were also eliminated if they were missing data from 2016 Grade 10, English ISTEP+, 2018 graduation rate or mean SAT. Data were obtained from a total of 290 public, private and charter high schools in Indiana. After identifying what schools to obtain data from within the files the researcher went back to the clearing house and found the remaining independent variables from 2016: school size, average SAT reading score, percentage of students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students and continued merging the SPSS files into one major data compilation which contained all of the necessary schools. After reviewing what schools met the sample and population criteria the researcher ran tests for descriptive statistics and outliers, eliminating any schools with missing data from the set. The final number of schools eligible to participate in the study came to 290.

Data Analysis

Data was analyzed using IBM's SPSS Advanced Statistics 26 software for Mac. Both univariate and bivariate statistics was used within the study. After the analysis for descriptive statistics and outliers, a Pearson r correlation between 2016 ISTEP+ English passing rate and 2018 graduation rate for the entire sample of 290 schools was performed. Next, the researcher completed a Pearson r correlation between 2016 Grade 10, ISTEP+ English passing rate and school size. The researcher continued the same analysis, using the Pearson r correlation for the remaining variables, average SAT reading score, percentage of

students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students. Next, the researcher performed a multiple regression with 2016 ISTEP+ English passing rate and all independent 2016 school characteristic variables determining what variables best predicted a school's 2016 Grade 10, ISTEP+ English passing rate. Then, the researcher determined how the 2016 school characteristics related to the combined IN schools' 2018 graduation rates by running a multiple regression and forward stepwise regression using the 2016 Grade 10 ISTEP+ English passing rates and the 2016 school characteristic variables. The last test determined how the 2016 Grade 10 ISTEP+ English passing rate related to the 2018 graduation rate controlled for the 2016 school characteristics. To complete this the researcher ran a hierarchical regression adding ISTEP+ in addition to the 2016 school characteristics.

Ethical Considerations

All data was obtained with permission of the Indiana Department of Education. All data was shared with the researcher and dissertation committee. All data had been previously scrubbed of any student information or identifiable remarks which maintained student and teacher confidentiality statewide.

CHAPTER 4

ANALYSIS OF DATA

The purpose of this correlational study is to better understand the relationship

between the 2016 Grade 10 ISTEP+ English passing rate and 2018 graduation rate

throughout 290 Indiana high schools and the following 2016 school characteristics: school

size, average SAT reading score, percentage of students passing advanced placement (AP)

exams, percentage of special education students, percentage of free or reduced lunch

students, percentage of English Language Learner students, and percentage of minority

ethnic group students. The presentation of the results will begin with a descriptive analysis

of the variables used within the study and a description of how the researcher selected

schools and discovered the variables used within the study.

Data Cleaning

The sample was a purposive sample taken from 432 high schools using secondary

data originally obtained by the Indiana Department of Education. All data was first found

on the state of Indiana assessment repository online database. Each data file was

downloaded to the researcher's computer and opened using SPSS 26 Syntax for Mac. The

researcher first established a master file for the renamed, subsequent variables to be

recoded into after cleaning and readying. All variables would go into this file and would be ready for final descriptives and analysis. It should be noted that all school characteristic variables and ISTEP+ English data were from the year 2016. The only variable from 2018 used in the study was graduation data.

The first file the researcher cleaned was the 2018 graduation rate file. Schools were selected if they had grades greater than grade nine and only two were eliminated from the sample (school id's 21 and 29) and were sorted by cases using School ID numbers. After checking work, the data file was saved with the relevant variables in the desired order and were ready for merging by ID. The dataset was then vetted to eliminate any schools with graduates less than 10 students. This eliminated seven more schools, (School ID's: 23,47,91,101,102,105 and 177). The second file, containing the variables for minority population and ethnicity was then prepared for analysis. After renaming the variables to match datafile one, the researcher sorted the cases by School ID, and saved the outfile ready for merging. Next, the researcher joined files one and two together. To do this, the researcher had to select the variables by name and save them into a new data outfile. This would allow the researcher to utilize the outfile as a place to send all of the readied data after cleaning and coding. After checking for errors, the researcher repeated the process for files three and four. This time, the variables in file three contained data on class size, English Language Learner data and special education students. The variables were renamed to match previous variables in the main file and miscellaneous variables were dropped from the data file that were no longer needed. After saving these files, the researcher merged the file with the previously formed master file. Now, the researcher had one file which

contained the variables: school size, average SAT reading score, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students.

Next, the researcher completed that same process for file five containing information on Grade 10 2016 ISTEP+ English passing rates. The variables within the file were renamed, and schools were only selected if they contained data on the 2016 ISTEP+ English passing rate. This eliminated 24 schools from the dataset because they did not contain any data. After checking the work of file four, the combined file and file four were also joined. The last file, file six, containing information on SAT and AP students contained variables that had to be renamed and sorted by School ID this removed an additional 79 schools. All files contained N's for each variable. After combining the last file with the master file, the researcher was able to work with one combined master file. The researcher converted the provided N's for each variable into percentages into the master file. At this point in the data readying process, the researcher needed to ensure there were no repeated or duplicate high schools within the data set, this required a good match sequence. After proofreading the non-matches and filtering the school names, 56 schools needed to be removed based off of duplicate names or non-matches. Lastly, the researcher organized the file by school name and also designated school's with missing data to show up at the end of the dataset. In total, 295 schools remained with good, workable data after meeting the specifications previously outlined.

After screening the set for outliers, it was determined that five schools with a 2018 graduation rate lower than sixty percent were extreme and could possibly distort the

analyses and violate assumptions. Therefore, the researcher eliminated the School ID's 2488, 8270, 5290, 7944 and 5643 from the data set using a filter. The researcher checked models with the 2016 school characteristics as independent variables and both the 2016 ISTEP+ English passing rates and 2018 graduation rate as dependent variables. There were no records with extreme Cook's Distance values, so no further removal of records seemed appropriate. In total, 290 schools remained.

<div align="center">

Description of Sample

</div>

This section presents the results of descriptive analyses: (a) percentages and frequencies for two dependent variables, the 2016 English 10 ISTEP+ English passing rates and the 2018 graduation rates, (b) mean and standard deviations for the seven 2016 school characteristics: school size, average SAT reading score, percentage of students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students. Table 1 provides the means and standard deviations for the dependent variables within the study, the 2018 graduation rates and the 2016 ISTEP+ English passing rates.

The passing rate for the 2016 English ISTEP+ for Grade 10 was 244 out of 400. The mean passing rate for the 290 Indiana high schools in the sample was 57.41% with a standard deviation of 12.93%.

The mean 2018 graduation rate for the 290 high schools, was 91.93% with a standard deviation of 6.03%.

Although the 2016 ISTEP+ English is a required test to graduate, the 34% difference between the 2018 graduation rate and the 2016 ISTEP+ English passing rate can be attributed to Indiana students having the availability to retake the 2016 ISTEP+ English in their junior and senior years. Additionally, students can also apply for waiver to graduate, exempting them from the requirement to pass the ISTEP+ English 10.

Table 1

Descriptive statistics for the dependent variables

Variable	*N*	Min	Max	*M*	*SD*
2016 ISTEP+ English passing rate	290	16.10%.	98.70%	57.41%	12.93%
2018 graduation rate.	290	23.88%	100.00%	91.93%	6.03%

The descriptive statistics for the independent variables (2016 school characteristics) are presented in Table 2. The school size standard deviation of 745.51 indicates a wide variation in school size as also indicated by the minimum and maximum school size values. Of the remaining school characteristics, there were few English Language Learners, few graduates passing an AP exam, and substantial numbers of students receiving free-reduced meals, special education students and students from minority ethnic group students.

Table 2

Descriptive statistics for the independent variables

Variable	N	Min	Max	M	SD
School size	290	166	4930	1014.67	745.51
Average SAT reading score	290	431	658	533.57	30.25
Percentage of students passing advanced placement exams	290	0.0%	92.80%	14.63%	12.73%
Percentage of free or reduced lunch students	290	5.11%	100.00%	41.90%	17.53%
Percentage of English Language Learner students	290	.00%	20.83%	1.960%	2.96%
Percentage of special education students	290	.29%	29.47%	13.760%	3.65%
Percentage of minority ethnic group students	290	1.08%	99.84%	21.107%.	23.897%

Relationship between 2016 Grade 10 ISTEP+ English

and 2016 School Characteristics

The first research question asks what the relationship is between the 2016 ISTEP+ English passing rate and each of the 2016 school characteristics. Table 3 depicts the correlations and the analyses below discusses the strengths and weaknesses of the relationships beginning with school size.

The correlation between school size and 2016 ISTEP+ English passing rate is low (r = .103) and is not statistically significant (p = 0.08). The correlation between 2016 ISTEP+ English passing rate and average SAT reading score is high (r = 0.663) and statistically significant (p = 0.00). The correlation between the 2016 ISTEP+ and AP students passing at least one exam is moderately high (r = 0.463) and highly significant (p = 0.00). The correlation between 2016 ISTEP+ and percentage of special education students is

59

moderately negative, (r = -.412) and highly significant (p = 0.00). There is a high, negative

correlation between the 2016 ISTEP+ English passing rate and the number of students that

qualify for free or reduced lunch services (r= -0.680) and is highly significantly (p = 0.00).

There is a moderately negative correlation between 2016 ISTEP+ English passing rate and

the percentage of English Language Learners (r= -.408) and is highly significant level (p =

0.00). There is a moderately negative association between how many minority students

attend a school and how many students passed the ISTEP+ in 2016 (r= -.433) is highly

significant (p = 0.00).

Table 3

Correlation between 2016 ISTEP+ English and 2016 school characteristics

School Characteristic Variable	r	*p*
School size	.103	.081
Average SAT reading score	.663	.000
Percentage of students passing AP exams	.463	.000
Percentage of free or reduced lunch students	-.680	.000
Percentage of English Language Learner students	-.408	.000
Percent of special education students	-.412	.000
Percent of minority ethnic group students	-.433	.000

Relationship between a Combination of 2016 School Characteristic Variables

and 2016 ISTEP+ English Passing Rate

Table 4 present the results of testing how the combination of all seven 2016 school

characteristics (school size, average SAT reading score, percentage of students passing

advanced placement (AP) exams, percentage of special education students, percentage of

free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students) predict a school's Grade 10 2016 ISTEP+ English passing rate which answered research question 2 of the research study.

All seven 2016 school characteristics in combination predicted 57% ($R^2=.569$) of the variance in 2016 ISTEP+ English passing rates (p=.000).

The only 2016 school characteristic with a strong, positive relationship to 2016 ISTEP+ English passing rate in the combined model was the average SAT reading score (part r = .148, p = .000). The part r of .148 indicates that 2.2% of the variance of 2016 ISTEP+ English passing rates is uniquely predicted by average SAT reading score (2.2%= .148 squared). 2016 school characteristics that were statistically significant but negatively related to the dependent variable were the percentage of students who received free or reduced lunches (part r = -.168, p = .000), percentage of special education students, (part r = -.176, p = .000) and the percentage of English Language Learners (part r = -.123, p = .002). Three of the seven 2016 school characteristics were non-significant predictors of the 2016 ISTEP+ English passing rate: school size, the percentage of graduates passing AP Exams and the percentage of minority ethnic group students.

Table 4

Simultaneous regression for the relationship between 2016 school characteristic variables and 2016 ISTEP+ English passing rate

School Characteristic Variable	b	t	*p*	part r
School size	.001	.813	.417	.032
Average SAT reading score	.117	3.796	.000	.148
Percentage of students passing AP exams	.049	.838	.403	.033
Percentage of free or reduced lunch students	-.231	-4.296	.000	-.168
Percentage of English Language students	-.722	-3.153	.002	-.123
Percentage of special education students	-.714	-4.495	.000	-.176
Percentage of minority ethnic group students	.004	.086	.932	-.003

R^2 = .569, *p*=.000

The researcher then conducted both a forward and backward stepwise regression to determine if a smaller combination of independent variables (2016 school characteristics) could predict the 2016 ISTEP+ English passing rate as well as all seven 2016 school characteristics together. The results of the forward stepwise procedure in Table 5 showed that four school characteristics predicted 56.5% (R^2=.565) of the variance in 2016 ISTEP+ English passing rates: the percentage of students receiving free or reduced lunches, the average SAT reading score, the percentage of special education students and the percentage of students as English Language Learners. A backward regression confirmed the same results.

62

Table 5

Forward stepwise regression model for 2016 school characteristics predicting ISTEP+
English passing rate

Model	R Square	p
1	.462	.000
2	.515	.000
3	.550	.000
4	.565	.002

a. Predictors: (Constant) Percentage of students receiving free or reduced meals
b. Predictors: (Constant) Percentage of students receiving free or reduced meals, average SAT reading score
c. Predictors: (Constant) Percentage of students receiving free or reduced meals, average SAT reading score, percentage of special education students
d. Predictors: (Constant) Percentage of students receiving free or reduced meals, average SAT reading score, percentage of special education students, Percentage of English Language Learner students

Table 6

Four predictor model for 2016 school characteristics predicting 2016 ISTEP+ English
passing rate

School Characteristic Variable	b	t	p	part r
Average SAT reading score	.138	5.437	.000	.212
Percentage of free or reduced lunch students	-.227	-.307	.000	-.191
Percentage of English Language students	-.594	-3.104	.002	-.121
Percentage of special education students	-.745	-5.060	.000	-.198

$R^2 = .565$, *p*=.002

To summarize, the results of the simultaneous regression with all seven 2016 school

characteristics predicted 57% (R^2=.569) of the variance in 2016 ISTEP+ English passing

rates while the results of the forward stepwise procedure showed that four school

characteristics predicted 56.5% (R^2=.565) of the variance in 2016 ISTEP+ English passing

rates as depicted in Table 6. The two models are quite similar, only differing by .5%.

Relationship between 2016 Grade 10, ISTEP+ English Passing Rate

and 2018 Graduation Rate

This section describes the relationship between the 2016 ISTEP+ English passing

rate and the 2018 graduation rate, research question 3 in the study.

Table 7 depicts that there is a positive, moderately high and statistically significant

relationship between the two dependent variables, 2016 ISTEP+ English passing rate and

the 2018 graduation rate (r = 0.545, p = 0.000). High schools with higher passing rates in

the 2016 ISTEP+ English in 2016 had a higher graduation rate in 2018.

Table 7

Correlation between 2016 English ISTEP+ and 2018 graduation rate

Variable	r	*p*
2016 ISTEP+ English passing rate	.545	.000

Relationship between 2018 Graduation Rate

and 2016 School Characteristics

Table 8 depicts the correlations between the 2018 graduation rate and the 2016

school characteristics, research question 4 in the study.

The relationship between school size and the 2018 graduation rate is negative ($r = -.090$) and is not statistically significant ($p = 0.126$). The relationship between the 2018 graduation rate and average SAT reading score is moderately high ($r = 0.450$) and statistically significant ($p = 0.00$). The relationship between the 2018 graduation rate and percent of graduates passing at least 1 AP exam is moderately high ($r = .285$) and is statistically significant ($p = 0.00$). The relationship between the 2018 graduation rate and the percentage of students receiving free or reduced meals is moderately high, negative ($r = -.515$) and highly significant ($p = 0.00$). There is a moderately high, negative relationship between the 2018 graduation rate and the percentage of students who are English Language Learners ($r = -0.462$) and is highly significant ($p = 0.00$). There is a moderately high, negative relationship between how many minority ethnic group students attend a school and how many students graduate that is highly significant ($r = -.431$, $p = 0.00$). The relationship between the 2018 graduation rate and the percentage of special education students is negative, moderately high ($r = -.363$) and highly significant ($p = 0.00$).

Table 8

Correlation between 2018 graduation rate and 2016 school characteristics

School Characteristic Variable	r	p
School size	-.090	.126
Average SAT reading score	.450	.000
Percent of graduates passing at least 1 AP exam	.285	.000
Percent of free or reduced meals	-.515	.000
Percent of English Language Learners	-.462	.000
Percent of minority ethnic group students	-.431	.000
Percent of special education students	-.363	.000

Relationship between 2016 School Characteristic Variables
and 2018 Graduation Rate

Table 9 presents the regression results of simultaneously testing how the combination of all seven 2016 school characteristic variables (school size, average SAT reading score, percentage of graduates passing at least one Advanced Placement exam, percentage of special education student population, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students population) predict the 2018 graduation rate, research question 5 in the study. All seven school characteristic variables in combination predicted 40% (R^2=.397) of the variance in the 2018 graduation rate (p=.000).

Only two 2016 school characteristics were statistically significant predictors of the 2018 graduation rate, the percentage of students receiving free or reduced meals and the percentage of special education students.

Table 9

Simultaneous regression for the relationship between 2016 school characteristic variables and 2018 graduation rate

School Characteristic Variable	b	t	*p*	part r
School size	.000	-.942	.347	-.044
Average SAT reading score	.014	-.824	.410	.038
Percentage of students passing AP exams	.041	1.264	.207	.058
Percentage of free or reduced lunch students	-.054	-1.826	.069	-.084
Percentage of English Language students	-.529	-4.188	.000	-.194
Percentage of special education students	-.418	-4.770	.000	-.220
Percentage of minority ethnic group students	-.025	-1.106	.270	-.051

$R^2 = .397, p=.000$

Tables 10 and 11 present the results of the forward stepwise regression used to determine if a smaller combination of 2016 school characteristics worked together differently in predicting the 2018 graduation rate.

The results concluded that three 2016 school characteristics could predict 38.5% ($R^2=.385$) of the variance in the 2018 graduation rate among schools: the percentage of students receiving free or reduced meals, Percentage of English Language Learner students, percentage of special education students. A backward stepwise regression was also

completed to see if any of the variables reacted in a different manner. After review, no

change occurred, and no further notation was necessary.

Table 10

Forward stepwise regression model for 2018 graduation rate and 2016 school characteristic

Model	R^2	*p*
1	.265	.000
2	.331	.000
3	.385	.000

a. Predictors: (Constant) Percentage of students receiving free or reduced meals
b. Predictors: (Constant) Percentage of students receiving free or reduced meals, Percentage of English Language Learner students
c. Predictors: (Constant) Percentage of students receiving free or reduced meals, Percentage of English Language Learner students, percentage of special education students

Table 11

Three predictor model for 2016 school characteristic variables and 2018 graduation rate

School Characteristic Variable	b	t	*p*	part r
Percent of students receiving free or reduced meals	-.294	-5.328	.000	-.247
Percentage of English Language students	-.313	-6.001	.000	-.278
Percentage of special education students	-.246	-4.989	.000	-.231
$R^2 = .385$, *p=.000*				

The results of the simultaneous regression with all seven 2016 school characteristics

predicted 40% (R^2=.397) of the variance in the 2018 graduation rate while the results of the

forward stepwise procedure concluded that three 2016 school characteristics predicted

38.5% (R^2=.385) of the variance in the 2018 graduation rate, see Table 11. The two models

are similar, only differing by 1.2%.

68

Relationship between 2016 ISTEP+ English Passing Rate and

2018 Graduation Rate

when Controlled for 2016 School Characteristics

This section describes the value of 2016 ISTEP+ English passing rate in predicting

the 2018 graduation rate in addition to the seven 2016 school characteristics (independent

variables), answering research question 6 of the study.

The results of the first step of the hierarchical regression analysis (see Table 12)

determined that 39.7% (r^2= .397) of the variance in the 2018 graduation rate could be

explained by the seven 2016 school characteristic variables (see Table 9). Step 2 shows

that adding 2016 ISTEP+ English passing rate to the model explains an additional 2.5% of

the variance in the 2018 graduation rate which is highly significant (F Change $_{(1,281)}$ =

12.154, p=.001) giving a total of 42.2% variance explained. Table 13 shows the

contribution of each of the variables when 2016 ISTEP+ English passing rate is combined

with the seven 2016 school characteristics.

Table 12

Hierarchical regression analysis adding 2016 ISTEP+ English passing rate to the seven 2016 school characteristic variables

Step	R^2	*R^2 Change*	*p Change*
1	.397	.397	.000
2	.422	.025	.001

1. Predictors: (Constant), school size, average SAT reading score, percentage of students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, percentage of minority ethnic group students
2. Predictors: (Constant), school size, average SAT reading score, percentage of students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, percentage of minority ethnic group students, ISTEP+ English passing rate

Table 13

Step one in hierarchical regression results adding 2016 ISTEP+ English passing rate to the seven 2016 school characteristic variables

School Characteristic Variable	b	t	*p*	part r
School size	-.001	-1.128	.260	-.051
Average SAT reading score	.001	.051	.959	.002
Percentage of students passing AP exams	.036	1.113	.266	.050
Percentage of free or reduced lunch students	-.028	-.940	.348	-.043
Percentage of English Language students	-.448	-3.553	.000	-.161
Percentage of special education students	-.337	-3.796	.000	-.172
Percentage of minority ethnic groups	-.025	-1.145	.253	-.051
2016 ISTEP+ English passing rate	.112	.032	.001	.158

$R^2 = .422$, $F_{(1,281)} = 12.154$, $p = .001$

Predictors: (Constant), school size, average SAT reading score, percentage of students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, percentage of minority ethnic group students, ISTEP+ English passing rate

Table 14 is an overall summary of the percent of variance explained according to each research question. All seven 2016 school characteristic variables together accounted for 56.90% of the variance found in the 2016 ISTEP+ English passing rate, while a smaller model, which included only four of the school characteristics, accounted for 56.50% of the variance. 46.20% of the variance in the 2016 ISTEP+ English passing rate can be explained by the best school characteristic alone.

All seven 2016 school characteristic variables together accounted for 39.70% of the variance found in the 2018 graduation rate, while a smaller model, which included only three of the school characteristics, accounted for 38.50% of the variance. 29.50% of the variance in 2018 graduation rate can be explained by the ISTEP+ passing rate alone and 26.5% of the variance can be explained by the best school characteristic alone.

The 2016 ISTEP+ English passing rate, in addition to all seven of the 2016 school characteristics, accounted for an additional 2.5% of the variance found in the 2018 graduation rate.

Table 14
Summary Table 1—Percent of variance explained

Dependent Variable	Research Question	Prediction Model	Percent of Variance Explained (R^2)
2016 ISTEP+ English passing rate	1	IV's: Best IV alone	46.20%
	2a	IV's: Simultaneous (7 IV's)	56.90%
	2b	IVs: Smaller model (4 IV's)	56.50%
2018 graduation rate	3	2016 ISTEP+ English passing rate alone	29.50%
	4	IV's: Best IV alone	26.50%
	5a	IV's: Simultaneous (7 IV's)	39.70%
	5b	IVs: Smaller model (3 IV's)	38.50%
	6	2016 ISTEP+ English passing rate in addition to 7 IV's	2.5%

Table 15 is an in-depth summary of all correlations and part correlations for each research question.

In predicting 2016 ISTEP+ English passing rate, school size was not a statistically significant predictor when considered alone, simultaneously with all other school predictors, or in the smaller model of 2016 school characteristics. Percentage of students

72

passing AP exams and percent of minority ethnic group students were statistically significant predictors when considered alone, but not in either simultaneous or smaller model combinations. Mean SAT reading scores, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of special student students were statistically significant when considered alone, simultaneously with all 2016 school characteristics, and in the smaller model.

In predicting 2018 graduation rate, 2016 ISTEP+ English was a statistically significant predictor. In predicting 2018 graduation rate, school size was not a statistically significant predictor when considered alone, simultaneously with all other school predictors, or in the smaller model of 2016 school characteristics. Average SAT reading score, percentage of students passing AP exams, and percent of minority ethnic group students were statistically significant predictors when considered alone, but not in either simultaneous or smaller model combinations. Percentage of free or reduced lunch students was a statistically significant predictor when considered alone and in the smaller model but not simultaneously with all other 2016 school characteristics. Percentage of English Language Learner students and percentage of special student students were statistically significant when considered alone, simultaneously with all 2016 school characteristics, and in the smaller model.

When predicting the 2018 graduation rate with all seven 2016 school characteristics and 2016 ISTEP+ English passing rate, the percentage of English Language Learner students, percentage of special student students and the 2016 English ISTEP+ passing rate were significant predictors.

Table 15

Summary Table 2—Correlations and part correlations

Dependent Variable	Research Question	Prediction Model	r Part r	School Size	Average SAT reading score	% of students passing AP exams	% of free or reduced lunch students	% of English Language Learner students	% of special education students	% of minority ethnic group students	2016 ISTEP+ English passing rate
2016 ISTEP+ English passing rate	1	IV's: Best IV alone	r	.103	.663*	.463*	-.680*	-.408*	-.412*	-.433*	
	2a	IV's: Simultaneous (7 IV's)	Part r	.032	.148*	.033	-.168*	-.123*	-.176*	.003	
	2b	IVs: Smaller model (4 IV's)	Part r		.212*		-.191*	-.121*	-.198*		
2018 graduation rate	3	2016 ISTEP+ English passing rate alone	r								.545*
	4	IV's: Best IV alone	r	-.090	.450*	.285*	-.515*	-.462*	-.363*	-.431*	
	5a	IV's: Simultaneous (7 IV's)	Part r	-.044	.038	.058	-.084	-.194*	-.220*	-.051	
	5b	IVs: Smaller model (3 IV's)	Part r				-.247*	-.278*	-.231*		
	6	2016 ISTEP+ English passing rate in addition to 7 IV's	Part r	-.051	.002	.050	-.043	-.161*	-.172*	-.052	.158*

* correlation is significant at the 0.01 level (2-tailed)

CHAPTER V

SUMMARY, DISCUSSION, CONCLUSIONS,

AND RECOMMENDATIONS

Introduction

The purposes of Chapter Five are to present a summary of the problem, discussion

of the findings and conclusions found within the data, implications for assessment in

education and recommendations for future research.

Summary of the Problem

Although high stakes testing is a heavily researched area, limited data can be found

on Indiana's high stakes test, the Grade 10 English ISTEP+ passing rate, and its

relationship to school characteristics. In the state of Indiana, students are required to pass

the ISTEP+ English in order to graduate from high school, unless the student can provide

evidence in the form of a waiver as to why they cannot pass the ISTEP+. Currently, the

ISTEP+ does not offer other measures of achievement or offer test differences based on

demographic data or cultural appropriation and does not account for student differences

like special education or language differences (Poulsen & Hewson 2014, p. 32). The

current research in high stakes testing suggests a gap in data studying the variables, high

stakes testing, ethnic minority grouping, and free or reduced lunch status at the local level

(Au, 2007, 2009, 2011; Berliner, 2011; Giordano, 2005; Knoester & Au, 2015; Knoester & Parkison, 2017; Kohn, 2000; Meier, 2002; Meier & Wood, 2002; Nichols & Berliner, 2007; Sacks, 1999 as cited in Meier & Knoester, 2017, p. 8). Therefore, it is important for policymakers to understand the consequences of their directives regarding high stakes testing as they are an important aspect in advancing education at the state levels. Therefore, an examination of this research has a potential to benefit stakeholders in the field of assessment and education.

Purpose of Study

The purpose of this quantitative, correlational study was to better understand the relationship between the 2016 Grade 10 ISTEP+ English passing rate and 2018 graduation rate throughout 290 Indiana high schools and the following variables: school size, average SAT reading score, percentage of students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students. The results of the research may further determine how 2016 school characteristics are related to the Grade 10 2016 ISTEP+ English passing rate which may suggest future revision of the ISTEP+ English to remove bias or how the test is used.

Research Questions

The following research questions guided the study and generated the need for

testing:

1. What is the relationship between a school's 2016 Grade 10 ISTEP+ English

   passing rate and the following 2016 school characteristics?

   a) school size

   b) average SAT reading score

   c) percentage of students passing advanced placement (AP) exams

   d) percentage of special education students

   e) percentage of free or reduced lunch students

   f) percentage of English Language Learner students

   g) percentage of minority ethnic group students

2. What combination of 2016 school characteristics best predicts a school's

   2016 Grade 10, ISTEP+ English passing rate?

3. What is the relationship between schools 2016 Grade 10 ISTEP+ English

   passing rate and 2018 graduation rate?

4. What is the relationship between the 2018 graduation rate and each of the

   2016 school characteristics variables?

5. What combination of 2016 school characteristics best predicts a school's

   2018 graduation rate?

6. What is the relationship between schools 2016 Grade 10 ISTEP+ English passing rate and 2018 graduation rate when controlled for 2016 school characteristics?

Methodology

The data obtained for this study was housed and maintained by the state of Indiana in the Department of Education (IDOE) online databases. For this study, the independent variables (2016 school characteristic variables) were used as a way to understand if there is a relationship with the dependent variables, 2016 Grade 10 ISTEP+ English passing rate and 2018 graduation rate. Files containing necessary data on the dependent variables, 2016 ISTEP+ English passing rate and 2018 graduation rate and the 2016 school characteristic variables, school size, average SAT reading score, percentage of students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students, were uploaded and saved from the IDOE website. After selecting variables from the multiple files in the Indiana Department of Education database, the files were downloaded to the researcher's computer and combined into one file using SPSS.

There were a possible 432 schools to choose from the Indiana database. In order to participate in the study, the high school's population must have had at least 50 students in grades 9-12 in the year 2016 and at least 10 graduates in the year 2018. High schools were also eliminated if they were missing any data from the dependent variables, 2016 Grade 10

ISTEP+ English passing rate or 2018 graduation rate and independent variable, average SAT reading score. These variable requirements brought the number of eligible participating high schools down from 432 schools to 290 schools. In this study, the researcher used school characteristic data from the 2016 school year and graduation rates from the 2018 school year. Students taking the 2016 Grade 10 ISTEP+ English passing rate would be the graduating class in 2018. This included students in Indiana from grades 10, both male and female, from various economic backgrounds and abilities.

This study used both regression and correlation to analyze school data. The researcher used SPSS to first run descriptive statistics. Next, correlations were run on the 2016 Grade 10 ISTEP+ English passing rate and the 2018 graduation rate as well as all of the 2016 school characteristic variables to understand how each independent variable related to the dependent individually. From there, the researcher ran a multiple regression with both dependent variables, the 2016 Grade 10 ISTEP+ English passing rate and the 2018 graduation rate to find out how all of the independent variables together predicted each of the dependent variables. Finally, a stepwise regression was run to identify if a smaller number of independent variables could predict either one of the dependent variables.

Discussion of Findings

Research Questions One and Two

The ISTEP+ English test is the state of Indiana's high stakes test and is used as one the requirements to graduate from high school. Indiana students in 2016 need to pass the

grade 10 ISTEP+ English by the second semester of their senior year in order to graduate from high school (IDOE, 2010). The 2016 Grade 10 ISTEP+ English passing rate and 2018 graduation rate are the dependent variables within this study.

Research questions one and two of the research study focused on the relationship between the 2016 Grade 10 ISTEP+ English passing rate and seven 2016 school characteristic variables. Research question one of this study examined the relationship between the 2016 Grade 10 ISTEP+ English passing rate and the 2016 seven school characteristics when each is considered independently. Research question two focused on the relationship between the 2016 school characteristics in combination with the 2016 Grade 10 ISTEP+ English passing rate both in a model with all seven independent variables together and in a smaller subset of significant predictors.

Of the seven school characteristic variables, six had a statistically significant relationship with the 2016 Grade 10 ISTEP+ English passing rate when considered individually: Average SAT reading score, percentage of students passing AP exams, percentage of students receiving free or reduced lunch, percentage of English Language Learner students, percentage of special education students and the percentage of minority ethnic group students. The variable that did not have a statistically significant correlation to the 2016 Grade 10 ISTEP+ English passing rate was school size, which Hattie (2009) previously indicated was a moderately high indicator of student achievement. In Hattie's work, Stekelenburg (1991) and Ready, Lee, and Welner (2004) all argued that school size should optimally be around 600-900 students to positively affect student achievement (p. 80).

Of the seven statistically significant 2016 school characteristics, the highest positive correlation to the 2016 Grade 10 ISTEP+ English passing rate was the average SAT reading score which predicted 45% of the variance in the 2016 ISTEP+ English passing rates. Achievement based tests like the 2016 Grade 10 ISTEP+ English and ability tests, like the SAT have often been correlated for their similarities in content (Noftle, 2007, Barton, Dielman & Cattell, 1972).

Of the seven statistically significant 2016 school characteristics, four were negatively correlated to the 2016 Grade 10 ISTEP+ English passing rate: percentage of students receiving free or reduced lunch, percentage of English Language Learner students, percentage of special education students and the percentage of minority ethnic group students. The highest of the negatively correlated school characteristic variables was the percentage of free or reduced lunch students. 46.20% of the variance in the 2016 ISTEP+ English passing rate could be explained by this variable. As noted in the literature, socioeconomic status, measured by free or reduced lunch, continues to be a notable indicator for student achievement. The shortage of resources, lack of facilities, and lower levels of parental involvement at home may indicate that students living in a lower socioeconomic status and start the school process behind others can result in lower test scores (Hattie, 2009, p. 98).

When evaluating for all seven of the 2016 school characteristics combined, 57% of the variance in 2016 Grade 10 ISTEP+ English rate was predicted while a combination of the four 2016 school characteristics (p. 000): the percentage of students receiving free or reduced lunches, the average SAT reading score, the percentage of special education

81

students and the percentage of students as English Language Learners predicted 56.5% of the variance found in the 2016 Grade 10 ISTEP+ English passing rate (p=.000).

Research Questions Four and Five

Research question four of the study examined the relationship between the seven independent variables and the 2018 graduation rate individually. Research question five of the study focused on the combination of the school characteristic variables and the 2018 graduation rate with all seven together and a smaller subset of significant predictors.

Of the seven 2016 school characteristics, six displayed a statistically significant correlation to the 2018 graduation rate: average SAT reading score, percentage of students passing AP exams, percentage of students receiving free or reduced lunch, percentage of English Language Learner students, percentage of special education students and the percentage of minority ethnic group students. The highest of the positively correlated 2016 school characteristics was again the average SAT reading score, similar to the 2016 ISTEP+ English pass rate correlations. Of the seven statistically significant school characteristics, four were negatively correlated to the 2018 graduation rate: percentage of students receiving free or reduced lunch, percentage of English Language Learner students, percentage of special education students and the percentage of minority ethnic group students. The highest negative correlation being the percentage of free or reduced lunch students, similar to the 2016 Grade 10 ISTEP+ English passing rate correlations. This aligns with the previous literature, noting a study of North Carolina districts on the End of

Course examinations for the years 2011-2012 and 2013-2014 which found that graduation

rates decreased as the percentage of students receiving free and reduced lunches increased

(Morales & Charles, 2014).

When evaluating if all seven 2018 school characteristic variables combined could

predict a school's 2018 graduation rate, all seven of the school together predicted 40%

(R^2=.397) of the variance found in the 2018 graduation rate. Two of the school

characteristics were significant predictors, the percentage of English Language Learner

students and the percentage of special education students. The literature indicates that any

learning disability will make learning different for a student. However, as long as

mainstreaming is utilized in the general education setting, there will not be a positive or

negative effect to student achievement (Hattie, 2009, p. 95). This did not align with the

findings in this particular study. In the model using the forward stepwise regression, three

of the 2016 school characteristics predicted 38.5% (R^2=.385) of the variance in the 2018

graduation among schools, only differing 1.2% from the larger model: percentage of

students receiving free or reduced lunch, percentage of English Language Learner students,

percentage of special education students. This aligns with the literature on the basis of

analyses of school scores in terms of subpopulations and neighborhood income (Hattie,

2008, 2009, Martin, 2012). Previous studies performed in school districts of Washington,

DC found that there were significant correlations between test results and students'

economic status, special education status, and English language proficiency (Martin, 2012,

p.11). Furthermore, there is evidence that schools with a majority of students considered to

83

be economically disadvantaged experience more pervasive testing failure (Martin, 2012). In addition to finding the percent of English Language Learners as significant predictor, the 2018 graduation rate will be a helpful addition to the literature in this area as research on achievement. These findings contradict the premise of NCLB (2001) that we ought to ignore differences in student factors when evaluating instructional quality and test design (Martin, 2012).

<div align="center">Research Questions Three and Six</div>

Research question three examined how well the 2016 Grade 10 ISTEP+ English passing rate predicted the 2018 graduation rate individually while research question six examined this relationship when controlled for the seven 2018 school characteristic variables.

The study found that there was a high, statistically significant relationship between the two dependent variables, 2016 ISTEP+ English passing rate and the 2018 graduation rate. High schools with higher passing rates in the 2016 ISTEP+ English in 2016 had a higher graduation rate in 2018. The study found that that 29.50% of the variance in 2018 graduation rate could be explained by the 2016 ISTEP+ English passing rate alone. The results of the first step of the hierarchical regression analysis controlled for the seven 2018 school characteristics determined that 39.7% (r^2= .397) of the variance in the 2018 graduation rate could be explained by the seven 2016 school characteristic variables. After adding the 2016 ISTEP+ English passing rate to the model, an additional 2.5% of the

variance in the 2018 graduation rate could be explained, for a total of 42.2% of the variance in the 2018 graduation rate.

Final Summary

The purpose of this quantitative, correlational study was to better understand the relationship between the 2016 Grade 10 ISTEP+ English passing rate and 2018 graduation rate throughout 290 Indiana high schools and the following variables: school size, average SAT reading score, percentage of students passing advanced placement (AP) exams, percentage of special education students, percentage of free or reduced lunch students, percentage of English Language Learner students, and percentage of minority ethnic group students. When considering the 2016 ISTEP+ passing rate alone, it appears to be a good predictor. The 2016 ISTEP+ English passing rate predicted 30% of the variance in the 2018 graduation rate.

This study also examined the explanatory value of the 2016 ISTEP+ English passing rate in predicting the 2018 graduation rate by the 2016 school characteristics. The seven school characteristics predicted 57% of the variance in the 2016 ISTEP+ and 40% of the variance in graduation rate. When controlled for the seven school characteristics, the 2016 ISTEP+ English passing rate only accounted for 2.5% of the variance found in the 2018 graduation rate. These findings suggest that while the ISTEP+ English may provide useful information; it should be reconsidered as a graduation requirement. In all, four of the seven school characteristics were especially strong predictors of ISTEP+ English passing rate and graduation rate: average SAT reading score, percent of free or reduced lunch students, percent of English Language Learner students, and percent of special education

students. This concludes that the 2016 Grade 10 ISTEP+ English passing rate may not be an appropriate predictor of the 2018 graduation rate because it may be influenced by the 2016 school characteristics and therefore, possibly influenced by outside variables.

Limitations of Study

The integrity of any research venture aimed at capturing patterns that characterize students must be gauged by the methodology employed in the associated study. Missing data from the Indiana Department of Education limited the number of schools included in the sample. For example, several high schools were not included in the analysis because they did not report average SAT reading scores and AP testing results. The data for some of the grade level totals was also questionable and even missing at times which caused the researcher to eliminate some schools from the dataset all together. It should also be noted that although seven different school characteristics were tested within the regression models, there could be other factors that influenced the model given the degree of variance remaining to the 2018 graduation rate or in the 2016 ISTEP+ English pass rate. These characteristics could have been teacher, class, home, community or personal. For example, factors including teacher experience and classroom resources could have impacted the regression models but were not measured in this study.

Recommendations for Stakeholders and Future Research

Based on the findings and limitations of the study discussed in the foregoing paragraphs of this chapter as well as the literature review in chapter 2, recommendations are provided for the guidance of future research in this area of study.

This study can inform the decisions for guardians and students. Particularly, what characteristics inform student achievement might be particularly interesting to guardians. Understanding that higher SAT reading scores had a positive correlation to the 2016 ISTEP+ English passing rate indicates that students who perform well on one may plausibly perform well on the other. Additionally, reviewing what variables negatively relate to high stakes testing may also be of interest. Guardians who have children in the groups mentioned in the study (those who use services in free and reduced lunch programs, special education programs, or English Language Learner services) might need more attention when it comes to performing well on state standardized tests like the ISTEP+. Guardians of students in these subgroups should be able to easily acquire information on how enroll students in free or reduced lunch programs, special education programs, English Language Learner programs and after school test preparation if desired. If knowledge is not easily attainable, changes should be made so guardians can find this information easier for their student.

Those in the education field will find this research interesting in several meaningful ways. Principals may want to refocus response to intervention (RTI) or after school test preparation programs to target groups mentioned in this study, specifically, English Language Learners, Special Education Students or students receiving free or reduced lunches. If both administrators and classroom teachers understand how important it is for these subgroups to have more attention at school, it could lead to opportunities in creating more with students and could possibly lead to improved learning (Hattie, 2009). Educators could adjust their everyday teaching strategies to align with the needs of their students.

Classroom educators should consider including more Tier 1 strategies in everyday teaching. In a Tier 1 instruction model "all students receive instruction within an evidence-based, scientifically researched core program" (Shapiro, 2020). Tiered models are often found within RTI programs but can be included in everyday teaching as well. Typically, in a tier 1 model, core reading and math curriculum is aligned with the state or core standards and focuses on skill development of the targeted area.

The needs of most students can be met with Tier 1. To implement Tier 1 strategies in the classroom educators can incorporate some of the following techniques: the first begins with planning using Wiggins and McTighe's *Understanding by Design* (UBD) (2005). In UBD, teachers focus on designing classroom assessments with the standards and tested items on the ISTEP+ in mind while working backwards to plan instruction and activities around those objectives. Next, educators should emphasize promoting a safe and secure learning environment. In doing so, this allows students to develop curiosity and questioning which can develop trusting bonds between one another and stronger student to teacher relationships. During Tier 1 instructional sessions, educators are encouraged to conduct on going assessment which permits improvement in the standards but also for more opportunities to provide immediate feedback, another indicator for high student achievement according to Hattie (2008, 2009). Finally, educators should consider differentiation within their instruction, this includes flexible grouping and tiered assignment development which can promote scaffolding and collaboration. Educators could also focus on implementing more reading and comprehension exercises derived from SAT preparatory materials due to the positive correlation between the SAT reading test and

the ISTEP+. Tests like the ISTEP+ provide post-test analyses for each student supplied to

schools after test results are administered. Using these results for test score improvement is

an important step towards identifying where and why students faltered in the original test.

Some students may have struggled in pieces like reading comprehension while others

struggled only in writing. Analyzing pieces like this and differentiating instruction is

paramount for student success. If students are becoming discouraged with reviewing test

analyses or the work itself applying techniques like growth mindset can be helpful. To

employ growth mindset techniques in the classroom, educators can model practical

optimism or maintaining success files which allow students to keep track of their progress

in remedial sessions. This strategy has been successful in combating anxiety in students

and has helped to promote a positive outlook on retaking tests (Dweck, 2006).

     Finally, all educators, regardless of position, should work to influence policy that

ensures fairer testing practices which adequately reflect students' knowledge and less about

school characteristics. The state of Indiana has recently made positive changes to the

current methods of assessment in the high school level, some of which, align the

recommendations in this study. Until the year 2023 high stakes testing will still be required

in the state of Indiana, but afterwards achievement tests like the SAT, ACT and ASVAB

will take the place of the ISTEP+ in effort to recognize student differences and fairer

testing practices and strategies. The following verbiage has been supplied by the IDOE,

> with the passage of Graduation Pathways, students are now able to individualize
> their graduation requirements to align to their postsecondary goal. No longer must
> all students fit into the same academic mold, but rather, they can choose the options
> that best meet their postsecondary needs and aspirations. (IDOE, 2019)

This update reflects the findings in this study in that student differences should be taken into account while developing tests. The state of IN could also consider shifting to an assessment model where tests are used to assess student abilities rather than for high stakes purposes. It would also be beneficial for other states to perform a meta-analysis on their own high stakes tests to consider what questions have been asked, the performance of their constituents and the demographics to develop fairer assessments.

More research should be completed on the alternatives for high stakes testing. For example, the state of New York has recently changed their assessment requirements for students K-12 in order to,

> provide the opportunity to customize the assessment to the individual abilities and needs of the student. It was designed to measure a wide range of proficiencies of students, is quicker and easier to administer and score, and provides useful information to teachers to inform future instruction for the student. (2016, NYSED)

The State of New York's assessment program explains that at the "beginning with the 2015-16 school year, ELA and mathematics will be assessed using Dynamic Learning Maps (DLM) computer-based assessments" (2016, NYSED). This study could be beneficial for many stakeholders but for those interested in high stakes testing it could help indicate what and who should be tested and for what purposes? More research should also be performed on high stakes tests considering other variables not included in this study.

Implication of the Study

This study was concerned mainly with the investigation of the relationship between the school characteristics, graduation rates and the ISTEP+. The practice of using exams as a graduation requirement is a policy far more reaching than just the 290 schools used in this

study and it is my hope that these findings add to the growing research on high stakes testing. Moreover, it appears that groups like special education, English Language Learners and minority ethnic groups are adversely affected by testing the most and by requiring these tests to graduate. If all else, this research should be used as a way to illuminate the possible hurdles surrounding the topics surrounding high stakes testing at the state level. Hopefully we can require more consideration from policymakers on how high stakes testing is possibly disproportionately and negatively affecting student groups. This is all in hope to provide appropriate alternatives and support. This study provided an additional perspective on the association between the ISTEP+, graduation rates and several school characteristics. Given the adverse effects surrounding high stakes testing, stakeholders should reconsider the ISTEP+ English all together and improve educational opportunities for students, parents and teachers.

Conclusion

This study provided additional resources on the association between the ISTEP+ English and school characteristics. Although this data provided some answers regarding the ISTEP+ English and graduation rates, it raised some other questions to further research in this area. Additionally, research on variables which occur inside of the home such has poverty, trauma, abuse and so forth would be interesting to consider alongside their relationship to high stakes testing. The findings particular to this study suggest that more research should be performed on other school characteristics. Additionally, stakeholders should be aware of the characteristics that can increase or can decrease student

91

achievement on tests like the ISTEP+ English like, minority ethnic group status, special

education student status and students who identify as English Language Learners.

Bibliography

Acosta, S., Garza, T., Hsu, H. *et al.* The accountability culture: a systematic review of high-stakes testing and english learners in the united states during no child left behind. *Educ Psychol Rev* 32, 327–352 (2019). https://doi.org/10.1007/s10648-019-09511-2.

Adams, M. (2014). *Indy charter school to close after ISTEP cheating scandal*. Retrieved on April 12th, 2017 from, http://www.foxnews59.com

Allen, J. D. (2005). *Grades as valid measures of academic achievement of classroom learning.* The Clearing House 78(5).

Allen, K. J. (2011). *Are standardized test scores accurate indicators of student achievement as measured by grades?* ProQuest. Wilmington University.

American Psychological Association. (2009). *Publication Manual of the American Psychological Association*. Sixth Edition. Washington, DC: American psychological Association.

Associated Press (2016). *The latest: house committee passes ISTEP teacher pay bill.* Retrieved on April 12, 2017 from, http://newsandtribune.com.

Au, W. (2009). *Unequal by design: High stakes testing and the standardization of inequality.* New York, NY: Routledge.

Battley-Fabre, M. (2011). *A study examining teachers' perception of state high stakes standardized testing programs: Their effects on teacher preparation, performance and instruction.* (Master's thesis). Retrieved from ProQuest Dissertations & Theses Full Text. (880573000)

Barry, C., Horst, J., Finney, S., Brown, A., Kopp, J., *Do examinees have similar test-taking effort? a high stakes question for low-stakes testing*. International Journal of Testing. 10(4) 342-363.

Behind, N. C. L. (2001). *Elementary & secondary education act.* Washington, DC: 107th United States Congress.

Berliner, D. (2011). Rational responses to high stakes testing: The case of curriculum narrowing and the harm that follows. *Cambridge Journal of Education*, 41(3), 287-302. doi: 10.1080/0305764x.2011.607151

Binet, A. (1916). *The development of intelligence in children.* London: Forgotten Books.

Black, P. (1998). *Testing: friend or foe? the theory and practice of assessment and testing*. Washington, D.C.: The Falmer Press.

Boake, C. (2002). *Tracing the history of intelligence testing.* Journal of Clinical and Experimental Neuropsychology 24(3).

Boykin, A.-S. M. (2010). The relationship between high school course grades and exam scores. *Research Watch.*

Buck Institute for Education (n.d.). *What is project based learning?* Retrieved June, 15, 2015, from http://bie.org.

Burner, J. S. (2009). *The process of education.* Harvard University Press.

Butler, R. C. (2011). *High stakes testing and student grades: a study of correlational significance*. ProQuest, Capella University.

Burns, Richard W.; Klingstedt, Joe Lars (1973). *Competency-based Education: An Introduction*. Englewood Cliffs, NJ: Educational Technology. p. 31. ISBN 0-87778-061-7.

Bybee, R.W. (1997). *The sputnik era: why is this educational reform different from all other reforms?*. Retrieved on September 27, 2018 from www.nas.edu

Carden, D. (2018). Testing irregularities lead Indiana to invalidate ISTEP results at Gary elementary school. *NWI Times.* Retrieved from https://www.nwitimes.com/news/local/govt-and-politics/testing-irregularities-lead-indiana-to-invalidate-istep-results-at-gary

Clarke, M. (2001). *The marketplace for educational testing marguerite national board on educational testing and public policy*. Third Edition. School of Education Boston College.

Coffey, H. (n.d) *Discovery learning.* Retrieved on June 15th, 2015 from http://www.learnnc.org/education

Cooper, S. (2015). *He had a point.* Retrieved on, Nov. 1, 2015 from http://www.coolcatteacher.com

Creswell, J. W. (2013). *Qualitative inquiry & research design*. Third Edition. Thousand Oaks, CA: SAGE Publications Inc.

D'Agostino, J.V., Welsh, M.E., and Corson, N.M. (2007). *Instructional sensitivity of a state's standards-based assessment.* Educational Assessment 12(1).

DerSimonian, R., & Laird, N. M. (1983). *Evaluating the effect of coaching on average SAT reading score: A meta-analysis*. Harvard Educational Review*, 53*(1), 1-15.

Dewey , J. (1916). *Democracy and education: An introduction to the philosophy of education*. New York: Macmillan.

Dewey , J. (1922). Education as engineering. *The New Republic*, (9), 89-91.

Dewey, J. (1930). From absolutism to experimentalism. *Contemporary American Philosophy.* New York: Macmillan Co. (2)13–27.

Dewey , J. (1922). Individuality, equality and superiority. *The New Republic*, (12), 61-63

Duke, N. K., & Block, M. K. (2012). Improving reading in the primary grades. *Future of Children, 22*(2), 55-72.

Dweck, C. S. (2006). Mindset: The new psychology of success. New York: Random House.

Easton, J.Q., Johnson, E., & Sartain, L. (2017). The predictive power of ninth-grade GPA. Chicago, IL: University of Chicago Consortium on School Research.

ProCon.Org: The leading source for pros & cons of controversial issues. *Standardized testing*. Retrieved on February 1, 2017 from, http://standardizedtests.procon.org/.

Flinders, D., & Thornton, S. (Eds.). (2009, 2013) *The curriculum studies reader*. Fourth Edition. New York, NY: Routledge.

Forte, E. (2010). *Examining the assumptions underlying the NCLB federal accountability policy on school improvement.* Educational Psychologist *45*(2).

Gardner, D. P. (1986). *A nation at risk*. Washington, D.C., Department of Education.

Giordano, G. (2005). *How testing came to dominate american schools*. New York: Peter Lang.

Glass, K. (2009). *The relationship between the teacher's assessment of content knowledge and a standards based assessment*. College of Education. ProQuest, Mercer University.

Great Lakes Center for Education Research & Practice (nd) *Terms, legislation, and tips to help your child succeed.* Retrieved February 26th, 2017, from http://greatlakescenter.org

Goodwin, D. (2006). *A little ISTEP history*. KPC News. Retrieved on March 10th, 2017 from http://www.kpcnews.com

Hardegree, A. (2012). *Standards-based assessment and high stakes testing: accuracy of standards based grading*. ProQuest. Liberty University.

Hart, B., & T.R. Risley. (1995). *Meaningful differences in the everyday experience of young american children.* Baltimore: Brookes.

Hattie, John. (2009) *Visible learning: a synthesis of over 800 meta-analyses relating to achievement*. New York, NY: Routledge.

Harris, Phillip, Joan Harris, and Bruce M. Smith. (2013). *Standardized tests do not effectively measure student achievement.* The Myths of Standardized Tests: Why They Don't Tell You What You Think They Do. p. 33-45.

Hagopian, J. (2014). *A brief history of the "testocracy" standardized testing and test defying*. Haymarket Books.

Hirsch, E. D. (2013). *Why was it called 'Progressive Education?* Huffington Post. Retrieved on June 15th, 2015 from, http://www.huffingtonpost.com

Hout, M., & Elliot, S. (2011). *Committee on incentives and test-based accountability in public* education. Washington, D.C.: Washington Academies Press.

Huddleston, A. P., Rockwell, Elizabeth C. (2015). *Assessment for the masses: a historical critique of high stakes testing in reading.* Texas Journal of Literacy Education 3(1).

Hursh, D. (2006). *Assessing no child left behind and the rise of neoliberal education policies.* American Educational Research Journal. (44)3.

Indiana Department of Education (2016). *Meeting the assessment requirement for graduation/waiver process.* Retrieved on January 28, 2017 from, http://www.doe.in.gov.

Indiana Department of Education (2018). *English learner guidebook.* Indiana department of education: office of english learning & migrant education division of title grants & supports. Retrieved on May 22, 2019 from, https://www.doe.in.gov/sites/default/files/elme/idoe-el-guidebook.pdf

Indiana Department of Education (2018) *Indiana department of education announces income eligibility guidelines for free and reduced-price meals and milk programs.* Retrieved on\May 22, 2019, from https://www.doe.in.gov/news/indiana department-education announces-income-eligibility-guidelines-free-and-reduced price

Indiana Academic Standards. (2016). *Instructional and assessment guidance ISTEP+: English/language arts—grade 10.* Retrieved on January 28, 2017 from, http://www.doe.in.gov/assessment

Indiana Department of Education (2016). *Adequate yearly progress fact sheet.* Retrieved February 26, 2017 from, htttp://www.doe.in.gov

Indiana Department of Education (2015). *Guide to test interpretation.* Retrieved March 23, 2017 from, htttp://www.doe.in.gov

Indiana Department of Education (2017). *Indiana school breakfast and lunch program.* Retrieved February 26, 2017 from, http://www.benefits.gov

Jacob, B., Ryan, J. (2018) *How life outside of school affects student performance in school.* Evidence Speaks Report 2(44) 1-12.

Jaeger, Richard, M. (1990). *Statistics a spectator sport* (2rd ed). Sage Publications, NY.

Jaschick, Scott (2018). *Record numbers take advanced placement courses.* Inside HigherEd, Retrieved September 26, 2018 from, www.insidehigher.com

Jolly, J. (2009). *The national defense education act, current STEM initiative and the gifted.* Historical Perspectives 32(2), 50-53.

Kapinus, B. A., Collier, G. V., & Kruglanski, H. (1994). *The maryland school performance assessment program: a new view of assessment*. In S. W. Valencia, E. H. Hiebert, & P. P. Afflerbach (Eds.), Authentic reading assessment; Practices and possibilities. Newark, DE: International Reading Association.

Kamentez, Anya (2015). *The test: why our schools are obsessed with standardized test, but you don't have to be*. New York, NY: PublicAffairs.

Kellaghan, T., Stufflebeam, D.L. (2012). *International handbook of educational evaluation*. Dublin, Ireland. Springer Netherlands.

Kohn, A. (2008). *Progressive education why it's hard to beat, but also hard to find.* Independent School. Retrieved on June 15th, 2015 from, http://www.alfiekohn.org.

Kohn, A (2000) A case against standardized testing: raising the scores, ruining the schools. Portsmouth, NH: Heinemann.

Kliebard, H. (2004). *The struggle for the american curriculum*: 1893-1958. Third Edition. New York: Routledge Falmer.

Kridel, C. (2010). *Progressive education.* Encyclopedia of curriculum studies. Retrieved on June 15, 2015, from http://www.progressiveed.org

Kortez, D. (2017) *The testing charade.* Chicago, IL: University of Chicago Press.

Ladd, Helen, F. (2018). No child left behind: a deeply flawed federal policy. *Journal of Policy Analysis and Management, (36)*2, 461-469.

Lee, J. (2008). Is Test-Driven External Accountability Effective? Synthesizing the Evidence from Cross-State Causal-Comparative and Correlational Studies. *Review of Educational Research,78*(3), 608-644. Retrieved from http://www.jstor.org/stable/40071139

Lee, M. (2013). *Relationships between teacher-assigned grades and academic achievement as determined by AIMS testing*. Educational Leadership. ProQuest.

Madaus, George. (1988). The distortion of teaching and testing: high stakes testing and instruction. *Peabody Journal of Education. 65*(3), 29-46.

Marshall, J.D., Sears, J.T., Allen, L.A., Roberts, P.A., & Schubert, W.H. (2007). *Turning points in curriculum* (2nd ed.). Upper Saddle River, NJ: Pearson.

Marzano, R. (2006). *Classroom assessment and grading that work.* Alexandria, VA: Association for Supervision & Curriculum Development.

Meier, D., Knoester, M. *Beyond testing: seven assessments of students and schools more effective than standardized tests*. Teachers College Press, 2017

McInery, C. (2016). *Independence of ISTEP validity study called into questions.* State Impact News. Retrieved on March 31, 2017 from, http://www.indianapublicmedia.com

98

National Center for Educational Statistics. (2018). *Public high school graduation rates.*
    Retrieved on May 10, 2019, from http://www.nces.ed.gov.

National Council of Teachers of English. (2014). *How standardized tests shape and limit*
    student learning. Retrieved on February 22ⁿᵈ, 2016, from http://www.ncte.org

No Child Left Behind Act of 2001, PL 107-110 (2001).

NYC Opt Out, https://www.optoutnyc.com/ (2019).

Olson, L. (2001). *Study questions reliability of single year test score gains*. Education
    Week. Retrieved on September 14, 2019 from, http://www..edweek.org/tm/articles.

Pavia, A. (2012). *Elementary teachers' perceptions of the effects of high stakes testing.*
    (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Full
    Text. (1022333822)

Pinar, W. F. (1977). *The reconceptualization of curriculum studies*. American Educational
    Research Association.

Pinar, W., Reynolds, W., Slattery, P., & Taubman, P. (2014). *Understanding curriculum:*
    an introduction to the study of historical and contemporary discourses. New York,
    N.Y.: Peter Lang.

Poulsen, J., & Hewson, K., (2014) *Standardized testing: fair or not.* Teaching Centre
    Magazine Retrieved December 13th, 2017, from, http://www.www.uleth.ca

Resnick, D. L., & Resnick, L. B. (1985). *Standards, curriculum, and performance: A*
    historical and comparative perspective. (Report No. ISSN-0013-189X). United
    Kingdom Educational Researcher. Retrieved from ERIC database. (EJ317701)

Richardson, V. (2003). *Constructivist pedagogy.* The Teachers College Record, New York,
    NY. 105(9), 1623-1640.

ProCon.Org: The leading source for pros & cons of controversial issues. *Standardized*
    testing. Retrieved on February 1, 2017 from, http://standardizedtests.procon.org/.

Rebora, A. (2014). *An interview with James. W. Pellegrino on assessment*. Education
    Week. Retrieved on December 13, 2016 from, http://www..edweek.org/tm/articles.

Rentner, D., Kober, N. & Frizell, M., (2016). Listen to us: teacher views and voices. Center
    on educational policy. Washington D.C.: George Washington University

Roeber, E. & Briggs, D. (2015). *An investigation into the validity of the indiana 2015 istep+ assessment program.* Retrieved December 1st from, htttp://www.doe.in.gov

Rothstein, R. (1998). *The Way We Were? The Myths and Realities of America's Student Achievement.* New York, NY: Century Foundation.

Ricketts, C. R. (2010). *end-of-course grades and standardized test scores: are grades predictive of student achievement?* ProQuest. Capella University.

Segall, B. (2012). *Dept. of education investigating ISTEP cheating allegations.* Retrieved on April 12th, 2017 from, http://www.wthr.com

Shapiro, E. (2020). *Tiered instruction and intervention in a response to intervention model.* RTI action network a program of the national center for learning disabilities. Retrieved on November 4th, 2020 from, http://www.rtinetwork.org

Solórzano, R. (2008). High Stakes Testing: Issues, Implications, and Remedies for English Language Learners. *Review of Educational Research, 78*(2), 260-329. Retrieved September 29, 2019, from http://www.jstor.org/stable/40071129

Stiggins, R. J. (1992). In teachers' hands: Investigating the practices of classroom assessment. Albany, NY: State University of New York Press.

Strauss, J., Corbin, A. (2007) *Basics of qualitative research* (3rd ed). Sage Publications, NY.

Student Assessment Division at the Texas Education Agency. (2010) *A study of the correlation between grade 10 Math performance and course performance.* Retrieved from http://tea.texas.gov/student.assessment

Sugimoto, T. J., *Equity analyses of the 2015-2017 indiana school funding formula. Report prepared for the indiana state board of education.* Retrieved on May 10, 2019, from www.in.gov.

Suskind, D. (2015) *Living assessment passes the test.* Sage Publications, NY.

Tomlinson, S. (1997). *Edward Lee Thorndike and John Dewey on the science of education.* Oxford review of education, 23(3), 365-383.

U.S. Department of Education Institute of Education Sciences and National Center for Educational Statistics. *National assessment of educational process*. Retrieved on September 12, 2016, from http://nces.ed.gov

Walker, T. (2018) Despite progress, the 'charade' of high stakes testing persists. *neaToday.* Retrieved from http://neatoday.org/2018/04/04/daniel-koretz-testing-charade/

Warren, J. R., Jenkins, K. N., & Kulick, R. B. (2006). High school exit examinations and state-level completion and GED rates, 1975 through 2002. *Educational Evaluation and Policy Analysis*, *28*(2), 131–152. https://doi.org/10.3102/01623737028002131

Wiggins, G., & McTighe, J. (2005). *Understanding by design* (2nd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.

Wiggins, G. (1990) *The case for authentic assessment*. Practical research assessment and evaluation, 2(2).

Wiggins, G. (2002) Toward genuine accountability: the case for a new state assessment system. *Edutopia.* Retrieved from https://www.edutopia.org/toward-genuine accountability-case-new-state-assessment-system

Wiggins, G. (2006) Healthier testing made easy: the idea of authentic assessment. *Edutopia*. Retrieved from https://www.edutopia.org/authentic-assessment-grant wiggins

Wiliam, D. (2010). *Standardized testing and school accountability.* Educational Psychologist, 45(2).

Valencia, S. W., Hiebert, E. H., & Afflerbach. P. A. (1994). *Authentic reading assessment; practices and possibilities*. (Report No. ISBN-0-87207-765-9). Newark, DE: International Reading Association. Retrieved from ERIC database. (ED363855)

Valencia, S. W. (1997). *Authentic classroom assessment of early reading: alternatives to standardized tests.* (Report No. ISSN-1045-988X). Newark, DE: International Reading Association. Retrieved from ERIC database. (EJ542793)

Yell, M. L. (2006). *The Law and special education*. Third Edition. Upper Saddle River, New Jersey: Pearson College Div.

"As a member of the academic community of Andrews University, I pledge that I have not received, used, or given any unauthorized assistance on this work."

Kelsey M. Dailey

101