# HIGH SCHOOL EXIT EXAMS AND HIGH-STAKES TESTING:

# A NATIONAL COMPARISON OF HIGH SCHOOL COMPLETION IN 2000

A Dissertation Presented to the
Faculty of the College of Education
University of Houston

In Partial Fulfillment
of the Requirements for the Degree

Doctor of Education

by

Andres Garcia III

May, 2012

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## Abstract

The adoption of high school exit exams as a prerequisite for graduation has become an increasingly popular high-stakes testing policy for states. This study examined the relationship between high school exit exams and high school completion rates nationally in 2000. The study incorporates existing school level data from the Office of Civil Rights and Common Core Data to sample a total of 8,653 high schools representative of grades 9-12. The study addresses two research questions. First, nationally are there school-level differences in completion rates between high schools with exit examinations and high schools without exit examinations? Second, which school characteristics predict school completion proportions in high schools with and without exit exams? To answer the first research question, Independent Samples T-Test was used to test for differences in the high school completion rate between schools with and without exit examinations in 2000. The second research question used Multiple Regression to identify which covariates are the best predictors of high school completion. Additionally, the study utilizes propensity scores to control for demographic characteristics in high schools with and without exit exams and features the Cumulative Promotion Index (CPI) as the high school completion indicator. The study found that high schools with exit exams reported significantly lower high school completion rate than high schools without exit exams. Overall schools with exit exams ($M = .70$, $SD = .12$) reported significantly lower CPI scores than high schools without exit exams ($M = .75$, $SD = .12$), $t(4915) = 8.56$, $p < .001$. Additionally, when incorporating propensity

scores stratification into the comparison of high school completion rates, results were similar. Within each of the five propensity score strata, high schools with exit exams reported significantly lower CPI rates than high schools without exit exams. For the second research question, Percent Free and Reduced Lunch, School Region, and Percent Suspension/Expulsion were identified as the strongest predictors of high school completion rate among both high schools with and without exit exams. The regression model for high schools with exit exams significantly predicted CPI rate, $F(11, 2585) = 103.14$ ,$p < .001$, with seven of the eleven variables significantly contributing to the prediction model. Results reported an adjusted $R^2$ of .30. The regression model for high schools without exit exams also significantly predicted CPI rate, $F(9,2452) = 117.6$,$p < .001$, with eight of the nine variables significantly contributing to the prediction model. The adjusted $R^2$ for the regression model was also .30. Findings suggest high school graduation is an inequitable process where students taking exit exams face differential barriers relative to students that do not take exit exams.

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## *INTRODUCTION*

High school completion represents an important achievement for students and schools. However, the path to accomplish this milestone may vary according to the state in which the student lives. Currently, 25 states require high school students to pass an exit examination to receive a diploma with an additional state, Oklahoma, phasing in the exit exam requirement in 2012 (CEP, 2010). The exit examinations are an example of the role high stakes testing encompasses in educational reform and represent a cornerstone of the NCLB policy by providing insight into each school's and child's progress (No Child Left Behind, 2001).

For schools the NCLB policy implications are high. Schools must make Adequate Yearly Progress, AYP, on assessments or face sanctions (No Child Left Behind, 2001). In addition to meeting testing requirements, schools disaggregate student outcomes by ethnicity and report the number of graduates and dropouts to remain in compliance with NCLB. For high schools, the number of graduating students can be seen as the ultimate measure of a high school's academic effectiveness. In order to meet testing standards, schools dedicate vast resources and time preparing students to meet the testing standard (Sunderman & Kim, 2004). Proponents argue that schools address the high-stakes testing by aligning their curriculum to the test while critics contend that high-stakes testing narrows the curriculum by teaching only the material that is tested.

Another factor influencing states and schools are the requirements to meet proficiency levels in math and reading by 2014 and the implementation of interventions for schools that fail to meet adequate yearly progress (U.S. Department of Education, 2011). To offset the deadline, the Obama administration granted waivers for states to

surrender certain requirements of NCLB. However, critics contend that the waivers are based on the conditional agreement of supporting Obama's educational reforms and under-mind efforts to hold schools accountable (Derthick & Rotherham, 2012).

For students the implications of the NCLB policy are high as well. Although, testing was intended to be used as a tool to measure skills, some states attached promotion, retention, and graduation standards to the tests and have used exit exam results as a sole source to make high stakes decisions for students. Several researchers have advised against the validity to use of a sole examination to make policy decisions for students (Dworkin, 2005; Heubert & Hauser, 1999; Sheldon & Biddle, 1998).

Regardless of a supporter's or critic's perceptions of the exit exam policy, both can agree that for students the consequences of not passing the exit examination directly affects their future. Reardon, Atteberry, Arshan, and Kurlaender (2009) state that the consequences of failing exit exams fall primarily on students rather than schools and districts. Furthermore, Garcia (2003) argues that students who fail high school exit examinations and do not receive a diploma have "few options to make a living, and creates a permanent lower class of uneducated and possibly unemployed citizens and residents" (p. 435). Graduating and obtaining a diploma has great ramifications not only for the student but for society as well. High school dropouts account for billions of dollars in lost tax revenue and affect welfare, income, and the justice system (Lochner & Moretti, 2001). Additionally, Belfield and Levin (2007) found large economic losses in lost tax revenue within California by assessing the economic consequences of a deficient education.

*Context of the Study*

Exit examinations have been in place since the 1970s and were initially described as minimum competency exams geared to determine if students had basic reading and math skills (Center for Education Policy, 2000). The basis of the exit exams was to improve and reform curriculum (Mehrens, 1998). Although some schools used exit exams as a graduation requirement, the exams measured lower level skills (Heubert & Hauser, 1983).

However, by the 1980s, use of the minimum competency exam led to the perception that these tests were encouraging low academic standards and social promotion (Bond & King, 1995). After the publication of *A Nation at Risk* (National Commission, 1983), policymakers perceived the U.S. education was inferior to other countries and students lacked the necessary skills needed to compete in the global economy. The report identified several educational weaknesses including promoting low standards with a "diluted" curricula and minimum math and science course requirements (National Commission, 1983).

Due to the negative perceptions of U.S. education, policymakers began increasing testing standards by exchanging the minimum competency tests with exams testing higher level skills. Some states began to increase the number of subjects tested (Heubert & Hauser, 1999). States also began to make high stakes decisions on the basis of the test. Policymakers justified the changes in the exit exam as an opportunity to create a better skilled labor force to compete in a global community. The basis of the educational reform including the exit examination was to make a diploma "meaningful" (CEP, 2000).

The minimum competency tests upgraded to meet higher standards and testing in more subject areas were included in the graduation.

By the 1990s, the push for educational reform led to the authorization of the Improving America's Schools Act (IASA). The IASA legislation passed under the Clinton administration required states to place academic standards and tests in three grade levels in math and reading (Toch, 2006). Tests measured schools' annual progress to determine if schools were meeting or making adequate academic progress (IASA, Sec.1116.) The IASA then lead into implementation of NCLB policy.

### *Purpose of Study*

The purpose of this study is to evaluate the association between exit examinations and high school completion rates before the introduction of NCLB. The study compares high school completion rates for high schools with exit examination policies and high schools without such policies in 2000. The study then shifts to identifying predictors of high school completion rates among states with and without exit examinations. The study focuses on 2000 data because it provides a foundation of the completion rates prior to the accountability requirements mandated by NCLB policy. Additionally, the 2000 data is a unique dataset which provides a census of school data.

### *Research Questions*

The research questions for the study between exit examination policy and high school completion are as follows:

(1) Nationally, are there school-level differences in completion rates between high schools with exit examinations and high schools without exit examinations?

(2) Which school characteristics predict school completion proportions in high schools with and without exit exams?

### *Need for the Study*

There is a great need for further research in high stakes testing and exit examinations. The increased presence of high stakes testing is apparent throughout the country. The inception of NCLB in 2001 has increased high stakes testing in the number of grades and subjects requiring testing. For example, according to the provisions in NCLB in 2005-2006, states were required to measure every child's progress in reading and math in each grade from 3 to 8 and at least once during the grades 10 through 12. Furthermore in 2007-2008 states had implemented a science assessment at least once during grades 3-5, 6-9, and 10-12 (U.S. Department of Education, 2009). Additionally, the increase in tests and subjects tested impacts the curricula and other graduation requirements including graduation credits. In order to align the curricula to meet stricter requirements of high stakes testing, some school districts increase in the number of graduation credits by introducing the Basic 4 program which requires students to take four years of Math, Science, History, and English (Balfanz, 2009). Additionally, in Texas, the adoption of end-of-course exams requires students in high school to take a total of 12 end-of-course exams (Texas Education Agency, 2011). Because of the increased use of high-stakes testing further research is needed.

This study addresses several gaps in the research between exit examinations and graduation rates. The study focuses on the association exit examination policy has on high school completion prior to the implementation of NCLB. First, the study provides additional research in the area of exit examinations and high school completion rates. This area needs further study to better understand completion rates and drop out rates in high schools with exit exams to improve educational policy and practice (Hauser & Koenig, 2011). Additionally, the study takes an alternative perspective in comparison to previous research with exit examinations. Unlike other studies which make comparisons by state or school district high school completion rates, this study compares high school completion rates at the school level by matching schools on similar demographic characteristics. High schools with exit exams and without exit exams share similar school characteristics. The analysis better clarifies the relationship between exit examination policies and high school completion and changes that improve opportunities for high school students. This study also brings insight into alternative processes in high school graduation requirements including how policymakers create better policy addressing special needs student groups like limited English proficient, special education, and historically underserved populations (Warren, Jenkins, & Kulick, 2006).

Using 2000 pre-NCLB information for the study has several advantages. Specifically, pre-NCLB data may provide cleaner information in understanding the relationship between high-stakes testing and high school completion than current data because research has documented the gaming and state-level implementation issues associated with the initiation of NCLB policy. Amerin and Berliner (2002), for example, found in their study that as risks associated with performance exams increase so does the

likelihood that schools manipulate or game high-stakes exam. Heilig and Darling-Hammond (2008) also argue that high-stakes testing systems that can reward or penalize schools on the basis of performance outcomes may manipulate the population of students taking exams to boost the schools scores. Additionally, data may become manipulated due to NCLB as states pursue the mandate for adequate yearly progress, the rigor of performance demands, and intervention burdens that differ across states (Mintorp & Trujillo, 2005). These issues bring into light why the use of pre-NCLB data for this study clarifies the high school completion rates for similar high school with and without exit exam prior to the accountability mandates from NCLB.

## *Definition of Terms*

### High-Stakes Testing

The study uses American Educational Research Association definition of a high-stakes test. The American Educational Research Association (1999) defines high-stakes testing as tests which have "high-stakes" consequences associated with the outcome of the tests. High-stakes associated with the outcome of the tests for students can include promotion, retention, or graduation requirements.

### Exit-Examination

According to the Office of Civil Rights (2000) dataset, an exit examination is defined as an exam taken by high school students in which a passing score is the sole or a primary requirement for that student to obtain a diploma.

High School Completion Rate

According to the data provided by the Department of Education, Civil Rights Data Collection (2002), high school completion refers to the total number of students that obtained a diploma within the high school for a given year. Various measures exist in calculating high school completion or graduation rates. This study uses Swanson's Cumulative Promotion Index (CPI) as an indicator of high school completion. The CPI indicator "approximates the probability that a student entering the $9^{th}$ grade will complete high school on time with a regular diploma" (Swanson (2003, p.7). The high school completion rate only counts students that obtain a diploma. The measure is the product of three grade to grade transitions ($9^{th} – 10^{th}$, $10^{th} – 11^{th}$, $11^{th} – 12^{th}$) and a final transition from grade 12 to diploma (Swanson, 2003).

### *Limitations*

The study has several limitations. First, the timeliness of the Office of Civil Rights (OCR) and Common Core Data (CCD) data collection creates a limitation. Collection for the OCR and CCD data occurs in the month of October and does not capture incoming or transferring students after the October. Additionally, the data collection is a self-reporting process for school districts. Data are not verified. Another limitation of the study is the use of CPI as the high school completion indicator. Due to the limitations of the data, the CPI does not capture a true measure of the number of students for the first time in ninth grade or on-time graduates. The total number of ninth graders includes repeaters and does not account for student mobility. Both factors

increase the difficulty in getting a true number of first time ninth graders for the completion rate.

The study proceeds into the second chapter which reviews the literature surrounding exit examinations and high-stakes testing. The third chapter then leads to the methods section describing the sample of the study, instrumentation, and data analysis. Following this, chapter four provides the results of the analysis. Chapter five completes the study with the discussion and conclusion.

# Literature Review

Research on high-stakes testing reveals a polarization of opinions and evidence as to the relationship between exit examinations and student achievement. Previous research on exit examinations and high school completion has only provided correlational data rather causal evidence (Greene & Winters, 2004). One aspect which may clarify the differences in the effectiveness or outcomes of exit exams is the diversity in datasets and methods researchers use in high school completion calculations.

The following chapter provides an overview of the literature about exit examinations in the U.S. The chapter begins with a discussion on the usage and policy development of exit exams currently and in 2000. Next, the chapter discusses the negative and positive aspects of high-stakes tests in schools followed by a review of the research surrounding exit exams and different student groups. The chapter then provides a closer view of varying high school completion rate calculations. Finally, the chapter describes how exit exams fit into the Institutional Analysis and Development (IAD) Framework.

## Exit Exams in 2011 and 2000

Currently, there are 28 states using exit exams however 3 of these states have not incorporated exit exams as a graduation requirement (CEP, 2010). These three states plan to include exit exam as a graduation requirement in 2018 (CEP, 2010). States that provide exit exams enrolled 74% of all public school students nationally and 83% of nation's minority students (CEP, 2010). Of the 28 states with exit exams, 15 states were

using comprehensive exams, 9[1] states were using end of course (EOC) exams, 1 state was using minimum competency exams, and 3 states were using both standards-based and EOC exams (CEP, 2010).

In 2000, 18 states used exit exams as a requirement for graduation prior to the implementation of No Child Left Behind (CEP, 2002). The last three decades have shown a gradual increase from the first exit exam implemented in Florida in the late 1970's (Linn, 1998) to the current 25 states using exit exams as a requirement for graduation in 2012 (CEP, 2010). In a study reviewing these states, Amrein and Berliner (2002) noted several similarities. The characteristics the states with exit exams shared included location in the South and Southwest with higher percentages of minority student enrollment and greater poverty compared to schools located in North or Midwest. These characteristics revealed exit exam policy had disproportionately impacted particular student groups including students of color, economically disadvantaged, and students with disabilities (Orfield, Losen, Wald, & Swanson, 2004).

## Types of Exit Exams

States have adopted three types of exit exams. They include minimum competency tests (MCT), standards-based tests, and end-of-course exams. MCT have been in use since the 1970s and 1980s and were described as testing basic knowledge and skills based on an eighth grade level (CEP, 2002). The standards-based and end-of-course exams are academically more rigorous than the MCT. Standards-based tests were more aligned with high school standards while end-of-course exams were associated

[1] Texas is included in the end-of-course test group due to the introduction of the STAAR in 2011-2012 academic year.

more with a specific high school course. These exit exams played an important role in the standards-based reform movement because they measured students' progress and held educators accountable to academic achievement (CEP, 2002).

The use of MCT exams have changed in popularity over time. As states tried to move way from minimum competency tests, standards-based reform began to take hold across the nation so did the interest in the types of exit exams that were more rigorous. For example, in 2000 of the 18 states with exit exams over half (10) used MCT exams but in 2009 only 1 state used the MCT exam (CEP, 2002). Of the 8 remaining states, 6 used standards-based exams, one state used end-of-course exam, and single state used both standards-based and end-of-course exams.

## Exit Exam Policy

Several policies developed the context for this study prior to the implementation of NCLB. The release of *A Nation at Risk* was influential in the development of educational reform and educational standards (National Commission, 1983). The report supported the need for higher standards and student accountability due to the inferiority and mediocrity of American education. Another factor which reinforced systemic reform through the development of standards and national goals was the creation of America 2000. First proposed by George H.W. Bush in 1989, America 2000 was created through a coalition of governors to set several national goals to be achieved by 2000. In 1994 Clinton supported the development of educational standards thru Goals 2000 which were developed to address educational needs and emphasize national goals. The implementation plan for Goals 2000 was the Improving America's Schools Act (IASA)

of 1994. The policy that preceded the immediate implementation of NCLB was the Improving America's Schools Act (IASA) of 1994. By the 1990s the push for educational reform led to the authorization of the Improving America's Schools Act (IASA); a reauthorization of the Elementary and Secondary Act of 1965 which focused to provide funding for schools with economically disadvantaged students (Linn, 2008). The IASA legislation passed under the Clinton administration and required states to place academic standards and tests in three grade levels in math and reading (Toch, 2006). The IASA policy altered the focus given to student assessments from inputs to outcomes (Linn, 2008). Tests measured schools' annual progress to determine if they were meeting or making adequate academic progress (IASA, Sec.1116.) The IASA policy assessment standards addressed the valid and reliable use of assessments and consistent alignment with national and professional standards. Additionally, the IASA policy supported the importance of making reasonable adjustments for student with diverse learning needs (Stedman, 1994).

States defined adequate yearly progress for Title 1 students and worked with schools districts to assist schools with low academic progress (Heubert & Hauser, 1999). Later passage of NCLB policy developed from the standards set in IASA: increased student testing in more grade levels, required student results reported by student subgroups, and tied consequences for schools based on student scores (Toch, 2006). Neither IASA nor NCLB imposed high-stakes decisions like exit-exam policy for students; the implementation of testing requirement for graduation was set by states and some school districts (Heubert & Hauser, 1999).

In the blueprint of the Reauthorization of the Elementary and Secondary Education Act of 2011, the Obama administration identified the goal for education as students graduating from high school college or career ready (U.S. Department of Education, 2011). Although states have implemented standards as a requisite of the Elementary and Secondary Act, there has been a disconnection between these standards and the knowledge and skills needed to succeed in college or in a job (U.S. Department of Education, 2011). A main component of Obama's educational policy is to improve assessments that align to college and career standards. These assessments would be based on higher-level skills, more precise measures of student growth, and better connection between instruction and student needs.

Additionally, the National Governors Association Center for Best Practices and the Council of Chief State School Officers created a movement to address a common set of standards across states through the development of The Common Core State Standards (CCSS) (CEP, 2011). The CCSS provides a consistent set of educational standards across states that would provide students with skills for college and career readiness (CEP, 2011). Although not developed by the federal government, the Obama administration did support the CCSS because it provided stakeholders an opportunity to compare students' achievement or outcomes from different states.

Applying the CCSS to exit exam policy across states could impact exit exams. Currently, 23 of the 28 states with exit exams have adopted CCSS (CEP, 2011). States adopting the CSSS reveal an assurance to align assessments to standards focusing on college and career readiness. The federal policy and CCSS movement to improve assessments may affect states with exit exams by improving and changing the types of

exams given. Although, critics feel that current exit exams test a narrow set of skills and knowledge, the CCSS may provide opportunities to test more rigorous standards and a broader set of skills (CEP, 2011).

## Legal Challenges to Exit Exams

Several groups have questioned the implementation of exit exams as a prerequisite to a diploma. In 1978, the Florida state legislature passed an amendment requiring students to pass an examination in order to receive a diploma. Critics challenged the implementation of the exit exam policy most notably its impact on minority students.

### Debra P. v. Turlington (1979).

In Debra P. v. Turlington (1979), Black high school students sued the Florida Board of Education on the constitutionality of the exit exam (Alexander & Alexander, 2001). Plaintiffs argued that the exit exam discriminated against Black students due to graduation discrepancies between Black and White students. Ultimately, the court ruled that (1) students had a property interest in obtaining a diploma, (2) the exit exam must be a measure of what students had been taught, and (3) students must be given advanced notice of the exit exam requirement (Debra P. v. Turlington, 1979).

### GI Forum Image de Tejas v. Texas Education Agency (2000).

In 1997, nine minority students with assistance from the Mexican American Legal Defense Fund (MALDEF) filed a federal lawsuit against the Texas Education Agency

arguing that the TAAS test was racially discriminatory (GI Forum Image de Tejas v. Texas Education Agency, 2000). These nine students failed to meet the exit exam requirement prior to their graduation. Additionally, the plaintiffs claimed that the TAAS was racially discriminatory and violated their right to due process. Plaintiffs contend that a greater percentage of minority students do not meet the test standard compared to White students. The lawsuit challenged the use of the TAAS exit exam as a graduation requirement. The Court ruled that the use of the TAAS test does not have an adverse impact on minority students and does not violate the students' rights to due process (GI Forum Image de Tejas v. Texas Education Agency, 2000).

Flores v. Arizona (2000).

In 1992 the Arizona Center for Law brought the case against the state arguing the lack of funding for English Language Learners. Plaintiffs won the case in 2000 which ordered Arizona to improve funding for ELLs (Flores v. Arizona, 2000). However with the incorporation of the AIMS exit exam as a graduation requirement in 2005, a request to suspend the graduation requirement for ELLs was requested until the state had complied with the earlier decision to improve funding and the instruction for the students (Sherwood, 2005). The court almost dismissed the case but gave the Arizona legislature power to determine funding and English instruction for ELLs (Flores v. Arizona, 2000).

Espinoza v. State of Arizona (2006).

In 2006, plaintiffs in Arizona argued the constitutionality of the exit exam (AIMS) on behalf of low income students, minority students, and English Language

Learners that had met all course requirements however had not passed the exit exam (Espinoza v. State of Arizona, 2006; Fischer, 2006). Plaintiffs contend that the inadequacies of educational funding limited resources and services necessary to obtain a quality education needed to pass exit exam. In 2008, the Court dismissed the case based on insufficient evidence and lack of causal connection of testing results on the exit exam and district funding (CEP, 2006; Espinoza v. State of Arizona, 2006).

Valenzuela v. O'Connell (2006).

In California, the Morrison and Foerster Law Firm filed a lawsuit in February 8, 2006 arguing that the exit exam unfairly penalized students that have not received sufficient learning resources (Valenzuela v. O'Connell, 2006). In 2007, the lawsuit resulted in a settlement which provided remediation classes and additional resources to help students pass the exit exam for up to two years of the student's anticipated graduation date (Valenzuela v. O'Connell, 2006).

Overall, when groups have questioned the use of exit exams as a graduation requirement, the court has ruled in favor of the continued use of exit exams. Debra P. vs. Turrlington has served as precedent identifying that students must be given sufficient notice of the exit exam requirement and the curriculum provided to students must be reflective of the exit exam

Perspectives on High Stakes Testing

The opinions surrounding exit exams fall within the context of the opinions surrounding high-stakes testing. A closer look at the positive and negative aspects using high-stakes testing provides a framework for exit examinations.

Critics report several limitations associated with the exit exams and high-stakes testing. For example, Phelps (2004) identified some of the critics' issues with high stakes testing including increasing student drop-out rates and limiting curriculum. The critics also question the gains in student achievement as a result of high-stakes testing. Amrein and Berliner (2002) analyzed 18 states with stern consequences associated with the testing programs to determine if evidence exists if learning was occurring as a result of the tests. The study reported that if high-stakes testing was effective, the testing domains covered in the test would also be reflected in the same testing domains in alternative tests. These other tests included ACT, SAT, NAEP, and AP tests. If the testing domains in the other tests increased then this was indicative of learning within schools. Results of the study revealed increasing scores for the high-stakes tests however when compared to the alternative tests results remained the same or reduced during the introduction of high-stakes testing.

## Limiting Curriculum

Researchers also suggest that high-stakes testing produces inequity within resources, opportunities to learn, access to qualified teachers when poor schools are compared to more privileged schools (McNeil, 2005). Additionally, when addressing the limiting curriculum, "substituting a bogus curriculum of test practices for a real, academically challenging and instructionally productive curriculum was most prevalent

in predominately Latino and African American schools and in the lower academic tracks of larger multiracial comprehensive schools" (McNeil, 2005, p. 90). Popham (2003) identified the limiting curriculum as "reductionist curriculum" where there is decline in time of the instructional objectives not covered by the test. In order to increase test scores, teachers do not teach materials not included on the test. Popham (2003) refers to these students that are shortchanged in curriculum as "miseducated students." In a study focusing on the realignment of subjects focusing on testing, Smith et al. (1991) revealed that teachers ignored subjects including social studies and writing because the subjects were not included in state test. McNeil, Coppola, Radigan, and Heigil (2008) also supported that high-stakes testing dominated the curriculum by focusing on test preparation.

Furthermore, by testing everyone, policy makers assume that all students learn at the same pace and that everyone begins learning each academic year with the same basic foundation of skills and language fluency (Valenzuela, 2005). However, when considering the vast differences culturally, economically, and personally, it imposes harsher requirements on some students. For example, due to the limited length of time allotted to learn a second language, English language learners face difficulties in the mastery of language fluency and subject matter learning (Anstrom, 1997). Ruiz de Velasco (2005) also contends the situation may even be worse the later Limited English Proficient students arrive at a campus. Students must deal with multiple factors of cultural adjustment, language acquisition, and academic achievement. Valenzuela (1999) contends that the difficulty of dealing with these multiple factors, finally push these children away from school. According to McNeil (2005), this process of pushing

children or losing a significant number of predominately poor, children of color produced positive indicators for NCLB.

## Stress

Another effect from the introduction high-stakes testing and exit exams was stress associated with students and teachers. Although principals were seen as the overall school leader, teachers have a more direct link with student achievement. For example, Jones and Egley (2006) conducted a study comparing the teachers' and administrators' perceptions on the effects of high-stakes testing in Florida. Results revealed that administrators had more positive perceptions of high-stakes testing than teachers. However, 97% of the teachers felt that students would learn the same amount or more without the test. More teachers than administrators also cited greater negative effects of testing on students and teacher motivation. The authors report that the results may be due to how administrators used the testing results as a useful tool for students and teachers while teachers were more affected by testing in their teaching and student learning. None the less, these researchers did identify that the teachers stated high-stakes testing did hold students, educators, and parent's accountable for their actions.

Cizek and Burg (2006) identified two forms of stress affecting teachers. These researchers describe the first form as systemic stress in which the teachers are pressured by administrators and parents to obtain high scores on the tests. The second is described as personal stress which is generated by teachers worrying about student performance and how the student performance reflects their professional standing. In a national sample of teachers, Pedulla, Abrams, Madaus, and Russell (2003) revealed that teachers teaching in

states with high-stakes testing report higher pressure than teachers in states without the high-stakes testing programs. Furthermore, more teachers in the study representative of high-stakes testing states wanted to transfer out of tested grades than teachers not in high-stakes testing states. Hoffman, Assaf and Paris (2001) contend that high-stakes testing is one of the main factors teachers' leaving the profession within four years.

Additionally, students are affected by stress associated from high-stakes testing. Goonan (2004) revealed that about 20% of students in elementary schools are limited in showing their educational ability due to test anxiety. Wigfield and Eccles (1989) also stated that as many as 10 million students were performing poorly on tests due to anxiety. Cizek and Burg (2006) identified effects of student stress which include test anxiety but also increased student apathy to testing, prompt cheating, and decreased student motivation in school**.**

## Gaming and Testing

Critics have also argued over the negativity in "gaming" that can occur as a result of the exit exams and high-stakes tests. In a high-stakes testing system, corruption is present when student outcomes have negative consequences and rewards attached to them (Nichols & Berliner, 2007). McNeil et.al. (2008) reported the use of dropouts and ninth grade waivers as a means to improve a school's rating in Texas referring to the practice as a "safety value". The waiver is used when a high school wants to retain a ninth grade student for failing a course. In retaining these ninth graders, the schools can limit the number of tenth graders testing and improve their test scores. This practice would present an overrepresentation of ninth grade students in comparison to other

grades. Additionally, schools would engage in "triage behavior" which excluded students from testing by reassessing them into a special education or LEP categories (Booher-Jennings 2005; Booher-Jennings & Beveridge, 2007; Dworkin, 2008). Haney (2000) in a study tracking student enrollments, dropouts, and completion data reported greater percentages of minority students failing to go to the tenth grade in comparison to White students. Furthermore, Abrams and Haney (2006) in a study reviewing attrition rates in 9th and 10th grade over time found that attrition rates had tripled since the 1970's.

Another method used to increase the number of successful students on testing was lowering the cut score or promotion standard on the test (Haney, 2001; McNeil, 2005). Nichols and Berliner (2007) note that states engage in manipulating cut scores to allow greater students to pass tests and steer clear of any consequences. For instance, Haney (2001) reported that the practice of randomly lowering cut score in Texas as low as 50% on certain test was the truth behind the increase in student achievement. Proponents push the idea that they're "raising the bar" academically for students when actually the number of items required to show mastery on the exam decreases. However, Toenjes and Dworkin (2002) found in a reanalysis of the study that Haney's conclusions were inaccurate.

Another example of gaming in high-stakes testing was the use of expulsions and suspensions as a factor during testing. Figlio (2003) studied multiple school districts in Florida to determine if schools used school discipline as a mechanism to increase test performance. Findings from the study reported incidences of selectively disciplining students but only in grades in which were tested. When comparing high-achieving and low-achieving students on similar offenses committed, high-achieving students were

disciplined less than low-achieving students. Additionally in a longitudinal examination of suspended students, Arcia (2006) found that suspended students performed lower academically within a three year period and had a higher dropout rates when compared to a matched control group.

## Positive Aspects of Testing

Supporters reveal that the current accountability policies in association with local actors are making gains closing the achievement gap (Fuller & Johnson, 2001). Phelps (2004) identified several positive results from high stakes testing including the improvement of professional development and improvement of knowledge about testing.

Additional research suggests that high-stakes testing forces schools to teach all students including those that have been historically underserved. For example, Scheurich, Skrla, and Johnson (1999) revealed schools and school districts are successfully serving low-income students of color within Texas. Additionally, Toenjes, Dworkin, Lorence, and Hill (2002) contended that the accountability system in Texas has forced schools meet the educational needs of underserved students. These researchers argue that testing has been closing the achievement gap by forcing campuses to teach students who in the past were denied an education based on color or social economic status.

Other researchers also support some of the similar findings as to the practicality of testing. For example, Borko and Stecher (2001) reported that high-stakes testing aids teachers in planning curriculum and instruction for improved student outcomes. McNeil et.al. (2008) added that many teachers make the changes in the curriculum to align the

curriculum to the test. Advocates state that the alignment with test leads to clearer goals and opportunities to learn and improved pacing of the content providing more exposure to skills tested on the test (Cohen, 1996). Testing results allow teachers to identify student strengths and focus on the student weaknesses. Shepard and Dougherty (1991) stated that test results were beneficial in revealing student strengths and weaknesses but also in acquiring additional assistance for students most in need.

Other studies revealed direct increases in student achievement as a result of high-stakes testing. Roderick, Jacob, and Bryk (2002) analyzed student achievement in Chicago for students subject to test based grade promotional policy. The results indicated that students in low-performing schools made greater achievement gains in reading and math than students in high-performing schools. In another study analyzing Dallas schools, Ladd (1999) revealed more rapid student achievement for seventh graders within schools after the implementation of the accountability system. Additionally, within the Texas Report Card for 2003 through 2005, NCLB revealed increases in student learning in fourth grade increased proficiency in reading and math. Additionally, Texas Report Card reported the Black-White achievement gap in fourth grade narrowed in reading by 4 percentage points and narrowed in math by 5 percentage points.

Proponents of high-stakes testing give several examples of educational improvement for all stakeholders. The improvements are apparent within the instruction and curriculum and supports direct evidence of the improved student achievement through increases in test scores.

## Exit Exams and Student Outcomes

Previous research on the effects of exit exams and student outcomes has produced mixed results. Amrein and Berliner (2002) looked at whether states adoption of exit exams decreased graduation rates, increased dropouts or increased likelihood of students seeking a GED. Researchers found that 67% of the states with exit exams reported a decrease in high school graduation rate after the tests were implemented. However, Hanushek and Raymond (2003) reviewed the Amrein and Berliner study a found the study contained several methodological flaws. After re-analyzing and adjusting the previous study, Hanushek and Raymond reported no relationship between exit exams and student outcomes. In another study, Jacob (2001) used NELS data from 1992 to look at the association between exit exams and 12th grade achievement and graduation. Jacob found no effect between exit exams and student achievement however lowest skilled students were more likely to drop out in states with exit exams than states that did not mandate the testing requirement. Additionally in a study focusing on test gains and the strength of the accountability policy, Carnoy and Loeb (2002) found no effect in test gains prior to the introduction and strength of the accountability policy.

Reardon and Galindo (2002) analyzed 1988 NELS data to describe 8th grade promotion exams and the relationship between testing requirements and early high school dropouts. The researchers found that students that were required to take and pass a test prior to entering 9th grade were more likely to drop out of school by the 10th grade than students that did not have to take the 8th grade test. However, in a reanalysis of the Reardon and Galindo study, Warren and Edwards (2003) found no effect of the exit exams and graduation.

Greene and Winters (2004) studied if the implementation high school exit exam affects the state's graduation rate. The study incorporated the use of two graduation rate calculations using data from Common Core Data and Census 1991-2001. Results indicated no effect between the adoption of exit exams and graduation rates. Dee and Jacob (2006) reported on the effects of exit exams on several student outcomes and labor market experiences using the Common Core Data (CCD) and the 2000 Census. The results indicated mixed findings on the student outcomes. The Census data reported that exit exams reduced the probability of graduating high school. The CCD data also suggested that exit exam increased the probability of dropping out in poor, urban, high minority school districts in Minnesota. However, the authors did note that exit exams decreased the dropout rate in low-poverty and suburban schools especially for students in grades 10 and 11.

Warren, Jenkins, and Kulick (2006) looked at the difficulty of exit exams and their affect on state-level high school completion rates. Results indicated that more difficult exams lowered graduation rates by 2.1 percentage points and lowered GED-taking rates by 0.1 percentage points. The researchers found that exit exams were more negatively impacting graduation rates in states with larger groups of poor students and minority students.

In a mixed methods study of a Texas school district over a seven year period, McNeil, Coppola, Radigan, and Heilig (2008) reported that the school districts perceived increase in student outcomes and graduation rates were due to increases in ninth grade retention and limited grade progression for minority youth. The researchers contend that these practices masked the actual graduation rate.

Reardon, Atteberry, Arshan, and Kurlaender (2009) used longitudinal student data of the California's high school exit exam in four school districts to study the effects of the exit exam on student achievement and graduation rates. Findings reported graduation rates have dropped by 20% for low-achieving minority students and girls since the implementation of the test. Additionally, the exam did not motivate minority students and female students in the bottom 25% to in grades 9 and 10 to study harder to graduate. The authors also found that minority students scored lower than white students on the exit exam that had similar academic achievement prior to the exam.

Ou (2009) in a study of High School Proficiency Test from New Jersey from 2002 to 2006 compared students who barely passed/failed the exit exam and whether that affected their decision to complete high school. The author found that students that barely failed the exam especially in math were more likely to drop out of school than students that barely passed the exam. Results also reported Hispanic and Black students as well as economically disadvantaged students were more likely to dropout when barely failing exam.

As a whole, the research reporting on the impact of high school exit exams and student outcomes is mixed. The studies by Amrein and Berliner (2002), Reardon and Galindo (2002), Dee and Jacobs (2006), Warren et al.(2006), Reardon et al.(2009), and Ou (2009) all reported negative student outcomes from exit exams. However, work by Hanushek and Raymond (2003) contradicted the findings by Amrein and Berliner and the work by Warren and Edwards (2003) contradicted the findings by Reardon and Galindo. Additionally, Greene and Winters (2004) found that exit exams had no effect on graduation rates.

A contributor to the differences in these studies may be the varied datasets and graduation rate calculations (CEP, 2011). The national datasets including NELS, CPS, and CCD each has its limitations which may contribute to varying student outcomes. One aspect which may bring insight to this research is the shift of moving from national datasets to state-level data. Researchers are finding state-level data more reliable and can account for changes in state policy and student characteristics (CEP, 2011).

## Exit Exams and Students with Disabilities

Exit exam outcomes for students with disabilities have produced high fail rates for this group especially when tests are first introduced (Heubert, 2002). Additionally, exit exams affect students with disabilities more than other student groups (Johnson & Thurlow, 2003; CEP, 2007). In a study of the New York Regents English Exam, Koretz and Hamilton (2001) reported disproportionate failure rates for students with disabilities when compared to students without disabilities. McLaughlin (2000) also found that of the students with disabilities that participated in Florida's minimum competency test over 50% of students with disabilities failed the exit exam. In 2001, students with disabilities in California also performed poorly on an optional two test exit exam. Results showed that just 10.3% of the students with disabilities passed both exams while 42.2% of all students passed (Office of Special Education Programs, 2000). Student outcomes in Texas also follow similar results. In review of the end-of-course exit exams, students without disabilities outperformed students with disabilities on each exam in Algebra I, Biology, English II, and US History (Texas Education Agency, 2000).

Addressing this pattern of low performance for these disabilities was important because of the negative experiences associated with not having a diploma (Blackorby & Wagner, 1996; Johnson, McGrew, Bloomberg, Bruininks, & Lin, 1997). Some states have responded to the low performance on exit exams by postponing the implementation date the graduation requirement would take place for students with disabilities (Olson, 2001). Other states have responded differently to exit exam requirements and diploma options for students with disabilities. Some states have adopted the exit exams with accommodations or the use of IEPs (Individual Education Plans) as the overriding decision if students do not pass the exit exam (Guy, Shin, Lee, & Thurlow, 1999). However, other states required students with disabilities to pass the exit exam to receive a diploma (Office of Special Education Programs, 2000). For the students that failed to pass the exit exam, some states have adopted alternative diplomas or certificates of completion or certificates of attendance (Guy et al. 1999). Erickson, Kleinhammer-Tramill, and Thurlow (2007) looked at the relationship between high school exit exams and diploma options for students with disabilities and found that a greater number of certificates of completion for students enrolled in a state with exit exams than students enrolled in states without exit exams. Although states that use certificates have provided exit options for these students with different learning needs, the certificates of completion are second-rate to a diploma (Erickson et al., 2007).

## Exit Exams and English Language Learners

Like students with disabilities, ELLs have had difficulty mastering exit exams. Several issues develop when graduation exams are applied to English Language Learners.

Critics have questioned the validity, reliability, and fairness of tests that have serious consequences for ELLs because of the level of English proficiency required for the exit exam (Heubert & Hauser, 1999). When ELLs take exit exams the test formation not only tests knowledge but English language aptitude as well. Valdez and Figueroa (1994) reported that construct validity of exit exams are problematic for ELLs because construct definitions were not designed to include ELLs. For example, Garcia (1991) found in a study comparing ELLs and non-ELLs that ELLs had significantly lower test scores in reading portion of the tests because of differences in background knowledge and test taking strategies not as a result of a lack of knowledge or academic ability. Garcia (2003) further states that the exit-exams are a reflection of an English-only policy which creates unintentional suppression of minority language. McNeil et.al. (2008) also noted that ELLs were inadequately supported in preparing for the exit exams.

Test results have revealed that ELLs performed below English speakers in content subjects and across grade levels (Escamilla, Mahon, Riley-Bernal, & Retledge, 2003; Valenzuela, 2005). Results revealed poor performance on standardized tests in turn denied ELLs a diploma. The pattern of ELLs underperforming in comparison to English speakers was apparent cross multiple states. For example, the results of the first year of the California exit exam found that the test did not improve achievement nor narrow the achievement gap between language minority students and white students (Garcia & Gopal, 2003). In fact, these students had significantly lower results passing the exit exam than white students. Abedi and Dietal (2004) reported that the achievement gap between ELLs and non-ELLs on statewide assessments on average ranges from 20% to 40%. Results on New York's Regents exams reveal similar discrepancies between ELLs and

other students. In 2005, 33.2% of ELLs passed the Regents exam compared to 80.7% passing by other students (New York City Dept. of Education, 2005).

## Exit Exams and Minority Students

Research has revealed that poor, minority students are more likely to live in a state where they must take an exit examination (CEP, 2006). Currently, 83% of all students of color reside in states that administer exit exams (CEP, 2010). Critics have argued that this disproportionately impacts minority students taking exit exams which may lead to a greater number of minority students not graduating. Several critics contend that exit exams have an adverse effect on minority and low-performing students by forcing them to leave school prematurely (Jacob, 2001).

Several studies have documented the disparities in achievement gaps between minority students and White students over time. Although long term National Assessment of Educational Progress (NAEP) data have revealed slight improvements in math during 1973-1999 and reading 1971-1999 large differences exist among racial groups (Loveless & Diperna, 2000). From the 1970s to the beginning of the 1980s, NAEP data showed some narrowing of Black-White and Hispanic-White achievement gaps in math and reading (Lee, 2002). However, since the mid 1980's the achievement gaps for Black-White students have stopped narrowing. Additionally, the Hispanic-White achievement gap in reading and math has showed little to no narrowing (Lee, 2002). In addition, Madaus and Clarke (2001) reported that NAEP results in 1996 indicated that average proficiency by 13 year old White students was at the equivalency level of 17 year old Black students. In a report by Center on Educational Policy (2006),

researchers indicated that among states with exit exams, gaps in passing rates between Black-White and Hispanic-White students averaged from 20 to 30 percentage points.

Additionally, the underperformance of minority students in comparison to White on exit exams is consistent across states. In Florida the initial legal challenge to exit exam policy (Debra P. v. Turlington) was based on achievement gap between White and Black students (Alexander & Alexander, 2001). In 1979, after third administration of the exit exam, roughly 2% of the White seniors had not passed, in comparison to 20% of the Black seniors (Phillips, 1993). In another study of the California exit exam, Reardon (2009) reported that since its implementation, the graduation rates for minority students and girls fell by nearly 20 percentage points in comparison to White students after the initial administration of the exit exam. Horn (2003) reported similar discrepancies in a study of high stakes testing in Massachusetts and North Carolina. In Massachusetts, results of the 10$^{th}$ grade math and English language arts exit exam suggested that less than 50% of minority students met the testing requirement for graduation. Although reflective of the 5$^{th}$ grade promotional exam, results show similar achievement discrepancies in North Carolina. Horn (2003) reported that 87% of White and 85% of Asian students passed the exam while only 62% and 67% of Black and Hispanic students passed the exam. Results suggest similar outcomes when comparing White students and minority students. In a study of 20 states, CEP (2007) reported achievement gaps reading and math in all states. Differences in achievement were noted between Black-White students in math and between Hispanic-White students in math and reading.

## Exit Exams and Completion Rate Calculations

Research on exit exams reveals different methods of calculating high school completion rates and may use different datasets for calculations. Researchers have used National Educational Longitudinal Survey (NELS), Current Population Survey (CPS), and Common Core Data for calculating completion rates. The following are some popular measures of high school completion/graduation rates. Swanson (2003, 2004) measures the graduation rate through the Cumulative Promotion Index (CPI). This measure "approximates the probability that a student entering the 9th grade will complete high school in 4 years with a regular diploma" (p.7). The measure is the product of three grade to grade transitions (9th – 10th, 10th – 11th, 11th – 12th) and a final transition from grade 12 to diploma or promotion ratios together (Swanson, 2003). The measure calculates the high school completion within a two year period. Because of the two year period, the CPI calculation is considered an estimated grade-level cohort rather than a true individual student cohort (Swanson, 2004.). Swanson (2004) identified several benefits in using the CPI indicator including the methodology follows definition by NCLB, relies on enrollment and diploma counts for calculation, and requires a shorter time period to make calculation as compared to four years with other methods. Swanson uses the CCD to calculate the CPI at the school district level. Critics however contend that one of the limitations of the CPI indicator is that it does not account for student mobility and is influenced by student retentions especially the ninth grade bulge (Roy & Mishel, 2008).

Balfanz and Legters (2004) identify their graduation indicator as Promotion Power. This indicator reveals the extent which students progress from 9th to 12th grade in a high school. Promotion power compares the enrollment of 12th grade students to the

enrollment of 9th grade students three years earlier. Balfanz's Promotion Power has been used to identify schools considered "Dropout Factories" where less than 60% of the students graduate within a four year period. Promotion power as an indicator of high school completion has several advantages. Promotion power reports the successfulness high schools have graduating students and provides the opportunity to make national comparisons by high schools. The limitations using Promotion power include neither accounting for student mobility nor the influence of student retentions (Balfanz, 2007).

Greene and Forster (2003) high school completion indicator averages enrollment of 8th, 9th, and 10th grades to estimate the enrollment of the first time 9th graders and adjusts for student population growth for the cohort's high school years. Critics contend that Greene's measure of averaging 8th, 9th, and 10th grade enrollments to determine the estimate first-time 9th graders does not yield the correct estimate of the cohort. The estimate for calculating the student population growth may be inaccurate due to the lack of immigration data which can underestimate graduation rates for minorities (Roy & Mishel, 2008). In a study that analyzed the enrollment of first-time ninth graders in Texas, Dworkin (2008) reported that in five years 13.8% of the students left the Texas education system for reasons other than defined as a dropout. Percentages for unaccounted students were greater when disaggregating results by ethnicity and student groups. Furthermore in a 2009-2010 IDRA report, 29% of students enrolled in Texas during 2006-2007 left school before their 2009-2010 graduation (Johnson, 2010).

Seastrom, Hoffman, Chapman and Stillwell (2005) averaged 8th, 9th, and 10th graders to obtain an estimate of the entering 9th grade enrollment. However, their calculation did not adjust for student population growth. Seastrom et al. (2006) identified

this method as the Averaged Freshman Graduation Rate used by National Center for Education Statistics (Roy & Mishel, 2008). This study focuses on Swanson's CPI index as the indicator for high school completion.

## Framework

Politicians set the stage for academic reform in schools creating policy to change and improve the quality of education for students. Recognizing the importance of the political perspective brings insight into how politicians conceptualize school dilemmas and how they go about addressing the school's needs including the implementation of exit exams as a graduation requirement. This study uses the Institutional Analysis and Development Framework a segment of Institutional Rational Choice as a framework to understand and clarify the politician's role in implementing exit examination policy in schools.

### Institutional Analysis and Development (IAD) Framework

When analyzing policy creation and implementation, there are multiple factors that affect the comprehension of the policy. Sabatier (1999) describes IAD as a set of frameworks which reveals how institutional rules influence the behavior of rational individuals motivated by self-interest. The IAD framework is composed of three parts consisting of the action arena, patterns of interactions and outcomes, and evaluation of the outcomes (Sabatier, 1999). Within IAD, there is a focus on the actors' motives and the contexts in which the action of the actors takes place (Scott, 2000). These actors are described as rational problem solvers that attempt to obtain specific outcomes to maximize their benefit. The information that the actors use to make the policy or actions

may or may not be correct. Nonetheless, the actors create policy on the basis of the information provided to maximize utility. The variations of exit exam graduation policy support how politicians interpret and create policy in different states.

There are multiple levels within educational arena and for this study the focus centers in the state government action arena. Although, there are different rules that encompass the multitier action arenas in education overall stakeholders want to push their agenda in education. The decentralized education gives power to states and school districts to create educational policy (CEP, 2006) and is an important factor in the IAD framework because it introduces the relationship between business and education. The high school exit exam policy became popular among employers and policy makers as a means of making sure students receiving diplomas had mastered basic educational skills (Amrein & Berliner, 2002; Dorn, 2003). Through business and school partnerships, business leaders expected to influence school reform (Emery, 2002). Employers use their network of organizations, parents, community organizers, and teachers to influence policy makers' decisions (Emery, 2002). As a result of this influence, politicians push the high school exit exam policy to make a diploma more meaningful and have a better skilled group of future employees (CEP, 2004). This relationship is also evident as policy makers and politicians appoint business leaders to key school roles because of the belief schools should run like a business. As noted previously, critics have several concerns in evaluating the implementation of exit exams especially if the exam is being used as a sole indicator for academic achievement (Heubert & Hauser, 1999). Proponents including policy makers argue however that exit exams hold schools and students accountable. From the policy maker's perspective, the basis of the policy is rational and effective

because it raises student achievement by motivating students and teachers work harder to meet the required standards (Fuller & Johnson, Jr., 2001).

In a review of the previous research on exit exams, currently there are 28 states using exit exams representing an increase in 18 states using exit exams in 2000 (CEP, 2010). This increase in the use of exit exams also accompanies a shift in the types of exit exams adopted by states. The shift moves from the popular use of minimal competency test in 2000 to the higher skilled comprehensive and end-of-course exams. The increase in the use of exit exams has been followed with an increase in number students being tested. Currently, 73% of the nation's students and 83% of students of color are located in states that provide exams (CEP, 2010).

Proponents of exit exams find that the exams improve student outcomes for all students and provide important data and makes students work harder making the diploma more meaningful. Critics on the other hand, contend that high-stakes testing like exit exams have unintended consequences and impact historically underserved students. Minority, English language learners, and poor students are impacted the most by exit exams (CEP, 2002; CEP, 2010).

In a review of the research on graduation rates and the effects of exit exams, studies provide mix results. However, more studies are finding a negative association between exit exams and graduation rates. These results may be impacted by the datasets and calculations used to determine the graduation rates (CEP, 2010). The results of the research are often impacted by the descriptives and characteristics that are not controlled in the studies. In all, the review of the literature provides a broad perspective of factors

that have been impacted by the use of high-stakes testing policy and high school exit exams.

Studies support the need for further research over exit exams. There is limited research on studies determining the causality and association of exit exams and graduation rates. Researchers report the difficulty in making state to state comparisons of graduation rates because of the differences in policy and the differences in the student characteristics (CEP, 2011).

With this in mind, this study makes comparisons of graduation rates based on the CPI index at the high school level rather than state-level comparing schools with exit exams to schools without exit exams. The study determines if a relationship exists between exit exam and graduation rates.

The study now leads into the methods section. The following section provides information on the sample and the research methodology used to test the research questions.

# METHODS

## *Introduction*

The purpose of this study is to determine if a relationship exists between exit examinations and high school completion. The Methods chapter of the study consists of the following sections: 1) research design, 2) sample description, 3) instrumentation, and 4) analysis.

## *Research Design*

The purpose of the study determines if a connection exists between exit examinations and high school completion. A cross-sectional research design is utilized in comparing high school completion by states with exit examinations and states without exit examinations in 2000. Gall, Gall, and Borg (2003) define a cross-sectional study as "data are obtained for one point in time" (p. 295). This study focuses on an analysis of high school completion in 2000.

## *Sample Description*

The Office of Civil Rights (OCR) data provides the basis for the sample selection. The Department of Education's Office of Civil Rights gathers data in response to access to elementary and secondary school and for programs and services within the schools. The survey provides data to monitor discrimination and civil rights issues in educational programs. The purpose of the survey is to determine institutional compliance with civil rights and the prevention of illegal discrimination in education.

The 2000 data were collected through the Elementary and Secondary School Civil Rights Survey. The 2000 OCR data sampling design included all public schools. After

the high schools in the study were selected, they were matched to the 2000 Common Core Data (CCD) dataset.

This study collects high school data from all 50 states in the U.S. including the District of Columbia. To be included in the sample, high schools must have precisely grades $9^{th}$ – $12^{th}$, a total enrollment of a minimum 300 students, and represent regular or vocational school (Balfanz & Letgers, 2007). According to Balfanz and Letgers (2007) high schools with less than 300 student enrollment would be highly influenced by student changing status and would drastically affect the campus high school completion indicator.

The following tables describe the sample of high school campuses in the study. The tables provide insight to major variables. The tables report the schools by state and describe the mean percentage high school student by demographic groups, including minority students, LEP students, and special education students.

Initially, 19,966 schools were identified as high schools. However, when filtering for the specified criteria including $9^{th}$ – $12^{th}$ grades, student enrollment 300 or greater, and identification as regular, the sample totaled 8,653 schools. Regular campuses are defined by CCD as public elementary or secondary school that does not focus on vocational, special, or alternative education.

Table 1 below reports the number of high schools by state.

Table 1.

*Total Number of High Schools by State 2000*

| State | Number of Schools |
|---|---|
| Alabama | 156 |
| Alaska | 20 |
| Arizona | 122 |
| Arkansas | 41 |
| California | 742 |
| Colorado | 135 |
| Connecticut | 122 |
| Delaware | 26 |
| District of Columbia | 14 |
| Florida | 294 |
| Georgia | 258 |
| Hawaii | 27 |
| Idaho | 41 |
| Illinois | 370 |
| Indiana | 221 |
| Iowa | 127 |
| Kansas | 104 |
| Kentucky | 177 |
| Louisiana | 150 |
| Maine | 74 |
| Maryland | 166 |
| Massachusetts | 207 |
| Michigan | 410 |
| Minnesota | 137 |
| Mississippi | 103 |
| Missouri | 199 |
| Montana | 38 |
| Nebraska | 47 |
| Nevada | 40 |
| New Hampshire | 53 |
| New Jersey | 235 |
| New Mexico | 54 |
| New York | 505 |
| North Carolina | 288 |
| North Dakota | 15 |
| Ohio | 490 |
| Oklahoma | 111 |
| Oregon | 127 |
| Pennsylvania | 346 |
| Rhode Island | 35 |
| South Carolina | 151 |

| | |
|---|---|
| South Dakota | 28 |
| Tennessee | 197 |
| Texas | 660 |
| Utah | 27 |
| Vermont | 22 |
| Virginia | 223 |
| Washington | 173 |
| West Virginia | 74 |
| Wisconsin | 256 |
| Wyoming | 15 |
| Total | 8,653 |

*Note. District of Columbia included.*

The states with the largest number of high schools were California (n = 742) followed by Texas (n = 660) while the states with the fewest high schools include North Dakota (n = 15), Wyoming (n =15), and District of Columbia (n = 14).

The mean student enrollment for the campuses was 1,162.37 students ranging from the required minimum enrollment of 300 to a maximum of 5,031. The median was 1,015. Table 2 below provides the mean percentage of various demographic characteristics in the sample.

Table 2.

*Demographic Characteristics for Schools*

| Characteristics | | Mean Percentage (N = 8,653) |
|---|---|---|
| Gender: | Male | 50.8 |
| | Female | 49.2 |
| Student Ethnicity | | |
| | White | 69.5 |
| | Black | 15.3 |
| | Hispanic | 10.6 |
| | Asian | 3.5 |
| | Native American | 1.2 |
| Total Minority | | 30.5 |

| | | | |
|---|---|---|---|
| LEP Students | | | 3.5 |
| Free or Reduced Lunch (N = 7725) | | | 25.9 |
| Suspensions and Expulsions | | | 11.5 |
| | Suspensions | | 11.2 |
| | Expulsions | | 0.37 |
| Students with Disabilities | | | 11.3 |
| Title 1 Campus | Yes | 1,526 | 21.3 |
| | No | 5,646 | 78.7 |
| School Locale | Central City | | 22.0 |
| | Suburb | | 35.8 |
| | Town | | 18.0 |
| | Rural | | 24.2 |
| Regional location | | | |
| | Northeast | | 18.5 |
| | South | | 35.7 |
| | Midwest | | 27.8 |
| | West | | 18.0 |
| Exit Exam | Yes | | 50.0 |
| | No | | 50.0 |

When disaggregating enrollment by ethnicity, white students represented the greatest student group compromising 69.5% of the student body. The overall minority student representation consisted of 30.5% of the students with Blacks reporting the greatest percentage at 15.3% followed by Hispanics at 10.6%, then Asian 3.5%, and finally Native American 1.2%. For the variable gender, schools reported similar mean percentage for males and females with males representing 50.8% and females representing 49.2% students.

Schools reported 3.5% for LEP enrollment. However, not all students received LEP services. The OCR data reports the number of students identified as LEP and the number of students enrolled in LEP services. A percentage of students receiving LEP Services were calculated by dividing the number of students enrolled in LEP services by the number identified as LEP. Results indicate 83.9% of eligible students received LEP services. Additionally, 11.3% represented the mean percentage of students with disabilities.

Although 8,653 high schools represent the sample, 7,725 schools responded to the item measuring percentage of students receiving free or reduced lunch. The mean percent of students receiving free or reduced lunch was 25.9%. For the construct, Title 1 campus, 7,172 schools responded to the item. Of these 21.3% (n= 1,526) identified themselves as a Title 1 campus while 78.7% (n = 5,646) did not identify themselves as a Title 1 campus.

Measuring schools' percentage of suspensions and expulsions was combined at 11.5%. When disaggregating these constructs, the measures were 11.2% for students suspended and 0.37% for students expelled.

For the construct School Locale, the greatest percentage of schools identified themselves in Suburbs at 35.8% followed by schools identified in Rural at 24.2% then Central City at 22% and finally schools identified in Town 18%.[2] When reporting on the Regional U.S. location of schools, schools in the South represented the greatest group at 35.7% followed by schools located in the Midwest with 27.8%. Next, schools regionally located in Northeast followed at 28.5% and finally schools in the West at 18%.

[2] School types are defined through CCD classifications. Central City is defined as Large City or Mid-size City, Suburb is defined as Urban Fringe of a Large City and Urban Fringe of a Mid-size City, Town is defined as Large Town or Small Town, Rural is defined as Rural, outside MSA or Rural inside MSA.

When disaggregating schools by exit exam policy, the total number of schools with and without exit exams was similar with 4,328 schools with exit exams and 4,325 without exit exams. See Table 3 below reveals the number of high schools with and without exit examinations by state.

Table 3.

*Number of High Schools by State and Exit Examination Status*

| States with Exit Examinations | | States without Exit Examinations | |
|---|---|---|---|
| State | Number of Schools | State | Number of Schools |
| Alabama | 156 | Alaska | 20 |
| Florida | 294 | Arizona | 122 |
| Georgia | 258 | Arkansas | 41 |
| Indiana | 221 | California | 742 |
| Louisiana | 150 | Colorado | 135 |
| Maryland | 166 | Connecticut | 122 |
| Minnesota | 137 | Delaware | 26 |
| Mississippi | 103 | District of Columbia | 14 |
| Nevada | 40 | Hawaii | 27 |
| New Jersey | 235 | Idaho | 41 |
| New Mexico | 54 | Illinois | 370 |
| New York | 505 | Iowa | 127 |
| North Carolina | 288 | Kansas | 104 |
| Ohio | 490 | Kentucky | 177 |
| South Carolina | 151 | Maine | 74 |
| Tennessee | 197 | Massachusetts | 207 |
| Texas | 660 | Michigan | 410 |
| Virginia | 223 | Missouri | 199 |
| | | Montana | 38 |
| | | Nebraska | 47 |
| | | New Hampshire | 53 |
| | | North Dakota | 15 |
| | | Oklahoma | 111 |
| | | Oregon | 127 |
| | | Pennsylvania | 346 |
| | | Rhode Island | 35 |
| | | South Dakota | 28 |
| | | Utah | 27 |
| | | Vermont | 22 |
| | | Washington | 173 |
| | | West Virginia | 74 |

| | | | |
|---|---|---|---|
| | | Wisconsin | 256 |
| | | Wyoming | 15 |
| Total | 4,328 | Total | 4,325 |

*Note. District of Columbia included.*

In states with exit exams, the largest numbers of high schools were located in Texas with 660 high schools followed by New York with 505 high schools. The state with the fewest high schools was Nevada with 40 schools. For states without exit exams, the states with the greatest concentration of schools were California with 742 high schools followed by Michigan with 410 schools. The states with the least number of high schools include North Dakota and Wyoming each with 15 campuses and District of Columbia with 14 schools.

When focusing just on states with exit exams, the following table identifies the different types of exit exam used by state.

Table 4.

*States with Exit Examinations*

| States | Exit Exam |
|---|---|
| Alabama | Standards-based exam |
| Georgia | Standards-based exam |
| Indiana | Standards-based exam |
| Louisiana | Standards-based exam |
| New Jersey | Standards-based exam |
| North Carolina | Standards-based exam |
| Texas | Standards-based exam / End-of-course exam |
| New York | End-of-course exam |
| Florida | Minimum competency exam |
| Maryland | Minimum competency exam |
| Minnesota | Minimum competency exam |
| Mississippi | Minimum competency exam |
| Nevada | Minimum competency exam |
| New Mexico | Minimum competency exam |
| Ohio | Minimum competency exam |
| South Carolina | Minimum competency exam |

| | |
|---|---|
| Tennessee | Minimum competency exam |
| Virginia | Minimum competency exam |

As the table shows, the greatest number of states (10) used the Minimum competency exam in 2000. Six states used a standards-based exam and one state used the end-of-course exam. Texas was the only state in which both the standards-based exam and end-of-course exams were used. Center for Educational Policy provided data for the Table 3. Due to the small number of states using EOC exams, comparisons of graduation rates and the different exams, standards-based, and EOC exams, were combined to represent higher-level exams.

### *Procedures*

Data was requested for schools from Elementary and Secondary School Civil Rights survey at the Department of Education, Office of Civil Rights (OCR) for the year 2000. Once received, the data was reviewed to include only high school campuses. The high school identification number matched the high school campuses. Additionally, data included the Common Core Data (CCD). The CCD data provided data on student enrollment by grade level. The CCD data then was merged with the data from the OCR based on the high school identification number.

### *Instrumentation*

The instruments for the study included the Office Civil Rights Data Collection (OCR) and the Common Core Data (CCD). The OCR survey formerly the Elementary and Secondary School Civil Rights survey instrument provides a variety of data on

elementary and secondary schools and school districts. Some of the data include enrollment for Students with Disabilities, Certification of Teachers, School Suspensions, Total Enrollment for Limited English Proficient, Special Education, Gifted and Talented, and High School Completers. The dataset disaggregates the items/categories by gender and student ethnicity. The study focuses on the following items:

- Limited English Proficiency (LEP) Students enrollment
- Student Race/Ethnicity
- Children with Disabilities
- Total Enrollment
- Expulsions/Suspensions[3]
- High school completers

The second source of data for the study is Common Core Data (CCD). According to the Department of Education this database kept by the National Center for Educational Statistics and is "used as the universe for identifying pubic school districts for participation in the OCR survey"(2006, para. 3). The CCD data consist of three categories, general descriptive information on schools and school districts, data on students and staff, and fiscal data. The data collection occurs annually and allows for making comparisons across states. The primary purpose of including the CCD data was to calculate a Cumulative Promotion Index (CPI), the high school completion indicator. Although, the OCR dataset provides a variety of information such as overall student enrollment, it does not report student enrollment by grade level. The CCD provides student enrollment by grade level. This was the reason for including the CCD data, to

[3] Suspension data are representative of long-term suspensions and do not include short term suspensions which represent the bulk of total suspensions.

provide the enrollment per grade level an important component in calculating Cumulative Promotion Index.

*Analysis*

The study is a secondary analysis of data from the 2000 OCR and 2000 CCD. The data is representative of high school campuses in the U.S. and contain the data for total number of that obtained a diploma.

A major component of the study is to match high schools from states with exit examinations to states without exit examinations. The study incorporates propensity scores to obtain a better comparative sample of schools with and without examinations. The propensity score trims high schools with and without exit exams to create a better match for the study. Rosenbaum and Rubin (1984) define propensity scores as "a method of controlling for systematic differences [by] grouping units into subclasses based on observed characteristics and then comparing only treatment and control units who fall in the same subclass" (pg. 516). The model compares schools with exit exams and schools without exit exams identified as (1 = exit exam and 0 = no exit exam) where ***z*** reveals the treatment or exit exams assignment. The number of covariates, **x**, consists of the following eight items:

1. Percentage of minority student enrollment
2. Percentage of LEP student enrollment
3. Percentage of Student with disabilities
4. Percentage of Student Expulsions/Suspensions
5. Percent Free and Reduced Lunch

6. Title 1 Campus
7. School Type (City, Suburban, Town, and Rural)
8. Regional location of Schools (Northeast, South, Midwest, West)

The propensity scores is estimated through the logit model for **z**,

$$\log [e(\mathbf{x})/(1 - e(\mathbf{x})] = \alpha + \boldsymbol{\beta}^T \mathbf{f}(\mathbf{x})$$

where $\alpha$ and $\boldsymbol{\beta}$ are parameters and $f(\cdot)$ is the specified function (Rosenbaum & Rubin, 1984).

The propensity score is obtained through logistic regression and then converted into a logit. Next the scores are divided into five strata by their propensity score for comparison. Creating 5 strata often is adequate to remove 90% of the bias due to each of the covariates (Cochran, 1968; Rosenbaum & Rubin, 1983). Comparisons of schools with and without exit exams are made on the basis of similar propensity scores within the strata.

Independent Samples T-Test answers the first research question, Nationally, are there school-level differences in completion rates between high schools with and without exit examinations? The dependent variable is the CPI indicator. The focus is to compare the differences in the high school completion proportion between schools with and schools without exit exams within each of the 5 strata identified through the propensity scores. The independent variable is the presence of exit exams for the schools. The Independent Samples T-test compares CPI indicator for schools with and without exit exams.

Additionally, for the states with exit exams the study makes comparisons of the CPI index among the three exit exams, minimum competency exams, standards based, and end of course exams, to determine if different exit exams are associated with higher CPI index. The study uses a fixed effect model.

The second question, "Which school characteristics predict school completion proportions in high schools with and without exit exams?" is measured with multiple regression. Multiple regression looks for relationships between the covariates and the CPI index for schools with and schools without exit exams. Multiple regression is initiated separately for schools with and schools without exit exams comparing results to determine if differences exist between covariates and the CPI index within each group. The dependent variable is the CPI index. The covariates include the following:

1. Percentage of minority student enrollment
2. Percentage of LEP student enrollment
3. Percentage of Student with disabilities
4. Percentage of Student Expulsions/Suspensions
5. Percentage Free/Reduced Lunch
6. Title 1 campus
7. School Type (Central City, Suburban, Town, and Rural)
8. Regional location of Schools (Northeast, South, Midwest, West)

The model for multiple regression is written in two parts. Harlow (2005) defines the model as a set of independent (X) variables with a linear combination labeled (X´) so that:

$$X' = A + B1(X1) + B2\ (X2) + B3\ (B3) + \cdots + Bp\ (Xp)$$

"where A = Y-intercept, B*i* – an unstandardized regression weight which indicates how much an outcome (Y) variable would change if the X variable were changed by one unit, and p = the number of predictors" (p. 46).

Then the model "in which the outcome variable, Y, is a function of the linear combination of the X variables, X′, plus the prediction error, E, that represents variance that is not related to any of the X variables" (Harlow, 2005, p. 47). The model is written as:

$$Y = X' + E$$

Similar covariates for the study and the propensity score matching were selected to address some of the difficulties in making comparisons among high schools with and without exit exams. Propensity score matching controls for differences by grouping high schools "into subclasses based on observed characteristics, and then directly comparing only treated and control units who fall in the same subclass" (Rosenbaum & Rubin, 1984, p. 516). Using similar covariates in the propensity score matching also work to strengthen the results of the regression by providing some background to determine which covariates may best predict high school completion.

## High School Completion Rate

According to the data provided by the Department of Education, Civil Rights Data Collection (2000), high school completion refers to the total number of students that obtained a diploma and other high school completers within the high school for a given year. Swanson (2004) defines high school completion as "an individual who has received

a high school credential as the result of fulfilling the requirements of a standard or modified secondary educational program" (p. 6). The two definitions represent slight differences in high school completers. These differences bring about an important fact about the lack of uniformity in high school completion variables and measures. Belfanz and Legters (2004) reveal that "there is no common measure of high school dropout or graduation rates at the school level [and] states are allowed to use different graduation measures" (p.2). These differences create difficulties in generating dropout and graduation rates but also in comparing rates to between states.

For this study, the CPI is used to calculate the high school completion rate. Swanson (2004) defines CPI as "a stepwise process composed of three grade-to-grade promotion transitions (9 to 10, 10 to 11, 11 to 12) in addition to the ultimate high school graduation event (grade 12 to diploma) (p. 7). The CPI measure is calculated within a two year period.

The calculation for the 2000 CPI graduation rates is listed below:

$$\frac{E^{10}\ 2001}{E^{9}\ 2000} * \frac{E^{11}\ 2001}{E^{10}\ 2000} * \frac{E^{12}\ 2001}{E^{11}\ 2000} * \frac{G\ \ 2000}{E^{12}\ 2000}$$

$E^{9}$ 2000 – Represents 9th grade enrollment in 2000
$E^{10}$ 2001 – Represents 10th grade enrollment in 2001
G 2000 – Represents number of graduates in 2000

This high school completion rate is not ideal due to the limitations it possesses. Swanson (2004) contends that this example of a graduation rate as an imperfect measure because of the multiple factors not captured by this rate. For example, this graduation rate does not factor in students retained in ninth grade and student transfers in and out of the

school. A better measure or rate would be to identify on-time students obtaining a diploma for a given year divided by first-time ninth graders four years earlier. Despite the limitations of the high school completion rate, the CPI is comparable to other measures and creates a high completion rate for all schools based on a common measure.

## Technical Terms

The definitions for the variables in the dataset can be found in the Appendix.

## *Summary*

The purpose of the study was to determine if a connection exist between exit examinations and high school completion. This chapter revealed the methodological processes utilized in the undertaking of the study. The following chapter, Chapter Four, presents the results of the study.

# RESULTS

## *Introduction*

The chapter begins with the presentation of the results prior to the introduction of propensity scores. Next, the chapter presents data with propensity scores. Then the section presents the results in accord to the research questions in the study.

The initial sample for this study included 8,653 high schools. However, when grade level enrollment totals from the CCD were merged with OCR data to calculate CPI rate, results concluded that 7,379 schools contained required data to calculate a CPI rate[4]. The high school completion rate (CPI) for high schools ranged from 0.01 to 1.00 with a mean of .72 (SD = .12). Swanson (2006) suggests that to maintain data quality CPI scores less than 0.5 should not be included in analysis due to insufficient coverage. After removing CPI scores less than 0.5, the sample totaled 6,475. Additionally, calculating the propensity score for the high schools in the study required the absence of missing data. This resulted in a final sample of 5,057 schools included for analysis.

The table below presents an overview of the data disaggregated by the use of exit exam. Independent samples T-Test was used to determine differences between high schools with and without exit exams and the covariates prior to the implementation of propensity scores.

[4] To calculate the CPI rate, high school needed to contain data for grades 9 thru 12 and number of students obtaining a diploma. Some schools however were missing student enrollment for one of the grade levels.

Table 5.

*Comparison of Covariates for Schools with and without Exit Exams Before Propensity Scores*

| School characteristics | | Exit Exam N = 2596 | No Exit Exam N = 2461 | t-statistic |
|---|---|---|---|---|
| Percentage student ethnicity: | | | | |
| | White | .73 | .77 | .06** |
| | Black | .15 | .06 | 606.9** |
| | Hispanic | .09 | .10 | 14.1 * |
| | Asian | .02 | .05 | 402.9** |
| | Native American | .01 | .02 | 110.4** |
| Percentage Minority student enrollment | | .27 | .23 | .03** |
| Percentage LEP student enrollment | | .02 | .03 | 285.4** |
| Percentage Free or Reduced Lunch | | .22 | .21 | .4 |
| Percentage Suspensions and Expulsions | | .11 | .10 | 22.9* |
| Percentage Students with Disabilities | | .11 | .10 | 10.7** |
| Title 1 Campus Yes =1, No = 0 | | .16 | .24 | 173.9** |
| School Type | Central City Yes=1, No=0 | .15 | .15 | 2.2 |
| | Suburb Yes=1, No=0 | .36 | .41 | 13.6 |
| | Town Yes=1, No=0 | .19 | .20 | 22.9** |
| | Rural Yes=1, No=0 | .30 | .24 | 93.5** |
| Regional location North Yes=1, No=0 | | .11 | .26 | 727.3** |
| | Midwest Yes=1, No=0 | .26 | .25 | 11.7 |
| | South Yes=1, No=0 | .61 | .15 | 1824.4** |
| | West Yes=1, No=0 | .02 | .34 | 11.7** |
| CPI Rate | | .70 | .75 | 9.3** |

*Note.* *p< .05
**p < .001

For the construct Student Ethnicity, results revealed significant differences between high schools with and without exit exams. High schools without exit exams reported significantly greater percentages of White, Hispanic, Asian, and Native American students than high schools with exit exams. However, schools with exit exams (M = .27, SD = .26) reported a significantly greater overall percentage of minority students than schools without exit exams (M = .23, SD = .26), $t(4915) = .03$, $p < .001$.

Additionally when comparing other student characteristics, more notable difference were apparent between high school with and without exit exams. For Percent LEP, schools with exit exams showed significantly lower percentage LEP (M = .2, SD = .05) than schools without exit exams (M =.3, SD = .08), t(4915) = 285.4, p <.001. Additionally, results indicated no significant differences in high schools with exit exams (M = .22, SD .18) and high school without exit exams (M = .21, SD = .17) for the percent Free and Reduced Lunch. However, schools with exit exams reported significantly higher Percent Suspensions/Expulsions (M = .11, SD .10) than high schools without exit exams (M = .10, SD = .09), t(4915)= 22.9, p< .05. Results for Percent with Disabilities were similar. High schools with exit exams were significantly higher (M = .11, SD = .04) than high school without exit exams (M = .10, SD = .04), t(4915)= 10.7, p < .001.

Results for the constructs Regional Location and School Type were reported as dummy variables. High schools that represented the school characteristic were scored as a "1" while schools without the particular characteristic were scored as "0". Schools without exit exams reported significantly greater representation in Suburbs (M = .41, SD = .49) and Towns (M = .20, SD = .40) than high schools with exit exams (M = .36, SD = .48), (M = .19, SD = .39). However, high schools with exit exams reported significantly greater percentages of schools in Rural area (M = .30, SD = .46) than high schools without exit exams (M = .24, SD = .43). No significant differences were apparent between high schools located in Central City. Schools with exit exams showed greater percentage of schools in Rural area (30%). Within the covariate Regional Location, schools with exit exams reported a significantly greater representation in the South (M = .61, SD = .49) than school without exam (M = .15, SD = .36), t(4915) = 1615.8, p < .001.

However high schools without exit exams represented a significantly greater percentage of schools in North (M = .26, SD = .44) and West (M = .34, SD = .47) than schools with exit exams (M = .11, SD = .31), (M = .02, SD = .14). No significant differences were found in high schools with exit exams (M = .26, SD = .44) and schools without exit exams (M =.25, SD = .43) in the Midwest.

For overall comparison of the CPI rate for high schools, high schools without exit exams reported significantly higher graduation rate (M = .75, SD = .12) than high schools with exit exams (M = .70, SD = .12), $t(4915) = 8.56$, $p < .001$.

CPI Rate and School Characteristics

The following tables present the CPI rate for high schools with and without exit exams and several covariates.

Table 6.

*CPI by Region for High Schools With and Without Exit Exam*

| | Exit Exam CPI | No Exit Exam CPI | *t*-statistic |
|---|---|---|---|
| Northeast | .76 | .79 | 3.65** |
| South | .67 | .70 | 10.40** |
| Midwest | .76 | .78 | 0.71** |
| West | .62 | .71 | 10.60** |

*Note.* *p< .05
**p < .001

The table shows that within each geographical region high schools with no exit exams had higher CPI rates than high schools with exit exams. The results were significant for each region. The region with the greatest mean difference in CPI rate between high schools was the West. In the Northeast, high schools with no exit exam (M = .79, SD =

.12) reported significantly higher CPI rate than high schools with an exit exam (M = .76, SD = .13), t(885) = 3.65, p < .001. High schools without exit exams (M = .70, SD = .10) in the South also reported significantly higher CPI rates than high schools with exit exams (M = .67, SD = .11), t(572.2), = 10.4, p < .001. In the Midwest, high schools without exit exams (M = .78, SD = .11) also revealed significantly higher CPI rates than high schools with exit exams (M = .76, SD = .11), t(1256) = .716, p < .001. Finally, the high schools with exit exams (M = .71, SD = .11) in the West similarly reported higher CPI rates than high schools without exit exams (M = .62, SD = .08), t(58.9) = 10.6, p < .001).

The table below presents the CPI rate by school type.

Table 7.

*CPI by School Type for High Schools With and Without Exit Exam*

| | Exit Exam CPI | No Exit Exam CPI | *t*-statistic |
|---|---|---|---|
| Central City | .65 | .69 | 3.73** |
| Suburb | .73 | .76 | 15.90** |
| Town | .67 | .73 | 8.91** |
| Rural | .71 | .76 | 1.86** |

*Note.* *p< .05
**p < .001

The table showed differences in the CPI rate within each of the four school types for high schools with and without exit exams. Schools in Central City without exit exams (M = .69, SD = .11) have significantly higher CPI rates than schools with exit exams (M = .65, SD = .10), t(792) = 3.73, p < .001. Additionally, in the Suburb high schools without exit exams (M = .76, SD) reported significantly higher CPI rate than high schools with exit exams (M = .73, SD = .13), t(1880.5) = 15.9, p < .001. For located in a Town, high

schools without exit exams (M = .73, SD = .11) also showed significantly higher CPI rate than high schools with exit exams (M = .67, SD = .11), t(1009) = 8.91, p < .001. For schools located in Rural, high schools without exit exams (M = .76, SD = .12) also reported significantly higher CPI rates than high schools with exit exams (M = .71, SD = .12), t(1347) = 1.86, p < .001. The greatest mean difference in the CPI rate between high schools with and without exit exams was found in the high schools identified as Town.

The next table presents the CPI results by schools eligible for Title 1 status.

Table 8.

*CPI by Title 1 Eligible Schools for High Schools With and Without Exit Exam*

| | Exit Exam CPI | No Exit Exam CPI | *t*-statistic |
|---|---|---|---|
| Title 1 | .69 | .72 | .650** |

*Note.* *p< .05
**p < .001

The table showed that high schools without exit exams reported significantly greater graduation rate (M = .72, SD = .12) than high schools with exit exams (M = .69, SD = .13), t(996) = .650, p < .001.

Although majority-minority school was not included as an initial covariate, it brings into light the graduation rate for high school campuses with large population of minority students. Majority-minority schools were defined as a school that has a total minority population of 50% or greater. The following table displays the CPI results for high schools identified as majority-minority schools.

Table 9.

*CPI by Majority-minority Schools for High Schools With and Without Exit Exam*

| | Exit Exam CPI | No Exit Exam CPI | t-statistic |
|---|---|---|---|
| Majority-minority Schools | .63 | .67 | 3.82** |

*Note.* *p< .05
**p < .001

Results showed that high schools with no exit exams (M = .67, SD = .11) reported significantly greater CPI rate than schools with exit exam (M = .63, SD = .10), t(847), 3.82, p < .001. High schools with no exit exams reported .04 percentage points higher CPI rate than high schools without exit exams.

When comparing high schools with exit exams, a closer review of the CPI rate and the type of exit exam was conducted. Schools with exit exams were giving either minimum competency exams or higher-level exams. The higher-level exams were composed of end-of-course and standards based exams. The table below presents the results of the type of exit exam and CPI rate.

Table 10.

*CPI by Type of Exit Exam*

| Type of Exit Exam | CPI | *t-statistic* |
|---|---|---|
| Minimum Competency Exams | .68 | 16.4** |
| Higher-order thinking Exams | .72 | |

*Note.* *p< .05
**p < .001

Results show high schools using the higher-level thinking exams reported significantly higher CPI rate (M = .72, SD = .13) than high schools using minimum competency exams (M = .68, SD = .12). t(2595), 16.4, p < .001.

## Propensity Scores

A major component to this study was the incorporation of propensity scores to assist in matching high schools with and without exit exams to minimize differences in the comparison schools. Logistic regression was used to calculate propensity scores for the schools. The requirement for high schools in the sample for logistic regression was that data from the covariates could not contain missing data to calculate the propensity score. Several states including Arizona, Michigan, Maine, and Washington did not report Title 1 eligibility or the percentage of students receiving so were not included in the analysis. Although eight covariates were originally identified for the study, the two covariates were converted into dummy variables to calculate the propensity scores. This increased the total number of covariates to fourteen for the analysis. The categorical covariates converted into dummy variables where School Region and School Locale. Removing the two covariates and replacing them with the four responses for School Region and four responses for School Locale resulted in 14 total covariates. The four responses for School Region were South, Northeast, West, and Midwest and the four responses for School Locale were Central City, Suburb, Rural, and Town. After calculating the propensity score, a total of 5,057 schools were included in the sample. After propensity scores were created for the high schools, propensity scores were divided into five strata based on the results of the high school with exit exams. High schools without exit exams were then grouped within one of the 5 strata based on their propensity scores. Cochran (1968) reported that using quintiles for propensity scores would remove 90% of the bias from the covariates.

Results by Strata

Results of the propensity scores ranged from .01478 to .99335 for the high schools with exit exams. The propensity scores were grouped into 5 strata with Strata 1 representing the highest propensity scores and Strata 5 representing the lowest propensity scores. The table below disaggregates CPI rates by strata.

Table 11.

*CPI Rate by Strata*

| Strata | N | CPI Mean |
|---|---|---|
| Strata 1 | 1,388 | .67 |
| Strata 2 | 832 | .72 |
| Strata 3 | 930 | .76 |
| Strata 4 | 783 | .77 |
| Strata 5 | 984 | .71 |

Analysis of Variance was used to compare CPI rates and strata. Results from the ANOVA each strata revealed high schools within Strata1 reported a significantly lower CPI rate ($M = .67$, $SD = .12$) than all other strata, $F(4,4912) = 148.55$, $p<.001$. CPI rates for each strata gradually increased from Strata 1 to Strata 4 within each stratum.

Review of the results for high schools with and without exit exams revealed that propensity scores did improve the comparability of high schools on some but not all of the covariates. For example, Strata1 and Strata 2 representing the higher propensity scores reported the least differences among the 14 possible covariates. Strata 1 reported differences in four of the fourteen covariates and Strata 2 reported differences in two of

the fourteen covariates. Strata 3 reported school differences in nine of the fourteen covariates while Strata 4 reported differences in seven of the covariates. Strata 5 reported the greatest differences in covariates within eleven of the fourteen covariates. Several of strata reported difference in multiple categorical covariates which were converted in the dummy variables for the propensity score analysis. Rosenbaum and Rubin (1984) warn in number of covariates used in calculating a propensity scores because this may result in subclasses that may not have either treatment or control units.

The propensity score analysis created matched groups of high schools with and without exit exams within each strata. The strata range from 1 to 5 with strata 1 reporting the highest propensity scores and strata 5 reporting the least propensity scores. High schools with and without exit exams in strata 1share similar school characteristics with each other while high schools in strata 5 report greater differences in school characteristics. The results of the propensity score established the matched high schools with and without exit exams to address the first research question. Comparisons of high school completion rates for high schools with and without exit exams were then tested in each strata.

Question 1: Nationally, are there school-level differences in completion rates between high schools with and without exit examinations?

For the first research question, an Independent samples T-test was used to measure differences in completion rates (CPI) between high schools with and without exit examination. T-test measure would be used to measure CPI rate between high schools with and without exit exams within each of the 5 strata.

The table below provides the results of the CPI rate for high schools.

Table 12.

*CPI Rate by Strata*

| | | N | CPI Mean |
|---|---|---|---|
| Overall | With Exit Exam | 2596 | .70** |
| | Without Exit Exam | 2461 | .75 |
| *Stratification based on propensity scores* | | | |
| Strata 1 | With Exit Exam | 1,270 | .67** |
| | Without Exit Exam | 118 | .70 |
| Strata 2 | With Exit Exam | 548 | .71** |
| | No Exit Exam | 284 | .75 |
| Strata 3 | With Exit Exam | 456 | .76** |
| | No Exit Exam | 474 | .78 |
| Strata 4 | Exit Exam | 208 | .75** |
| | No Exit Exam | 575 | .79 |
| Strata 5 | Exit Exam | 114 | .66** |
| | No Exit Exam | 870 | .71 |

*Note.* *p< .05
**p < .001

Overall schools without exit exams (M = .75, SD = .12) reported significantly higher CPI scores than high schools with exit exams (M = .70, SD = .12), $t(4915) = 8.56$, $p < .001$. CPI rates for each strata gradually increased from Strata 1 to Strata 4 and decreased in Strata 5. Additionally, the differences between high schools with and without exit exams were consistent within each of the five strata with schools without exit exams reporting statistically significantly higher CPI rates than high schools with exit exams.

Question 2: Which school characteristics predict school completion proportions in high schools with and without exit exams?

Simultaneous multiple regression was used to analyze the second research question. The analysis tested which covariates were the best predictors of CPI rate for high school group separately with exit exams and then followed schools without exit exams. The following section reports the results of the multiple regression first for high schools with exit exams and then high schools without exit exams.

## Multiple Regression and High Schools with Exit Exams

Initial multiple regression models for high schools with exit exams revealed significant results incorporating all fourteen covariates. However, tolerances with several covariates revealed concerns with multicollinearity. Low tolerances[5] in collinearity statistics were apparent in Percent Minority, South, and Suburb[6].

The final multiple regression model included eleven of the fourteen original covariates. The covariates included Percent Free and Reduced Lunch, North, Percent Suspension/Expulsion, Midwest, Central City, Rural, West, Town, Title 1, Percent Disabled, and Percent LEP. Correlations with covariates and CPI rates revealed moderate negative relationships between Percent Free and Reduced Lunch (-.450) and CPI rates and a weak negative relationship between South (-.341) and CPI rates. Beta weights for the final multiple regression model for schools with exit exams are presented below.

---

[5] Tolerance values report the level of multicollinearity in regression model. Tolerance values range from 0 to 1. If the tolerance value is (< 1 – R squared), then multicollinearity may be a issue in analysis (Leech, Barrett, & Morgan, 2005)

[6] Tolerance values for covariates excluded were Percent Minority (.404). South and Suburbs reported values < .0001 which were automatically excluded by SPSS analysis (Leech, Barrett, & Morgan, 2005).

Table 13.

*Multiple Regression Analysis for CPI for High Schools with Exit Exams*

| Construct | β | t |
|---|---|---|
| Constant | | 106.910** |
| Percentage Free and Reduced Lunch | -.292 | -14.354** |
| Midwest | .230 | 12.541** |
| Percentage Suspension/Expulsion | -.172 | -10.135** |
| Northeast | .138 | 7.742** |
| Central City | -.113 | -5.963** |
| Percentage Disabled | -.076 | -4.458** |
| Town | -.055 | -2.872* |
| Rural | -.033 | -1.754 |
| Percentage LEP | -.028 | -1.568 |
| West | -.023 | -1.345 |
| Title 1 | .013 | .739 |

*Note.* *p< .05
**p < .001

The regression model significantly predicted CPI rate, $F(11, 2585) = 103.14$ ,$p < .001$, with seven of the eleven variables significantly contributing to the prediction model. The covariates Percent Free and Reduced Lunch, Midwest, and Percent Suspension/Expulsion contributed the most in predicting CPI. The other covariates that also significantly contributed in the regression model were Central City, Town, North, and Percent Disabled. Percentage LEP, Title 1, Rural, and West did not significantly contribute to the regression model. The adjusted R squared for the regression model was .30 indicating that 30% of the variance in CPI rate was determine by the model. The R squared also revealed a medium effect size (Cohen, 1992).

Multiple Regression and High Schools without Exit Exams

Again initial simultaneous multiple regression model for high schools without exit exams revealed significant results incorporating all fourteen covariates. However, several covariates revealed concerns with multicollinearity. Low tolerances in collinearity statistics were apparent for Percent Minority[7], South, West, Rural, and Suburb.

The multiple regression model included nine of the fourteen original covariates. The covariates included Percent Free and Reduced Lunch, North, Percent Suspension/Expulsion, Midwest, Central City, Town, Title 1, Percent Disabled, and Percent LEP. Correlations with covariates and CPI rates revealed moderate inverse relationship between Percent Free and Reduced Lunch (-.455) and CPI rates and a weak inverse relationship between Percent Suspension/Expulsion (-.280) and CPI rates. Beta weights for the final multiple regression model are presented below.

Table 14.

*Multiple Regression Analysis for CPI for High Schools without Exit Exams*

| Construct | β | t |
|---|---|---|
| Constant | | 116.703** |
| Percentage Free and Reduced Lunch | -.294 | -14.188** |
| North | .207 | 10.297** |
| Percentage Suspension/Expulsion | -.180 | -10.172** |
| Midwest | .181 | 9.274** |
| Central City | -.142 | -7.881* |
| Town | -.054 | -2.972* |
| Title 1 | -.048 | -2.676* |
| Percentage Disabled | -.041 | -2.296* |
| Percentage LEP | .003 | .146 |

*Note.* *p< .05
**p < .001

[7] Tolerance values for covariates excluded were Percent Minority (.514), South (.606), Rural (.724). West and Suburbs reported values < .0001 which were automatically excluded by SPSS analysis (Leech, Barrett, & Morgan, 2005).

The combination of variables significantly predicted CPI rate, $F(9,2452) = 117.6$, $p < .001$, with eight of the nine variables significantly contributing to the prediction model. The betas in the previous table revealed that Percent Free and Reduced Lunch, North, and Percent Suspension/Expulsion contribute the most in predicting CPI. The other covariates that also significantly contribute to model were Midwest, Central City, Town, Title 1, and Percent Disabled. Percentage LEP was the single covariate that did not significantly contribute to the regression model. The adjusted R squared was .30 indicating that 30% of the variance in CPI rate was determine by the model. The R squared also revealed a medium effect size (Cohen, 1992).

## Summary

In all, high schools with exit exams reported significantly lower high school completion rates than high schools without exit exams. These differences were apparent in each of the five propensity score strata and across multiple categorical variables. The differences in high schools with and without exit exams were also consistent across variable and strata with high schools with exit exams reporting significantly lower completion rates than high schools without exams. Additionally, when predicting which covariates were the best of high school completion rates both high school groups reported significant regression models predicting high school completion rates. The covariate, Percent Free and Reduced Lunch, was the strongest predictor of completion rates for both high school groups.

# Discussion

This chapter summarizes the findings from the results of the study. Next the findings are compared to the literature. The chapter then leads into implications for research and finally implications for future practice.

## Summary of Findings

This study looked at the relationship between exit exams and high school completion rates. The study differed from previous research in that it compared high school completion rates of high school with and without exit exam by controlling for different school characteristics through propensity scores. The previous research compared adoption of exit exams with different student outcomes, student groups or changes in student outcomes over time (Dee & Jacobs, 2006; Rearden et. al., 2009; Swanson, 2004; Warren, Jenkins, & Kulick, 2006). The previous literature regarding the effects exit exams and different student outcomes reported mixed findings. There were several studies that reported the negative effects from the incorporation of exit exams while other studies found no effects (Greene & Winters, 2004; Hanushek & Raymond, 2003; Warren & Edwards, 2003). Similar to the studies by Amrein and Berliner (2002), Dee and Jacobs (2006), Ou (2009), Reardon and Galindo (2002), Reardon et al. (2009), and Warren et al. (2006) this study reported a negative student outcomes associated with high school completion for students attending schools in states with exit exams. Overall the results comparing completion rates between high schools with and without exit

examinations reported significantly lower CPI graduation rates than high schools without exit exams.

Furthermore, this association of lower high school completion rates for schools with exit exams was found in each of the five propensity score strata. The results showed a consistent pattern of high schools with exit exams reporting lower CPI rates. In all, these results were similar Warren, Jenkins, and Kulick (2006) study which reported lower high school completion rates with the introduction of high school exit exams.

Another interesting aspect of the results was apparent within various school-level characteristics. Results reported significant differences within the categorical covariates. For example for schools identified as Title 1, high schools with exit exams produced lower completion rates than high school without exit exams. Several studies have noted the association between students of poverty and low graduation rates (Jacobs, 2001; Reardon et. al., 2009; Swanson, 2005). The findings of this study suggest however that students of poverty taking exit exams may have a greater struggle graduating than students of poverty not taking exit exams.

Results for the covariate School Type (Suburb, Central City, Urban, and Rural) reported the similar patterns comparing high schools with and without exit exams. Overall, schools located in Central City reported the lowest high school completion rate. Additionally, both high schools with and without exit exams reported schools in the Central City with the lowest high school completion rate. Swanson (2006) reported similar results in his study measuring high school completion rates across the U.S. where high schools located in Central Cities reporting the lowest completion rates. However,

high schools with exit exams reported lower high school completion rates than high school without exit exams within each school type.

For the variable School Location (South, Midwest, West, and Northeast) high schools within both exit exam groups reported similar results. Overall, the West reported the lowest high school completion rates from the four regional locations. However, when comparing high school completion rates by high schools with and without exit exams, high schools with exit exams reported significantly lower completion rates than high schools without exit exams in each of the school regions. For high schools with exit exams, the West reported the lowest high school completion rate while schools without exit exams reported the South with the lowest high school completion. Swanson (2006) also identified both West and South region with the lowest concentration of graduation rates.

For high schools identified as majority-minority, the results followed the same pattern. In majority-minority schools, high schools with exit exams reported significantly lower completion rates than high schools without the exams. Swanson (2005) reported a high correlation between racially segregated schools and low high school completion rates. Within these highly populated minority campuses, high schools with exit exams reported significantly lower graduation rates than high schools without exit exams. The finding suggests that students in majority-minority campuses with exit exams once again struggle more than students without exit exams to acquire a diploma.

The differences in CPI rates were also apparent in the types of exit exams. When comparing completion rates and types of exit exams, the high schools with higher-level exit exams reported significantly lower high school completion rates than exams

identified as minimum competency exams. These results are supported by the Warren, Jenkins, and Kulick (2006) study which found comparable results when schools with more difficult exams reporting lower completion rates than schools with less difficult exams.

In determining which school characteristics predicted school completion proportions in high schools with and without exit exams, results for high schools with and without exit exams both reported significant regression models. Both models for high schools with and without exit exams reported 30% (Adjusted R Squared = .30) of the variance predicting the school completion proportion. Both high school types also reported the Percent Free/Reduced Lunch covariate as the greatest predictor of school completion.. These results reflected the various studies which focus on impact high-stakes testing and exit exams have on low income students (Amrein & Berliner, 2002). Results were strengthened when both high schools regardless of the use of exit exams reported that Percent Free and Reduced Lunch as the best predictor of high school completion rates. Similar to the findings of Reardon (1996), schools likely to have high-stakes testing policies were representative of high concentrations of low socio-economic status. His research argued that "the concentrated poverty of these schools and their communities, and their concomitant lack of resources, that link [high-stakes testing] policies to higher dropout rates, rather than other risk factors such as student grades, age, attendance, and minority group membership" (pg. 5). In Swanson (2006), results for predicting the CPI rate for school districts indicated that of all the district characteristics Free and Reduced Lunch variable was the strongest predictor of high school completion.

The schools regional location was the second greatest predictor of the high school completion rate. However, for schools with exit exams the predictor was the regional location Midwest while schools without exit exams reported the second greatest predictor as Northeast. High schools with and without exit exams both reported the highest CPI rates for both regions. Swanson (2006) also reported high relationships with school location and high school graduation rates in his national study of completion rates.

Both high school groups reported Percent Suspension/Expulsion as the third greatest predictor of high school graduation completion. Several studies have identified the correlation between student suspensions and low achievement and dropping out (Civil Rights Project, 2000; Suh and Suh, 2007). Interestingly, for this study regardless of whether the schools had an exit exam the Percent Suspension/Expulsion reported a strong association with high school completion. These findings support the importance of suspensions and expulsions have in predicting successful student outcomes.

## Limitations

The study experienced several limitations. Missing data from the Common Core Data, in the study limited the number of schools included in the sample due to the lack of data. For example, several states were not included in the analysis because they did not report the Title 1 eligibility or Percent Free and Reduced Lunch. The data for some of the grade level totals was also missing or questionable. Additional implementation and data collection issues made even the most accurate numbers suspect. Another limitation was the use of the CPI index was a limitation because the high school completion measure did not account for student that transferred or moved for a campus. It should be

noted that although this study tested fourteen covariates in the regression model there may have been other factors that might have influenced the model. Other school or community characteristics may have contributed to the strength of the relationships between exit exams and high school completion rates. For example, factors including teacher experience and educational resources may have an impacted the regression model but were not measured in this study.

## Implications for Future Research

Future research on exit exams and high-stakes testing should continue to develop across different areas. For example, the integration of propensity scores in educational research would benefit in improving comparisons between different educational units including schools, students, or teachers. Propensity scores provide researchers an additional tool to match treatment and control groups in an environment where experimental designs may not be practical or difficult to implement.

An analysis of more recent graduation data would also provide a more current evaluation of high schools and exit exams. A current analysis would also update changes in exit exams themselves and the states implementing the exit exam testing requirements. Currently, a greater number of states are using exit exams increased from 18 in 2000 to 25 (CEP, 2010). The inclusion of new states using exit exams would not only shift the number of the high schools affected by exit exams but also increase the number of students notably minority and low socio-economic status affected by exit exams. Additionally, a current study could provide greater insight into the adoption higher-level exit exams such as the end-of-course exam and their relationship to graduation rates.

Instead of taking a single exit exam like a standards-based or minimum-competency exam, students taking end- of- course exams would have to take multiple exams to meet the graduation requirement. Finally, future research should include other graduation rates like the Average Freshman Graduation Rate (AFGR). The AFGR is currently used by the Department of Education to calculate high school graduation rates.

In all these suggestions for future research reveal a shift in researchers' intent to move from descriptive studies on exit exams toward increasingly more robust empirical studies. These robust studies which incorporate improved data and methodology can assist in better understanding causality between high school completion and exit exams.

The consistency in the results for high school completion rates and high schools with exit exams regardless of the propensity scores and across variables suggests that students' high school graduation and educational experience may differ depending on whether they attend a school with an exit exam. Such findings suggest that the focus should not surround the exit exam itself but the entire high-stakes testing atmosphere which encompasses what and how students learn. With the high number of minority, low socioeconomic students representative of schools with exit exams, that work is imperative in order to better understand whether exit exams may seem to hurt the students that they were intended to help (Losen, 2006).

## Implications for Future Practice

The practice of using exit exams policy as a graduation requirement needs further study. These findings add to the research showing a negative association between exit exams high schools completion rates suggesting that exit exams may be harming the

historically underserved students. Since states that adopt exit exams are representative of high enrollment of minority and low income students, it seems these student groups are being targeted by the policy. There needs to be more consideration by researchers and policymakers on how exit exams are disproportionately affecting underserved student groups.

Further research also needs to be conducted in schools that use exit exams as the sole measure in graduating. Exit exam policy should focus on improving student opportunities to graduate and provide data to create improved student interventions not additional barriers. Additionally, student graduation based on single exit exam should not be intention of exit exams rather it should provide another form of data that measures additional student skills or achievement. Policymakers must reassess the initial basis for introducing exit exams as a graduation requirement. Educational policy should be made to improve educational opportunities for all students not to make the diploma more meaningful and making students and teachers work harder. Policymakers' actions contradict the policy created to improve education especially for historically underserved youth. The provision of the Title 1 component of No Child Let Behind which focuses on improving the achievement of the disadvantaged to ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging State academic achievement standards and state academic assessments (US Department of Education, 2011b). Stakeholders should reassess whether mandating exit exams for some students and the consequences associated with them is fair, equal, and significant opportunity to attain an education.

Additionally future research should strive to obtain greater comprehensive data for high schools nationally. Much like the limitations of this study, incomplete or nonexistent data constrains the researcher's ability make generalizations understanding the phenomenon. Reporting complete data allows not only researchers and policymakers the ability to make better decisions and interventions to improve high school completion rates. Improving data measures provide the basis for creating better opportunities and interventions for high school students in reducing dropout rates.

## Conclusion

As a whole this study provided an additional perspective on the association between the implementation of exit exams and high school completion rates. The consistency of the findings suggest that students in high schools that administer exit exams face a more rigorous path in graduating in addition to consequences than students that do not take an exit exam. Given the adverse effects surrounding exit exams stakeholders should reconsider if exit exams improve educational opportunities for students and teachers.

References

Abrams, L. & Haney, W. (2004). Accountability and the Grade 9 to 10 Transition: The Impact on Attrition and Retention Rates. In Gary Orfield (ed.). *Dropouts in America: Confronting the Graduation Rate Crisis*. Cambridge, MA: Harvard Education Press.

American Educational Research Association, American Psychological Association & National Council on Measurement in Education. (1999). *Standards for educational and psychological testing.* Washington DC: American Educational Research Association.

Amrein, A. & Berliner, D. (2002). High-stakes testing, uncertainy, and student learning. *Educational Policy Analysis Archives* 10(18). Retrieved September 5, 2010 from http://epaa.asu.edu/epaa

Anstrom, K. (1997). Academic achievement for secondary language minority students: standards, measures, and promising. Washington, DC: National Clearinghouse. Retrieved March 13, 2009 from http://facstaff.unca.edu/mcglinn/AllenResearch%20Paper2007.doc

Abedi, J., and Dietal, R. (2004). *Challenges in the No Child Left Behind Act for English language learners.* CRESST Policy Brief 7. Los Angeles: National Center for Research on Evaluation, Standards, and Student Testing.

Arcia, E. (2006). Achievement and enrollment status of suspended students: Outcomes in a large, multicultural school district. *Education and Urban Society*, 38(3). Retrieved September 23, 2010 from http://eus.sagepub.com/content/38/3/359.short.

Balfanz, R. (2009). Putting middle school students on the graduation path: A policy and practice brief. Everyone Graduates Center and Talent Development Middle Grades Program. National Middle School Association John Hopkins University

Balfanz, R., & Legters, N. (2004). *Locating the dropout crisis: Which schools produce the nation's dropouts?* Baltimore, MD: Center for Research on the Education of Students Placed at Risk. http://www.csos.jhu.edu/tdhs/rsch/Locating_Dropouts.pdf

Blackorby, J., & Wagner, M. (1996). Longitudinal postschool outcomes of youth with disabilities: Findings from the National Longitudinal Transition Study. Exceptional Children, 62(5), 399-413.

Booher-Jennings, J. (2005). Below the bubble: Educational triage and the Texas accountability system. *American Educational Research Journal* 42 (2): 231-268.

Booher-Jennings, J.& Beveridge, A.A. (2007). Who counts for accountability? High-stakes test exemptions in a large urban school district. Pp. 77-95 in A.R. Sadovnik, J.A. O'Day, Bohrnstredt, G.W., & Borman, K. M., eds., No Child Left Behind and the Reduction of the Achievement Gap. New York: Routledge.

Borko, H. & Stecher, B. M. (2001, April). Looking at reform through different methodological lenses: Survey and case studies of the Washington state education reform. Paper presented as part of the symposium, *Testing policy and teaching practice: A multi-method examination of two states* at the annual meeting of the American Educational Research Association, Seattle, WA.

Center for Education Policy. (2002). State High School Exit Exams 2002 Annual Report. Washington, DC: Author.

Center for Education Policy. (2006). State High School Exit Exams 2006 Annual Report: A Challenging Year. Washington, DC: Author.

Center for Education Policy. (2007). State High School Exit Exams 2007 Annual Report: Working to Raise Test Scores. Washington, DC: Author.

Center for Education Policy. (2010). State High School Tests: Exit Exams and Other Assessments. Washington, DC: Author.

Center for Education Policy. (2011). State High School Tests: Changes in State Policies and the Impact of the College and Career Readiness Movement. Washington, DC: Author.

Cizek, G.J. & Burg, S.S. (2006). Addressing test anxiety in a high-stakes environment: Strategies for classrooms and schools. Thousand Oaks, CA: Corwin Press.

Cochran, W.G. (1968). *The effectiveness of adjustment by subclassification in removing bias in observational studies*. Biometrics, 24, 205-213.

Cohen, J. (1992). "A power primer". *Psychological Bulletin* **112** (1): 155–159.

Dee, T. S., & Jacob, B. A. (2006). *Do high school exit exams influence educational attainment or labor market performance?* NBER Working Paper Series Working Paper 12199. Retrieved June2, 2010 from http://www.nber.org/papers/w12199

Debra P. v. Turlington, 474 F.Supp. 244 (M.D.Fla.1979).

Derthick, M. & Rotherham, A. (2012). Obama's NCLB waivers: Are they necessary or illegal? Education Next, 12 (1). Retrieved January 5, 2012 from http://educationnext.org/author/mderthick/

Dorn, S. (2003). High-stakes testing and the history of graduation. *Education Policy*

*Analysis Archives,* 11(1). Retreived May 15, 2010 from http://epaa.asu.edu/epaa/v11n1/.

Dworkin, A.G. (2005). The No Child Left Behind Act: Accountability, high-stakes testing, and roles for sociologists. *Sociology of Education* 78 (April): 170-74.

Dworkin, A.G. (2008). Dropping out of high school: Another American Dilemma. Paper commissioned by Southern Education Foundation, Atlanta, Georgia

Erickson, A. G., Kleinhammer-Tramill, J., & Thurlow, M.L. (2007). An Analysis of the Relationship Between High School Exit Exams and Diploma Options and the Impact on Students With Disabilities. *Journal of Disability Policy Studies* 18, 117-128.

Escamilla, K., Mahon, E., Riley-Bernal, H., & Retledge, D. ( 2003). High-stakes testing, Latinos, and English language learners: Lessons from Colorado. *Bilingual Research Journal*, 27 (1) 25-49

Espinoza v. Arizona CV2006 005616, Superior Court of the State of Arizona (2006)

Flores v. Arizona, 172 F.Supp.2d 1225 (D.Ariz. 2000)

Figlio, D.N. (2003). Testing, crime, and punishment. University of Florida and NBER

Fischer, J. D. (2006) Implications of Recent Research on Student Evaluations of Teaching. *Montana Professor*, 17(Fall 2006): 11-14.

Fuller, E. J., and Johnson, J.F.. (2001). 'Can State Accountability Systems Drive Improvements in School Performance for Children of Color and Children from Low-Income Homes?' Education and Urban Society, 33 (3), pp. 260-83.

Gall, M.D., Gall, J.P., & Borg, W.R. (2003). Educational research: An introduction. Boston, Allyn and Bacon. 431-438.

Garcia, P. (2003). Use of high school exit examinations in four southwestern states. *Bilingual Research Journal*. 27(3)

Garcia, P., & Gopal, M. (2003). The relationship to achievement on the California high school exit exam for language minority students. *NABE Journal of Research and Practice,* 1, pp. 123-37.

GI Forum et al. v. Texas Education Agency et al., 87 F. Supp.2d 667 (W.D. Tex. 2000).

Goonan, B. (2003). Overcoming test anxiety: Giving students the ability to show what they know. In *Measuring up: Assessment issues for teachers, counselors, and administrators.*Retrieved December 1, 2009, from the ERIC database

Greene, J., & Forster, G. (2003). *Public high school graduation and college readiness rates in the United States.* New York: Center for Civic Innovation, Manhattan Institute. Retrieved June 11, 2010 from http://www3.northern.edu/rc/pages/Reading_Clinic/highschool_graduation.pdf.

Greene, J.P., & Winters, M.A. (2005). *Public high school graduation and college-readiness rates: 1991-2002*. New York: Manhattan Institute.

Guy, B., Shin, H., Lee, S.-Y., & Thurlow, M. L. (1999). *State graduation requirements for students with and without disabilities* (NCEO Technical Report 24). Retrieved May 25, 2009, from http://education.umn.edu/NCEO/OnlinePubs/Technical24.html

Haney, W. (2000). The myth of the Texas miracle. *Educational Policy Analysis Archives*, 8(41). Retrieved September 22, 2010, from http://epaa.asu.edu/epaa/v8n41/

Haney, W. (2001). Revisiting the myth of the Texas miracle in education: Lessons about

dropout research and dropout prevention. Paper presented at the Dropout Research: Accurate Counts and Positive Interventions Conference, Harvard Civil Rights Project,Cambridge, MA.

Hanushek, E. A., and Raymond, M. (2005). 'Does school accountability lead to improved student performance?' *Journal of Policy Analysis and Management*, 24(2), pp. 297-327

Heubert, J. P. (2002). *Disability, race, and high stakes testing.* Wakefield, MA: National Center on Accessing the General Curriculum. Retrieved June 8, 2011 rom http://aim.cast.org/learn/historyarchive/backgroundpapers/ncac_high_stak...

Heubert, J.P., & Hauser, R.M. (Eds.). (1999). High stakes: Testing for tracking, promotion, and graduation. Committee on Appropriate Test Use, Board on Testing and Assessment, Commission on Behavioral and Social Sciences and Education, National Research Council. Washington, DC: National Academy Press.

Hoffman, J. V., Assaf, L., Pennington, J. & Paris, S. G. (2001). High stakes testing in reading: Today in Texas, tomorrow? *The Reading Teacher, 54*(5), 482–492.

Horn, C. (2003). High-stakes testing and students: Stopping or perpetuating a cycle of failure? *Theory into Practice*, 42(1).

Jacob, B. A. (2001). Getting tough? The Impact of High School Graduation Exams. *Educational Evaluation and Policy Analysis,* 23(2), pp. 99-122.

Johnson D.R, McGrew K.S, Bloomberg L, Bruininks R.H, Lin H. Results of a national

follow-up study of young adults with severe disabilities. *Journal of Vocational Rehabilitation.***8**:119–133.

Thurlow, M. L., & Johnson, D. R. (2003). A national study on graduation requirements and diploma options for youth with disabilities. NCEO Technical Report 36. Retrieved on May 10, 2010 from http://www.cehd.umn.edu/nceo/OnlinePubs/Technical36.htm

Jones, B. D. & Egley, R. J. (2006). Looking through different lenses: Teachers' and administrators' views of accountability: Teachers and principals don't always agree about the effects on education of accountability systems based on high-stakes testing. *Phi Delta Kappan,* 87(10), 767-771.

Koretz, D. & Hamilton, L. (2001). *The performance of students with disabilities on the New York Regents comprehensive examination of English* (CSE technical report 540). University of California, Los Angeles: Center for the Study of Evaluation/ Retrieved on June 10, 2010, from http://www.cse.ucla.edu/CRESST/pages/reports.htm

Ladd, H. F. (1999). The Dallas school accountability and incentive program: an evaluation of its impacts on student outcomes. *Economics of Education Review*, 18(1), 1-16

Lee, J. (2002). Racial and ethnic achievement gap trends: Reversing the progress toward equity? *Educational Researcher*, 31(1), 3-12. Retrieved June2, 2010 from http://www.aera.net/publications/?id=431

Leech, N.L., Barrett, K.C., & Morgan, G.A. (2005) SPSS for intermediate statistics: Use and interpretation. Mahwah, New Jersey, Lawrence Erlbaum Associates.

Linn, D. (1998). High school exit exams: Setting high expectations. NGA Center for Best Practices.

Linn, R.L. (2008). Toward a more effective definition of adequate yearly progress. *National Center for Evaluation, Standards, and Student Testing.*

Lochner, L. & Moretti, E. (2001), The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self-Reports. NBER Working Paper No. 8605.

Loveless, T., & Diperna, P. (2000). How well are American students learning? Focus on math achievement. The Brown Center Report on American Education, I(1). Washington, DC: The Brookings Institution

Losen, D.J. (2006). Graduation rate accountability under no child left behind act and the disparate impact on students of color. In G. Orfield (Ed.), Dropouts in america: Confronting the graduation rate crisis (pp. 41-56). Cambridge, Massachusetts: Harvard Education Press.

Madaus, G., & Clarke, M. (2001). The impact of high-stakes testing on minority students. In M. Kornhaber & G. Orfield (Eds.), Raising standards or raising barriers: inequality and high stakes testing in public education (pp. 85-106). New York: Century Foundation.

McLaughlin, M. (2000). High stakes testing and students with disabilities. Presentation at the National Research Council Conference on the Role of the Law in Achieving High Standards for All. Washington, DC, June 30

McNeil, L. M. (2005). Faking equity: High-stakes testing and the education of Latino

youth. pp. 57-111 in A. Valenzuela, ed., *Leaving Children Behind: How "Texas-style" Accountability Fails Latino Youth*. Albany, NY: State University of New York Press.

McNeil, L. M., Coppola, E., Radigan, J., & Heilig, J.V. (2008) Avoidable losses: High-stakes accountability and the dropout crisis. *Education Policy and Analysis Archieves* 16 (3). Retrieved September 8, 2011 form http://epaa.asu.edu/epaa/v16n3/.

Mehrens, W.A. (1998). Consequences of assessment: What is the evidence? *Evaluation PolicyAnalysis Archives*, 6(13).

National Commission on Excellence in Education. (1983). A nation at risk: The imperative for educational reform. Washington DC: U.S. Department of Education. Retrieved May 23, 2010, from http://www.ed.gov/pubs/NatAtRisk/risk.html

Nichols, S.L. & Berliner, D.C. 2007. Collateral Damage: How High-Stakes Testing Corrupts America's Schools. Cambridge: Harvard Education Press.

No Child Left Behind (NCLB) Act of 2001, Pub. L. No. 107-110, § 115, Stat. 1425 (2002)

O'Connell v. Superior Court (Valenzuela) (2006) 141 Cal.App.4th 1452 [47 Cal.Rptr.3d 147]

Orfield, G. (2004). *Dropouts in America: Confronting the graduation rate crisis*. Cambridge, MA: Harvard Educational Publishing Group.

Orfield, G., Losen, D., Wald, J., & Swanson, C., (2004). *Losing Our Future: How*

*Minority Youth are Being Left Behind by the Graduation Rate Crisis*, Cambridge, MA: The Civil Rights Project at Harvard University. Contributors: Advocates for Children of New York, The Civil Society Institute. Retrieved May 8, 2009 from http://www.civilrightsproject.harvard.edu

Ou, D. (2009). To leave or not to leave? A regression discontinuity analysis of the impact of failing the high school exit exam. *Economics of Education Review, 29*(2), 171-186.

Phelps, R. (2005). *Defending standardized testing*. Mahwah, NJ: Erlbaum

Popham, W. J. (2003). Test better, teach better: The instructional role of assessment. Alexandria, VA: Association for Supervision and Curriculum Development

Pedulla, J., Abrams, L., Madaus, G., Russell, M., Ramos, M., & Miao, J. (2003). *Perceived effects of state-mandated testing programs on teaching and learning: Findings from a national survey of teachers.* Chestnut Hill, MA: Center for the Study of Testing, Evaluation, and Educational Policy, Boston College.

Phillips, S. E. (1993). *Legal implications of high-stakes assessment: What states should know*. Oak Brook, IL: North Central Regional Educational Laboratory.

Reardon, S. F., Atteberry, A., Arshan, N., & Kurlaender, M. (2009). *Effects of the California high school exit exam on student persistence, achievement, and graduation*. IREPP Working paper 2009-12. Stanford, CA: Institute for Research on Education Policy and Practice, Stanford University

Reardon, S.F. & Galindo, C. (2002). Do high stakes testing affect students' decision to drop out of school? Evidence for NELS. Departmant of Education Policy Studies.

Roderick, M., Jacob, B.A., & and Bryk, A.S. (2002). The impact of high-stakes testing in

Chicago on student achievement in promotional gate grades. Educational Evaluation and Policy Analysis, 24 (333). Retrieved June 10, 2010 from http://epa.sagepub.com/cgi/content/abstract/24/4/333

Rosenbaum, P.R., & Rubin, R.B. (1984). Reducing bias in observational studies using subclassification on the propensity score. Journal of the American Statistical Association. 79 (387) 516-524.

Roy, J.,& Mishel, L.. (2008). Using administrative data to estimate graduation rates: Challenges, Proposed solutions and their pitfalls. Education Policy Analysis Archives, 16. Retrieved May 23, 2010 from http://epaa.asu.edu/ojs/article/view/36

Ruiz de Velasco, J. (2008). *Alternative Education in Continuation High Schools*: *Meeting the Needs of Over-aged, Under-credited Youth*

Sabatier, P.A. (1999) Institutional rational choice: An assessment of the institutional analysis and development framework.pp. 35-72. In P.A. Sabatier Theories of the policy process. University of California, Davis: Westview Press.

Seastrom, M., Hoffman, L., Chapman, C., and Stillwell, R. (2006). *The average freshman graduation rate for public high schools from the Common Core of Data: School years 2002-03 and 2003-04.* NCES 2006-606rev. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Scheurich, J., Skrla, L., & Johnson, J. (2000). Thinking carefully about equity and accountability. *Phi Delta Kappan, 82*(4), 293–299.

Sheldon, K. M., & Biddle, B. J. (1998). Standards, accountability, and school reform: Perils and pitfalls. Teachers College Record, 100(1), 164–180.

Shepard, L. A., & Dougherty, K. C. (1991, April). *Effects of high-stakes testing on*

*instruction*. Paper presented at the annual meeting of the American Educational Research Association and National Council on Measurement in Education, Chicago.

Smith, F. (1986). *High school admission and the improvement of schooling*. New York: New York City Board of Education.

Stedman, J.B. (1994) Improving America's Schools Act: An Overview of P.L. 103-382. CRS Report for Congress. Washington, DC. Congressional Research Service.

Suh, S., & Suh, J. (2007). Risk factors and levels of risk for high school dropouts. *Professional School Counseling*, 10, 297-306.

Sunderman, G.L. & Kim, J. (2004). Large mandates and limited resources: State response to the no child left behind act and implications for accountability. *The Civil Rights Project.* Retrieved May 23, 2010 from http://www.civilrightsproject.ucla.edu/research/k-12education/nclb

Swanson, C.B. (2003). *Keeping count and losing count: Calculating graduation rates for all students under NCL*B *accountability*. Washington, DC: Urban Institute. http://www.urban.org/publications/410848.html.

Swanson, C. (2004). *Who graduates? Who doesn't? A statistical portrait of public high school graduation, Class of 2001*. Washington, DC: Education Policy Center: Urban Institute. Retrieved March 12, 2009 from http://www.urban.org/publications/410934.html

Texas Education Agency (2011). STARR resources. Retrieved December 20, 2011 from http://tea.state.tx.us/student.assessment/starr/

Toch, T. (2006). Margins of error: The education testing industry in the no child left

behind era. Education Sector Reports. Retrieved June 6, 2011 from http://educationsector.org.

Toenjes,L.A. and Dworkin, A.G. (2002). Are increasing test scores in Texas really a myth, or is Haney's myth a myth? *Education Policy Analysis Archives*, 10 (17). Retrieved 10-5-2011 from http://epaa.asu.edu/epaa/v10n17/.

Toenjes, L.A., Dworkin, A.G., Lorence, J. & Hill, A.N. (2002). High-stakes testing, accountability, and student achievement in Texas and Houston. pp 109-130 In J.E. Chubbs & T. Loveless, (Eds.), *Bridging the Achievement Gap*. Washington, DC: The Brookings Institution.

U.S. Department of Education (2002) IASA regulations for oese programs. Retrieved December 2, 2011 from http://www2.ed.gov/about/offices/list/oese/legreg.html

U.S. Department of Education (2011a). A blueprint for reform. Retrieved December 5, 2011from http://www2.ed.gov/policy/elsec/leg/blueprint/publicationtoc.html

U.S. Department of Education (2011b). ESEA Flexibility. Retrieved December 3, 2011 from http://www.ed.gov/esea/flexibility

Valdes G., & Figueroa R. (1994). Bilingualism and Testing: A Special Case of Bias. Ablex Publishing, Norwood,NJ.

Valenzuela, A. (1999). *Subtractive school: U.S.-Mexican youth and the politics of caring*. Albany: State University of New York Press.

Valenzuela, A. ( 2005). Leaving children behind: How "Texas-style" accountability fails Latino youth. Albany: State University of New York Press

Warren, J. R., Jenkins, K.N. and Kulick, R.B. (2006). High school exit examinations and state-level completion and GED pass rates 1975-2002. *Educational Evaluation*

*and Policy Analysis,* 28(2), pp.131-52.

Wigfield, A., & Eccles, J. (1989). Test anxiety in elementary and secondary school students. *Educational Psychologist, 24*, 159-183.