

FACTORS THAT CONTRIBUTE TO PASS RATES ON THE  
CALIFORNIA HIGH SCHOOL EXIT EXAM

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By  
Dianne Harris  
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CERTIFICATION OF APPROVAL

FACTORS THAT CONTRIBUTE TO PASS RATES ON THE  
CALIFORNIA HIGH SCHOOL EXIT EXAM  
(CAHSEE)

by  
Dianne Harris

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\_\_\_\_\_  
Dr. John Borba  
Professor of Education

\_\_\_\_\_  
Date

\_\_\_\_\_  
Dr. Chet Jensen  
Professor of Education

\_\_\_\_\_  
Date

\_\_\_\_\_  
Dr. Patrick Sweeney  
Superintendent

\_\_\_\_\_  
Date

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## DEDICATION

This dissertation is dedicated to my niece, Emma Grace Vargas, whose life was too short, but left a life-long impression on my heart. I learned from you that great things can be accomplished in a short time and that life is worth living for every moment.

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## ABSTRACT

This study analyzed factors that may increase pass rates on the California High School Exit Exam (CAHSEE). Four research questions were analyzed: (a) What are students' perceptions regarding the effectiveness of preparation that may contribute to passing the California High School Exit Examination (CAHSEE), (b) Do preintervention programs affect student achievement on high school exit exams, (c) Do intervention programs have an effect on passage rates of students who fail the first administration of a high school exit exam, and (d) How much of student performance on the CAHSEE can be explained by the following variables: gender, ethnicity, socioeconomic status, advanced level courses, years of teaching, CST scores, and parent education level?

This study collected and analyzed data from 6 high schools in California that were located in rural, suburban, and urban counties. Data was collected and analyzed from the 2010 and 2011 administrations of the CAHSEE. Discrepancies in pass rates were identified between minorities, English language learners (ELLs), and Special Education (SPED) students, a result that was broadly consistent with the theory of Social Darwinism.

A major finding was that General Education and English-only students reported more often than SPEDs and ELLs that they did well on the test, were better prepared to take the test, and were confident they would earn a diploma with their class. Also, General and English-only students felt they did not need to work harder

to pass the CAHSEE. Another finding was that preintervention programs geared for Reclassified Fluent English Proficient (RFEP) students did not produce increases in pass rates on the first administration of the CAHSEE.

This study found that academic factors such as the California Standards Test (CSTs) and higher level courses were strong positive predictors of student performance on both sections of the CAHSEE. Factors such as lower level courses, ethnicity (Black), language classification (ELLs), gender (male) had negative effects on student performance for the ELA section of the CAHSEE. Lower level courses and language classification (ELLs) had strong negative effects on student performance on the mathematics section of the CAHSEE.

Four suggestions for further research include: (a) taking a closer look at students' perceptions with respect to the CAHSEE, (b) implementing preintervention programs earlier in a child's education to remediate as soon as a skill deficiency is identified, (c) implementing interventions at an early age so students take grade level courses in high school, (d) improved data collection on pre-intervention and intervention programs in order to determine their effectiveness, (e) implementing additional support to close the achievement gap for ELLs and SPED students.

## CHAPTER I

### INTRODUCTION

Requiring students to pass a test before they can receive a high school diploma remains a popular state strategy for reforming education. Exit exams have become a common part of the American high school experience. Based on enrollment data from the National Center for Education Statistics, more than 72% of all American students who enroll in high school in 2012 will have to take an exit exam to graduate (EdSource, 2003). Fifty percent of public high school students were required to pass exit exams in 2005. For example, in 2004, 23 states required students to pass exit exams as a means to hold schools and students to higher academic standards (Greene & Winters, 2004). By 2012, Arkansas, Oklahoma, and Maryland have plans to implement exit exams as a graduation requirement, raising the total to 26 states that require students to pass an exam in order to earn a diploma (Center for Education Policy, 2007). This trend brings the total to approximately 75% of the nation's public school students affected by high stakes exams. More specifically, an estimated 82% of minority students, 71% of Special Education students (SPED), and 87% of English language learners (ELLs) will have to pass exit examinations by 2012 (Center on Education Policy, 2005).

Educational reforms that require students to pass an exit exam are not new. In fact, education in the United States has undergone many changes over the last 50 years. From limited accountability for student achievement to a system that has many

educators scrambling to ensure all students achieve at the same level, education reform has come a long way. In 1960, John F. Kennedy raised the question of how to provide a system for all American students to receive an education, regardless of religious, racial, or class background and ensure that America remained competitive with other countries. Making this vision a reality, President Lyndon B. Johnson's "War on Poverty" led to the enactment of the Elementary and Secondary Education Act (ESEA) in 1965 (U.S. Department of Education (USDOE), 2008a). This act was created to provide funds for elementary and secondary schools to employ instructional support personnel, purchase instructional materials, and provide services for parents and professional development opportunities for teachers (USDOE, 2008a). This act is reauthorized every 5 years. The most prominent reauthorizations affecting the current trend toward accountability occurred in 1994 and 2001 (Sirotnik, 2004).

In 1994, President Clinton had his own ideas regarding how to restructure the ESEA. He called for safe drug-free schools, bilingual education, and world-class standards. This reauthorization led to standards-based teaching (McLaughlin & Shepard, 1995). The reauthorization was called the "Improving America's Schools Act" (IASA). During the same period, it was determined that many recent high school graduates were not performing at a proficient level and they were unable to compete at a national, if not international, level. The call for world-wide standards was addressed when the California State Legislature required the State Board of Education to develop and adopt rigorous academic content and performance standards for all students based on skills or knowledge that all students should know at each

grade level. Each state was charged with the task of developing academic content standards that would be implemented in all classrooms. Although standards-based education was a step towards standardizing education for all students, IASA provisions did not state how mastery of the standards would be measured. Further, having states create their own standards made it impossible to compare content and rigor across states, as no two sets of standards were similar (Sirotnik, 2004). In other words, there was no accountability system in place to measure achievement or make comparisons across states (Sunderman, 2008).

In 2001, accountability became the linchpin of President George W. Bush's reform of K-12 education with the enactment of the No Child Left Behind (NCLB) Act of 2001. The main goal of this law was to close the achievement gap between minority and disadvantaged youth and their peers. The focus shifted from "input" to "outcome-based" education, rendering all school personnel responsible for student achievement. The NCLB Act affected stakeholders in all states with mandates and guidelines for implementing programs that would promote educational change. For the first time, states would be held accountable for all students performing at proficient levels in the core subjects. NCLB also solidified the use of high-stakes testing as a measure of student achievement.

In response to NCLB, the California Legislature proposed the California High School Exit Exam (CAHSEE) as a requirement for graduation. The primary goal of the CAHSEE was to "...significantly improve pupil achievement in high school and to ensure that pupils who graduate from high school can demonstrate grade level

competency in reading, writing, and mathematics” (California Department of Education (CDE), 2008b, p. 1). The CAHSEE was developed on the recommendation of the High School Exit Examination Standards Panel, whose members were appointed by the State Superintendent of Public Instruction and approved by the California Board of Education (CDE, 2008b). For the first 6 years of its existence, the CAHSEE was not a mandatory test. The initial administrations were used to norm the test (CDE, 2008b). Beginning with the class of 2006, all California students were required to pass the CAHSEE to earn a diploma, regardless of whether they speak English, have a disability, or are new to their school district.

Holding schools accountable by requiring that they bring all students up to grade level academic standards is undeniably a positive goal (Rabinowitz, Zimmerman, & Sherman, 2001). The use of standardized tests to make high stakes decisions, such as student placement, graduation, promotion, and funding for schools, raises a number of issues for minorities, ELLs, and SPED students.

Many researchers in education question the fairness of high-stakes testing of minorities, ELLs, and SPED students. On the one hand, these students have the most to gain from efforts to hold schools accountable. For example, high-stakes tests can focus attention on how a system is failing to serve all students (Rabinowitz et al., 2001). However, critics of high-stakes exams feel that the burden is placed wrongly on students, whose schools may have offered insufficient opportunities to learn what is needed to pass (WestEd, 2003).

Consequently, NCLB poses significant challenges for school districts that serve large populations of various subgroups of students. For example, many schools that serve ELLs have large percentages of ELLs compared to other schools. Approximately 53% of ELLs attend a school where over 30% of their peers are ELLs. Conversely, 57% of English proficient students attend schools where less than 1% of all students are ELLs (Van Hook & Fix, 2000). The problem is amplified when many of the schools also serve large populations of low socioeconomic status and SPED populations (Van Hook & Fix, 2000).

Schools are unfairly punished when serving large populations of ELL, low socioeconomic status, and SPED students because they are held to the same accountability standards as schools with low populations of these groups (Van Hook & Fix, 2000). The federal accountability system for setting achievement targets is Adequate Yearly Progress (AYP), which is based on the performance of schools in four specific evaluation areas: graduation rates, participation rates on statewide tests, proficiency levels in language arts and mathematics (a score of 380 is considered proficient on the CAHSEE as opposed to a passing score of 350), and performance in the state's accountability program (API for California). In addition, significant subgroups (any group of students who represents at least 15% of the student population) such as non-native English-speaking, low-income, and SPED students must meet the same proficiency targets. Further, schools must advance all significant subgroups to 100% proficient on the California Standards Tests (CSTs) by 2014 (CDE, 2009a). This law applies to schools that receive Title I money from the federal

government (typically, schools where at least 35% of the students are on Free and Reduced Price Lunch).

Additionally, CAHSEE results are included in both the state required reporting of Base and Growth Academic Performance Index (API) established by the Public Schools Accountability Act of 1999 (PSAA) and the federal required reporting of Adequate Yearly Progress (AYP) results established by NCLB (CDE, 2009b). The API system rates schools based on how they score on the CSTs in English Language Arts (ELA), mathematics, science, and social science. The API is a scale that ranges from 200 to 1000. The overall statewide performance target that all schools and their significant subgroups must meet is 800. Annual API growth targets are predicated on 5% of the difference between the base and 800. If a school and its significant subgroups meet the target score of 800, they must maintain that score annually.

In addition to the API score, a statewide decile ranking system assigns each school a rank of 1 to 10 to show how it compares to all schools in the state. If a school ranks 10, its API is in the top 10% of all schools. If the rank is 1, the school is in the bottom 10%. Typically, elementary and middle schools score higher than high schools. The similar-schools ranking compares each school to 100 similar schools in terms of student ethnicity, percentage of non-English-speaking students, and other characteristics (CDE, 2009b).

The pressure to meet state and federal standards has caused many schools to narrow their curriculum to cover only subjects that are addressed on standardized tests. In addition, schools that once provided a variety of education programs may

feel pressure to only serve the struggling students by providing remediation and intervention programs and ignore programs for higher achieving students (Misco, 2010). This trend creates a “what's best for schools” rather than a “what's best for students” environment. Finally, the pressure of PSAA and NCLB may increase dropout rates for various subgroups who become discouraged by their poor performance and the subsequent pressure to succeed on high-stakes tests such as the CAHSEE. These accountability measures punish schools if academic growth targets are not met under the provisions of PSAA and NCLB (CDE, 2009b).

Given that low student performance is usually associated with various subgroups long before high school (ECS StateNotes, 1997), the best way to improve pass rates on exit examinations is to guarantee strong curriculum and instruction starting in kindergarten, or even preschool (WestEd, 2003). This guarantee means that all teachers should be able to identify struggling learners and address their learning needs immediately. Many schools have adopted intervention programs for students who do not demonstrate proficiency in core subjects. Students are provided interventions in various ways. At the classroom level, the teacher should identify a deficiency in a student or group of students and provide interventions. This approach involves exposing all students to the same grade level standards during the lesson and providing intense instruction for those who need additional help, while the other students work on independent work (Hollingsworth & Ybarra, 2009).

Many middle and high schools have adopted block or double-period classes. Students who show a pattern of deficiency or low-skill level are placed in

intervention classes. The students are enrolled in regular mathematics or English classes and placed in a support class in the same subject for another period. This intervention class takes the place of an elective for the student (Misco, 2010).

Other approaches to intervention should be considered for students who are struggling to pass the California graduation exit examination. According to the CDE, schools must provide an intervention course for students who do not pass the CAHSEE on their first attempt. Students are also allowed to retake the examination up to 2 years after their intended graduation date and are allowed to take intervention courses (CDE, 2007). Most schools provide intervention classes that target the two main areas of the CAHSEE, ELA and mathematics. Students are placed in a course that is based on the section not passed on the CAHSEE. Students who do not pass both sections of the examination are enrolled in both mathematics and ELA intervention courses until they pass both sections.

There are many positive things that have come from high stakes tests and NCLB. Many low-achieving and underrepresented students have the most to gain from the objective of holding schools, teachers, and students accountable for higher standards of teaching and learning. More attention to instruction has been observed in schools to help all students achieve at higher levels such as Explicit Direct Instruction (EDI) and English Language Development (ELD) programs. While high stakes tests, such as the CAHSEE, do disproportionately leave many low achievers without a diploma, more districts are addressing the needs of these students with interventions. The most obvious strength of PSAA and NCLB is the awareness that

has been generated among educators regarding the perfect reform for education. A cache of approaches will be required rather than one to fix public education. Given that all high school students in California are affected by exit exams, districts will have to think carefully about the implementation of their programs, study the impact of exit exams on all types of students, and make sure that programs are in place for those students who are struggling to pass the CAHSEE (Jimerson, Pletcher, & Graydon, 2006).

### **Statement of the Problem**

Although minority, ELL, and SPED students have the most to gain from California's accountability system, they are passing at an inadequate rate. Further, researchers question whether students receive the proper exposure to the standards covered on the CAHSEE (Center on Education Policy, 2004; ECS StateNotes, 1997; Tsang, Katz, & Stack, 2008). Other issues raised by researchers are also vexing (Gayler, 2005; Warren & Grodsky, 2009). These issues include the increase of ELL and SPED students identified in the American education system, narrowing of the curriculum, and the lack of language proficiency needed to pass the exam.

The number of ELLs has grown consistently over the last 20 years (Tafoya, 2002) and will continue to grow in the future. "California alone represents one third of the total national English language learner enrollment" (Kindler, 2000, p. 6). ELLs are dispersed throughout the state, although some regions have more ELLs than others. For example, "...the South Coast (Los Angeles, Orange, and Ventura Counties) have by far the most ELLs, with over 790,000 (nearly half the state total of

ELL students). The Bay Area, the Inland Empire, and the San Joaquin Valley each have ELL populations around 200,000” (Jepson & Alth, 2005, p. 7). In contrast, the Sierras have only 741 ELL students (Jepson & Alth, 2005).

Not only are ELLs diverse in terms of location, they are also diverse in the languages they speak. The data collected by Kindler (2000) indicated that Spanish is the native language of the great majority of ELLs (77%), followed by Vietnamese (2.3%), Hmong (2.2%), Haitian Creole (1.1%), Cantonese (1.0%), and Korean (1.0%). All other language groups each represented less than 1% of the Language English Proficient (LEP) student population. The diversity of languages makes the ultimate goal of English language proficiency and assimilation very difficult for most schools. This problem also causes a disparity in academic achievement among ethnic groups on high stakes tests.

The state of California has a huge stake in how ELL students fare academically, and although most learn to speak English, the majority of ELLs do not achieve at levels that will provide them—or the state—with much of a future. Rumberger and Gándara (2005) found only 10% of ELLs were able to pass the English Language Arts (ELA) section of the CSTs in spite of the fact that 47% passed the California English Language Development Test (CELDT) of English proficiency in 2004 (Rumberger & Gandara, 2005). Moreover, only 39% of ELLs were able to pass the ELA section of the CAHSEE in 2004 compared to 81% of English speakers (including both English-only and former ELLs), and only 49% of ELLs could pass

the mathematics section compared with 78% of their English proficient peers (Rumberger & Gándara, 2005).

Like ELLs, identification of SPED students is on the rise. The higher referral rate into Special Education is a result of schools feeling the pressure for all students to pass the CAHSEE (Allington & McGill-Franzen, 1992). In some cases, students with disabilities have been excluded from taking state exit exams (Heubert & Hauser, 1999); however, those who did take the test are failing at rates of over 50% (McLaughlin, 2000). For example, in California, "only 10.3 percent of students with disabilities passed both tests, compared with 42.2 percent of all students" (Heubert, 2002, p. 6). As of 2001, 10th graders in Massachusetts with disabilities only passed at a rate of 29%, compared with 76% of students without disabilities (Massachusetts Department of Education, 2001). Alaska shows similar fail rates among 10th grade students with disabilities (Alaska Department of Education, 2001). In the area of reading, 78.9 % of students with disabilities failed compared to 34.1% of those in General Education. In the area of writing, 95.7 % of students with disabilities failed compared with 53.4% of those in General Education. Finally in mathematics, 91.1 % of students with disabilities failed compared with 56.0% of those in General Education.

Further, Heubert (2002) finds that nonpass rates would be higher if they accounted for students with disabilities who drop out before they have taken graduation tests. In fact, students with disabilities who live in states that require exit examinations are more likely to drop out of high school. "Nearly 30 percent of

students with learning disabilities drop out of school (compared to 11% of the general student population)" (Cortiella, 2010, p. 2).

For school administrators and teachers, the challenge of helping these students pass and close the achievement gap on these exams is tremendous. Proponents of exit examinations as well as many researchers find that a narrowing of the curriculum exists as teachers are now teaching to the test (Gayler, 2005; Gayler, Chudowsky, Hamilton, Kober, & Yeager, 2004; Human Resource Research Organization (HumRRO), 2006). Less time is devoted to teaching a majority of the academic content standards. A strategically selected few are taught because they are more likely to be covered on state tests. Schools are also charged with having to provide remedial and intervention courses for students who are either at risk for not passing the CAHSEE or have not passed. This problem is amplified further when students are removed from general education curriculum and placed in remedial courses. The strain on teachers is intensified as students are pulled from general curriculum courses in order to accommodate the growing need for remediation. For these reasons, schools are trying to identify ways in which to help these students pass the examination on the first administration (Walker, 2006).

This study examined a number of samples of high school students in California from the 2010 and 2011 administrations of the CAHSEE. First, student perceptions regarding their preparedness, familiarity, and plans after high school were examined. Second, preintervention programs were examined to determine if they increased pass rates on the CAHSEE for first time test takers. Third, intervention

programs were examined to determine if they increased pass rates on the CAHSEE for students who did not pass the CAHSEE on the first administration of the examination. Finally, academic and demographic factors were explored to determine if they can predict success on the CAHSEE.

### **Significance of the Study**

Given that student success, as determined by earning a diploma, is likely to decrease after high schools implement an exit examination, educators will be searching for ways to help students succeed in their mathematics and English courses. Perceptions of students regarding the CAHSEE may help administrators and teachers plan and prepare mathematics and English courses that address essential standards. Examining students' perceptions of their preparedness before the examination, as well as their reactions after taking the examination, may provide valuable information to both administrators and teachers when designing programs to help them pass.

Administrators and teachers must evaluate preintervention programs that are designed to reduce the number of students who fail during the first administration. Understanding the effects of preintervention programs on achievement levels on the CAHSEE is necessary. "A critical gap in most remediation programs is the tracking of student participation and progress, an oversight that greatly hinders the ability to judge program effectiveness" (WestEd, 2003, p.2). Further, understanding the effects of an intervention program on achievement levels on the CAHSEE for students who do not pass the CASHEE on the first administration are important in order to help struggling students.

Finally, understanding how academic and demographic factors help improve pass rates on the CAHSEE will help educators identify the needs of students in order to help students who may not pass on the first administration of the examination. Knowing the factors that can predict success may allow educators to plan in advance before students take the CAHSEE in the 10th grade.

A study investigating these effects may provide awareness of and familiarity with the CAHSEE, expectations of impact on instruction, effects of preinterventions and postinterventions at various stages of the students' education, and passing rates.

### **Research Questions**

#### Research Question #1

What are students' perceptions regarding the effectiveness of preparation that may contribute to passing the California High School Exit Examination (CAHSEE)?

***H1a.*** There is a significant difference in the distribution of questionnaire responses between rural English Language Learner students' and rural English-only students' perceptions regarding preparation that may contribute to outcomes on the CAHSEE.

***H1b.*** There is a significant difference in the distribution of questionnaire responses between suburban English Language Learner students' and suburban English-only students' perceptions regarding preparation that may contribute to outcomes on the CAHSEE.

***H1c.*** There is a significant difference in the distribution of questionnaire responses between urban English Language Learner students' and urban English-only

students' perceptions regarding preparation that may contribute to outcomes on the CAHSEE.

*H1d.* There is a significant difference in the distribution of questionnaire responses between rural Special Education students' and rural General Education students' perceptions regarding preparation that may contribute to outcomes on the CAHSEE.

*H1e.* There is a significant difference in the distribution of questionnaire responses between suburban Special Education students' and suburban General Education students' perceptions regarding preparation that may contribute to outcomes on the CAHSEE.

*H1f.* There is a significant difference in the distribution of questionnaire responses between urban Special Education students' and urban General Education students' perceptions regarding preparation that may contribute to outcomes on the CAHSEE.

#### Research Question #2

Do preintervention programs affect student achievement on high school exit exams?

*H2a.* There is a significant difference in mean scores on the mathematics section of the CAHSEE between students who participated in a preintervention program and students who did not.

*H2b.* There is a significant difference in mean scores on the English language arts section of the CAHSEE between students who participated in a preintervention program and students who did not.

### Research Question #3

Do intervention programs have an effect on passage rates of students who fail the first administration of a high school exit exam?

*H3a.* There is a significant difference in mean scores on the mathematics section of the CAHSEE of students before and after an intervention.

*H3b.* There is a significant difference in mean scores on the English language arts section of the CAHSEE of students before and after an intervention.

### Research Question #4

How much of the student performance on the CAHSEE can be explained by the following variables: gender, ethnicity, socioeconomic status, advanced level courses, years of teaching, CST scores, and parent education level?

*H4a.* Academic factors explain more about student performance on the English language arts section of the CAHSEE than demographic factors.

*H4b.* Academic factors explain more about student performance on the mathematics section of the CAHSEE than demographic factors.

### **Theoretical Framework**

Social Darwinism and equity in education are often used when referring to students of poverty, ethnic minorities, ELLs, and SPED students. Many researchers (Hursh, 2007; Hursh & Martina, 2003; Lewin & Medina, 2003; Leyva, 2008) have made the theoretical link of high-stakes tests to Social Darwinism. Social Darwinism was developed by the British philosopher, Herbert Spencer, in the late Victorian era in England and America and became popular a short time after Charles Darwin wrote

*Origin of Species*. Social Darwinism is a theory that is based in the belief that the strongest or fittest should survive and flourish in society, while the weak and unfit should be allowed to die (Leyva, 2008). The theory that applies natural selection to the evolution of individuals and society infers that (a) individuals and groups of people compete for survival, and (b) superior individuals, social groups, and races are most fit for survival. Defined here, "superior" means rich and powerful (Asma, 1993).

This theory also postulates that economies grew and operated like ecosystems and weeded out the weak and allowed the strong to flourish. The idea of "only the strongest survive," is still a relevant analysis of how today's educational testing system works. "The NCLB Act granted the federal government the power to determine which subject areas take precedence, limit the ways in which they may be taught, and designate what reform options are available to schools and districts that fail to sufficiently improve their test scores" (Leyva, 2008, p. 371).

Furthermore, the ideas of Social Darwinism were based on the capitalist functioning of America's economy. The premise is that people needed to be stronger, faster, and smarter than the competition. Also, it justified the elimination of many weaker industries to make room for the fittest corporations to run the economy. Social Darwinism affected the growth of the economy by making everything more competitive and allowing people to eliminate their competition, not accommodate them (Leyva, 2008). This further strengthens the argument that Social Darwinism may cause schools to follow the practice of sending underperforming students to alternative or charter schools.

The link of today's education practices to Social Darwinism is seen in the way charter and alternative schools are expanding. Huberman (2003) argued that the NCLB was specifically designed to make schools fail in order to clear the road for voucher and charter schools (experimental publicly funded private schools with minimal regulation). Huberman made a strong statement to suggest that the government wants schools to fail, but it is hard to ignore the possibility considering that the Bush administration actively pushed for voucher programs and charter schools, proposing a provision within the original NCLB that provided \$70 million for voucher "demonstration programs" (Huberman, 2003), with another \$250 million proposed for the 2008 fiscal year (Klein, 2007). Moreover, the NCLB goal that 100% of all students will test proficient or above proficient by the year 2014 seems like a very difficult task considering the fact that NCLB "was severely under-funded by billions making the act's initiatives even harder to accomplish" (Leyva, 2008, p. 373). Also the link between NCLB and Social Darwinism implies that outcomes of high stakes testing works exactly opposite to the stated intentions of NCLB, which is to ensure that all students are achieving at the same level.

"Even on graduation tests that measure basic skills, for example, minority students and students with disabilities usually fail at higher rates than other students, especially in the years after such tests are first introduced" (Heubert, 2002, p. 3). For example, in the 1970s, when minimum competency tests gained popularity, 20% of African American students, compared with 2% of White students—a discrepancy of 10 to one—initially failed Florida's graduation tests and were denied high school

diplomas (*Debra P. v. Turlington*, 1979). While many students with disabilities were excluded from state graduation-test programs (Heubert & Hauser, 1999), those who did participate failed at rates of over 50 % (McLaughlin, 2000). Students who cannot pass these high stakes exams will have to find other ways to earn a high school diploma such as a General Education Diploma (GED).

This study will use Herbert Spencer's model of Social Darwinism Theory as the underlying theoretical framework to describe the inequitable outcomes that occur among minority, ELL, and SPED students on the CAHSEE. This theory can help answer the questions of whether high-stakes tests are fair for all students. While the argument in this study is not whether all students should take and pass an exit examination to earn a diploma, the question is whether the test is punishing schools and creating unintended consequences for students who are not ready to take the exam.

### **Definition of Terms**

*Adequate yearly progress (AYP)*. Statewide accountability system mandated by the No Child Left Behind Act of 2001. The NCLB defines AYP as the minimum level of student performance of each school, district, and significant subgroup required by a state each year (Richmond, 2009). The system indicates whether schools, districts, and states are on target with all significant subgroups of students and identifies which schools and significant sub-groups of students need the most help.

***Academic performance index (API).*** California's system for measuring student academic proficiency by district, school, and significant subgroup.

***Accountability.*** A process by which schools and school districts are meeting goals set under the NCLB Act of 2001.

***California English language development test (CELDT).*** A required state test of English language proficiency, which must be administered to students whose primary language is one other than English (California Department of Education (CDE), 2010b).

***California high school exit exam (CAHSEE).*** A test that is designed to ensure that all students who exit high school have achieved grade level competency through Grade 10 in three academic areas: reading, writing, and mathematics (EdSource, 2003).

***Disability.*** A condition or function that is judged to be significantly impaired relative to the usual standard of an individual or group. The term is often used to refer to individual functioning, including physical impairment, sensory impairment, cognitive impairment, or mental disorder.

***English language learner (ELL).*** A student who enters the school system in the United States and has not achieved English language proficiency (CDE, 2010b).

***English language proficiency level.*** A level of proficiency assigned to students whose primary language is one other than English based on five levels. The five levels of proficiency are beginning, early intermediate, intermediate, early advanced, and advanced.

***Ethnicity.*** Ethnicity represents a category assigned to each student by each school district. Categories include American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; Hispanic; and White, not of Hispanic origin (CDE, 2009b).

***Grade level.*** The level of instruction taught to a student for an academic year. Students are said to be ‘on grade level’ when they are achieving at the expected level of instruction for their age and previous education history.

***Graduation rate.*** A percentage of students who receive a diploma from high school. This number is calculated by dividing the number of students who graduate on time in a given year by the number of 9th graders entering school for the first time 4 years earlier and multiplying by 100 (Curran, 2009).

***High-stakes testing.*** Testing that refers to a single test that has important consequences for the test-taker, such as determining placement in courses or graduation.

***Intervention.*** The recognition of deficiencies in an individual student before a knowledge gap is identified.

***Limited English proficient.*** A person who meets one or more of the following conditions: a) was born outside of the United States or whose native language is not English; b) lives in an environment where a language other than English is dominant; or c) is an American Indian or Alaskan Native who lives in an environment where a language other than English has had a significant impact on his/her level of English

language proficiency; and has experiences speaking, reading, writing, or understanding the English language.

***Low socioeconomic status.*** An economic status that qualifies students for the federal Free and Reduced Price Lunch program (CDE, 2009b).

***Minority.*** Any racial or ethnic group that is non-White. Racial/ethnic is a classification indicating general racial or ethnic heritage based on self-identification (as in Bureau of Census data collection), or observer identification (as in Office for Civil Rights data collection). The following categories are in accordance with the Office of Management and Budget standard classification scheme: American Indian/Alaskan Native, Asian Pacific Islander, Black, Hispanic, and White.

***No child left behind (NCLB).*** President George W. Bush's reauthorization of the Elementary and Secondary Education Act (ESEA). Education shifted from standards-based to outcome-based.

***Outcome-based education.*** The term used after the passage of NCLB to promote an increase in the number of students proficient in various academic subjects.

***Parent education level.*** A level that refers to a category chosen by a parent(s) when enrolling their student(s) and updated annually. Categories of parent education level used in this study are (a) some high school, (b) GED, (c) high school graduate, (d) some college, and (e) college graduate.

***Proficiency level on standardized tests.*** A designation that refers to a performance category assigned to individual students on standardized tests.

Categories on the CSTs are Far Below Basic, Below Basic, Basic, Proficient, Advanced. For the CAHSEE, students are considered proficient if they score a 380 as opposed to a passing score of 350.

***Program improvement status.*** A school that has not made Adequate Yearly Progress for 2 consecutive years on the same accountability measure while receiving Title I funds.

***Special education.*** An instructional program that serves students with a wide range of disabilities in general education schools, nonpublic schools, and special education schools throughout the country. Services are available to children from birth through age 22.

***Standards-based teaching.*** Delivery of instruction and curriculum directed towards clearly defined standards in each subject and grade level.

***State-standards.*** Standards that represent knowledge or skills which students must know and be able to perform in specific subject areas. The state standards provide clarity to teachers of what content and skills should be taught at each grade-level.

***Standardized tests.*** Tests that are designed in such a way that the questions, conditions for administering, scoring procedures, and interpretations are consistent and are administered and scored in a predetermined, standard manner. The test is designed to measure test takers against each other and a standard, and standardized tests are used to assess student progress in schools, ability to attend institutions of higher education, and placement in programs suited to a variety of abilities.

### **Assumptions of the Study**

This study was conducted with an awareness of the following assumptions: (a) The test results of the CAHSEE were accurate based on the data available on the CDE website and provided to schools; (b) The criteria for choosing students for the preintervention program were similar between schools; (c) The survey that was created by HumRRO was a valid instrument for gathering data (Human Resources Research Organization (HumRRO), 2004); and (d) Students answered honestly about their perceptions on their familiarity and preparation with the CAHSEE.

### **Limitations of the Study**

This study will be limited to six high schools in California; therefore, the results of this study should not be used to generalize beyond the sample. Survey data will be compared between test takers at one rural, one suburban, and one urban high school; however, only test takers who responded to the questionnaire portion of this study will be included. Further, only the students who took the CAHSEE and were not absent on the day of the test will be included in this study. In addition, the CAHSEE only addresses two content areas, mathematics and English language arts, and does not test achievement in science and social studies.

Another limitation of this study included internal threats to validity, such as history, maturation, and testing. The history threat included events such as students who took the examination the first time during their sophomore year and again their junior year. The maturation threat to this study involves students who took the CAHSEE in October and again in February as they may have been better prepared to

take the CAHSEE the second time even with no intervention. A testing threat also existed not knowing if the testing environment was different for each administration. Some students tested in large rooms, while others tested in smaller environments.

### **Delimitations of the Study**

This study provides results for six high schools and did not include other schools in California, which may generate different outcomes that may contribute to achievement on the CAHSEE.

Another delimitation is that students who were exposed to a preintervention course before taking the CAHSEE spent more time with study material specifically designed for the CAHSEE than students who did not pass the CAHSEE the first time and were enrolled in an intervention course. Consequently, it was not possible to predict if other factors, besides the intervention, may have affected the results.

### **Summary**

The purpose of this study was to determine factors that contribute to pass rates on the California High School Exit Examination (CAHSEE) based on: (a) students' perceptions, preparation, and familiarity of the content on the examination and their reactions after taking the CAHSEE; (b) the effects of a preintervention program on those students who risk not passing the CASHEE on the first administration compared to students who are at-risk but did not enroll in a preintervention program; (c) the effects of an intervention program for those students who did not pass the CAHSEE the first time and, (d) demographic and academic factors that may explain pass rates on the first administration of the CAHSEE.

With districts and schools feeling the pressure placed on them under NCLB, a study that identifies the preparation and intervention activities that contribute to pass rates on the CAHSEE the first time students take the exam may assist schools in providing successful intervention programs that may increase the percentage of students passing the examination on the first administration. This study may identify other proactive activities that may provide schools with the tools to prepare students before they take the CAHSEE the first time which may reduce the need for intervention.

### **Organization of the Study**

This dissertation is divided into five chapters. The introduction situates this study within the existing accountability system, NCLB, and the challenges these mandates have on students, schools, and districts. Chapter two places high school exit examinations within the historical and critical perspectives that led to the development of the CAHSEE as a graduation requirement and accountability measure. Current literature is presented that discusses the issues of implementing high school exit examinations and the need for studies that focus on activities to assist students to pass. Chapter three describes the research design and methods of this study. Chapter four includes the analysis of data collected using the methods described in Chapter three. Chapter five summarizes this study, the findings, and discusses conclusions, implications, and recommendations for future study.

## CHAPTER II

### REVIEW OF LITERATURE

This chapter provides a review of literature on standardized tests, specifically high-stakes tests such as exit examinations, as a requirement for earning a high school diploma. This researcher will examine factors that contribute to pass rates on the CAHSEE. Five areas will be reviewed: historical perspectives of education reform, accountability in the 21st century, development of the CAHSEE, research on high-stakes testing, intended and unintended consequences of high-stakes testing, and factors that lead to successful achievement on exit examinations, and intervention programs.

#### **Historical Perspectives on Education Reform**

Historically, standardized tests have been used to measure how students compare to other students or to determine mastery of skills and concepts, such as multiplication facts. Since the implementation of standardized tests, educators have less control over what is taught in the classroom. Opponents of standardized testing argue that knowledge taught and tested is not necessarily what will make students successful in college or in life (Zhao, 2009).

The use of assessments in the United States follows three policy frameworks: examination, guidance testing, and accountability (Mazzeo, 2001). During the mid-nineteenth century, examination of students was the framework that educational reform emphasized. At a time when elementary school enrollment was rapidly

increasing and opportunities for a high school education were limited, many states implemented testing as a way to ensure student readiness for advanced educational and career opportunities (Mazzeo, 2001). Between 1865 and 1915, approximately 12 states developed and implemented 8th grade written tests to determine admission to high school. In addition, these states used the results to allocate funds fairly, modify and improve teaching and learning at the elementary level, and help reform rural education (Mazzeo, 2001). These written examinations were later (1920s-1960s) replaced by guidance tests. The core theory of action in guidance testing suggested that "information about student capabilities, interests and achievements would allow local educators to diagnose student learning problems and "guide" pupils more effectively and efficiently" (Mazzeo, 2001, p. 11). As such, these tests were used to identify appropriate programs for students based on their abilities.

By the late 1950s, the Soviet launch of Sputnik created perceived U.S. shortcomings, later coined the "missile gap," which resulted in an increased focus on testing. This event led Congress to pass the National Defense Education Act (NDEA) to promote the defense of the nation. The NDEA provided funds for school counseling services in all high schools and development of school counselor preparation programs (Lambie & Williamson, 2004). Further, this legislation charged counselors with the task of identifying and supporting students who excelled in mathematics and science (Grant, 2004). The NDEA, in effect, initiated educational reform and a surge of standardized achievement tests followed (Grant, 2004).

Additionally, the Civil Rights Movement gained momentum during the 1960s. This movement raised issues of equity and excellence in public education, particularly among the Black population. The Civil Rights Act of 1964 and the Elementary and Secondary Education Act (ESEA) of 1965 legislated equal access to education and higher academic standards and accountability. The ESEA authorized federally-funded education programs to be administered by the states to improve academic achievement for students from low-income families, address achievement gaps, and provide more educational opportunities for disadvantaged students.

In the 1970s, President Nixon gave a special address to Congress on education reform, which was credited with “having ushered in a new era of accountability” (Hansen, 1993, p. 13). Initiatives to improve accountability included the establishment of the National Institute of Education as "a focus for educational research and experimentation in the United States" (Woolley & Gerhard, 2006, p. 1). Simultaneously, testing in public schools began. Also in 1970, the first National Assessment of Educational Progress (NAEP) issued the first edition of the Nation’s Report Card.

In the early 1980s, the public education crisis came to the forefront of public awareness and generated dialogue about greater national involvement in school reform. Specifically, this reform began with the publication of *A Nation at Risk: The Imperative for Educational Reform*, which was a report that called for higher standards and more rigorous curriculum to increase national competitiveness (National Commission on Excellence in Education [NCEE], 1983). According to

Schwallie-Giddis, ter Maat, and Pak (2003), *A Nation at Risk* “became the most quoted and read national publication, not only by educators, but by business and community people from the private and public sector” (p. 170). Zhao (2009), reported the following:

Hailed by some as the most important education document of the 20th century, *A Nation at Risk* laid the foundation for changes in American education in the ensuing decades and thus is primarily responsible for pushing America education down the path of greater federal control in a number of ways. (p. 28)

The most recent policy framework assessment was driven by accountability. Initially, the accountability framework was rooted in the notion that increasing accountability and sharing this information would help educators improve the identification and the resolution of problems in education (Mazzeo, 2001).

By the mid-1980s, 25 states had provisions that mandated some form of minimum competency testing for students to pass before they were awarded a high school diploma (Catterall, 1989). Further, in 1989, President George H. W. Bush organized the Governor’s Education Summit which “led to a new wave of education reform driven by accountability and undergirded by a set of general educational goals for the nation” (Hansen, 1993, p. 15). Testing continued to intensify throughout the nation, leading educators and state authorities to develop Minimum Competency Tests (MCTs) to assess students on basic skills in reading, writing, and mathematics (Federiksen, 1994). Many researchers describe MCTs as a historic turning point that

moved from large-scale assessments for program evaluation to student-level evaluations (Hamilton & Koretz, 2002; Heubert & Hauser, 1999; Horn, 2003).

The focus of MCTs shifted when policy makers determined that minimum competencies were not enough. State officials recognized a need to assess higher-level cognitive learning rather than basic skills (Federiksen, 1994). Several studies suggested that the emphasis on assessing minimum competencies could undermine the importance of high-order thinking (Federiksen, 1994). In addition, several studies on high school education outlined the need for equity and excellence in education (Boyer, 1983; Goodlad, 1984; Powell, Farrar, & Cohen, 1985;Sizer, 1984). Overall, findings from this collection of studies suggested that tracking students based on academic ability created inequity in the curriculum. In other words, students who are at lower achievement levels are taught so they reach grade level. Thus, lower achieving students are rarely challenged at higher cognitive levels.

Following the research cited above, state officials and legislators sought ways to hold the schools more accountable. In 1994, President Clinton reauthorized ESEA, which became the Improving America's School Act (IASA). This reauthorization shifted education from Kennedy's and Johnson's education for all and Reagan's achievement for all to standards-based teaching. In 2002, under President George W. Bush, Congress amended ESEA and reauthorized it as the No Child Left Behind Act (NCLB) (U.S. Department of Education (USDOE), 2008b). Once again, education shifted its focus and moved from standards-based education to outcome-based

education, which created a new set of requirements to increase accountability for states, districts, and schools.

### **Accountability in the 21<sup>st</sup> Century**

NCLB developed a national system of accountability, which requires state specific standards (Choi, Seltzer, Herman, & Yamashiro, 2007; Porter, Linn, & Trimble, 2005). The primary goal of the national legislation is that all students, including significant subgroups, reach grade-level proficiency on state standards by 2014 (CDE, 2009b). Of note, significant subgroups include major ethnic and racial groups, socioeconomically disadvantaged groups, English language learner groups, and groups with disabilities (Kim & Sunderman, 2005).

California's attempt to meet federal NCLB standards is the Accountability Progress Reporting (APR) system. This integrated accountability system reports both the federal Adequate Yearly Progress (AYP), the state Academic Performance Index (API), and Program Improvement (PI).

Under the federal AYP standards, California chose four subcategories: (a) participation rate, (b) percent proficient, (c) API target, and (d) graduation rate to achieve compliance with NCLB.

Under the first subcategory, participation rate, 95% of students, based on the California Basic Educational Data System (CBEDS), must participate in the 10th grade administration of the CAHSEE given in February or March and the California Standards Test (CSTs) given in the Spring (CDE, 2010a). Significant subgroups also must meet the participation rate for schools, districts, and the state. A subgroup is

defined numerically significant if composed of 100 or more students or 50 or more students if they make up at least 15% of total school and/or district enrollment (CDE, 2008a).

Under the second subcategory, percent proficient, schools must meet the minimum percentage of students proficient or advanced on the CAHSEE and California Standards Test (CSTs). For the 2009-2010 school year, the minimum percentage of students proficient or advanced in English language arts and mathematics was 55.6% and 54.8% proficient, respectively (CDE, 2008a).

California's third subcategory is the Academic Performance Index (API) target for both schools and districts. The target is a minimum API of 650 or at least one point growth on the API in addition to meeting other federal AYP targets (participation rate, percent proficient, and graduation rate). Of note, federal API requirements differ from the state API requirements (CDE, 2008a).

The final subcategory is graduation rate for each high school, district, and the state overall. For example, to meet the 2009-2010 graduation rate criteria for AYP, districts must have a graduation rate of at least 90%. An alternative criteria for meeting the graduation rate requirement is for a district to improve their graduation rate by at least 1% from the previous year or improve by at least 2% over a 2-year span (CDE, 2010a).

Schools or districts that do not meet one or more of these four requirements do not meet its Adequate Yearly Progress (AYP) (CDE, 2010a). If a school or district does not meet the AYP requirement for 2 consecutive years, they are placed on

Program Improvement, or the PI list. Further, a school or district can be removed from the list once it performs adequately for 2 consecutive years after being placed on the list (CDE, 2010a).

AYP targets have often been credited as the first accountability measure initiated by the educational system. However, the California legislature first enacted the Public Schools Accountability Act (PSAA) of 1999 to reform schools and increase achievement 2 years prior. Specifically, the PSAA established the system of API to monitor the level of student achievement for each district, school, and numerically significant subgroup (CDE, 2008a).

Among California high schools, the California Standards Tests (CSTs) and the CAHSEE results determine a school's API score (CDE, 2009b). In 2009, the weights used to calculate API using the CST scores were as follows: 27% for English language arts, 18% for mathematics, 23% for science, and 14% for history/social science. Additionally, in 2009, the weights used to calculate API using the CAHSEE scores were as follows: 9% for English language arts and 9% for mathematics (CDE, 2009b). As mentioned previously, the federal API requirements differ from the state API requirements; specifically, the former uses a proficiency level of 380, whereas the latter uses a passing score of 350 in its calculations (Garcia, 2003).

Finally, the state assigns a decile ranking ranging from 1 to 10 (one being the lowest and 10 being the highest), in two ways. First, schools are ranked against each other based on how one school compares to another in the same category (Peterson, 2005). With this ranking system, it is possible that a school may have a state ranking

of three; however, when compared to similar schools, a ranking of nine. Considering a high school with such rankings would mean the school is below average compared to other high schools in the state, but above average for schools that have similar demographics.

In addition to the federal AYP and the state API accountability measures, the NAEP was created to show trends across the nation, state, and school districts (Schafer, Liu, & Wang, 2007). One notable problem of the NAEP is the difference in state standards. For example, California students are compared to students in New York on the NAEP; however, academic standards are different in each state.

Beyond comparing students across states, the NAEP shows trends within each state. For example, the NAEP reports Hispanic student performance compared with African American student performance on mathematics exams in various California school districts. Further, NAEP data is updated annually to highlight similarities and disparities (Schafer et al., 2007). The NAEP is often seen as an accountability system as it encourages schools to become more competitive as they attempt to increase their progress toward higher student achievement (Campbell, 2008). These federal standards were enhanced in California by the passage of Proposition 98.

Originally, Proposition 98 (Classroom Instructional Improvement and Accountability Act) was intended to support funding for public education in California. In 1988, following the passage of Proposition 98, an additional stipulation was included, which required schools and districts to publish student achievement data for easy access (such as on district websites) (Ramanathan, 2008). For

California schools, this stipulation resulted in the School Accountability Report Card (SARC). Also, districts publish student achievement data on grade-level tests, one year drop-out rates, number of students in class size reduction programs, number of fully credentialed teachers, number of days used for professional development, and suspension and expulsion rates (CDE, 2010a). In recent years, this list has expanded to include AYP, graduation rates, and status of participation in Title I Improvement Programs (Ramanathan, 2008). Posting this information also provides the community with specific information on where and how well money is spent (CDE, 2010a). Further, publishing this data also serves as an accountability system as schools and districts cannot hide the progress their students are or are not making.

### **CAHSEE Development and Implementation**

In 1995, after determining that the proficiency level of many recent high school graduates was below grade level, the California State Legislature required the State Board of Education to develop and adopt rigorous academic content and performance standards. By 1999, the Legislature proposed the CAHSEE, a minimum-skills test, as a high school graduation requirement. The CAHSEE was developed based on recommendations from the High School Exit Examination Standards Panel, whose members are appointed by the State Superintendent of Public Instruction and approved by the State Board of Education (CDE, 2006). According to the California Department of Education, the CAHSEE serves three purposes: (a) ensure that pupils who graduate from high school can demonstrate grade-level competency in reading, writing, and mathematics (Senate Bill 2, Section 1[b]); (b)

significantly improve pupil achievement in high school; and (c) identify students who are not developing skills that are essential for life after high school and encourage districts to give these students the attention and resources needed (CDE, 2006).

In California, beginning with the class of 2006, students must pass the CAHSEE as one requirement for high school graduation regardless of whether they speak English, have a disability, or are new to their school district. One exception to this requirement falls under California Education Code Section 60852.3 which states that

any student with disabilities (any type of disability, for any duration) who has an individualized education program (IEP) or Section 504 plan, and has satisfied or will satisfy all other state and local requirements for receipt of a high school diploma, is exempt from meeting the CAHSEE requirement as a condition of graduation. (CDE, 2010a, p. 2)

This exemption will last until the State Board of Education (SBE) makes "either a determination that alternative means to the CAHSEE for students with disabilities are not feasible or such alternative means have been implemented" (CDE, 2010a, p. 2).

The CAHSEE requires that students pass in two subject areas, mathematics and English language arts, with a 55% and 60% score, respectively (EdSource, 2003). Students take the CAHSEE for the first time in 10th grade, known as the census administration, and results are used to calculate AYP and API. Students who do not pass one or both parts of the CAHSEE in 10th grade may take the failed section up to

two times per school year in 11th grade and up to five times per school year in 12th grade (CDE, 2010a). Students retake only the sections not previously passed.

Since students take the CAHSEE in the tenth grade, much of the material taught in high school does not appear on the examination. Table 1 provides a breakdown of the grade-level standards covered on each section of the examination.

Table 1

*Grade-level Standards for the CAHSEE*

Mathematics		English language arts	
Grade-level	Subject	Grade-level	Subject
6 & 7	Statistics	9 &10	Reading (word analysis/fluency/vocabulary, reading comprehension, literary response and analysis)
7	Number Sense (fractions, decimals, percents, exponents) Algebra and functions (graphing, exponents, roots, equations) Measurement and geometry (perimeter, area, volume, conversions, Pythagorean theorem)  Mathematical reasoning (estimation, making generalizations from data) Algebra I (equations, graphs, word problems, slopes, systems of equations)		Writing (writing strategies, and written and oral English conventions)

Note: Adapted from the California Department of Education, 2010a

Seventh grade students should learn the material needed to pass the CAHSEE. They may not encounter the material again until the 10th grade. This lapse of time creates a gap in learning from the time students initially learn the material until they must take the examination in 10th grade.

Statewide, approximately 81% and 80% of high school sophomores passed the mathematics and language arts section of the examination in 2009, respectively, while only approximately 65% pass both sections of the examination (CDE, 2009a). Also of note, statewide achievement gaps persisted on the 2009 administration of the examination between students on the basis of ethnicity, English language proficiency levels, and socioeconomic status.

Pass rates on the CAHSEE did not change much in 2010 as 80% of students passed the ELA section in their sophomore year. A disaggregation of data shows passage rates by subgroups in the following: 91.0% Asian, 91.0% White, 74.0% Hispanic or Latino, 72.0% African American, 41.0% English learners, 72.0% economically disadvantaged, and 37.0% students with disabilities (Dataquest, 2010). The percent of students who passed the mathematics CAHSEE in their sophomore year was 81.0%. The passage rates in mathematics are presented by subgroup in the following: 96.0% Asian, 92.0% White, 75.0% Hispanic or Latino, 69.0% African American, 53.0% English learners, 75.0% economically disadvantaged, and 39.0% students with disabilities (Dataquest, 2010).

According to Nichols, Glass, and Berliner (2006), these gaps have "led to several legislative and judicial attempts to eliminate CAHSEE as a graduation

requirement on the grounds that minority and disadvantaged students have not had an equal opportunity to learn" (p. 2). For example, in *Chapman v. California Department of Education*, plaintiffs sought to delay the consequences of the CAHSEE for students with disabilities (CDE, 2008b). The litigants consisted of students who were eligible for either an IEP pursuant to the Individuals with Disabilities Education Act (IDEA) or a 504 education plan pursuant to the Rehabilitation Act of 1973. As a result of the settlement, SB 267 was passed, which allowed students with disabilities in the Class of 2007 to graduate with high school diplomas even if they did not pass the CAHSEE. To qualify, students were required to meet five requirements: (a) had an IEP or Section 504 Plan prior to July 1, 2006, (b) took the CAHSEE at least twice since the 10th grade, (c) completed or predictably would have completed all other high school diploma requirements, (d) took the CAHSEE at least once with the accommodations approved in their IEP or 504 Plan (California defines accommodation as a change in the CAHSEE in format, student response, timing, or other attribute) that does not invalidate the score achieved, and (e) participated in high school or private remediation targeted at passing the CAHSEE, if such remediation was available (*Kidd v. California Department of Education*, 2008). Of note, California defines modification as a change in the CAHSEE that invalidates the test score because it fundamentally alters what the test measures (*Kidd v. California Department of Education*, 2008 ).

Further, as part of the settlement agreement in *Kidd v. California Department of Education* (2008), the verdict required the state of California to conduct a study

that would examine the impact of CAHSEE on students with disabilities as a diploma requirement (CDE, 2010a).

Lawsuits have also emerged regarding the fairness of the CAHSEE as a high school graduation requirement for English language learners; however, none have succeeded in waiving the requirement to pass the test. For example, in *Valenzuela v. O'Connell, 2007* plaintiffs alleged the following:

defendants had (a) deprived plaintiffs of their fundamental right to a public education by denying high school diplomas, (b) violated the equal protection clause of the California Constitution by failing to provide plaintiffs with an equal opportunity to pass the CAHSEE, unfairly allocating supplemental funding, and disadvantaging English learners, (c) violated their statutory duty to conduct a good faith study of alternatives to the CAHSEE, and (d) deprived plaintiffs of their property interest in obtaining their high school diplomas without due process. (p. 1)

The settlement resulted in AB 347 Nava, §§ 526 (2007), which now requires all schools to offer intensive instruction and services to students who do not pass the CAHSEE. In addition, students are entitled to services for two consecutive academic years following Grade 12. Targeted instruction in English is currently provided to ELLs; therefore, ELLs have not benefited much from this legislation except for the additional years to receive services.

### **High-Stakes Testing**

Research on high-stakes tests has not provided convincing evidence that higher accountability standards and mandatory testing have improved academic achievement. Amrein and Berliner (2002) challenged the validity of high-stakes testing when no corresponding achievement gains were found in 18 states. Their sample was selected using the states with the most severe consequences (i.e., grade advancement decisions, graduation, and course placement). The results of the study conducted by Quality Counts showed that the states in question “lead the nation in school closures, school interventions, state takeovers, teacher/administrator dismissals, which is due in part to low test scores” (as cited in Amrein & Berliner, 2002, p. 19). The purpose of the Amrein and Berliner study (2002) was to determine whether high-stakes testing programs improved student learning. To determine if student learning occurred, four commonly used standardized tests that overlapped the same domains as state tests were examined (Scholastic Achievement Test, American College Test, National Assessment of Educational Progress, and Advanced Placement Test). Each measure of transfer was used to examine the effects of each state's high-stakes testing program to determine whether the transfer measures increased as a function of the inclusion of the high-stakes tests.

Amrein and Berliner (2002) found that the “transfer of achievement levels did not increase in states with high-stakes tests” (p. 1). Amrein and Berliner concluded that student learning does not increase due to the implementation of a high-stakes testing policy. Further, they concluded that any increase in test scores may be due to

a variety of factors such as teaching to the test or exclusion of some students taking the tests (Amrein & Berliner, 2002). Finally, they argued that the implementation of high-stakes tests should cause an increase in student learning, “not whether it can increase student scores on a particular test” (p. 2). In other words, increased test scores may not mean increased student learning. These results indicate the need to reexamine whether high-stakes tests raise academic achievement or if these tests cause unintended consequences, such as achievement gaps, between some subgroups of students.

One group of students affected most often by these consequences is English language learners. Tsang, Katz, and Stack (2008) conducted a study in the San Francisco Unified School District (SFUSD) to determine when it is appropriate to administer standardized tests in English to ELLs. The sample included the entire SFUSD student database of 18,624 ELLs who spoke 64 different languages. According to the February 2002 report of the district’s Bilingual Education Task Force, the five foreign languages most spoken in San Francisco included Chinese (43%), Spanish (37%), Filipino (4.9%), Vietnamese (3.1%), and Russian (2.7%) (Tsang, Katz, & Stack, 2008).

The data analyzed in the Tsang's study were retrieved from the Stanford Achievement Test, Ninth Edition (SAT/9) of the 2000-01 school year. In addition, demographical data were collected including birthdate, birthplace, English language proficiency level, GPA, family income indicators, parents’ educational background, and year of entry into the U.S. Finally, accommodations used by ELLs were recorded

such as the use of a bilingual dictionary, translated test directions, reading of test items or questions, and extended time. Tsang et al., (2008) found that ELLs had difficulty understanding English in word problems, which ultimately affected their performance on the tests. In other words, the tests may not be good indicators of ELLs' achievement on subject matter. Additionally, the results indicated that the more years of schooling an ELL acquired, the less difficult the word problems become. Additionally, the more English proficient a student becomes, the more successful they will be on achievement tests.

English learners are not the only students who underperform on high-stakes tests such as the CAHSEE. According to the Center on Education Policy (2004), students who are most likely to experience lower passing rates are ELLs, students with disabilities, and low-income students. For example, in Washington, 4% and 12% of the students with disabilities passed their mandatory exit exam in mathematics and ELA, respectively, compared to 39% and 60% for all students. While results were better in Virginia, they are still disproportionate; students with disabilities passed at a rate of 51% and 70% in mathematics and reading, respectively, compared to 80% and 92% for all students (Center on Education Policy, 2004).

On a positive note, some evidence of improvement for students with disabilities has occurred. Christenson, Decker, Triezenberg, Ysseldyke, and Reschly (2007) sought to explore the consequences of high-stakes assessments for students with and without disabilities. The study reviewed 19 states and 99 schools that implemented high school exit examinations. Participants included 249 general

education teachers, special education teachers, and school psychologists who completed a Perspectives of Testing and Grade Promotion Survey that examined high-stakes assessment and grade advancement decisions (Christenson et al., 2007). The majority of participants identified themselves as experienced at making grade advancement decisions, while fewer than 12% described themselves as limited or very limited. The remaining respondents identified themselves average at making grade advancement decisions.

Christenson et al. (2007) designed a survey to address 64 observable events of instructional practices, assessment and decision making, community support, indicators of student performance, parent participation, educational options, and curriculum. The criterion set for indicating a change in the observable event was a minimum of a 10-point difference between general and special education teachers. Results revealed the following seven items increased by 10 points or more: monitoring of quality of instruction, referral to special education, knowledge and skills for teaching diverse learners, home-school communication, reporting of statistics for retained or promoted students, testing procedures for students, and parents' request to end the use of high-stakes testing. The item inclusion of students with disabilities in general education was the only measure to decrease under the 10-point criterion (Christenson et al., 2007).

As part of the Christenson et al. (2007) study, a rank-order comparison of the seven observable events that increased by 10 points or more was conducted to explore any differences between general and special education teachers. The event with the

highest number of respondents was "efforts to improve school programming". In addition, a Spearman rank-order correlation was conducted to compare the responses of general and special education teachers. The Spearman correlation between these groups was extremely high ( $\rho = .957$ ,  $p < .001$ ). Christenson et al. concluded that the observable events were almost identical between general and special education students, which indicates that teachers believe students with and without disabilities are similarly influenced with regard to high-stakes testing. One result, worthy of reporting, is that general and special education teachers indicated that grade-level advancement decisions were either occasionally or almost never made based on the same criteria for students with and without disabilities (Christenson et al., 2007). In summary, the results of the Christenson et al. study did not indicate an increase in student performance; rather, they showed that schools are focused on improving instruction for all students.

Despite the positive outlook for improved instruction, there is an achievement gap on the CAHSEE for specific subgroups versus the general population. In a mixed design study, conducted by the Human Resources Research Organization (HumRRO) (2004), a complete evaluation of the CAHSEE was ordered by the state to determine if it was an effective instrument as a high school graduation test (Wise et al., 2004). The study included observations of test development, interviews of principals and teachers, surveys of students on preparation and reactions to the CAHSEE, and longitudinal results from the 2003 administration of the exam for 11th-grade students who did not pass the exam and 10th-grade first-time test takers.

The first step in the Wise et al. (2004) study was to evaluate the test development of the CAHSEE. The evaluation was accomplished by reviewing relevant standards published in the *Standards for Educational and Psychological Testing* (1999), which are the most widely used standards in testing (Wise et al., 2004). The findings suggest that the development of the CAHSEE met all the testing requirements for use as a high school examination.

Wise et al. (2004) also included annual surveys and interviews of administrators, English and mathematics teachers, and testing coordinators in both 2004 and 2005. The sample represented approximately 90 high schools from 24 districts. The main theme of both the interviews and surveys was to identify the schools' perspectives regarding the impact of the CAHSEE on their programs. Results indicate that adequate prerequisite skills were lacking in courses provided to help students master the required standards. In remedial courses, designed for special education students who have not passed the exam, 72% responded that most students did not have prerequisite skills. Additionally, respondents of the surveys and interviews gave reasons why current instruction yielded limited effectiveness. The most common answer was low student attendance and motivation. Further, students often do not take advantage of remedial classes, summer programs in particular.

Wise et al. (2004) also considered teacher qualifications based on credential, years of experience, and professional development as factors that may influence success on the CAHSEE. The results indicated that the majority of teachers had proper credentials and years of experience. However, professional development

exposure was not an important factor. In fact, teachers who had experience teaching ELLs and Special Education students showed no significant impact on CAHSEE performance at the  $\rho < .05$  level.

Wise et al. (2004) also conducted surveys among students in the Class of 2004 and students in the Class of 2005. Findings suggested that the CAHSEE was more important to the Class of 2005 compared to the Class of 2004. Further, more students in the Class of 2005 indicated that they did as well as they thought they could on the exam compared to the perceptions of the Class of 2004 students. Post high school plans were similar for both classes.

Finally, Wise et al. (2004) collected longitudinal data from the results of the 2003 administrations of the CAHSEE for 10th-grade and 11th-grade students who took the test for the first time, as well as subsequent tests for those who did not pass the first time. Interestingly, 10th-grade students had lower cumulative pass rates compared to 11th-grade students. Further, the results indicated that pass rates in 2004 on the mathematics section of the test were 23.3% for ELLs and 52.6% for all students. Results for mathematics in 2005 were 25.8% for ELLs and 51.9% for all students. Additionally, special education students did far worse compared to all students on the mathematics section; pass rates were 16.0% in 2004 and 13.7% in 2005.

Wise et al. (2004) also found similar results for ELLs and special education students on the ELA section of the exam, with pass rates of 36.1% in 2004 and 35.6% in 2005 for ELLs compared to 72.6% and 66.9% for all students, respectively on the

first administration of the test. For special education students, the results from 2004 and 2005 were 31.2% and 26.1%, respectively.

The research on high-stakes exams provides some promising evidence that schools are changing the way they deliver instruction and expose students to testing standards (Christenson et al., 2007); however, a gap still exists in pass rates between ELLs and special education students compared to all students on the CAHSEE (Wise et al., 2004). The literature also reveals that, in many cases, student performance on the CAHSEE has not improved; however, there is an increased focus on improving instruction for all students. Additionally, several studies point to problems with the CAHSEE such as an adverse impact on disadvantaged subgroups. However, the literature is conflicted regarding solutions to this dilemma. Disadvantaged subgroups are clearly not achieving the same pass rates as other students.

### **Intended and Unintended Consequences of Exit Exams**

While most research on using exit examinations as a requirement to earn a high school diploma discusses the unintended consequences for students, many proponents (Brown, Galassi, & Akos, 2004; Stecher, 2008) support such examinations. Specifically, proponents argue that exit examinations, such as the CAHSEE, increase student achievement and the value of the diploma (Achieve Inc., 2007; Gandal & McGiffert, 2003; Greene & Winters, 2004) and provide for consistent expectations across the state (Timar, Rodriguez, Simon, Ferrario, & Kim, 2006). Further, exit examinations may encourage teachers to align their curriculum to the state standards covered on the CAHSEE (Center on Education Policy (CEP),

2004, 2005, 2006). Consequently, this may also help teachers identify and assist students who struggle to pass the CAHSEE (CEP, 2004, 2005, 2006; Heubert & Hauser, 1999; WestEd, 2003). In addition, supporters say that these tests push schools to consider preparation by providing "well-prepared teachers and high-quality professional development programs, early identification and intervention, testing at the appropriate grade level, and ongoing evaluation of the exit exams" (WestEd, 2003, p. 3). Finally, through state accountability systems, these exit examinations can help school officials to pinpoint problem areas and may "force poor performing schools to improve" (Timar et al., 2006, p. 2).

Research on exit examinations generally shows a noticeable impact on curriculum and instruction, with more attention and more resources placed on low-performing students. The Center on Education Policy conducted case studies in two school districts to assess how programs and policies are implemented in response to exit examination requirements (Gayler, 2005). The most noticeable change found in Gayler's (2005) study was that in both districts was a "greater focus to instruction by eliminating some extraneous activities and tightening the curriculum" (p. 4). Further, studies have found that exit examinations led to a greater focus on state standards and coverage content area across all classrooms (Gayler, 2005; Gayler, Chudowsky, Hamilton, Kober, & Yeager, 2004; HumRRO, 2006). These findings are consistent with Wise et al. (2004) who found that the CAHSEE covers the same standards found on other tests.

Education reform and holding more schools accountable may not necessarily provide educators with an entirely accurate picture of what students know. Further, many researchers argue that what is tested is not what students need to know to achieve success in higher education and the workforce (Warren & Grodsky, 2009; Zhao, 2009). Achieve Inc., as well as others, have found that expectations of employers and colleges merge in terms of the knowledge and skills expected of high school graduates (Achieve Inc., 2004; Forster & Greene, 2003). In the United States, postsecondary education and training will be a requirement for 80% of future job openings over the next decade. Further, 45% of future jobs will be considered middle-skill jobs that require some postsecondary education, while 33% will be considered high-skilled occupations that require a Bachelors degree or higher. In contrast, 22% of future jobs will require only a high school diploma (Achieve Inc., 2004). For those students who struggle to pass the CAHSEE and earn their diploma, the stakes are high and may influence their future educational attainment and labor market experiences.

Consequently, high-stakes tests like the CAHSEE may create unintended consequences for minorities, ELLs, and students with disabilities (Darling-Hammond, Rustique-Forrester, & Pecheone, 2005; Gaumer-Erickson, Kleinhammer-Tramill, & Thurlow, 2007; Thurlow, Liu, Weiser, & El Sawaf, 1997; Warren & Grodsky, 2009). While data on CAHSEE passage rates showed improvement for students with disabilities, they continue to perform at the lowest levels of all other demographic groups. “Even on graduation tests that measure basic skills, for example, minority

students and students with disabilities usually fail at higher rates than other students, especially in the years after such tests are first introduced” (Heubert, 2002, p. 3). For example, in the 1970s, when minimum competency tests gained popularity, 20% of Black students, compared to 2% of White students (a discrepancy of ten to one) initially failed Florida's graduation tests and were denied high-school diplomas (*Debra P. v. Turlington*, 1979). While many students with disabilities were excluded from state graduation-test programs (Heubert & Hauser, 1999), those who did participate failed at rates of over 50% (McLaughlin, 2000).

These findings are consistent with those of Becker, Wise, and Watters (2008) who also found that passing rates for specific student subgroups were significantly lower than the overall passing rate on the 2008 CAHSEE. Their findings revealed that the overall pass rate on the CAHSEE in 2008 was 90%; however, the passing rate for subgroups was as follows: ELL, 73.5%; students with disabilities, 54.5%; economically disadvantaged students, 85.5%; African Americans, 80.5%; and Hispanic, 86.2% (Becker et al., 2008). Findings from the Becker et al.'s study also revealed that initial pass rates for students who took the CAHSEE in 10th grade (Class of 2010), were lower for ELL (29%), students with disabilities (20%), economically disadvantaged students (57%), African American students (52%), and Hispanic students (58%).

The Becker et al.'s (2008) results were confirmed by Reardon, Atteberry, Arsham, and Kurlaender (2009), who concluded that there was no increase in student academic achievement for low-achieving and minority students. Both Becker et al.

(2008) and Reardon et al. (2009) recommended that efforts focus on exposing minorities and students with disabilities to the general curriculum so they can learn the necessary skills to pass the CAHSEE. Further, they both recommended that research should explore ways to increase student achievement and graduation rates for both economically disadvantaged and minority students (Becker et al., 2008; Reardon et al., 2009).

On one hand, the literature reveals some positive outcomes for high-stakes testing including an increase in student achievement, alignment of instruction to state standards, and identification of struggling students. These studies, especially those exploring the effects of the CAHSEE, demonstrate the impact of high-stakes tests on graduation rates, particularly for ELLs, students with disabilities, and minority students. Students who cannot pass the CAHSEE do not receive a high school diploma. Revealing both the positive and negative aspects of the CAHSEE may help educators identify solutions that can benefit all students.

### **Factors That Contribute to Successful Achievement on Exit Exams**

#### **Students Attitudes and Perceptions of Exit Exams**

Research on the effects of student attitudes when taking exit examinations have indicated a strong correlation between perceived success and actual success. For example, Catterall (1989) conducted a study in four secondary schools on Minimum Competency testing (MCT) that students were required to pass before they could receive a high school diploma. In addition to test performance, Catterall assessed the effects of earlier grade retention, academic performance, peer culture,

and family background on the students' self-perceived chances of dropping out of school. This study also included in-depth interviews with over 700 high school students, teachers, and site administrators in selected states.

Results of Catterall's (1989) analysis indicated that socioeconomic status, grades, and failure to pass the Minimum Competency Test (MCT) were statistically associated with students reporting the chance of dropping out. Catterall concluded that failing an MCT could contribute to student doubts about finishing school.

In another study (Jimerson et al., 2008), a group of 167 12th-grade students from the class of 2007, who had not passed the CAHSEE, were surveyed to determine their experiences after taking the examination. Students were from four California public school districts and were identified as high risk academically, based on poor performance on the CAHSEE. Participants were surveyed in the spring of their senior year and again in the fall to determine what happened to the students after their scheduled graduation date.

Jimerson et al. (2008) examined variables previously revealed as important in studies of dropout and school completion, including six composite variables: (a) youth's perception of the value of education, (b) youth self-efficacy, (c) life satisfaction, (d) parent-child communication, (e) school connectedness, and (f) extracurricular activities. Results indicated that of the six composites entered into the logistic regression, only one (life satisfaction) was significantly related to passing the CAHSEE, only one (valuing education) was significantly related to high school graduation, and no composite was significantly related to postsecondary school

attendance (Jimerson et al., 2008). Most importantly, the findings showed that despite the many challenges or experiences of failure throughout their education, students who did not pass the CAHSEE still persisted in their high school education through the end of their senior year of high school.

Jimerson et al. (2008) also administered a follow-up survey in the fall following graduation that revealed 20% of the students had passed both required portions of the CAHSEE by their scheduled graduation date. Further, the persistence of students wanting to earn their diploma resulted in 47% passing the CAHSEE by August of 2007, at which time they were awarded a high school diploma. These results indicate that persistence and valuing education created positive outcomes for students (Jimerson et al., 2008). Consistent with these findings are the results from a study conducted by Human Resources Research Organization (HumRRO). HumRRO (2007) also found that persistence had positive effects for about 40% of students who passed the CAHSEE after their senior year. Results of the HumRRO study found that 40% of students who continued to take the exam after their senior year, more than a quarter eventually passed within a year following their expected graduation date.

The findings of the Catterall (1989), Jimerson et al. (2008), and HumRRO (2007) indicated that persistence on the part of the student is an important factor that contributes to success on the CAHSEE. While it is the responsibility of schools to ensure that students are exposed to grade-level curriculum, without the student actively participating in the learning process there is no possible way for learning to occur (Kizilgunes, Tekkaya, & Sungur 2009; Meyer, Turner, & Schweinle, 2009).

## **Teacher Effectiveness**

Arguably, the most significant impact on raising academic achievement of students is the teacher in the classroom. The teacher is charged with the duty of exposing every student to grade-level curriculum every day (Kizilgunes et al., 2009). Not only must these professionals teach grade-level standards, they must also be able to identify and help students who are struggling to stay on grade-level. Therefore, early intervention to address deficiencies is important to ensure adequate progress toward grade-level competency (Brown, Morris, & Fields, 2005). Teachers must communicate shortcomings to parents or guardians, site administrators, and in some cases, the district (Carr, 2007).

Rockoff (2003) studied the impact of individual teachers on student achievement using panel data from elementary student test scores and teacher assignments in two New Jersey school districts. Test scores came from a nationally standardized basic skills test for reading and mathematics. In addition to test scores, Rockoff (2003) collected data on gender, ethnicity, special education classification, English as a second language, grade, and teacher identifiers (e.g., highest degree earned, teaching experience, year of birth).

Results indicated that there were large and statistically significant differences among teachers. Additionally, one standard deviation increase in teacher quality raised students' reading and mathematics test scores by approximately .20 and .24 standard deviations, respectively, on a nationally standardized scale. Further, teaching experience had statistically significant positive effects on reading test scores

when controlling for fixed teacher quality (Rockoff, 2003). Rockoff explained, "raising teacher quality is an important way to improve achievement, but suggests that policies may benefit from shifting focus from credentials to performance-based indicators of teacher quality" (p. 3).

Results of Rockoff's (2003) study are consistent with those of Goldhaber and Brewer (2000), who studied how 12th-grade students of teachers with probationary certification, emergency certification, private school certification, or no certification in their subject area compared to students of teachers who has subject area certification. They also examined whether state differences in teacher licensure requirements increased student achievement. Their study included survey data taken from the National Educational Longitudinal Study of 1988, which included approximately 24,000 8th-grade students. A survey was also given to parents to obtain information on family income. From the original group, a subset of these students was resurveyed in the spring of their 10th-grade (1990) and 12th-grade (1992) year. The follow-up surveys included student information including race, ethnicity, gender, and family structure. At the time of each survey, students took one or more subject-based tests in mathematics, science, English and writing, and history.

The results of Goldhaber and Brewer's (2000) study found that, in the area of mathematics, teachers who had a subject-specific certification had a statistically significant positive impact on student test scores compared to teachers who either held private school certifications or were not certified in their subject area. These results are consistent with previous studies conducted by Goldhaber and Brewer

(1997a; 1997b) and Monk and King (1994), who also found subject-specific certified teachers outperformed teachers who had no subject-specific certification based on test scores.

### **Socioeconomic Status**

According to the United States Census Bureau, approximately 28.7 million children are living in poverty across the U.S. (U.S. Bureau of the Census, 2003). This statistic may yield a negative impact on students as previous research has shown that student and school socioeconomic status (SES) are strong predictors of student academic achievement in most countries (Coleman et al., 1966; Organization for Economic Cooperation and Development (OECD), 2004; Rumberger & Palardy, 2005; Siren, 2005; Sui-Chu & Willms 1996; Thrupp, 1995, 1997; Willms, 1986). Research (Hobbs, 1990) asserted that SES is the single best predictor of academic achievement.

Although previous studies have suggested that socioeconomic status is strongly associated with student achievement, "our understanding of how the association may vary across groups of students, schools, or national contexts remains incomplete" (McConney & Perry, 2010). For example, Coleman et al. (1966) found that lower SES African-American students benefited from attending a racially integrated school, whereas achievement of their middle-class White peers did not change. More recent studies (Caldas & Bankston, 1997; OECD 2004; Tate, 1997) contradicted this finding and showed a significant relationship between SES and student achievement. One reason for this discrepancy is that "many studies do not

disaggregate students by SES to show conclusively that the association is equally or similarly strong for all" (McConney & Perry, 2010, p. 78).

McConney & Perry (2010) disaggregated SES student data from the Australian 2003 Programme for International Student Assessment (PISA) and found a strong association between school SES and student achievement for all student groups, regardless of individual SES based on an analysis of mean mathematics achievement levels. In addition, McConney and Perry (2010) found that students with higher SES tended to outperform their peers from less privileged backgrounds. These findings are consistent with Gilleece, Cosgrove, and Sofroniou (2010) who used mathematics and science data from the Programme for International Student Assessment. Using an independent samples *t*-test, their findings showed that, among students, level, home language, intention to leave school early, socioeconomic status, grade level, cultural capital, and books in the home were significantly ( $p < .05$ ) associated with achievement in mathematics and science. At the school level, only socioeconomic status of the school was statistically significant (Gilleece, Cosgrove, & Sofroniou, 2010).

Abbott and Joireman (2001) used a multiple regression analysis to study differences in school achievement according to ethnic population and income level of the students' families. Findings support the conclusion that low-income explains a much larger percentage of variance in academic achievement ( $p < .05$ ) compared to ethnicity across a variety of grades and tests (Abbott & Joireman, 2001). Abbott and

Joireman (2001) also found that low-income schools had more in common with each other, regardless of ethnic background, than they did with high-income schools.

Caldas and Bankston (1997) conducted a study to find the relationship between the socioeconomic status of peers and individual academic achievement. The results of their multiple regression analysis found that one-parent families had a sizable negative impact on academic performance ( $p < .05$ ). In fact, they found that students, regardless of family structure, performed worse in schools that contained large numbers of one-parent families. The majority of research on one-parent families shows that children from divorced and reconstituted homes (Jeynes, 1999) perform at lower levels than children from intact families (Teachman, Day, Paasch, Carver, & Call, 1998).

Further, a study by Ram & Hou (2003) was conducted to examine the effects of changes in family structure on emotional-behavioral and cognitive outcomes of young children. The results of their multiple regression ( $p > .05$ ) found "[compared] with children in families with two original parents, those in lone-parent and stepparent families are at a disadvantage on every measure of child outcome, even when their initial disadvantages and socioeconomic background are taken into account" (p. 309).

Caldwell and Ginther (1996) conducted a study to determine if differences existed in the learning styles of elementary-aged low socioeconomic status, low and high achievers. The Learning Styles Inventory (LSI) by Dunn, Dunn and Price (1989) was used to assess the learning styles of the subjects. Two separate direct

discriminate function analyses were performed to predict membership in one of two groups, high and low achievers in reading and high and low achievers in math. Their results showed that low motivation is a critical factor in student achievement, especially for the low socioeconomic students ( $p < .05$ ). Further, the authors found that students from a low socioeconomic background constituted the largest population of individuals considered at-risk of not graduating from high school.

The conclusion that can be drawn from research on SES and its effects on student achievement is that school officials need to target resources to promote equity in outcomes at the student and school level. Further, Caldwell and Ginther's (1996) study should encourage school officials to formulate strategies to improve the academic achievement of at-risk students, especially those in danger of not passing the CAHSEE.

### **Parent Involvement**

Grolnick and Slowiaczek (1994) defined parental involvement in three different ways: (a) behavioral involvement that includes participation in school activities such as parent-teacher conferences and home activities such as helping with homework, (b) cognitive-intellectual involvement may include taking children to the library and discussing current events that stimulate children's intellect, and (c) personal involvement that consists of knowing what is happening with their child at school and outside of school. These forms of parental involvement are important to understand because of a much broader scope of parental involvement than what school officials may assume. Further, these different forms of parent involvement

suggest that parents need to understand that it is not only direct involvement with the child, but also networking with teachers and other parents in the community that is important (Perna & Titus, 2005).

There is an extensive amount of research that demonstrates that various forms of parental involvement in children's learning is positively related to achievement (Armor et al., 1976; Cotton & Wikelund, 1989; Dornbusch, & Ritter, 1988; Fehrmann, Keith, & Reiners, 1987; Grolnick & Slowiaczek, 1994; Hoover-Dempsey, et.al., 2005; Reynolds, Howard, & Jones, 2009; Schoppe-Sullivan, McBride, & Mon-Ho Ho, 2004; Thorkikdsen & Stein, 1998). Further, research shows that parent involvement is positively related to achievement (Cotton & Wikelund, 1989). Henderson and Berla (1994) also found a high correlation between parent involvement and increased attendance, fewer discipline problems, and higher aspirations. Scott-Jones (1995) found that when parents were involved in their child's schooling, they sent stronger and more consistent messages that education is valuable and important. These messages have positive impacts on children's learning and social development.

Hong and Ho (2005) examined four forms of parental involvement including parental communication with their children about school, parental educational aspirations, parental participation, and parental supervision. They also measured the effects of these forms of parent involvement on Asian Americans, Whites, African Americans, and Hispanic students' self-concept, locus of control, and educational aspirations. Their sample of 6,000 students, representing each ethnic group, was

randomly selected from a nationally representative sample of 24,599 8th graders on the National Education Longitudinal Survey (NELS). Findings suggest that parental communication and educational aspiration showed consistent direct effects on initial achievement status. Further, Hong and Ho (2005) found parental involvement and participation, had a significant ( $p < .05$ ) positive impact on student achievement only in the Asian American group. In addition, parent supervision had a significant ( $p < .05$ ) positive impact on student achievement in the African-American group.

Sui-Chu and Willms (1996) measured the same basic categories but with different subcategories. They examined parental involvement, specifically, home discussion, school communication, home supervision, and school participation as they related to reading and mathematics achievement. They found that the most important factor in raising student achievement was home discussion ( $p < .05$ ). This finding implied that "in increase in 1 standard deviation in home discussion is associated with an increase in achievement of 0.12 of a standard deviation" (p. 136).

The findings on parental involvement further support the theory of social and human capital (Perna & Titus, 2005). The most consistently significant factor affecting student achievement is parents' genuine concern for their children. Research showed direct communication between parents and their children in the form of quality discussion has the greatest impact on student achievement.

### **Predicting Success on the CAHSEE**

Current research has revealed that earlier school factors can predict a student's success on the CAHSEE and high school graduation. Kurlaender, Reardon, and Jackson (2008) studied three large districts (San Francisco, Fresno, and Long Beach) in California to determine early predictors of high school graduation and success. Following three 7th-grade cohorts, the researchers investigated the role of several key middle school academic performance measures that included high school graduation, CAHSEE performance on the first attempt, and 11th-grade academic performance. The authors investigated the influence of middle school achievement indicators in facilitating high school completion, achievement, and passing the CAHSEE.

The results of the Kurlaener, Reardon, and Jackson study provide very important factors that may help educators identify students who may not pass the CAHSEE. First, standardized assessments (e.g., California Standards Test) provide a useful indication of a student's likelihood of high school graduation and CAHSEE failure. Specifically, in the study, students who scored far below basic on the CSTs also yielded very low rates of passing the CAHSEE on the first attempt: 22% in Fresno, 18% in Long Beach, and 27% in San Francisco.

A second finding of the Kurlaener, Reardon, and Jackson's (2008) study corroborated earlier research by Smith (1996), which found that the timing of algebra is a strong predictor of students' high school success. Kurlaener, Reardon, and Jackson's findings showed a 30% point difference in graduation rates between students who had completed algebra by the 8th grade and those who had not. Third,

the study found that retention in earlier (and later) years was a negative strong predictor ( $p < .05$ ) of high school completion, a finding that was also supported by previous research on high school completion (Roderick, 1994). Fourth, failure of courses at the middle school level proved an important indicator of graduation and for determining whether a student would pass the CAHSEE on the first attempt.

In a recent study by Faulk (2009), student scores from the previous two years of CST and CAHSEE tests were examined to identify whether CST scores predicted CAHSEE performance ( $p < .05$ ). The total number of students were 1,103 with 599 (54.3%) juniors and 504 (45.7%) seniors at an urban high school located in San Bernardino county. Of the students whose scores were examined, 547 (49.6%) were female and 556 (50.4%) were male. The ethnic breakdown consisted of 823 Hispanic students (74.6%), 162 Caucasian (14.7%), and 70 African-American (6.3%).

As part of the findings, significant predictability power of the CSTs for both English language arts and mathematics was found. Specifically, the ELA CST scores predicted the CAHSEE performance with an accuracy of 57% and the mathematics CST scores predicted the CAHSEE performance with an accuracy of 48%. The findings of this study can help school officials identify students who may not pass the CAHSEE before they take the examination for the first time in the 10th grade. This will help school officials identify which students need preintervention strategies that will help them pass the CAHSEE (Faulk, 2009).

### **What Happens When Students Fail a High School Exit Exam?**

Previous research clearly indicates that not all students pass exit examinations on the first try. To this end, school officials must look for ways to help students pass in order to earn their high school diploma. For example, the Assembly Bill 1802 (AB 1802) authorized the California Department of Education to allocate funding to districts to purchase State Board of Education (SBE)-approved intervention materials for 11th-grade and 12th-grade students who have not passed the CAHSEE (CDE, 2007).

There is a large body of empirical evidence to support effective intervention strategies to help students struggling academically; however, few studies have determined whether these strategies are effective in helping students pass the CAHSEE (Gewertz, 2007). Further, a literature gap still exists regarding when interventions should take place and for whom. The most common intervention strategies used by schools are preintervention and remedial programs, each with its own methodology and timeline for delivery. Intervention policies take on many forms and each state has multiple policies that address how schools should intervene when helping students pass high-stakes tests (Kratochwill & Stoiber, 2000). However, it is essential that educators keep in mind that there are no single silver-bullet program to meet the needs of all students. Rather, the key is for educators to be familiar with specific, evidence-based intervention strategies (Kratochwill & Stoiber, 2000).

The word *prevention* is defined as "the act of preventing or impeding" (Agnes, 2006). Here, prevention refers to the recognition of deficiencies in an individual student before a knowledge gap is identified. In other words, students are assumed at-risk of not passing the CAHSEE before they take the exam for the first time. While grades can give administrators and teachers a good idea of deficiencies, the only true way to know if the student is in danger of not passing the CAHSEE is with a diagnostic test (Cobb, 2003). Further, Piphoo (as cited in Haney & Madaus, 1978), recommended that "diagnosis of learning problems of pupils who do not attain minimum standards and implementation of instructional programs that focus on their particular deficiencies should be components of any minimum competency testing program" (p. 477).

Currently, the state of California does not provide a formal diagnostic test; therefore, many schools use released test questions and study guides as a way to diagnose student deficiencies (a prereleased test can be found on the California Department of Education's website). Further, some schools use grades and CST scores to identify students who may be at risk of not passing the CAHSEE. Once students are identified, many schools (e.g., Los Banos High School, Sanger High School, San Diego Unified School District, and Central Valley High School) place students in two to 3-week study sessions before the first 10th-grade examination. The purpose of study sessions is to preload key standards covered on the CAHSEE. As soon as school officials receive the CAHSEE result, students who did not pass are placed in remedial programs.

As an alternative to prevention, remediation occurs after a student has failed the CAHSEE on one or both sections of the examination. Research has provided various definitions and examples for remedial programs. For example, the California Department of Education (2009a) recommended that remedial programs should be designed to correct deficiencies identified by the CAHSEE and help prepare students to retake and pass the exam. Further, Hoegl (1983) defined remedial programs as the repeated teaching of basic skills to students who have not yet mastered them. Some of the more common forms of remedial programs are teacher-led and computer-based.

### **Teacher-led remediation**

Generally, teacher-led remediation is a drill method (McNeil, 2000; Smith & Fey, 2000; Volante, 2004; Wright, 2009). For example, teacher-led remediation often involves commercial test-preparation packages that review only tested topics, teach specific items from the test, and review questions from previous forms of the exam (Lai & Waltman, 2008; Vogler, 2005). According to many researchers, this type of instruction teaches to the test, which may narrow the curriculum, results in rote memorization, exacts content drilling on students, leads to teaching facts without meaning, and simplifies content (McNeil, 2000; Misco, 2010; Smith & Fey, 2000; Volante, 2004). Messick (1996) and Smith & Fey (2000) noted that teaching to the test does not promote authentic learning and usually creates inflated scores on these exams.

### **Computer-led remediation**

In contrast to teacher-led remediation, computer-led remediation, specifically web-based programs, can be customized to the individual student while adjusting the level of instruction and providing constant access to information (Fornaciari & Matthews, 2000). Further, most online remedial programs that are designed for exit exams are aligned to individual state content standards (Study Island, 2010). Researchers have also cited advantages of computer-led remediation, which include the fact that students (a) receive immediate feedback on answered questions (Fornaciari & Matthews, 2000); (b) choose the material they want to cover (Friend & Cole, 1990); (c) control the amount of material covered at one time (Hannafin, 1984); and (d) improve knowledge and skills (Marshall, 2002). Consequently, computer-led remediation is, in some cases, not appropriate or effective for at-risk students, especially those far below grade level (Cotton, 1991).

### **Summary**

Amidst the current emphasis of raising educational standards and accountability, the practice of using an exit examination as a high school graduation requirement has become more popular. Further, exit examinations have changed in form to reflect current educational theory and various reform efforts; however, the central premise centers on the controversial need to hold schools accountable to educate all students. The implementation of the CAHSEE originated from a need to authenticate that high school graduates have the knowledge and skills needed to be successful beyond secondary education (CDE, 2006). Educators continue to look for

ways to meet the needs of individual students as well as the entire student population as one approach to helping them pass the CAHSEE on the first administration.

Research on high-stakes exams shows that schools are changing delivery of instruction and focus on state standards (Christenson et al., 2007); however, a gap still exists in pass rates among ELLs and Special Education students compared to all students who take the CAHSEE. In addition, most educational researchers (Brennan, Kim, Wenz-Gross, & Siperstein, 2001; Heubert & Hauser, 1999; Smith & Fey, 2000) believed that a single test should not be the sole criterion for making judgments about school and student performance, especially when used as a determinant of grade advancement or a diploma. Educational researchers emphasize that schools need to target delivery of instruction and remedial education. Further, research is warranted to determine if remedial and intervention courses serve all groups of students in the best possible way.

Overall, the review of literature on exit examinations reveals that this study is critical in the implementation of the CASHEE. Previous studies have provided evidence that exit examinations cause some unintended consequences for students and may not be preparing students for what they will need to know to enter college and the workforce. Further, few studies have taken a positive approach to identifying what works in helping students pass the CAHSEE on the first attempt. Therefore, this study is critical to identify factors that help students pass the examination. Finally, this study may reveal possible strategies that can be used by high schools struggling to increase student pass rates on the CAHSEE.

This study is significant as it examines factors that contribute to pass rates on the CAHSEE. This study examines these factors in a comprehensive manner. First, it examines student perceptions of and reactions to the exam and related processes in order to identify barriers and roadblocks from the student's point of view. Next, this study looks at the effects of a preintervention program on student performance on the CAHSEE. Third, this study examines student performance after enrollment in an intervention for those students who did not pass the CAHSEE the first time they took the examination. Finally, this study examines demographic and academic factors that may enhance or hinder student performance on the CAHSEE. The results of this study may help administrators and teachers plan and prepare ELA and mathematics courses that address essential standards found on the CAHSEE, so that students pass the first time they take the examination.

Chapter three will describe the research design and method, including the analyses regarding the students' perceptions and reactions after taking the CAHSEE based on questionnaire responses, effects of a preintervention course to prepare students to take the CAHSEE on the first administration, the effects of an intervention program for those students who did not pass the CAHSEE the first time, and demographic and academic factors that may explain pass rates on the first administration of the CAHSEE.

## CHAPTER III

### METHODOLOGY

This study focused on various factors that may increase pass rates on the California High School Exit Exam (CAHSEE). Identifying factors that have the greatest effect on CAHSEE pass rates may increase the percentage of students who pass the exam on the first administration. This study may identify other proactive activities that prepare students before they take the CAHSEE.

Fundamental questions have yet to be answered about: (a) the fairness of requiring specific populations of students such as English language learners (ELLs), minority students, and Special Education students (SPED) to pass exit examinations and (b) the support systems to help these students succeed (Center on Education Policy, 2005).

The methodology is discussed as follows: (a) research design, (b) sample, (c) instrumentation, (d) methods, (e) data analysis, and (f) chapter summary.

#### **Research Design**

This study used quantitative research to determine the factors that may contribute to pass rates on the CASHEE. Quantitative research is a methodical process in which numerical data were used to gain information. Quantitative research involves standard nomenclature and procedures for organizing variables, selecting samples, collecting data, and proper techniques for statistical analysis (Gall, Gall, & Borg, 2003). This quantitative study was conducted in five phases.

The first phase of the study included archival questionnaire data from each section (ELA and mathematics) of the CAHSEE. Comparisons were made involving four types of students; specifically, ELLs compared to English-only students, and SPED students compared to General Education students. Also, this study included descriptive methods to report both frequencies and percentages of questionnaire responses between groups.

The second statistical analysis of this study was quasi-experimental because it compared the CAHSEE performance of students who participated in a pre-intervention program with students who did not participate in a preintervention program before the first administration of the CAHSEE. To manipulate the independent variable, participants were placed in groups: a treatment group who received the treatment (preintervention course) and a control group (no preintervention course) who did not receive the treatment. The CAHSEE scores were the dependent variable (Gall, Gall, & Borg, 2003). CAHSEE scaled scores in both ELA and mathematics from the March 2011 administration were used to compare means of the control and treatment groups.

The third phase of this study was quasi-experimental because students were assigned to an intervention course when they did not pass the first administration of the CAHSEE. CAHSEE scaled scores in both ELA and mathematics from the March 2010, October 2010, and February 2011 administrations were used to determine the effectiveness of an intervention course on those students who participated in the second administration.

The final statistical analysis of this study was a casual-comparative research design. The design is causal-comparative because demographic and academic factors of students, (i.e., gender, ethnicity, socioeconomic status, advanced level courses, years of teaching, California Standards Test (CSTs) scores, and parent education level), cannot be manipulated. This study sought to determine whether demographic and academic factors of students result in higher academic achievement. The independent variable included the students' gender, ethnicity, socioeconomic status, whether or not they participated in advanced level courses, CST scores, parent education level and the teaching experience of their English and mathematics teachers. The dependent variable was the CAHSEE scaled scores in both ELA and mathematics.

### **Sample**

For the first phase of this study, the sample included approximately 483 California students who attended a rural high school, 827 California students who attended a suburban high school, and 1,046 California students who attended an urban high school and took the CAHSEE on the first administration in March 2011. Students were classified by subgroups, including ELL, English-only, SPED and General Education students. The sample included responses for each student who completed the questionnaire at the end of each section of the CAHSEE on 2 different days. The demographic makeup of the schools were unknown as they were randomly chosen from the population of California high schools.

For the second phase of this study, the sample included 10th-grade students who participated in the first administration of the CAHSEE in March 2011. Students were selected from two similar high schools in Stanislaus County. One school was selected because it had a preintervention program to prepare students for the first administration of the CAHSEE and the other school was chosen because it did not have a preintervention program. The school with the preintervention program had approximately 603 10th graders who took the CAHSEE in March 2011. The total school population was approximately 2,583. The school with no preintervention program had approximately 449 10th graders who took the CAHSEE in March 2011. The school's student population was approximately 1,611.

The demographic makeup of the two high schools were similar. In the 2010-2011 school year, student enrollment by subgroup in the high school with a pre-intervention program were as follows: African American 4%, American Indian or Alaska Native < 1%, Asian 11%, Filipino <1%, Hispanic or Latino 59%, Pacific Islander <1%, White (not Hispanic) 20%, socioeconomically disadvantaged 50%, English learners 20%, and students with disabilities 9%. Student enrollment by subgroup in the high school with no preintervention program were as follows: African American 8%, American Indian or Alaska Native 1.6%, Asian 3%, Filipino 1.4%, Hispanic or Latino 61%, Pacific Islander 2%, White (not Hispanic) 22%, socioeconomically disadvantaged 52%, English learners 22%, and students with disabilities 13%.

For the third phase of this study, the sample included 10th-grade and 11th-grade students who participated in the first administration of the CAHSEE in March 2010 and the second and third administrations of the CAHSEE in October 2010 and February 2011. Students were selected from two similar high schools. One high school is located in Stanislaus County and one high school is located in Fresno County. The school located in Stanislaus County provided an intervention program in mathematics for students who did not pass the mathematics section of the CASHEE on the first attempt. The school located in Fresno County provided an intervention program in ELA for students who did not pass the ELA section of the CAHSEE on the first attempt.

The school located in Stanislaus County was the same high school examined in the second phase of the study in which demographics were reported. The high school located in Fresno County had an enrollment of approximately 2,781 and approximately 638 10th graders. The demographic makeup of the school for the 2010-11 year was Hispanic 72%, Filipino <1%, Asian 12%, American Indian <1%, African American 1%, White 14%, and Pacific Islander <1%. In addition, the school had approximately 12% ELLs and approximately 2% SPED students.

CAHSEE scaled scores in both ELA and mathematics were used in the third phase of this study. This phase consisted of 10th-grade students who participated in the first administration in March 2010 and second and third administrations in October 2010 and February 2011. The second administration of the test only included those students who did not pass the exam the first time; therefore, the

number of scores that were analyzed was smaller. The scores of students who did not pass the CAHSEE on the first administration in 10th grade were compared to their scores after the second administration. These students were enrolled in an intervention course in the subject or subjects not passed prior to the second administration. The sample consisted of both boys and girls who were of mixed socioeconomic and ethnic background. The third administration of the examination included those students who did not pass the second time; therefore, the number of scores was smaller than the first two administrations of the CAHSEE.

The final stage of this study included 10th-grade students from the smaller high school located in Stanislaus County used in phase three of this study. Demographic and academic data were collected and updated on an annual basis using the school's student information system, PowerSchool. Gender, ethnicity, SES, parent education level are all self-reported by the parent of each child, during enrollment into the school system. This information was updated by the parent on an annual basis at the beginning of each school year. All demographic data were kept on PowerSchool. Student achievement data in ELA and mathematics were kept on PowerSchool. Also, teachers of both ELA and mathematics were recorded by the number of years as teachers. All data were extracted from PowerSchool to an Excel spreadsheet before being uploaded into the Statistical Package for the Social Sciences (SPSS) 18.0 for analysis (SPSS v. 18.0).

## **Instrumentation**

The CAHSEE has two parts: English language arts (ELA) and mathematics. The ELA part addresses state content standards through Grade 10. In reading, standards include vocabulary, decoding, comprehension, and analysis of information and literary texts. In writing, standards cover writing strategies, applications, and the conventions of English (e.g., grammar, spelling, and punctuation). The mathematics part of the CAHSEE addresses state standards in Grades 6 and 7 and Algebra I. The exam includes statistics, data analysis and probability, number sense, measurement and geometry, mathematical reasoning, and algebra. Students are also asked to demonstrate a strong foundation in computation and arithmetic, including working with decimals, fractions, and percents (CDE, 2010a). The two content areas of the test are administered on separate days. Two statewide field tests were conducted to determine the highest technical quality for test questions and scores (CDE, 2010a).

The CSTs were developed by educators and test developers specifically for California. The CSTs are a series of standards-based assessments given in ELA in Grades 2 through 11; mathematics in Grades 2 through 11; science in Grades 5, 8 and 10; and history-social science in Grades 8, 10, and 11. In Grades 9 through 11 students take the CST for each subject area in which they are currently enrolled (Educational Testing Service (ETS), 2010). Student achievement on the CSTs is reported as either Advanced, Proficient, Basic, Below Basic, or Far Below Basic.

The questionnaire instrument was designed by the Human Resources Research Organization (HumRRO) in conjunction with the California Department of

Education (CDE). The questionnaire is included at the end of each content area of the CAHSEE (ELA and mathematics) and a section of the answer document is used to collect the questionnaire responses. To ensure reliability, HumRRO has administered the questionnaires since 2001, altering some of the questions significantly in 2005 and minor changes in more recent years. HumRRO has conducted an analysis of these questions on an annual basis. The 2011 questionnaire included 12 questions with multiple-choice responses. Five questions required multiple responses and seven questions required single answer responses. Students self-reported their perceptions and attitudes on questions pertaining to four categories, student perceptions (Q3, 4, 6, and 11), preparation (Q1 and 2), familiarity of the content on the examination (Q7, 8, 9, and 10), and plans after taking the CAHSEE (Q5 and 12). A copy of the questionnaire can be found in Appendix B.

### **Data Analysis**

The data analysis was conducted in four phases: (a) Inferential statistical analysis of the distribution of questionnaire responses between rural, suburban, and urban students that was administered to all students at the end of the CAHSEE ELA and mathematics sections. Also, included were descriptive analyses reported as percentages and frequencies of student responses on the questionnaires; (b) Determination of the difference between mean scores on the CAHSEE of students who were enrolled in a preintervention program and students who were not enrolled in a preintervention program; (c) Determination of the difference between mean scores on the CAHSEE of first time test takers and mean scores on CAHSEE after an

intervention; and (d) Determination of how demographic and academic factors explain achievement on the CAHSEE.

First, all test data, including CAHSEE scaled scores, CST scaled scores, and other academic data, were downloaded from the student information system, PowerSchool. In addition, state archival data on student questionnaire responses were requested from one rural, one suburban, and one urban high school. All data were downloaded on Excel spreadsheets before being uploaded into SPSS (SPSS v. 18.0).

The CAHSEE questionnaire responses were reported descriptively in frequencies and percentages. A Chi-square test of independence, was used to determine if differences existed in the distribution of responses. The Chi-square test of independence was run to test the following hypotheses:

***H1a.*** There is a significant difference in the distribution of questionnaire responses between rural English Language Learner students' and rural English-only students' perceptions regarding preparation that may contribute to outcomes on the CAHSEE.

***H1b.*** There is a significant difference in the distribution of questionnaire responses between suburban English Language Learner students' and suburban English-only students' perceptions regarding preparation that may contribute to outcomes on the CAHSEE.

***H1c.*** There is a significant difference in the distribution of questionnaire responses between urban English Language Learner students' and urban English-only

students' perceptions regarding preparation that may contribute to outcomes on the CAHSEE.

*H1d.* There is a significant difference in the distribution of questionnaire responses between rural Special Education students' and rural General Education students' perceptions regarding preparation that may contribute to outcomes on the CAHSEE.

*H1e.* There is a significant difference in the distribution of questionnaire responses between suburban Special Education students' and suburban General Education students' perceptions regarding preparation that may contribute to outcomes on the CAHSEE.

*H1f.* There is a significant difference in the distribution of questionnaire responses between urban Special Education students' and urban General Education students' perceptions regarding preparation that may contribute to outcomes on the CAHSEE.

The second phase of the data analysis included running an independent samples *t*-test to determine if there is a difference in achievement on the first administration of the CAHSEE after students participated in a preintervention program. The independent samples *t*-test was used to test the following hypotheses:

*H2a.* There is a difference in mean scores on mathematics section of the CAHSEE between students who participated in a preintervention program and students who did not.

**H2b.** There is a difference in mean scores on the English language arts section of the CAHSEE between students who participated in a preintervention program and students who did not.

In the third phase of the data analysis, a paired samples *t*-test was used to analyze if there is a difference in achievement between the first and second administration of the CAHSEE. The students participated in an intervention between both administrations. The paired samples *t*-test was used to test the following hypotheses:

**H3a.** There is a difference in mean scores on the mathematics section of the CAHSEE between students who participated in a preintervention program and students who did not.

**H3b.** There is a difference in mean scores on the English language arts section of the CAHSEE between students who participated in a preintervention program and students who did not.

In the final phase of data analysis, a multiple regression was used to determine how academic and demographic factors explain achievement on the CAHSEE. For this study, the dependent or criterion variable was the CAHSEE scaled scores in ELA and mathematics. The predictor variables were gender, ethnicity, socioeconomic status, advanced level courses, years of teaching, CST scores, and parent education level. Multiple regression was used to test the following hypotheses:

**H4a.** Academic factors explain more about student performance on the English language arts section of the CAHSEE than demographic factors.

*H4b.* Academic factors explain more about student performance on the mathematics section of the CAHSEE than demographic factors.

### **Summary**

Chapter III introduced and described the research design, the sample population, the instrumentation procedures for gathering data, and the methods that were used for analyzing the data. Chapter IV will report the results of this study.

## CHAPTER IV

### RESULTS

This study examined various factors that may increase pass rates on the California High School Exit Exam (CAHSEE). The following questions were addressed in this study:

#### **Research Question 1**

What are students' perceptions regarding the effectiveness of preparation that may contribute to passing the California High School Exit Examination (CAHSEE)?

#### **Research Question 2**

Do preintervention programs affect student achievement on high school exit exams?

#### **Research Question 3**

Do intervention programs have an effect on passage rates of students who fail the first administration of a high school exit exam?

#### **Research Question 4**

How much of the student performance on the CAHSEE can be explained by the following variables: gender, ethnicity, socioeconomic status, advanced level courses, years of teaching, CST scores, and parent education level?

This chapter focuses on the analysis and discussion of the findings resulting from the research procedures detailed in Chapter III. CAHSEE scaled scores and questionnaire responses of students were collected from the 2010-2011 school year.

The California high schools that were selected to answer Research Question 1 included one each from a rural, suburban, and urban area. For Research Question 2, two California high schools were selected because one provided a preintervention program and the other did not provide a preintervention program. Research Question 3 included one California high school in a rural area and one California high school in a suburban area. Finally, Research Question 4 included demographic and academic factors from the same rural high school used in Research Question 3.

All demographic and academic data collected from each of the schools that participated in this study were entered into the Statistical Package for the Social Sciences (SPSS v. 18.0). A Chi-square, test of independence, analysis was conducted to analyze the distribution of responses of students who completed a questionnaire after both sections of the CAHSEE. An independent *t*-test analysis was conducted to determine the effects of a preintervention program on CAHSEE pass rates. A paired samples *t*-test analysis was conducted to determine if an intervention program had a positive effect on CAHSEE pass rates of students who did not pass the first administration. Finally, a multiple regression analysis was conducted to determine how much of the student performance on the CAHSEE can be explained by the following variables: gender, ethnicity, socioeconomic status, advanced level courses, years of teaching, CST scores, and parent education level. All statistical tests were conducted at the .05 level of significance.

### **Findings Related to Hypothesis 1a**

*H1a.* There is a significant difference in the distribution of questionnaire responses between rural English language learner students' (ELLs) and rural English-only students' perceptions regarding preparation that may contribute to outcomes on the ELA section of the CAHSEE.

The questionnaire asked students to answer questions based on their preparation before taking each section of the CAHSEE, perceptions about how well they performed on each section of the CAHSEE and postexamination plans based on whether students perceived success on the CAHSEE. The questionnaire included 12 questions. Five questions required multiple responses and seven questions required single answer responses. For the five questions that required multiple responses, this researcher used only the first response of each student for data analysis. The questionnaire was given to each participant after each administration of the ELA and mathematics section of the CAHSEE. For this study, students' responses to the questionnaire given after the ELA section of the CAHSEE will be analyzed and discussed in depth. A brief discussion of the results on the questionnaire that addresses mathematics will follow for purposes of identifying differences in preparation and performance.

For this study, significance was set at  $p < .05$ . Table 2 shows the Chi-square values and p values for responses to each question. The analyses are based on the responses of rural ELLs and rural English-only students after the administration of the ELA section of the CAHSEE.

Table 2

*Chi-square test of independence between rural English language learners and rural English-only students on the ELA section of the CAHSEE*

Question	$\chi^2$	<i>df</i>	<i>p</i>
Q1	7.143	4	.129
Q2	21.107	6	.002*
Q3	90.679	6	.001*
Q4	24.824	5	.001*
Q5	7.295	6	.294
Q6	24.234	6	.001*
Q7	11.439	3	.010*
Q8	29.709	3	.001*
Q9	44.620	3	.001*
Q10	13.758	4	.008*
Q11	45.083	6	.001*
Q12	31.772	6	.001*

\* $p < .05$

Question 1 was "How did you prepare for this test?" The computed Chi-square value was 7.143. Since the computed probability ( $p = .129$ ) was greater than .05, there was no significant difference in the distribution of responses between rural ELLs and rural English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. Few differences existed between ELLs and English-only students' responses to the question (see Appendix A, Table A1).

Question 2 was "What materials did you use to prepare for this test?" The computed Chi-square value was 21.107. Since the computed probability ( $p = .002$ ) was less than .05, there was a significant difference in the distribution of responses between rural ELLs and rural English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE.

English-only students responded "used no material" (31%) or "released test questions" (14%) more frequently than ELLs (10% and 2%) to pass the ELA section of the CAHSEE. ELLs responded that they used "textbooks" (20%) or "other resources" (22%) more frequently than English-only students (10% and 11%) to pass the CAHSEE (see Appendix A, Table A2).

Question 3 was "Do you think you will receive a high school diploma?" The computed Chi-square value was 90.679. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural ELLs and rural English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (71%) responded more frequently than ELLs (29%) that they will receive their high school diploma "with their class". ELLs (29%) responded more frequently than English-only students (3%) that they will earn their diploma, but only after they "take more classes" to pass the CAHSEE (see Appendix A, Table A3).

Question 4 was "What might prevent you from receiving a high school diploma?" The computed Chi-square value was 24.824. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural ELLs and rural English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (59%) responded more frequently than ELLs (32%) that "I am confident I will earn my diploma". ELLs responded that they "may not pass all their courses" (22%) or "not passing the

CAHSEE" (15%) will prevent them from receiving their high school diploma compared to English-only students (11% and 3%). (see Appendix A, Table A4).

Question 5 was "What do you think you will do after high school?" The computed Chi-square value was 7.295. Since the computed probability ( $p = .294$ ) was greater than .05, there was no significant difference in the distribution of responses between rural ELLs and rural English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. Few differences existed between ELLs and English-only students' responses to the question (see Appendix A, Table A5).

Question 6 was "How well did you do on this test?" The computed Chi-square value was 24.234. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural ELLs and rural English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (68%) responded more frequently than ELLs (54%) that they "did as well as they could" on the ELA section of the CAHSEE. ELLs (17%) more often than English-only students (3%) responded that they were "too nervous to do well" on the ELA section of the CAHSEE (see Appendix A, Table A6).

Question 7 was "Were the topics on the test covered in courses you have taken?" The computed Chi-square value was 11.439. Since the computed probability ( $p = .010$ ) was less than .05, there was a significant difference in the distribution of responses between rural ELLs and rural English-only students regarding their

perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (44%) responded more frequently than ELLs (29%) "yes, all of them" regarding topics covered in courses they have taken. ELLs (15%) responded more frequently than English-only students (4%) "many topics were not covered" in courses they have taken (see Appendix A, Table A7).

Question 8 was "Were any of the questions on the test different from the types of questions or answer options you have encountered in your homework assignments or classroom tests?" The computed Chi-square value was 29.709. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural ELLs and rural English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (34%) responded more frequently than ELLs (2%) "no, all questions were similar" regarding the questions they saw on the CAHSEE compared to those seen in their courses. ELLs (27%) responded more frequently than English-only students (7%) "yes, many were different" regarding the questions they saw on the CAHSEE compared to those seen in their courses (see Appendix A, Table A8).

Question 9 was "Were the questions on this test more difficult than questions you were given in classroom tests or homework assignments?" The computed Chi-square value was 44.620. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural ELLs and rural English-only students regarding their perceptions about preparation

that may contribute to outcomes on the ELA section of the CAHSEE. English-only students responded "generally easier" (29%) more frequently than ELLs (2%) regarding question difficulty on the CASHEE compared to questions they have seen in their courses. ELLs (39%) responded more often than English-only students (8%) "yes, generally more difficult" regarding question difficulty on the CASHEE compared to questions they have seen in their courses (see Appendix A, Table A9).

Question 10 was "If some topics on the test were difficult for you, was it because?" The computed Chi-square value was 13.758. Since the computed probability ( $p = .008$ ) was less than .05, there was a significant difference in the distribution of responses between rural ELLs and rural English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (32%) responded more frequently than ELLs (12%) that "none of the topics were difficult" when responding to why topics may have been difficult on the CAHSEE. ELLs responded that they "did not take courses that covered the material" (12%) or "had trouble with the topics in the courses taken" (29%) more often than English-only students (6% and 14%) when responding to why topics may have been difficult on the CAHSEE (see Appendix A, Table A10).

Question 11 was "Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?" The computed Chi-square value was 45.083. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural ELLs and rural English-only

students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (47%) more frequently than ELLs (5%) responded that they "do not need to work harder to pass the CAHSEE". ELLs (39%) responded more often than English-only students (24%) that they are "working hard in the classes I am taking" (see Appendix A, Table A11).

Question 12 was "If you do not pass the CAHSEE in this administration, what are you most likely to do?" The computed Chi-square value was 31.772. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural ELLs and rural English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (61%) responded more frequently than ELLs (32%) that they "will stay in school until I pass CAHSEE" regarding plans if they do not pass the CAHSEE. ELLs (15%) responded more frequently than English-only students (3%) that they will "take classes at a community college" if they do not pass the CAHSEE (see Appendix A, Table A12).

### **Findings Related to Hypothesis 1b**

*H1b.* There is a significant difference in the distribution of questionnaire responses between suburban English language learner students' and suburban English-only students' perceptions regarding preparation that may contribute to outcomes on the ELA section of the CAHSEE.

Table 3 shows the Chi-square values and p values for responses to each question. The analyses are based on the responses of suburban ELLs and suburban English-only students after the administration of the ELA section of the CAHSEE.

Table 3

*Chi-square test of independence between suburban English language learners and suburban English-only students on the ELA section of the CAHSEE*

Question	$\chi^2$	<i>df</i>	<i>p</i>
Q1	22.025	5	.001*
Q2	58.031	6	.001*
Q3	38.057	5	.001*
Q4	48.415	5	.001*
Q5	22.807	6	.001*
Q6	19.161	6	.004*
Q7	40.394	3	.001*
Q8	51.140	3	.001*
Q9	39.327	3	.001*
Q10	34.375	4	.001*
Q11	79.642	6	.001*
Q12	24.183	6	.001*

\**p* < .05

Question 1 was "How did you prepare for this test?" The computed Chi-square value was 22.025. Since the computed probability (*p* = .001) was less than .05, there was a significant difference in the distribution of responses between suburban ELLs and suburban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students responded that they "practiced" (39%) or "did nothing" (18%) more frequently than ELLs (31% and 11%) to pass the ELA section of the CAHSEE. ELLs (18%) responded more frequently than English-only students (9%) that they

relied on a "special class during the school day" to pass the CAHSEE (see Appendix A, Table A13).

Question 2 was "What materials did you use to prepare for this test?" The computed Chi-square value was 58.031. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban ELLs and suburban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students responded "used no material" (14%) or "released test questions" (24%) more frequently than ELLs (8% and 7%) to pass the ELA section of the CAHSEE. ELLs (33%) responded more frequently than English-only students (16%) that they used "online CAHSEE prep material" to pass the CAHSEE (see Appendix A, Table A14).

Question 3 was "Do you think you will receive a high school diploma?" The computed Chi-square value was 38.057. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban ELLs and suburban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (73%) responded more frequently than ELLs (51%) that they will receive their high school diploma "with their class". ELLs (18%) responded more frequently than English-only students (10%) that they will earn their diploma, but only after they "take more classes" to pass the CAHSEE (see Appendix A, Table A15).

Question 4 was "What might prevent you from receiving a high school diploma?" The computed Chi-square value was 48.415. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban ELLs and suburban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (50%) responded more frequently than ELLs (26%) that "I am confident I will earn my diploma". ELLs (27%) responded more frequently than English-only students (12%) that "not passing the CAHSEE" will prevent them from receiving their high school diploma (see Appendix A, Table A16).

Question 5 was "What do you think you will do after high school?" The computed Chi-square value was 22.807. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban ELLs and suburban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (60%) responded more frequently than ELLs (42%) that they will "attend a 4-year college or university" upon completion of high school. ELLs (16%) responded more often than English-only students (10%) that they will "attend a community college" upon completion of high school (see Appendix A, Table A17).

Question 6 was "How well did you do on this test?" The computed Chi-square value was 19.161. Since the computed probability ( $p = .004$ ) was less than

.05, there was a significant difference in the distribution of responses between suburban ELLs and suburban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (79%) responded more frequently than ELLs (67%) that they "did as well as they could" on the ELA section of the CAHSEE (see Appendix A, Table A18).

Question 7 was "Were the topics on the test covered in courses you have taken?" The computed Chi-square value was 40.394. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban ELLs and suburban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (50%) responded more frequently than ELLs (27%) "yes, all of them" regarding topics covered in courses they have taken. ELLs (45%) responded more frequently than English-only students (34%) "most, but not all of them" regarding topics covered in courses they have taken (see Appendix A, Table A19).

Question 8 was "Were any of the questions on the test different from the types of questions or answer options you have encountered in your homework assignments or classroom tests?" The computed Chi-square value was 51.140. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban ELLs and suburban English-only students regarding their perceptions about preparation that may contribute to

outcomes on the ELA section of the CAHSEE. English-only students (42%) responded more frequently than ELLs (19%) "no, all questions were similar" regarding the questions they saw on the CAHSEE compared to those seen in their courses. ELLs responded "yes, many were different" (18%) or "yes, a few questions were different" (44%) more frequently than English-only students (6% and 23%) regarding the questions they saw on the CAHSEE compared to those seen in their courses (see Appendix A, Table A20).

Question 9 was "Were the questions on this test more difficult than questions you were given in classroom tests or homework assignments?" The computed Chi-square value was 39.327. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban ELLs and suburban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students responded "generally easier" (24%) or "generally about as difficult" (54%) more frequently than ELLs (12% and 46%) regarding question difficulty on the CASHEE compared to questions they have seen in their courses. ELLs (23%) responded more frequently than English-only students (9%) "yes, generally more difficult" regarding question difficulty on the CASHEE compared to questions they have seen in their courses (see Appendix A, Table A21).

Question 10 was "If some topics on the test were difficult for you, was it because?" The computed Chi-square value was 34.375. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the

distribution of responses between suburban ELLs and suburban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students responded "none of the topics were difficult" (24%) or "forgotten about the topics" (41%) more frequently than ELLs (13% and 31%) when responding to why topics may have been difficult on the CAHSEE. ELLs responded "did not take courses that covered the material" (13%) or "had trouble with the topics in the courses taken" (22%) more frequently than English-only students (5% and 17%) when responding to why topics may have been difficult on the CAHSEE (see Appendix A, Table A22).

Question 11 was "Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?" The computed Chi-square value was 79.642. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban ELLs and suburban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (35%) more frequently than ELLs (8%) responded that they "do not need to work harder to pass the CAHSEE". ELLs responded "getting help outside of my classroom" (11%) or will "stay in school an additional year" (11%) more frequently than English-only students (4% and 4%) (see Appendix A, Table A23).

Question 12 was "If you do not pass the CAHSEE in this administration, what are you most likely to do?" The computed Chi-square value was 24.183. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference

in the distribution of responses between suburban ELLs and suburban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (58%) responded more frequently than ELLs (45%) that they "will stay in school until I pass CAHSEE" regarding plans if they do not pass the CAHSEE. ELLs (6%) responded more frequently than English-only students (1%) that they will "take classes at a community college" if they do not pass the CAHSEE (see Appendix A, Table A24).

### **Findings Related to Hypothesis 1c**

*H1c.* There is a significant difference in the distribution of questionnaire responses between urban English language learner students' and urban English-only students' perceptions regarding preparation that may contribute to outcomes on the ELA section of the CAHSEE.

Table 4 shows the Chi-square values and p values for responses to each question. The analyses are based on the responses of urban ELLs and urban English-only students after the administration of the ELA section of the CAHSEE.

Table 4

*Chi-square test of independence between urban English language learners and urban English-only students on the ELA section of the CAHSEE*

Question	$\chi^2$	<i>df</i>	<i>p</i>
Q1	3.915	5	.562
Q2	10.798	6	.095
Q3	18.871	6	.004*
Q4	14.722	5	.012*
Q5	10.552	6	.103
Q6	9.296	6	.158
Q7	14.247	3	.003*
Q8	23.572	3	.001*
Q9	10.591	3	.014*
Q10	22.009	4	.001*
Q11	38.537	6	.001*
Q12	13.810	6	.032*

\* $p < .05$

Question 1 was "How did you prepare for this test?" The computed Chi-square value was 3.915. Since the computed probability ( $p = .562$ ) was greater than .05, there was no significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE (see Appendix A, Table A25).

Question 2 was "What materials did you use to prepare for this test?" The computed Chi-square value was 10.798. Since the computed probability ( $p = .095$ ) was greater than .05, there was no significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE (see Appendix A, Table A26).

Question 3 was "Do you think you will receive a high school diploma?" The computed Chi-square value was 18.871. Since the computed probability ( $p = .004$ ) was less than .05, there was a significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (60%) responded more frequently than ELLs (50%) that they will receive their high school diploma "with their class" (see Appendix A, Table A27).

Question 4 was "What might prevent you from receiving a high school diploma?" The computed Chi-square value was 14.722. Since the computed probability ( $p = .012$ ) was less than .05, there was a significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (38%) responded more frequently than ELLs (32%) that "I am confident I will earn my diploma". English-only students (21%) also responded more frequently than ELLs (15%) that they "may not pass all courses" as a reason why they will not earn their high school diploma. ELLs (15%) responded more frequently than English-only students (10%) that "not passing the CAHSEE" will prevent them from receiving their high school diploma (see Appendix A, Table A28).

Question 5 was "What do you think you will do after high school?" The computed Chi-square value was 10.552. Since the computed probability ( $p = .103$ )

was greater than .05, there was no significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE (see Appendix A, Table A29).

Question 6 was "How well did you do on this test?" The computed Chi-square value was 9.296. Since the computed probability ( $p = .158$ ) was greater than .05, there was no significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE (see Appendix A, Table A30).

Question 7 was "Were the topics on the test covered in courses you have taken?" The computed Chi-square value was 14.247. Since the computed probability ( $p = .003$ ) was less than .05, there was a significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (46%) responded more frequently than ELLs (32%) "yes, all of them" regarding topics covered in courses they have taken. ELLs (36%) responded more frequently than English-only students (28%) "most, but not all of them" regarding topics covered in the courses they have taken (see Appendix A, Table A31).

Question 8 was "Were any of the questions on the test different from the types of questions or answer options you have encountered in your homework assignments

or classroom tests?" The computed Chi-square value was 23.572. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (34%) responded more frequently than ELLs (20%) "no, all questions were similar" regarding the questions they saw on the CAHSEE compared to those seen in their courses. ELLs (16%) responded more frequently than English-only students (9%) "yes, many were different" regarding the questions they saw on the CAHSEE compared to those seen in their courses (see Appendix A, Table A32).

Question 9 was "Were the questions on this test more difficult than questions you were given in classroom tests or homework assignments?" The computed Chi-square value was 10.591. Since the computed probability ( $p = .014$ ) was less than .05, there was a significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students responded "generally easier" (22%) or "generally about as difficult" (44%) more frequently than ELLs (17% and 37%) regarding question difficulty on the CASHEE compared to questions they have seen in their courses. ELLs (19%) responded more frequently than English-only students (12%) "yes, generally more difficult" regarding question difficulty on the CASHEE compared to questions they have seen in their courses (see Appendix A, Table A33).

Question 10 was "If some topics on the test were difficult for you, was it because?" The computed Chi-square value was 22.009. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students responded "none of the topics were difficult" (22%) or "forgotten about the topics" (35%) more frequently than ELLs (15% and 29%) when responding to why topics may have been difficult on the CAHSEE. ELLs (12%) responded more frequently than English-only students (5%) that they "did not take courses that covered the material" when responding to why topics may have been difficult on the CAHSEE (see Appendix A, Table A34).

Question 11 was "Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?" The computed Chi-square value was 38.537. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (31%) more frequently than ELLs (14%) responded that they "do not need to work harder to pass the CAHSEE". ELLs (8%) responded more frequently than English-only students (3%) that they are "getting help outside of my classroom" to pass the CAHSEE (see Appendix A, Table A35).

Question 12 was "If you do not pass the CAHSEE in this administration, what are you most likely to do?" The computed Chi-square value was 13.810. Since the computed probability ( $p = .032$ ) was less than .05, there was a significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. English-only students (53%) responded more frequently than ELLs (46%) that they "will stay in school until I pass CAHSEE" regarding plans if they do not pass the CAHSEE (see Appendix A, Table A36).

#### **Findings Related to Hypothesis 1d**

*H1d.* There is a significant difference in the distribution of questionnaire responses between rural Special Education (SPED) students' and rural General Education students' perceptions regarding preparation that may contribute to outcomes on the ELA section of the CAHSEE.

Table 5 shows the Chi-square values and p values for responses to each question. The analyses are based on the responses of rural SPED and rural General Education students after the administration of the ELA section of the CAHSEE.

Table 5

*Chi-square test of independence between rural Special Education students and rural General Education students on the ELA section of the CAHSEE*

Question	$\chi^2$	<i>df</i>	<i>p</i>
Q1	31.799	4	.001*
Q2	34.769	6	.001*
Q3	44.780	6	.001*
Q4	35.614	5	.001*
Q5	47.208	6	.001*
Q6	31.350	6	.001*
Q7	35.778	3	.001*
Q8	37.564	3	.001*
Q9	46.853	3	.001*
Q10	32.954	4	.001*
Q11	45.160	6	.001*
Q12	34.526	6	.001*

\* $p < .05$

Question 1 was "How did you prepare for this test?" The computed Chi-square value was 31.799. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of response between rural SPED and rural General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (29%) responded more frequently than SPED students (10%) that they "did nothing" to pass the ELA section of the CAHSEE. SPED students (48%) did not respond to the question more frequently than General Education students (19%) (see Appendix A, Table A37).

Question 2 was "What materials did you use to prepare for this test?" The computed Chi-square value was 34.769. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses

between rural SPED and rural General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (32%) responded more frequently than SPED students (14%) that they "used no material" to pass the ELA section of the CAHSEE. SPED students (48%) did not respond to the question more frequently than General Education students (19%) (see Appendix A, Table A38).

Question 3 was "Do you think you will receive a high school diploma?" The computed Chi-square value was 44.780. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural SPED and rural General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (72%) responded more frequently than SPED students (35%) that they will earn their high school diploma "with their class". SPED students (52%) did not respond to the question more frequently than General Education students (20%) (see Appendix A, Table A39).

Question 4 was "What might prevent you from receiving a high school diploma?" The computed Chi-square value was 35.614. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural SPED and rural General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (61%) responded more frequently than SPED students (29%) that they are "confident I will earn my

diploma". SPED students (48%) did not respond to the question more frequently than General Education students (19%) (see Appendix A, Table A40).

Question 5 was "What do you think you will do after high school?" The computed Chi-square value was 47.208. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural SPED and rural General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (50%) responded more frequently than SPED students (16%) that they will attend a "4-year college or university" upon completion of high school. SPED students (61%) did not respond to the question more frequently than General Education students (23%) (see Appendix A, Table A41).

Question 6 was "How well did you do on this test?" The computed Chi-square value was 31.350. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural SPED and rural General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (71%) responded more frequently than SPED students (45%) that they "did as well as they could" on the ELA section of the CAHSEE. SPED students (48%) did not respond to the question more frequently than General Education students (19%) (see Appendix A, Table A42).

Question 7 was "Were the topics on the test covered in courses you have taken?" The computed Chi-square value was 35.778. Since the computed probability

( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural SPED and rural General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (47%) responded more frequently than SPED students (19%) "yes, all of them" regarding topics on the CAHSEE compared to topics covered in courses they have taken. SPED students (48%) did not respond to the question more frequently than General Education students (19%) (see Appendix A, Table A43).

Question 8 was "Were any of the questions on the test different from the types of questions or answer options you have encountered in your homework assignments or classroom tests?" The computed Chi-square value was 37.564. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural SPED and rural General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (35%) responded more frequently than SPED students (10%) "no, all questions were similar" regarding the questions they saw on the CAHSEE compared to those seen in their courses. SPED students (48%) did not respond to the question more frequently than General Education students (19%) (see Appendix A, Table A44).

Question 9 was "Were the questions on this test more difficult than questions you were given in classroom tests or homework assignments?" The computed Chi-square value was 46.853. Since the computed probability ( $p = .001$ ) was less than

.05, there was a significant difference in the distribution of responses between rural SPED and rural General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (31%) responded more frequently than SPED students (1%) "generally easier" regarding question difficulty on the CASHEE compared to questions they have seen in their courses. SPED students (49%) did not respond to the question more frequently than General Education students (20%) (see Appendix A, Table A45).

Question 10 was "If some topics on the test were difficult for you, was it because?" The computed Chi-square value was 32.954. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural SPED and rural General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (33%) responded more frequently than SPED students (10%) "none of the topics were difficult" when responding to why topics may have been difficult on the CAHSEE. SPED students (49%) did not respond to the question more frequently than General Education students (20%) (see Appendix A, Table A46).

Question 11 was "Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?" The computed Chi-square value was 45.160. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural SPED and rural General

Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (49%) responded more frequently than SPED students (14%) that they "do not need to work harder to pass CAHSEE". SPED students (48%) did not respond to the question more frequently than General Education students (19%) (see Appendix A, Table A47).

Question 12 was "If you do not pass the CAHSEE in this administration, what are you most likely to do?" The computed Chi-square value was 34.526. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between rural SPED and rural General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (63%) responded more frequently than SPED students (35%) that they will "stay in school until they pass CAHSEE". SPED students (54%) did not respond to the question more frequently than General Education students (21%) (see Appendix A, Table A48).

### **Findings Related to Hypothesis 1e**

*H1e.* There is a significant difference in the distribution of questionnaire responses between suburban Special Education students' and suburban General Education students' perceptions regarding preparation that may contribute to outcomes on the ELA section of the CAHSEE.

Table 6 shows the Chi-square values and p values for responses to each question. The analyses are based on the responses of suburban SPED and suburban

General Education students after the administration of the ELA section of the CAHSEE.

Table 6

*Chi-square test of independence between suburban Special Education students and suburban General Education students on the ELA section of CAHSEE*

Question	$\chi^2$	<i>df</i>	<i>p</i>
Q1	118.656	5	.001*
Q2	127.574	6	.001*
Q3	140.969	5	.001*
Q4	146.969	5	.001*
Q5	94.911	6	.001*
Q6	122.211	6	.001*
Q7	119.288	3	.001*
Q8	125.922	3	.001*
Q9	132.851	3	.001*
Q10	112.930	4	.001*
Q11	129.540	6	.001*
Q12	72.620	6	.001*

\* $p < .05$

Question 1 was "How did you prepare for this test?" The computed Chi-square value was 118.656. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban SPED and suburban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (39%) responded more frequently than SPED students (22%) that they "practiced" to pass the ELA section of the CAHSEE. SPED students (51%) did not respond to the question more frequently than General Education students (9%) (see Appendix A, Table A49).

Question 2 was "What materials did you use to prepare for this test?" The computed Chi-square value was 127.574. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban SPED and suburban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (22%) responded more frequently than SPED students (7%) that they used "released test questions" to pass the ELA section of the CAHSEE. SPED students (53%) did not respond to the question more frequently than General Education students (10%) (see Appendix A, Table A50).

Question 3 was "Do you think you will receive a high school diploma?" The computed Chi-square value was 140.969. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban SPED and suburban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (72%) responded more frequently than SPED students (30%) that they will earn their high school diploma "with their class". SPED students (55%) did not respond to the question more often than General Education students (10%) (see Appendix A, Table A51).

Question 4 was "What might prevent you from receiving a high school diploma?" The computed Chi-square value was 146.969. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban SPED and suburban General Education

students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (48%) responded more frequently than SPED students (11%) that they are "confident I will earn my diploma". SPED students (53%) did not respond to the question more frequently than General Education students (9%) (see Appendix A, Table A52).

Question 5 was "What do you think you will do after high school?" The computed Chi-square value was 94.911. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban SPED and suburban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (60%) responded more frequently than SPED students (22%) that they will attend a "4-year college or university" upon completion of high school. SPED students (55%) did not respond to the question more frequently than General Education students (14%) (see Appendix A, Table A53).

Question 6 was "How well did you do on this test?" The computed Chi-square value was 122.211. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban SPED and suburban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (81%) responded more frequently than SPED students (35%) that they "did as well as they could" on the ELA section of the

CAHSEE. SPED students (51%) did not respond to the question more frequently than General Education students (10%) (see Appendix A, Table A54).

Question 7 was "Were the topics on the test covered in courses you have taken?" The computed Chi-square value was 119.288. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban SPED and suburban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (48%) responded more frequently than SPED students (20%) "yes, all of them" regarding topics on the CAHSEE compared to topics covered in courses they have taken. SPED students (52%) did not respond to the question more frequently than General Education students (10%) (see Appendix A, Table A55).

Question 8 was "Were any of the questions on the test different from the types of questions or answer options you have encountered in your homework assignments or classroom tests?" The computed Chi-square value was 125.922. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban SPED and suburban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students responded "no, all questions were similar" (39%) or "yes, a few questions were different" (43%) more frequently than SPED students (14% and 22%) regarding the questions they saw on the CAHSEE compared to those seen in their courses. SPED

students (53%) did not respond to the question more frequently than General Education students (10%) (see Appendix A, Table A56).

Question 9 was "Were the questions on this test more difficult than questions you were given in classroom tests or homework assignments?" The computed Chi-square value was 132.851. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban SPED and suburban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students responded "generally about as difficult" (56%) or "generally easier" (22%) more frequently than SPED students (16% and 11%) regarding question difficulty on the CAHSEE compared to questions they have seen in their courses. SPED students (53%) did not respond to the question more frequently than General Education students (10%) (see Appendix A, Table A57).

Question 10 was "If some topics on the test were difficult for you, was it because?" The computed Chi-square value was 112.930. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban SPED and suburban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students responded "forgotten about these topics" (41%) or "none of the topics were difficult" (23%) more frequently than SPED students (18% and 10%) when responding to why topics may have been difficult on the CAHSEE. SPED students (53%) did not

respond to the question more frequently than General Education students (11%) (see Appendix A, Table A58).

Question 11 was "Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?" The computed Chi-square value was 129.540. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban SPED and suburban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (32%) responded more frequently than SPED students (3%) that they "do not need to work harder to pass CAHSEE". SPED students (52%) did not respond to the question more frequently than General Education students (10%) (see Appendix A, Table A59).

Question 12 was "If you do not pass the CAHSEE in this administration, what are you most likely to do?" The computed Chi-square value was 72.620. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between suburban SPED and suburban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (59%) responded more frequently than SPED students (23%) that they will "stay in school until they pass CAHSEE". SPED students (58%) did not respond to the question more frequently than General Education students (22%) (see Appendix A, Table A60).

### Findings Related to Hypothesis 1f

*H1f.* There is a significant difference in the distribution of questionnaire responses between urban Special Education students' and urban General Education students' perceptions regarding preparation that may contribute to outcomes on the ELA section of the CAHSEE.

Table 7 shows the Chi-square values and p values for responses to each question. The analyses are based on the responses of urban SPED and urban General Education students after the administration of the ELA section of the CAHSEE.

Table 7

*Chi-square test of independence between urban Special Education students and urban General Education students on the ELA section of CAHSEE*

Question	$\chi^2$	<i>df</i>	<i>p</i>
Q1	96.095	5	.001*
Q2	99.173	6	.001*
Q3	99.260	6	.001*
Q4	99.645	5	.001*
Q5	80.659	6	.001*
Q6	109.681	6	.001*
Q7	93.349	3	.001*
Q8	93.557	3	.001*
Q9	90.267	3	.001*
Q10	82.483	4	.001*
Q11	91.798	6	.001*
Q12	60.942	6	.001*

\* $p < .05$

Question 1 was "How did you prepare for this test?" The computed Chi-square value was 96.095. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between urban SPED and urban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE.

General Education students (39%) responded more frequently than SPED students (16%) that they "practiced" to pass the ELA section of the CAHSEE. SPED students (60%) did not respond to the question more frequently than General Education students (18%) (see Appendix A, Table A61).

Question 2 was "What materials did you use to prepare for this test?" The computed Chi-square value was 99.173. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between urban SPED and urban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (20%) responded more frequently than SPED students (6%) that they used "released test questions" to pass the ELA section of the CAHSEE. SPED students (61%) did not respond to the question more frequently than General Education students (19%) (see Appendix A, Table A62).

Question 3 was "Do you think you will receive a high school diploma?" The computed Chi-square value was 99.260. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between urban SPED and urban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (62%) responded more frequently than SPED students (25%) that they will earn their high school diploma "with their class". SPED students (61%) did not respond to the question more frequently than General Education students (19%) (see Appendix A, Table A63).

Question 4 was "What might prevent you from receiving a high school diploma?" The computed Chi-square value was 99.645. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between urban SPED and urban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (40%) responded more frequently than SPED students (11%) that they are "confident I will earn my diploma". SPED students (60%) did not respond to the question more frequently than General Education students (19%) (see Appendix A, Table A64).

Question 5 was "What do you think you will do after high school?" The computed Chi-square value was 80.659. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between urban SPED and urban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (39%) responded more frequently than SPED students (11%) that they will attend a "4-year college or university" upon completion of high school. SPED students (63%) did not respond to the question more frequently than General Education students (24%) (see Appendix A, Table A65).

Question 6 was "How well did you do on this test?" The computed Chi-square value was 109.681. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between urban

SPED and urban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (70%) responded more frequently than SPED students (22%) that they "did as well as they could" on the ELA section of the CAHSEE. SPED students (61%) did not respond to the question more frequently than General Education students (19%) (see Appendix A, Table A66).

Question 7 was "Were the topics on the test covered in courses you have taken?" The computed Chi-square value was 93.349. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between urban SPED and urban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (46%) responded more frequently than SPED students (18%) "yes, all of them" regarding topics on the CAHSEE compared to topics covered in courses they have taken. SPED students (61%) did not respond to the question more frequently than General Education students (19%) (see Appendix A, Table A67).

Question 8 was "Were any of the questions on the test different from the types of questions or answer options you have encountered in your homework assignments or classroom tests?" The computed Chi-square value was 93.557. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between urban SPED and urban General Education students regarding their perceptions about preparation that may contribute to

outcomes on the ELA section of the CAHSEE. General Education students (34%) responded more frequently than SPED students (7%) "no, all questions were similar" regarding the questions they saw on the CAHSEE compared to those seen in their courses. SPED students (60%) did not respond to the question more frequently than General Education students (19%) (see Appendix A, Table A68).

Question 9 was "Were the questions on this test more difficult than questions you were given in classroom tests or homework assignments?" The computed Chi-square value was 90.267. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between urban SPED and urban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (45%) responded more frequently than SPED students (18%) "generally about as difficult" regarding question difficulty on the CAHSEE compared to questions they have seen in their courses. SPED students (60%) did not respond to the question more frequently than General Education students (19%) (see Appendix A, Table A69).

Question 10 was "If some topics on the test were difficult for you, was it because?" The computed Chi-square value was 82.483. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between urban SPED and urban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (36%) responded more

frequently than SPED students (12%) "forgotten about these topics" when responding to why topics may have been difficult on the CAHSEE. SPED students (60%) did not respond to the question more frequently than General Education students (21%) (see Appendix A, Table A70).

Question 11 was "Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?" The computed Chi-square value was 91.798. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between urban SPED and urban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students responded "do not need to work harder to pass CAHSEE" (29%) or "are working hard in the classes I am taking" (37%) more frequently than SPED students (9% and 18%). SPED students (60%) did not respond to the question more frequently than General Education students (19%) (see Appendix A, Table A71).

Question 12 was "If you do not pass the CAHSEE in this administration, what are you most likely to do?" The computed Chi-square value was 60.942. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of responses between urban SPED and urban General Education students regarding their perceptions about preparation that may contribute to outcomes on the ELA section of the CAHSEE. General Education students (55%) responded more frequently than SPED students (19%) that they will "stay in school until they pass CAHSEE". SPED students (64%) did not respond to the question

more frequently than General Education students (29%) (see Appendix A, Table A72).

### **Findings Related to Mathematics Questionnaire for Hypotheses 1a-1f**

The mathematics questionnaire questions and responses were similar to the ELA questionnaire except for question 11, which asked, "Have you worked or will you work harder to the mathematics skills tested by the CAHSEE?" The questionnaire at the end of the ELA section referred to ELA skills tested, specifically. The results for the math questionnaire were similar to the ELA questionnaire responses, therefore, only a brief discussion of those questions that showed differences that were not significant on the ELA questionnaire will be discussed below. All results were significant for Special Education students compared to General Education students, so the results for these groups will not be discussed. The only questions that showed significant differences were those related to rural English language learners compared to rural English-only students and urban English language learners compared to urban English-only students.

Table 8 shows a side by side comparison of Chi-square results for the ELA and mathematics questionnaire for rural ELLs and rural English-only students.

Table 8

*Chi-square test of independence between rural English language learners and rural English-only students on the ELA & mathematics section of the CAHSEE*

Question	<i>ELA results</i>			<i>Mathematics results</i>		
	$\chi^2$	<i>df</i>	<i>p</i>	$\chi^2$	<i>df</i>	<i>p</i>
Q1	7.143	4	.129*	21.956	5	.001*
Q2	21.107	6	.002*	21.574	6	.001*
Q3	90.679	6	.001*	34.798	6	.001*
Q4	24.824	5	.001*	22.665	5	.001*
Q5	7.295	6	.294	18.387	6	.005*
Q6	24.234	6	.001*	10.950	6	.090
Q7	11.439	3	.010*	3.761	3	.288
Q8	29.709	3	.001*	19.014	3	.001*
Q9	44.620	3	.001*	13.734	3	.003*
Q10	13.758	4	.008*	8.358	4	.079
Q11	45.083	6	.001*	25.439	6	.001*
Q12	31.772	6	.001*	10.911	6	.091

\* $p < .05$

According to Table 8, Question 5 "What do you think you will do after high school?" was the only question that tested significant on the mathematics questionnaire and not significant on the ELA questionnaire. The computed Chi-square value was 18.387. Since the computed probability ( $p = .005$ ) was less than .05, there was a significant difference in the distribution of responses between rural ELLs and rural English-only students regarding their perceptions about preparation that may contribute to outcomes on the mathematics section of the CAHSEE. English-only students (44%) responded more frequently than ELLs (27%) that they plan to "attend a 4-year college" upon completion of high school. ELLs (41%) did not respond to the question more frequently than English-only students (29%) (see Appendix A, Table A73).

Table 9 shows a side by side comparison of Chi-square results for the ELA and mathematics questionnaire for urban ELLs and urban English-only students.

Table 9

*Chi-square test of independence between urban English language learners and urban English-only students on the ELA & mathematics section of the CAHSEE*

Question	ELA results			Mathematics results		
	$\chi^2$	<i>df</i>	<i>p</i>	$\chi^2$	<i>df</i>	<i>p</i>
Q1	3.915	5	.562	15.587	5	.008*
Q2	10.798	6	.095	18.000	6	.006*
Q3	18.871	6	.004*	27.802	6	.001*
Q4	14.722	5	.012*	8.928	5	.112
Q5	10.552	6	.103	13.075	6	.042*
Q6	9.296	6	.158	13.088	6	.042*
Q7	14.247	3	.003*	6.410	3	.093
Q8	23.572	3	.001*	11.251	3	.010*
Q9	10.591	3	.014*	11.769	3	.008*
Q10	22.009	4	.001*	2.851	4	.583
Q11	38.537	6	.001*	32.376	6	.001*
Q12	13.810	6	.032*	15.110	6	.019*

\* $p < .05$

According to Table 9, Questions 1, 2, 5 and 6 were significant at the  $p < .05$  level on the mathematics questionnaire. The mathematics results were different from the ELA questionnaire results, as these same questions were not significant.

Question 1 was "How did you prepare for this test?" The computed Chi-square value was 15.587. Since the computed probability ( $p = .008$ ) was less than .05, there was a significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation that may contribute to outcomes on the mathematics section of the CAHSEE.

English-only students (22%) responded more frequently than ELLs (12%) that they

"did nothing" to prepare for the mathematics section of the CAHSEE (see Appendix A, Table A74).

Question 2 was "What materials did you use to prepare for this test?" The computed Chi-square value was 18.000. Since the computed probability ( $p = .006$ ) was less than .05, there was a significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation that may contribute to outcomes on the mathematics section of the CAHSEE. English-only students responded "no materials" (17%) or "released test questions" (19%) more frequently than ELLs (10% and 12%) to pass the mathematics section of the CAHSEE (see Appendix A, Table A75).

Question 5 was "What do you think you will do after high school?" The computed Chi-square value was 13.075. Since the computed probability ( $p = .042$ ) was less than .05, there was a significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation that may contribute to outcomes on the mathematics section of the CAHSEE. English-only students (37%) responded more frequently than ELLs (28%) that they will attend a "4-year college or university" upon completion of high school (see Appendix A, Table A76).

Question 6 was "How well did you do on this test?" The computed Chi-square value was 13.088. Since the computed probability ( $p = .042$ ) was less than .05, there was a significant difference in the distribution of responses between urban ELLs and urban English-only students regarding their perceptions about preparation

that may contribute to outcomes on the mathematics section of the CAHSEE.

English-only students (63%) responded more frequently than ELLs (52%) they "did as well as they could" on the mathematics section of the CAHSEE (see Appendix A, Table A77).

### Post Hoc Analyses

Based on the results of Research Question 1, this researcher thought it was prudent to conduct additional Post Hoc analyses on a number of key variables with respect to pass rates on both the ELA and mathematics sections of the CAHSEE.

A Post Hoc analysis was conducted on pass rates on the ELA section of the CAHSEE between all three categories of high schools. Table 10 shows the Chi-square values and p values for all students in all three categories of high schools. The analyses are based on the pass rates of all students after the administration of the ELA section of the CAHSEE.

Table 10

*Chi-square test of independence between pass rates on the ELA section of the CAHSEE among all students*

Groups	$\chi^2$	<i>df</i>	<i>p</i>
Rural, suburban, & urban students	28.856	4	.001*

\* $p < .05$

According to Table 10, the computed Chi-square value was 28.856. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in pass rates between the three categories of high schools on the ELA section of the CAHSEE.

Table 11 shows the distribution of pass rates between the three categories of high schools. Students attending the rural high school had higher pass rates than students attending the urban high school.

Table 11

*Distribution of pass rates on the ELA section of the CAHSEE among all students*

	Fail		Pass		Did not take		Total	
Rural	69	14%	374	77%	40	8%	483	100%
Suburban	194	24%	579	70%	54	7%	827	100%
Urban	276	26%	691	66%	79	8%	1046	100%

A Post Hoc analysis was conducted on pass rates between ELLs and English-only students attending all three categories of high schools on the ELA section of the CAHSEE. Table 12 shows the Chi-square values and p values for ELLs and English-only students in all three categories of high schools. The analyses are based on the pass rates of ELLs and English-only students after the administration of the ELA section of the CAHSEE.

Table 12

*Chi-square test of independence between pass rates on the ELA section of the CAHSEE between ELLs and English-only students*

Groups	$\chi^2$	<i>df</i>	<i>p</i>
ELLs and English-only students	293.228	2	.001*

\* $p < .05$

According to Table 12, the computed Chi-square value was 293.228. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant

difference in pass rates on the ELA section of the CAHSEE between ELLs and English-only students who attend all three categories of high schools.

Table 13 shows the distribution of pass rates between ELLs and English-only students who attend the three categories of high schools. English-only students had higher pass rates than ELLs in all three categories of high schools.

Table 13

*Distribution of pass rates on the ELA section of the CASHEE between ELLs and English-only students*

	Fail		Pass		Did not take		Total	
ELLs	242	51%	185	39%	50	11%	477	100%
English-only	297	16%	1459	78%	123	7%	1879	100%

A Post Hoc analysis was conducted on pass rates between SPED students and General Education students attending all three high schools on the ELA section of the CAHSEE. Table 14 shows the Chi-square values and p values for SPED and General Education students in all three categories of high schools. The analyses are based on the pass rates of SPED and General Education students after the administration of the ELA section of the CAHSEE.

Table 14

*Chi-square test of independence between pass rates on the ELA section of the CAHSEE between SPED students and General Education students*

Groups	$\chi^2$	<i>df</i>	<i>p</i>
SPED and General Education students	371.867	2	.001*

\* $p < .05$

According to Table 14, the computed Chi-square value was 371.867. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant

difference in pass rates on the ELA section of the CAHSEE between SPED and General Education students who attend all three categories of high schools.

Table 15 shows the distribution of pass rates between SPED and General Education students who attend the three categories of high schools. General Education students had higher pass rates than SPED students in all three categories of high schools.

Table 15

*Distribution of pass rates on the ELA section of the CASHEE between SPED students and General Education students*

	Fail		Pass		Did not take		Total	
SPED	157	60%	47	18%	56	22%	260	100%
General Ed	382	18%	1597	76%	117	6%	2096	100%

Based on the differences in pass rates on the ELA section of the CAHSEE among all the groups in this study, this researcher believed an analysis of pass rates compared to specific questions on the ELA section of the CAHSEE was warranted. The questions that showed significant differences throughout this study were analyzed to find the greatest differences in responses and pass rates. Question 3, 4, and 11 on the ELA questionnaire showed the greatest differences in responses compared to pass rates and are discussed below.

Table 16 shows the Chi-square values and p values for all students in all three categories of high schools who responded to Question 3 on the questionnaire. The analyses are based on the pass rates of all students after the administration of the ELA section of the CAHSEE.

Table 16

*Chi-square test of independence between pass rates on the ELA section of the CAHSEE among all students on Question 3: Do you think you will receive a high school diploma?*

Groups	$\chi^2$	<i>df</i>	<i>p</i>
Rural, suburban, & urban students	952.082	12	.001*

\* $p < .05$

Question 3 was "Do you think you will receive a high school diploma?" The computed Chi-square value was 952.082. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of pass rates on Question 3 on the ELA section of the CAHSEE among all students.

Table 17 shows the distribution of pass rates for all students who attend the three categories of high schools. According to Table 16, "yes, with my class" revealed the greatest difference in perceptions. The results show higher pass rates for those students who chose this response more than any other response.

Table 17

*Distribution of responses on Question 3: Do you think you will receive a high school diploma?*

	Pass		Fail	
	Total	%	Total	%
No Response	186	11%	128	24%
Yes, with my class	1271	77%	219	41%
Yes, after taking more classes	137	8%	108	20%
Yes, in adult school	23	1%	32	6%
No, I will not receive a diploma	21	1%	37	7%
No, I will take the GED	5	0%	7	1%
No, I will go to a community college	1	0%	8	2%

Table 18 shows the Chi-square values and p values for all students in all three categories of high schools who responded to Question 4 on the questionnaire. The analyses are based on the pass rates of all students after the administration of the ELA section of the CAHSEE.

Table 18

*Chi-square test of independence between pass rates on the ELA section of the CAHSEE among all students on Question 4: What might prevent you from receiving a high school diploma?*

Groups	$\chi^2$	<i>df</i>	<i>p</i>
Rural, suburban, & urban students	863.192	10	.001*

\* $p < .05$

Question 4 was "What might prevent you from receiving a high school diploma?" The computed Chi-square value was 863.192. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of pass rates on Question 4 on the ELA section of the CAHSEE among all students.

Table 19 shows the distribution of pass rates for all students who attend the three categories of high schools. According to Table 18, "I am confident I will earn a diploma" revealed the greatest difference in perceptions. The results show higher pass rates for those students who chose this response more than any other response.

Table 19

*Distribution of responses on Question 4: What might prevent you from receiving a high school diploma?*

	Pass		Fail	
	Total	%	Total	%
No Response	178	11%	122	23%
May not pass all my courses	328	20%	102	19%
Not passing the CAHSEE	151	9%	112	21%
Drop out before the 12th Grade	15	1%	12	2%
Not meeting other graduation req.	87	5%	53	10%
I am confident I will earn a diploma	885	54%	138	26%

Table 20 shows the Chi-square values and p values for all students in all three categories of high schools who responded to Question 11 on the questionnaire. The analyses are based on the pass rates of all students after the administration of the ELA section of the CAHSEE.

Table 20

*Chi-square test of independence between pass rates on the ELA section of the CAHSEE among all students on Question 11: Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?*

Groups	$\chi^2$	<i>df</i>	<i>p</i>
Rural, suburban, & urban students	948.446	12	.001*

\* $p < .05$

Question 11 was "Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?" The computed Chi-square value was 948.446. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of pass rates on Question 11 on the ELA section of the CAHSEE among all students.

Table 21 shows the distribution of pass rates for all students who attend the three categories of high schools. According to Table 20, "I do not need to work harder to pass the CAHSEE" revealed the greatest difference in perceptions. The results show higher pass rates for those students who chose this response more than any other response.

Table 21

*Distribution of responses on Question 11: Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?*

Response	Pass		Fail	
	Total	%	Total	%
No Response	183	11%	126	23%
I do not need to work harder to pass	674	41%	52	10%
I am taking additional courses	60	4%	38	7%
I am working hard in the classes I am taking	603	37%	193	36%
I am getting help outside of my class	49	3%	55	10%
I am repeating a course to learn more material	24	2%	25	5%
I will stay in school an additional year to learn the material	51	3%	50	9%

### **Mathematics Post Hoc Analyses**

A Post Hoc analysis was conducted on pass rates on the mathematics section of the CAHSEE between all three categories of high schools. Table 22 shows the Chi-square values and p values for all students in all three categories of high schools. The analyses are based on the pass rates of all students after the administration of the mathematics section of the CAHSEE.

Table 22

*Chi-square test of independence between pass rates on the mathematics section of the CAHSEE among all students*

Groups	$\chi^2$	<i>df</i>	<i>p</i>
Rural, suburban, & urban students	50.889	4	.001*

\**p* < .05

According to Table 22, the computed Chi-square value was 50.889. Since the computed probability (*p* = .001) was less than .05, there was a significant difference in pass rates between the three categories of high schools on the mathematics section of the CAHSEE.

Table 23 shows the distribution of pass rates between the three categories of high schools. Students attending the rural high school had higher pass rates than students attending the urban high school.

Table 23

*Distribution of pass rates on the mathematics section of the CAHSEE among all students*

	Fail		Pass		Did not take		Total	
Rural	51	11%	391	81%	41	9%	483	100%
Suburban	172	21%	602	73%	53	6%	827	100%
Urban	271	26%	688	66%	87	8%	1046	100%

A Post Hoc analysis was conducted on pass rates between ELLs and English-only students attending all three categories of high schools on the mathematics section of the CAHSEE. Table 24 shows the Chi-square values and *p* values for ELLs and English-only students in all three categories of high schools. The analyses

are based on the pass rates of ELLs and English-only students after the administration of the mathematics section of the CAHSEE.

Table 24

*Chi-square test of independence between pass rates on the mathematics section of the CAHSEE between ELLs and English-only students*

Groups	$\chi^2$	<i>df</i>	<i>p</i>
ELLs and English-only students	148.325	2	.001*

\* $p < .05$

According to Table 24, the computed Chi-square value was 148.325. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in pass rates on the mathematics section of the CAHSEE between ELLs and English-only students attending all three categories of high schools.

Table 25 shows the distribution of pass rates between ELLs and English-only students who attend the three categories of high schools. English-only students had higher pass rates than ELLs in all three categories of high schools.

Table 25

*Distribution of pass rates on the mathematics section of the CASHEE between ELLs and English-only students*

	Fail		Pass		Did not take		Total	
ELLs	192	40%	238	50%	47	10%	477	100%
English-only	302	16%	1443	77%	134	7%	1879	100%

A Post Hoc analysis was conducted on pass rates between SPED and General Education students attending all three categories of high schools on the mathematics section of the CAHSEE. Table 26 shows the Chi-square values and *p* values for SPED and General Education students in all three categories of high schools. The

analyses are based on the pass rates of SPED and General Education students after the administration of the mathematics section of the CAHSEE.

Table 26

*Chi-square test of independence between pass rates on the mathematics section of the CAHSEE between SPED students and General Education students*

Groups	$\chi^2$	<i>df</i>	<i>p</i>
SPED and General Education students	379.075	2	.001*

\* $p < .05$

According to Table 26, the computed Chi-square value was 379.075. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in pass rates on the mathematics section of the CAHSEE between SPED students and General Education students attending all three categories of high schools.

Table 27 shows the distribution of pass rates between SPED and General Education students who attend the three categories of high schools. General Education students had higher pass rates than SPED students in all three categories of high schools.

Table 27

*Distribution of pass rates on the mathematics section of the CASHEE between SPED students and General Education students*

	Fail		Pass		Did not take		Total	
SPED	147	57%	52	20%	61	24%	260	100%
General Ed	347	17%	1629	78%	120	6%	2096	100%

Based on the differences in pass rates on the mathematics section of the CAHSEE among all the groups in this study, this researcher believed an analysis of

pass rates compared to specific questions on the mathematics section of the CAHSEE was warranted. The questions that showed significant differences throughout this study were analyzed to find the greatest differences in responses and pass rates. Question 3, 4, and 11 of the mathematics questionnaire showed the greatest differences in responses compared to pass rates and are discussed below.

Table 28 shows the Chi-square values and p values for all students in all three categories of high schools who responded to Question 3 on the questionnaire. The analyses are based on the pass rates of all students after the administration of the mathematics section of the CAHSEE.

Table 28

*Chi-square test of independence between pass rates on the mathematics section of the CAHSEE among all students on Question 3: Do you think you will receive a high school diploma?*

Groups	$\chi^2$	<i>df</i>	<i>p</i>
Rural, suburban, & urban students	1058.193	12	.001*

\**p* < .05

Question 3 was "Do you think you will receive a high school diploma?" The computed Chi-square value was 1058.1932. Since the computed probability (*p* = .001) was less than .05, there was a significant difference in the distribution of pass rates on Question 3 on the mathematics section of the CAHSEE among all students.

Table 29 shows the distribution of pass rates for all students who attend the three categories of high schools. According to Table 29, "yes, with my class" revealed the greatest difference in perceptions. The results show higher pass rates for those students who chose this response more than any other response.

Table 29

*Distribution of responses on Question 3: Do you think you will receive a high school diploma?*

Response	Pass		Fail	
	Total	%	Total	%
No response	199	12%	102	21%
Yes, with my class	1270	76%	193	40%
Yes, after taking more classes	147	9%	110	22%
Yes, in adult school	23	1%	26	5%
No, I won't receive a diploma	31	2%	49	10%
No, I will take the GED	2	0%	12	2%
No, I will go to a community college	9	1%	2	0%

Table 30 shows the Chi-square values and p values for all students in all three categories of high schools who responded to Question 4 on the questionnaire. The analyses are based on the pass rates of all students after the administration of the mathematics section of the CAHSEE.

Table 30

*Chi-square test of independence between pass rates on the mathematics section of the CAHSEE among all students on Question 4: What might prevent you from receiving a high school diploma?*

Groups	$\chi^2$	$df$	$p$
Rural, suburban, & urban students	940.412	10	.001*

\* $p < .05$

Question 4 was "What might prevent you from receiving a high school diploma?" The computed Chi-square value was 940.412. Since the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of pass rates on Question 4 on the mathematics section of the CAHSEE among all students.

Table 31 shows the distribution of pass rates for all students who attend the three categories of high schools. According to Table 31, "I am confident I will earn a diploma" revealed the greatest difference in perceptions. The results show higher pass rates for those students who chose this response more than any other response.

Table 31

*Distribution of responses on Question 4: What might prevent you from receiving a high school diploma?*

Response	Pass		Fail	
	Total	%	Total	%
No response	194	12%	101	20%
May not pass all of my courses	342	20%	128	26%
Not passing the CAHSEE	203	12%	116	24%
Drop out before the 12th grade	24	1%	12	2%
Not meeting other graduation require.	76	5%	43	9%
I am confident I will earn a diploma	842	50%	94	19%

Table 32 shows the Chi-square values and p values for all students in all three categories of high schools who responded to Question 11 on the questionnaire. The analyses are based on the pass rates of all students after the administration of the mathematics section of the CAHSEE.

Table 32

*Chi-square test of independence between pass rates on the mathematics section of the CAHSEE among all students on Question 11: Have you worked or will you work harder to learn the mathematics skills tested by the CAHSEE?*

Groups	$\chi^2$	<i>df</i>	<i>p</i>
Rural, suburban, & urban students	921.811	12	.001*

\**p* < .05

Question 11 was "Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?" The computed Chi-square value was 921.811. Since

the computed probability ( $p = .001$ ) was less than .05, there was a significant difference in the distribution of pass rates on Question 11 on the mathematics section of the CAHSEE among all students.

Table 33 shows the distribution of pass rates for all students who attend the three categories of high schools. According to Table 33, "I do not need to work harder to pass the CAHSEE" revealed the greatest difference in perceptions. The results show higher pass rates for those students who chose this response more than any other response.

Table 33

*Distribution of responses on Question 11: Have you worked or will you work harder to learn the mathematics skills tested by the CAHSEE?*

Response	Pass		Fail	
	Total	%	Total	%
No response	201	12%	106	22%
I do not need to work any harder to meet the CAHSEE requirement	599	36%	48	10%
I am taking additional courses	70	4%	35	7%
I am working harder in the courses I am taking	629	37%	187	38%
I am getting help outside of the class	59	4%	44	9%
I am repeating a course to learn the material better	68	4%	35	7%
I will stay in school an additional year to learn the required material	55	3%	39	8%

### **Findings Related to Hypothesis 2a**

**H2a.** There is a difference in mean scores on the mathematics section of the CAHSEE between students who participated in a preintervention program and students who did not.

An independent samples *t*-test was conducted to determine if there is a difference in mean scores on the mathematics section of the CAHSEE between students who participated in a preintervention program and students who did not. The results are reported in Table 34.

The results indicated a significant difference in mean scores on the mathematics section of the CAHSEE between students who participated in a pre-intervention program and students who did not. Students who did not enroll in a pre-intervention course (M=395.79, SD=29.916) had a significantly higher mean scores on the mathematics section of the CAHSEE than the students who enrolled in a pre-intervention program (M=366.72, SD=27.773),  $t = -7.455$ ,  $p < .05$ .

Table 34

*Independent samples t-test summary: Comparisons of mean scores between groups*

Variable	N	M	SD	<i>t</i>	<i>p</i>
Pre-Intervention in mathematics	141	366.72	27.773	-7.455	.001*
No Pre-intervention in mathematics	87	395.79	29.916		

\* $p < .05$

### **Findings Related to Hypothesis 2b**

**H2b.** There is a difference in mean scores on the English language arts section of the CAHSEE between students who participated in a preintervention program and students who did not.

An independent samples *t*-test was conducted to determine if there is a difference in mean scores on the ELA section of the CAHSEE between students who

participated in a preintervention program and students who did not. The results are reported in Table 35.

The results indicated a significant difference in mean scores on the ELA section of the CAHSEE between students who participated in a preintervention program and students who did not. Students who did not enroll in a preintervention course ( $M=396.57$ ,  $SD=25.690$ ) had significantly higher mean scores on the ELA section of the CAHSEE than the students who enrolled in a preintervention course ( $M=363.57$ ,  $SD=24.319$ ),  $t = -9.741$ ,  $p < .05$ .

Table 35

*Independent samples t-test summary: Comparisons of mean scores between groups*

Variable	N	M	SD	t	p
Pre-Intervention in ELA	141	363.57	24.319	-9.741	.001*
No Pre-intervention in ELA	87	396.57	25.690		

\* $p < .05$

### **Findings Related to Hypothesis 3a**

**H3a.** There is a difference in mean scores on the mathematics section of the CAHSEE of students before and after an intervention.

A paired samples  $t$ -test was conducted to determine whether there was a difference in mean mathematics CAHSEE scores of students before and after an intervention course. The results indicated that the mean score of students after they enrolled in an intervention ( $M = 330.04$ ,  $SD 20.897$ ) was significantly greater than the mean score of the same students prior to the intervention ( $M = 324.27$ ,  $SD 13.746$ ),  $t = -2.481$ ,  $p < .05$ . After taking the intervention course, students who took

the mathematics section of the CAHSEE the second time demonstrated significantly higher scores. The results are reported in Table 36.

Table 36

*Paired samples t-test of CAHSEE mathematic mean scores before and after intervention*

Variable	N	M	SD	t	p
Before mathematics intervention	51	324.27	13.746	-2.481	.016*
After mathematics intervention	51	330.04	20.897		

\* $p < .05$

### **Findings Related to Hypothesis 3b**

**H3b.** There is a difference in mean scores on the English language arts section of the CAHSEE of students before and after an intervention.

A paired samples *t*-test was conducted to determine whether there was a difference in mean ELA CAHSEE scores of students before and after an intervention course. The results indicated that the mean score of students after they enrolled in an intervention (M = 349.83, SD 16.971) was significantly greater than the mean score of the same students prior to the intervention (M = 331.50, SD 14.648),  $t = -7.938$ ,  $p < .05$ . After taking the intervention course, students who took the ELA section of the CAHSEE the second time demonstrated significantly higher scores. The results are reported in Table 37.

Table 37

*Paired samples t-test for CAHSEE English Language Arts scores after an intervention course*

Variable	N	M	SD	<i>t</i>	<i>p</i>
Before ELA intervention	48	331.50	14.648	-7.938	.001*
After ELA intervention	48	349.83	16.971		

\* $p < .05$

#### **Findings Related to Hypothesis 4a**

**H4a.** Academic factors explain more about student performance on the English language arts (ELA) section of the CAHSEE than demographic factors.

A stepwise multiple regression analysis was used to determine if academic factors (CST ELA score and level of English course) explain more about student performance on the ELA section of the CAHSEE than demographic factors (gender, ethnicity, socioeconomic status, years of teaching, and parent education level). In total, 25 independent variables were entered into the regression analysis. Table 38 provides the results of the 25 predictor model for ELA CAHSEE success (defined as a student passing the ELA section of the CASHEE with a score of 350 or higher). The regression model was statistically significant,  $R^2 = .757$ ,  $F_{7,240} = 111.169$ ,  $p < 0.001$  indicating the model was able to explain approximately 76% of the variance in the dependent variable (ELA CAHSEE score). Seven of the 25 independent variables made statistically significant contributions to the model.

Table 38

*Summary of the Multiple Regression Model Predicting English Language Arts success on the CAHSEE*

Predictor Variable	$\beta$	$t$	$p$
ELA CST Score in 9th grade	.837	23.959	.001*
Special Education English 10	-.178	-4.994	.001*
English 10 Honors	.119	3.258	.001*
English Learner	-.116	-3.042	.003*
Parent with High School Diploma	.078	2.455	.015*
Black	-.074	-2.282	.023*
Male	-.067	-2.102	.037*

\* $p < .05$

According to the model, gender (female), ethnicity (Hispanic, White, & other), language classification (English-only, Initial Fluent English Proficient, Reclassified Fluent English Proficient), SES (free, paid, reduced lunch), parent education level (no high school diploma, some college, college graduate, graduate degree, & decline to state), English courses (English 10 College Prep & English Language Development), and the number of years a teacher taught English were not significant predictors in this model.

According to the model, predictors that include English courses (Special Education English class), language classification (English Learner), ethnicity (Black/African American) and gender (male) were negatively related to achievement on the ELA section of the CAHSEE. The predictors that include achievement (CST

ELA score in 9th grade), English courses (English 10 Honors courses), parent education level (high school diploma) were positively related to student achievement on the ELA section of the CAHSEE. In other words, earning a higher score on the CSTs is related to achievement on the first administration of the ELA section of the CAHSEE. Also, there is a relationship between enrollment in a higher level English course and higher achievement on the ELA section of the CAHSEE. Finally, there is a relationship between parent education level (high school diploma) and higher achievement on the first administrations of the ELA section of the CAHSEE.

The CST ELA score is the strongest predictor of ELA CAHSEE success. Students with higher CST ELA scores prior to the administration of the ELA section of the CAHSEE explained nearly 70% of the variance in the dependent variable (ELA section of the CAHSEE). The other six variables explain the other 5% of variance in the dependent variable. In other words, the CST ELA score is a significant predictor of CAHSEE ELA scores. Therefore, the results of the multiple regression analysis support the hypothesis that academic factors explain more about student performance on the ELA section of the CAHSEE than demographic factors.

#### **Findings Related to Hypothesis 4b**

*H4b.* Academic factors explain more about student performance on the mathematics section of the CAHSEE than demographic factors.

A stepwise multiple regression was used to determine if academic factors (CST mathematics score and level of mathematics course) explain more about student performance on the mathematics section of the CAHSEE than demographic factors

(gender, ethnicity, socioeconomic status, years of teaching, and parent education level). In total, 26 independent variables were entered into the regression analysis. Table 39 provides the results of the 26 predictor model for mathematics CAHSEE success (defined as a student passing the mathematics section of the CASHEE with a score of 350 or higher). The regression model was statistically significant,  $R^2=.747$ ,  $F_{6,256} = 129.604$ ,  $p < 0.000$  indicating the model was able to explain approximately 75% of the variance in the dependent variable (mathematics CAHSEE score). Six of the 26 independent variables made statistically significant contributions to the model.

Table 39

*Summary of the Multiple Regression Model Predicting mathematics success on the CAHSEE*

Predictor Variable	$\beta$	$t$	$p$
Mathematics CST Score in 9th grade	.624	12.914	.001*
Pre-Calculus	.376	8.721	.001*
Algebra II	.412	11.308	.001*
Geometry	.123	2.198	.029*
Special Education Basic Mathematics	-.208	-6.120	.001*
English Learner	-.168	-4.904	.001*

\* $p < .05$

According to the model, gender, ethnicity, language classification (English-only, Initial Fluent English Proficient, Reclassified Fluent English Proficient), SES, parent education level, mathematics course (Algebra I), and the number of years a teacher taught mathematics were not significant predictors in this model.

According to the model, predictors that include mathematics courses (Special Education mathematic) and language classification (English Learner), were negatively related to achievement on the mathematics section of the CAHSEE. The predictors that include achievement (CST mathematics score in 9th grade), mathematics courses (Pre-Calculus, Algebra II, and Geometry) were positively related to student achievement on the mathematics section of the CAHSEE. In other words, earning a higher score on the mathematics CST, is related to higher achievement on the first administration of the mathematics section of the CAHSEE. Finally, there is a relationship between enrollment in a higher level mathematics course and higher achievement on the first administration of the mathematics section of the CAHSEE.

The CST mathematics score is the strongest predictor of mathematics CAHSEE success. Students with higher CST mathematics scores before taking the mathematics section of the CAHSEE explained nearly 39% of the variance in the dependent variable (mathematics CAHSEE score). The other five variables explain the other 36% of variance in the dependent variable. In other words, the CST mathematics score is a strong predictor, but other variables also help to predict the CAHSEE mathematics score. Therefore, the results of the multiple regression analysis support the hypothesis that academic factors explain more about student performance on the mathematics section of the CAHSEE than demographic factors.

## Summary

Chapter IV presented an analysis of the data collected. Preparation and intervention activities that are designed to increase pass rates on the California High School Exit Exam (CAHSEE) were tested through 12 hypotheses, and the results were subsequently reported in narratives and tables. Hypotheses 1a-1c were established to determine if differences existed between English language learners' and English-only students' perceptions after the administration of the ELA section of the CAHSEE. Both classifications of students were compared in each of the following settings: rural, suburban, and urban high schools in California. Many significant differences in perceptions between the groups were found leading to an acceptance of Hypotheses 1a-1c. The analysis suggested that compared to ELLs, English-only students were more confident, prepared less, and had clear plans after graduation.

Hypothesis 1d-1f were established to determine if differences existed between Special Education students' and General Education students' perceptions after the administration of the ELA section of the CAHSEE. Both classifications of students were compared in each of the following settings: rural, suburban, and urban high schools in California. All tested hypotheses showed significance leading to an acceptance of Hypotheses 1d-1f. The analysis suggested that compared to SPED students, General Education students were more confident, prepared less, and had clear plans after graduation.

Hypotheses 2a and 2b tested whether there is a difference in mean scores on the English language arts and mathematics sections of the CAHSEE between students who participated in a preintervention program and students who did not. The analysis of the test data showed significant differences leading to the acceptance of Hypotheses 2a and 2b. The analysis suggested that students who did not participate in a preintervention program outperformed those students who did.

Hypotheses 3a and 3b tested whether there is a difference in mean scores on the English language arts and mathematics sections of the CAHSEE of students before and after an intervention. The analysis of the test data showed significant differences leading to the acceptance of Hypotheses 3a and 3b. The analysis suggested that the intervention program improved scores on the second administration of the CAHSEE.

Hypotheses 4a and 4b tested whether academic factors explain more about student performance on the mathematics and ELA section of the CAHSEE, respectively, than demographic factors. The analysis of the test data showed significant differences leading to the acceptance of Hypotheses 4a and 4b. The analysis suggested that academic factors explain more about student performance on the CAHSEE than demographic factors. Chapter V discusses these results, draws conclusions, and includes implications for further study.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to determine factors that contribute to pass rates on the California High School Exit Examination (CAHSEE) based on (a) students' perceptions on preparation, familiarity of the content on the examination, and their reactions after taking the CAHSEE; (b) the effects of a preintervention program on students who are at-risk of not passing the CASHEE on the first administration compared to students who are at-risk but did not enroll in a preintervention program; (c) the effects of an intervention program for students who did not pass the CAHSEE the first time; and (d) demographic and academic factors that may explain pass rates on the first administration of the CAHSEE.

#### **Summary of Findings**

The results of this study and conclusions drawn by this researcher are discussed according to the following research questions which guided this study:

##### **Research Question 1**

What are students' perceptions regarding the effectiveness of preparation that may contribute to passing the California High School Exit Examination (CAHSEE)?

##### **Research Question 2**

Do preintervention programs affect student achievement on high school exit exams?

**Research Question 3**

Do intervention programs have an effect on passage rates of students who fail the first administration of a high school exit exam?

**Research Question 4**

How much of the student performance on the CAHSEE can be explained by the following variables: gender, ethnicity, socioeconomic status, advanced level courses, years of teaching, CST scores, and parent education level?

**Discussion on Research Question 1**

Research Question 1 asked whether differences exist in students' perceptions and students' preparation activities before and after taking the CAHSEE. To measure students' perceptions, preparation, and familiarity of the content on the examination and their plans after taking the CAHSEE, data were collected and analyzed from the March 2011 administration of the CAHSEE. The study consisted of 483 California students who attended a rural high school, 827 California students who attended a suburban high school, and 1,046 California students who attended an urban high school. Further, data were broken down demographically into four groups, English language learners (ELLs), English-only students, Special Education students (SPED), and General Education students. This study consisted of 477 ELLs, 1,879 English-only students, 260 SPED, and 2,096 General Education students.

The questions on the questionnaire were separated into the following four categories: students perceptions, preparation, familiarity of the content on the examination and plans after taking the CAHSEE. The results will be presented using

the four categories. Each question on the questionnaire was categorized as shown in the following:

**Student perceptions**

Q3: Do you think you will receive a high school diploma?

Q4: What might prevent you from receiving a high school diploma?

Q6: How well did you do on this test?

Q11: Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?

**Student preparation**

Q1: How did you prepare for this test?

Q2: What materials did you use to prepare for this test?

**Student familiarity with the content**

Q7: Were the topics on the test covered in courses you have taken?

Q8: Were any of the questions on the test different from the types of questions or answer options you have encountered in your homework assignments or classroom tests?

Q9: Were the questions on this test more difficult than questions you were given in classroom tests or homework assignments?

Q10: If some topics on the test were difficult for you, was it because?

**Student plans after taking CAHSEE**

Q5: What do you think you will do after high school?

Q12: If you do not pass the CAHSEE in this administration, what are you most likely to do?

### **Results of student perceptions**

The Chi-square test results suggested that student perceptions were very similar at the rural, suburban, and urban high school level. In general, English-only students compared to ELLs felt more confident that they did well on the CAHSEE and that they will graduate with their class. The only exception was no significant difference between English-only students and ELLs attending the urban high school regarding how well they felt they did on the test. The Chi-square results showed significant differences in the perceptions of SPED and General Education students on all questions. The results suggested that General Education students felt more confident that they did well on the CAHSEE and that they will graduate with their class. A difference worth noting is that SPED students, more than General Education students, chose not to respond to nearly half of the questions on the questionnaire. Perhaps the SPED students' failure to respond may suggest graduation does not seem achievable to them.

### **Results of student preparation activities**

The Chi-square results suggested that students' preparation activities were similar at the rural and suburban high school. The results showed no significant difference between students' preparation activities at the urban high school compared to the other categories of high schools. According to the results, English-only students attending the rural and suburban high school responded that they engaged in

little to no preparation activities to prepare to take the CAHSEE. On the other hand, ELLs attending the rural and suburban high school relied more heavily on teacher prep or other materials to prepare for the examination. The Chi-square results showed significant differences in the way SPED students and General Education students prepared to take the CAHSEE in all three categories of high schools. The results suggested that General Education students across all three high schools engaged in little to no preparation activities, while SPED students relied on various materials to prepare for the CAHSEE. A difference worth noting is that SPED students, more than General Education students, chose not to respond to nearly half of the questionnaire.

#### **Results of student familiarity about the content on the CAHSEE**

The Chi-square results suggested that students' familiarity with the content on the CAHSEE were similar at all three categories of high schools. The results showed that English-only students perceived that the topics and questions on the examination were familiar with the topics and questions covered in the classes they took in school. Further, English-only students felt the questions on the CAHSEE were generally easier than those covered in their courses. On the other hand, ELLs were not as familiar with the topics and questions presented on the CAHSEE. Further, ELLs felt the questions were more difficult on the CAHSEE than those encountered in their courses. The results suggested that General Education students perceived that the topics and questions on the examination were similar to the topics and questions covered in the classes they took in school. Further, General Education students felt

the questions on the CAHSEE were generally easier than those covered in their courses. On the other hand, SPED students were not as familiar with the topics and questions presented on the CAHSEE. Further, SPED students felt the questions were more difficult on the CAHSEE than those encountered in their courses.

### **Results of student plans after taking the CAHSEE**

The Chi-square results showed that students' plans after high school were similar only in the suburban high school. The results suggested that English-only students attending the suburban high school plan to attend a 4-year college or community college upon completion of high school. There was no significant difference in the way ELLs and English-only students in the rural and urban high schools responded to the question regarding plans after high school. Across all three categories of high schools, General Education students, more than SPED students, plan to attend a 4-year college or community college. The Chi-square results suggested that students in all three categories of high schools responded similarly to the question on their plans if they do not pass the CAHSEE. The results suggested that English-only students plan to stay in school until they pass the CAHSEE. ELLs plan to take additional courses or engage in other activities until they pass the CAHSEE. The results suggested that General Education students plan to stay in school until they pass the CAHSEE. A difference worth noting is that SPED students, more than General Education students, chose not to respond to nearly half of the questionnaire.

This study suggested that overall, English-only students and General Education students are more confident in their perceptions. These students who believe that they performed well on the CAHSEE were better prepared to take the CAHSEE and were more familiar with the topics and questions on the CAHSEE than ELLs and SPED students. Further, English-only students and General Education students are more likely to view college as their primary plan after completion of high school. In contrast, ELLs and SPED students view a range of options regarding their plans after the completion of high school. This study suggested that a significant gap exists in perceptions, preparedness, familiarity of the content on the CAHSEE and plans after high school between English-only students and ELLs and between SPED and General Education students.

The findings of this study supported previous research by Catterall (1989), Jimerson et al. (2008), and HumRRO (2007) which indicated that persistence on the part of the student is an important factor that contributes to success on the CAHSEE. English-only and General Education students showed persistence on passing the CAHSEE by their response to Question 12, which asked them what they will do if they do not pass. Both groups responded that they will stay in school until they pass. Further, the results support research by Kizilgunes et al., 2009 and Meyer, Turner, & Schweinle, 2009. They suggested that it is the responsibility of schools to ensure that students are exposed to grade-level curriculum. This study suggested ELL and SPED students use various preparation materials to learn the material on the CAHSEE rather

than relying solely on teacher prep. Further, ELL and SPED students were often placed in lower level courses, which did not expose them to grade-level curriculum.

### **Discussion on Research Question 2**

Research Question 2 was formulated to determine the effects of pre-intervention programs on student high school exit exam outcomes. Data were collected and analyzed to compare the effects of a preintervention program on those students who are at-risk of not passing the CASHEE on the first administration and students who are at-risk but did not enroll in a preintervention program. Data were collected and analyzed from the March 2011 administration of the CAHSEE. The study consisted of 141 Reclassified Fluent English Proficient (RFEP) students who took a preintervention course while attending a high school located in Stanislaus County, California and 87 students who did not take a preintervention course while attending another high school located in Stanislaus County, California.

An independent samples *t*-test was applied to test Hypotheses 2a and 2b. The results showed there was a significant difference in student achievement on the CAHSEE between RFEP students who enrolled in a preintervention program and RFEP students who did not enroll in a preintervention program. In fact, the results showed that RFEP students who were not enrolled in the preintervention program had higher mean scores on both the ELA and mathematics section of the CASHEE than those RFEP students who did enroll in an a preintervention program.

In this study, the preintervention course did not enroll other students who would be considered at-risk of not passing the CAHSEE on the first administration.

For example, the sample did not include at-risk students such as ELLs, SPED students, and students who are not on grade level. Further, the criteria for reclassifying ELLs to RFEP may be different at each of the high schools.

The findings for Research Question 2 are novel to this field of research. Due to the lack of preintervention programs to address at-risk students before taking the CAHSEE for the first time, little to no research has been conducted in this area. Most of the research on preintervention programs discusses ways to identify struggling learners or the need for remedial education.

The results of this study challenge research by Brown, Morris, and Fields (2005) who found that early intervention to address deficiencies is important to ensure adequate progress toward grade-level competency. The findings of this study suggest that preintervention programs do not raise student achievement on the CAHSEE. Student identification for preintervention programs may have contributed to the results. According to Cobb (2003), grades can give administrators and teachers a good idea of deficiencies, but the only true way to know if the student is in danger of not passing the CAHSEE is with a diagnostic test. The school that identified RFEP students for the preintervention program did not perform a diagnostic test to indicate if deficiencies in learning existed before taking the exam. More research in the area of preintervention programs is warranted.

### **Discussion on Research Question 3**

Research Question 3 was formulated to determine the effects of intervention programs on passage rates of students who fail the first administration of a high

school exit exam. Data were collected and analyzed from the October 2010 and February 2011 administrations of the ELA section of the CAHSEE to determine the effects of an intervention program on students who did not pass the CAHSEE on the first administration. This study consisted of 48 students who took an intervention course in ELA while attending a high school located in Fresno County, California. Also, data were collected and analyzed from the October 2010 and February 2011 administrations of the mathematics section of the CAHSEE. This study consisted of 51 students who took an intervention course in mathematics while attending a high school located in Stanislaus County, California.

A paired samples *t*-test was applied to test hypotheses 3a and 3b. The results showed that the mean score of students after an intervention in ELA was significantly greater than the CAHSEE mean score of the same students prior to the intervention. The results also showed that the CAHSEE mean score of students after an intervention in mathematics was significantly greater than the mean score of the same students prior to the intervention.

The effectiveness of the intervention may be due to effective teaching strategies used in the intervention course. Students may have done well the second time on the CAHSEE due to prior exposure to similar questions, subsequent course content, and teaching to the test.

The findings of this study did support previous research by Gayler (2005), who found that intervention programs showed a "greater focus to instruction by eliminating some extraneous activities and tightening the curriculum" (p. 4). The

intervention programs identified in this study confirmed research by Gayler (2005), Gayler, Chudowsky, Hamilton, Kober, and Yeager, 2004, and HumRRO (2006), which found that exit examinations led to a greater focus on state standards and coverage of course content across all classrooms. Both intervention programs used released test questions and high frequency state standards to prepare students to take the CAHSEE the second time.

#### **Discussion on Research Question 4**

Research Question 4 was formulated to determine how much of the student performance on the CAHSEE can be explained by the following variables: gender, ethnicity, socioeconomic status, advanced level courses, years of teaching, CST scores, and parent education level. Data were collected and analyzed from the March 2010 ELA and mathematics administration of the CAHSEE to determine the effects of the CAHSEE on student performance in relationship to other variables. The study consisted of 293 students from a rural high school located in Stanislaus County, California.

A Stepwise Multiple Regression was applied to test hypotheses 4a and 4b. The results showed that academic factors, which included a students' CST score in ELA and higher level English courses, were strong positive predictors of student performance on the ELA section of the CAHSEE. Further, the results showed that English courses (Special Education English class), language classification (English Learner), ethnicity (Black/African American) and gender (male) were negatively related to student performance on the ELA section of the CAHSEE.

The results showed that academic factors, which included a students' CST score in mathematics and higher level mathematics courses, were strong positive predictors of student performance on the mathematics section of the CAHSEE. Further, the results showed that mathematics courses (Special Education mathematic) and language classification (English Learner), were negatively related to student performance on the mathematics section of the CAHSEE.

This study suggested that in-coming freshmen who enroll in higher level ELA and mathematics courses are more likely to perform well on the CAHSEE in 10th grade. Further, this study suggested that high performance on the CST equates with higher performance on the CAHSEE.

The findings of this study did support previous research by the Center on Education Policy (2004). The Policy Center found that students who are most likely to experience lower passing rates on the CAHSEE are ELLs and students with disabilities. In this study, ELLs and SPED students were negatively related to student performance on both the ELA and mathematics section of the CAHSEE. The findings of this study also confirm results presented by Dataquest (2010). Dataquest showed lower pass rates among African-American students compared to White students. The findings of this study suggested that students who are classified as African American show negative student achievement on the ELA section of the CAHSEE.

The findings of this study contradicted the findings of Caldas & Bankston (1997), OECD (2004), and Tate (1997) and showed no significant relationship

between SES and student achievement. Further, the findings of this study refuted Abbott and Joireman's (2001) findings and suggested that low-income explains a much smaller percentage of variance in academic achievement. Finally, the findings of this study contradict Hobbs (1990) who asserted that SES is the single best predictor of academic achievement. The findings of this study suggested that CST scores are the single best predictor on both the ELA and mathematics section of the CAHSEE.

The findings of this study also contradicted the findings of Rockoff (2003) and suggested that teaching experience had no statistically significant effect on student achievement. This study supported findings by Wise et al. (2004) who found that teachers who had experience teaching ELLs and Special Education students showed no significant impact on CAHSEE performance.

This study corroborated findings of previous research conducted by Kurlaener, Reardon, and Jackson (2008) that standardized assessments (e.g., California Standards Test) are predictors of high school graduation and CAHSEE performance. Specifically, in this study, students who scored far below basic on the CSTs also yielded very low rates of passing the CAHSEE on the first attempt. The findings of this study also confirmed findings by Faulk (2009). The significant predictability power of the CSTs for both English language arts and mathematics was underscored. The findings of this study also corroborated earlier research by Smith (1996), which found that enrollment in algebra prior to the CAHSEE is a strong predictor of high school success.

### **Post Hoc Discussion**

This researcher thought it was prudent to conduct additional Post Hoc testing on a number of key variables with respect to pass rates on both the ELA and mathematics sections of the CAHSEE. The additional analyses included (a) student pass rates on both the ELA and mathematics sections of the CAHSEE among all three categories of high schools to see if differences existed between rural, suburban, and urban students, (b) student pass rates on both the ELA and mathematics sections of the CAHSEE between ELLs and English-only students from all three categories of schools, (c) pass rates on both the ELA and mathematics sections of the CAHSEE between SPED and General Education students from all three categories of schools, and (d) pass rates compared to students' responses on the questionnaire (questions 3, 4, and 11) from all three categories of schools.

The Post Hoc analysis showed that students who attended the rural high school passed the ELA section of the CASHEE at a significantly higher rate (77%) than students who attended the urban high school (66%). The results were similar for mathematics. Students who attended the rural high school passed the mathematics section of the CASHEE at a significantly higher rate (81%) than students who attended the urban high school (66%).

The gap in achievement between ELLs and English-only students and between SPED students and General Education students was even more apparent. The results of the Post Hoc analysis showed that English-only students passed the ELA section of the CAHSEE at a significantly higher rate (78%) than ELLs (39%).

Further, the results showed that General Education students passed the ELA section of the CAHSEE at a significantly higher rate (76%) than SPED students (18%).

This study confirmed the results by Wise et al. (2004) who found that students who were not classified as ELLs or SPEDs passed the ELA section of the CAHSEE at significantly higher rates (72.6%) than ELLs (36.1%) and SPED (31.2%). The results of this study suggested that the achievement gap has remained unchanged from 2004 to 2011.

The results of the Post Hoc analysis on the mathematics section of the CAHSEE were similar to the results on the ELA section. The results showed that English-only students passed the mathematics section of the CAHSEE at a significantly higher rate (77%) than ELLs (50%). Further, the results showed that General Education students passed the mathematics section of the CAHSEE at a significantly higher rate (78%) than SPED students (20%).

This study confirmed the results by Wise et al. (2004) who found that students who were not classified as ELLs or SPEDs passed the mathematics section of the CAHSEE at significantly higher rates (51.9%) than ELLs (25.8%) and SPED (16.0%). The results of this study suggested that the achievement gap still exists; however, both English-only students and ELLs have much higher pass rates in 2011 than they did in 2004. Unfortunately, the achievement gap has widened between General Education and SPED students over the past 7 years.

Finally, the Post Hoc analysis on Questions 3, 4, and 11 reveal interesting results regarding students' perceptions and pass rates on both the ELA and

mathematics sections of the CAHSEE. Question 3 asked students whether they believed they would earn a high school diploma. Students who passed the ELA section (77%) of the CAHSEE and passed the mathematics section (76%) of the CAHSEE responded "Yes, with my class".

Question 4 asked students what may prevent them from earning their high school diploma. Students who passed the ELA section (54%) of the CAHSEE and passed the mathematics section (50%) of the CAHSEE responded "I am confident I will earn my diploma".

Finally, Question 11 asked students if they have worked or if they will work harder to learn the ELA or mathematics skills tested by the CAHSEE. Students who passed the ELA section of the CAHSEE (41%) and (37%) responded "I do not need to work harder to pass" or "I am working hard in the classes I am taking," respectively. The same responses on the mathematics section of the CAHSEE yielded pass rates of (36%) and (37%), respectively.

The Post Hoc analysis students' perceptions and pass rates confirmed findings of two recent studies. The persistence of students who wanted to earn a diploma resulted in 47% passing the CAHSEE (Jimerson et al., 2008). Consistent with these findings are the results from a study conducted by Human Resources Research Organization (HumRRO). HumRRO (2007) found that persistence had positive effects for about 40% of students who passed the CAHSEE after their senior year. Results of the HumRRO study (2007) found that 40% of students who continued to

take the exam after their senior year, more than a quarter eventually passed within a year following their expected graduation date (HumRRO, 2007).

### **Implications**

Studies have shown that states requiring high school exit exams have increased dropout rates (Thurlow, Liu, Weiser, & El Sawaf, 1997). Ziechner (2003) suggested that dropout rates are higher for ELLs and SPED students than for English-only and General Education students, respectively. Garcia & Gopal (2003) suggested that ELLs and SPED students are placed at higher rates than English-only and General Education students in remedial instruction, summer school, and enrollment in special classes, and spend 1 to 2 years longer in high school. In some cases, students who do not pass exit exams tend to enroll in other educational institutions such as adult school, community colleges, or vocational schools rather than 4-year college institutions. The differences in placement may explain the discrepancies found on questions 7, 8, 9, and 10 of the questionnaire regarding students' familiarity of the topics and questions on the examination.

This study showed that these discrepancies may cause achievement differences for ELLs and SPED students. Oakes, Gamoran, & Page (1992) suggested ELLs and SPED students do not have equal access to rigorous curricular content standards. Wide differences in achievement between ELLs and English-only students suggest that educators need to identify ways to increase English proficiency in order to provide ELLs with exposure to the same curriculum as English-only students. The achievement gap between SPED and General Education students may suggest that

SPED students do not believe high school success is attainable. Further, the lack of responses on the questionnaire by SPED students may indicate that they have no plans if they do not pass the CAHSEE.

The results of this study showed that a preintervention program for RFEP students did not produce higher CAHSEE scores. There are many reasons why this result may not be generalizable to all preintervention programs and should be researched further to confirm or refute the results of this study. There are several researchers who suggest students who are below grade level need interventions to correct learning deficiencies (Cobb, 2003; Gewertz, 2007; Haney & Madaus, 1978; Kratochwill & Stoiber, 2000).

This study only examined RFEP students who may or may not have been below grade level when they took the CAHSEE. Students who are below grade level and enter a preintervention program should be examined before making the assumption that all preintervention programs are not effective in raising achievement on the CAHSEE. The results of this study on preintervention examined students from two different high schools in Stanislaus County. This study did not determine whether there was a difference between the two high schools in the way students are reclassified as RFEP. Also, identification of the at-risk population was inconsistent. Finally, the effects of the remedial label on the students who were placed in a pre-intervention may have affected the results of this study. The results of this study suggest that preintervention programs need to address all at-risk students who may fail the CAHSEE on the first administration. Further, the results of this study suggest

that effective instruction in intervention programs increases pass rates for those students who do not pass the CAHSEE on the first administration of the examination.

Finally, the results of this study suggested that academic factors are strong predictors of student outcomes on the CAHSEE. This finding has important implications for students who do not reach grade level by the 9th grade. Students enrolled in below grade level courses in high school have a lower chance of passing the CAHSEE the first time in 10th grade. Educators need to identify deficiencies early in a child's education in order to correct the learning deficit to keep students on grade level. Educators need to improve the quality of standards-based curriculum and instruction, especially for SPED students who are generally below grade level by 2 or more grades. Further, educators need to use student assessment data as a basis for planning instruction.

### **Conclusion**

This study used Herbert Spencer's model of Social Darwinism Theory as the underlying theoretical framework to describe the inequitable outcomes that occur among ELL and SPED students on the CAHSEE. This theory was used as the guiding principle to identify whether high-stakes tests are fair for all students. While the argument in this study is not whether all students should take and pass an exit examination to earn a diploma, the question is whether the test is punishing schools and creating unintended consequences for students who are not ready to take the examination. Further, this study sought out factors that may contribute to student achievement on the CASHEE based on students' perceptions on preparedness,

familiarity with the content on the CAHSEE, and their reactions after taking the CAHSEE. Also, this study examined the effectiveness of intervention activities, and academic and demographic factors. The results of this study coincide with Social Darwinism Theory in two ways. First, the results of this study showed that ELL and SPED students are not achieving at the same rate as English-only and General Education students. This ties to the premise behind Social Darwinism Theory, which is that only the strongest and fittest will survive. Further, ELL and SPED students responded more often than English-only and General Education students that they "may not graduate with their class" or even "drop out before the 12th grade".

Second, the results of this study showed that the link between NCLB and Social Darwinism implies that the outcomes of high stakes testing works exactly opposite to the goal of NCLB, which is to ensure that all students are achieving at the same level. The results of this study showed that academic factors are the strongest predictors of success on the CAHSEE. This study suggests that most ELLs and SPED students are placed in below-grade level courses that do not prepare them to take the CAHSEE. In fact, the results of this study show that below-grade level courses have a negative effect on CAHSEE scores. Further, the results indicate that the students placed in intervention courses takes them out of general education courses, which puts them further behind.

The results of the Post Hoc analyses showed that the achievement gap for ELL and SPED students still persists despite efforts by educators to close the gap. Further, students who attend rural high schools outperformed students attending

suburban and urban high schools on both the ELA and mathematics section of the CAHSEE. The reason may have to do with smaller classes and more individual student attention. Educators need to consider ways to provide individual attention to students who may be struggling with grade level state standards. Finally, persistence and valuing education may be strong predictors of student success on the CAHSEE. Educators can use this knowledge to address the motivation of students in order to teach them the value of persistence when it comes to earning their diploma. Further, educators can educate parents about the importance of education, so they may teach their children to value education.

### **Recommendations for Future Study**

The following are recommendations for future studies based on the research and findings of this study:

1. Conduct a study that looks at preintervention programs that include other at-risk students such as SPED students, ELLs who have not attained English proficiency, and students who are not on grade level. The study may confirm the reliability of the results of this study. Also, a study conducted at a different school district may help to confirm the conclusions of this study.
2. Conduct a longitudinal study following all groups of students (i.e., ELLs, SPED students, and minority groups) from their point of entry into the school district through their exit and/or graduation. Such a study may allow researchers the ability to track the frequency of CAHSEE administrations prior to passage. Tracking the factors that contribute to passing or not passing, such as quality of instruction, family

dynamics, socioeconomic status, access to educational services, and the level of interaction between ELLs and English-only students and SPED and General Education students can give new insight to causes of students passing or failing the examination.

3. Conduct a case study of post-CAHSEE interventions to identify reasons why these programs work in raising student achievement on both sections of the CAHSEE. The study may confirm the reliability of the results of this study.

4. Conduct a study that examines the effects of student achievement in middle school on CAHSEE pass rates on the first administration of the examination in the 10th grade.

5. Conduct research that examines whether the discrepancy of pass rates are due to a deficit in academic skills or a lack of appropriate and sufficient access to grade level curriculum.

The study may support results of this study as well as give researchers greater insight into the varying achievement on CAHSEE among all groups of students.

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## APPENDICES

## APPENDIX A

## FREQUENCY AND PERCENTAGE TABLES

**Rural ELLs compared to English-only**

Table A1

*Distribution of responses for Question 1: How did you prepare for this test?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	11	28%	100	23%
I practiced	9	22%	58	13%
Teacher prep	16	41%	155	35%
Special class during school day	2	5%	8	2%
Special class after school/summer	0	0%	0	0%
Did nothing	4	10%	121	27%

Table A2

*Distribution of responses for Question 2: What materials did you use to prepare for this test?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	11	27%	100	23%
Textbook	8	20%	45	10%
ELA student guide	5	12%	40	9%
On-line CAHSEE prep	3	7%	10	2%
Released (sample) test questions	1	2%	61	14%
Other resources	9	22%	47	11%
Used no material	4	10%	139	31%

Table A3

*Distribution of responses for Question 3: Do you think you will receive a high school diploma?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	11	27%	106	24%
Yes, with my class	12	29%	312	71%
Yes, after taking more classes	12	29%	13	3%
Yes, in adult school	2	5%	2	0%
No, I won't receive a diploma	3	7%	4	1%
No, I will take the GED	9	0%	5	1%
No, I will go to a community college	1	2%	0	0%

Table A4

*Distribution of responses for Question 4: What might prevent you from receiving a high school diploma?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	11	27%	100	23%
May not pass all of my courses	9	22%	48	11%
Not passing the CAHSEE	6	15%	13	3%
Drop out before the 12th grade	1	2%	2	0%
Not meeting other graduation require.	1	2%	18	4%
I am confident I will earn a diploma	13	32%	261	59%

Table A5

*Distribution of responses for Question 5: What do you think you will do after high school?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	14	34%	125	28%
Military	2	5%	10	2%
Community College	8	20%	76	17%
4-year college or university	15	37%	201	45%
Vocational or trade school	0	0%	8	2%
Work full-time	2	5%	6	1%
Other	0	0%	16	4%

Table A6

*Distribution of responses for Question 6: How well did you do on this test?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	11	27%	100	23%
I did as well as I could	22	54%	302	68%
I was too nervous to do as well as I could	7	17%	12	3%
I was not motivated to do well	0	0%	8	2%
I did not have time to do as well as I could	0	0%	3	1%
The room conditions made it difficult to do well	0	0%	13	3%
Other reasons	1	2%	4	1%

Table A7

*Distribution of responses for Question 7: Were the topics on the test covered in courses you have taken?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	11	27%	100	23%
Yes, all of them	12	29%	196	44%
Most, but not all of them	12	29%	129	29%
Many topics on the test were not covered in my courses	6	15%	17	4%

Table A8

*Distribution of responses for Question 8: Were any of the questions on the test different from the types of questions or answer options you have encountered in your homework assignments or classroom tests?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	11	27%	101	23%
Yes, many questions were different	11	27%	31	7%
Yes, a few questions were different	18	44%	160	36%
No, all questions were similar	1	2%	150	34%

Table A9

*Distribution of responses for Question 9: Were the questions on this test more difficult than questions you were given in classroom tests or homework assignments?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	12	29%	104	24%
Yes, generally more difficult	16	39%	36	8%
Generally about as difficult	12	29%	174	39%
Generally easier	1	2%	128	29%

Table A10

*Distribution of responses for Question 10: If some topics on the test were difficult for you, was it because?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	12	29%	106	24%
I did not take courses that covered these topics	5	12%	26	6%
I had trouble with these topics when they were covered in courses I took	12	29%	63	14%
I have forgotten things I was taught about these topics	7	17%	107	24%
None of the topics were difficult for me	5	12%	140	32%

Table A11

*Distribution of responses for Question 11: Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	11	27%	100	23%
I do not need to work any harder to meet the CAHSEE requirement	2	5%	209	47%
I am taking additional courses	3	7%	7	2%
I am working harder in the courses I am taking	16	39%	106	24%
I am getting help outside of the class	3	7%	9	2%
I am repeating a course to learn the material better	3	7%	6	1%
I will stay in school an additional year to learn the required material	3	7%	5	1%

Table A12

*Distribution of responses for Question 12: If you do not pass the CAHSEE in this administration, what are you most likely to do?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	14	34%	109	25%
I will stay in school and try again to pass the CAHSEE	13	32%	271	61%
I will take courses at a community college and try again to pass	6	15%	15	3%
I will participate in some other type of program that will help me pass	3	7%	5	1%
I will try to get a GED certificate	0	0%	5	1%
I will give up trying to get a diploma	2	5%	4	1%
I really do not know what I will do	3	7%	33	7%

### Suburban ELLs compared to English-only

Table A13

*Distribution of responses for Question 1: How did you prepare for this test?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	36	18%	78	12%
I practiced	62	31%	245	39%
Teacher prep	41	20%	128	20%
Special class during school day	37	18%	56	9%
Special class after school/summer	2	1%	8	1%
Did nothing	23	11%	111	18%

Table A14

*Distribution of responses for Question 2: What materials did you use to prepare for this test?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	38	19%	80	13%
Textbook	14	7%	69	11%
ELA student guide	28	14%	95	15%
On-line CAHSEE prep	67	33%	98	16%
Released (sample) test questions	15	7%	152	24%
Other resources	22	11%	45	7%
Used no material	17	8%	87	14%

Table A15

*Distribution of responses for Question 3: Do you think you will receive a high school diploma?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	38	19%	81	13%
Yes, with my class	103	51%	458	73%
Yes, after taking more classes	36	18%	60	10%
Yes, in adult school	9	4%	11	2%
No, I won't receive a diploma	14	7%	15	2%
No, I will take the GED	1	0%	1	0%
No, I will go to a community college	0	0%	0	0%

Table A16

*Distribution of responses for Question 4: What might prevent you from receiving a high school diploma?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	38	19%	79	13%
May not pass all of my courses	42	21%	126	20%
Not passing the CAHSEE	54	27%	77	12%
Drop out before the 12th grade	4	2%	4	1%
Not meeting other graduation require.	11	5%	26	4%
I am confident I will earn a diploma	52	26%	314	50%

Table A17

*Distribution of responses for Question 5: What do you think you will do after high school?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	48	24%	101	16%
Military	10	5%	33	5%
Community College	33	16%	63	10%
4-year college or university	84	42%	375	60%
Vocational or trade school	7	3%	15	2%
Work full-time	10	5%	24	4%
Other	9	4%	15	2%

Table A18

*Distribution of responses for Question 6: How well did you do on this test?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	37	18%	79	13%
I did as well as I could	135	67%	497	79%
I was too nervous to do as well as I could	14	7%	27	4%
I was not motivated to do well	6	3%	5	1%
I did not have time to do as well as I could	3	1%	2	0%
The room conditions made it difficult to do well	3	1%	4	1%
Other reasons	3	1%	12	2%

Table A19

*Distribution of responses for Question 7: Were the topics on the test covered in courses you have taken?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	38	19%	81	13%
Yes, all of them	54	27%	316	50%
Most, but not all of them	91	45%	210	34%
Many topics on the test were not covered in my courses	18	9%	19	3%

Table A20

*Distribution of responses for Question 8: Were any of the questions on the test different from the types of questions or answer options you have encountered in your homework assignments or classroom tests?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	38	19%	82	13%
Yes, many questions were different	36	18%	37	6%
Yes, a few questions were different	89	44%	246	39%
No, all questions were similar	38	19%	261	42%

Table A21

*Distribution of responses for Question 9: Were the questions on this test more difficult than questions you were given in classroom tests or homework assignments?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	38	19%	84	13%
Yes, generally more difficult	46	23%	55	9%
Generally about as difficult	92	46%	337	54%
Generally easier	25	12%	150	24%

Table A22

*Distribution of responses for Question 10: If some topics on the test were difficult for you, was it because?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	40	20%	86	14%
I did not take courses that covered these topics	27	13%	29	5%
I had trouble with these topics when they were covered in courses I took	44	22%	107	17%
I have forgotten things I was taught about these topics	63	31%	254	41%
None of the topics were difficult for me	27	13%	150	24%

Table A23

*Distribution of responses for Question 11: Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	38	19%	82	13%
I do not need to work any harder to meet the CAHSEE requirement	17	8%	220	35%
I am taking additional courses	15	7%	26	4%
I am working harder in the courses I am taking	75	37%	236	38%
I am getting help outside of the class	23	11%	24	4%
I am repeating a course to learn the material better	10	5%	14	2%
I will stay in school an additional year to learn the required material	23	11%	24	4%

Table A24

*Distribution of responses for Question 12: If you do not pass the CAHSEE in this administration, what are you most likely to do?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	63	31%	154	25%
I will stay in school and try again to pass the CAHSEE	91	45%	362	58%
I will take courses at a community college and try again to pass	13	6%	9	1%
I will participate in some other type of program that will help me pass	26	13%	72	12%
I will try to get a GED certificate	3	1%	4	1%
I will give up trying to get a diploma	1	0%	3	0%
I really do not know what I will do	4	2%	22	4%

### Urban ELLs compared to English-only

Table A25

*Distribution of responses for Question 1: How did you prepare for this test?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	60	26%	176	22%
I practiced	80	34%	304	37%
Teacher prep	56	24%	178	22%
Special class during school day	3	1%	9	1%
Special class after school/summer	2	1%	3	0%
Did nothing	34	14%	141	17%

Table A26

*Distribution of responses for Question 2: What materials did you use to prepare for this test?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	61	26%	177	22%
Textbook	46	20%	110	14%
ELA student guide	30	13%	133	16%
On-line CAHSEE prep	15	6%	60	7%
Released (sample) test questions	33	14%	160	20%
Other resources	23	10%	77	9%
Used no material	27	11%	94	12%

Table A27

*Distribution of responses for Question 3: Do you think you will receive a high school diploma?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	60	26%	185	23%
Yes, with my class	118	50%	490	60%
Yes, after taking more classes	30	13%	96	12%
Yes, in adult school	12	5%	20	2%
No, I won't receive a diploma	10	4%	12	1%
No, I will take the GED	3	1%	2	0%
No, I will go to a community college	2	1%	6	1%

Table A28

*Distribution of responses for Question 4: What might prevent you from receiving a high school diploma?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	61	26%	178	22%
May not pass all of my courses	35	15%	171	21%
Not passing the CAHSEE	36	15%	79	10%
Drop out before the 12th grade	3	1%	13	2%
Not meeting other graduation require.	25	11%	79	7%
I am confident I will earn a diploma	75	32%	311	38%

Table A29

*Distribution of responses for Question 5: What do you think you will do after high school?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	70	30%	224	28%
Military	11	5%	41	5%
Community College	48	20%	171	21%
4-year college or university	73	31%	306	38%
Vocational or trade school	4	2%	16	2%
Work full-time	19	8%	34	4%
Other	10	4%	19	2%

Table A30

*Distribution of responses for Question 6: How well did you do on this test?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	62	26%	178	22%
I did as well as I could	138	59%	547	67%
I was too nervous to do as well as I could	19	8%	43	5%
I was not motivated to do well	4	2%	16	2%
I did not have time to do as well as I could	3	1%	5	1%
The room conditions made it difficult to do well	3	1%	12	1%
Other reasons	6	3%	10	1%

Table A31

*Distribution of responses for Question 7: Were the topics on the test covered in courses you have taken?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	63	27%	180	22%
Yes, all of them	76	32%	374	46%
Most, but not all of them	84	36%	224	28%
Many topics on the test were not covered in my courses	12	5%	33	4%

Table A32

*Distribution of responses for Question 8: Were any of the questions on the test different from the types of questions or answer options you have encountered in your homework assignments or classroom tests?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	61	26%	181	22%
Yes, many questions were different	37	16%	70	9%
Yes, a few questions were different	91	39%	282	35%
No, all questions were similar	46	20%	278	34%

Table A33

*Distribution of responses for Question 9: Were the questions on this test more difficult than questions you were given in classroom tests or homework assignments?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	61	26%	180	22%
Yes, generally more difficult	45	19%	100	12%
Generally about as difficult	88	37%	353	44%
Generally easier	41	17%	178	22%

Table A34

*Distribution of responses for Question 10: If some topics on the test were difficult for you, was it because?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	64	27%	192	24%
I did not take courses that covered these topics	28	12%	38	5%
I had trouble with these topics when they were covered in courses I took	39	17%	124	15%
I have forgotten things I was taught about these topics	69	29%	280	35%
None of the topics were difficult for me	35	15%	177	22%

Table A35

*Distribution of responses for Question 11: Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	61	26%	184	23%
I do not need to work any harder to meet the CAHSEE requirement	32	14%	249	31%
I am taking additional courses	17	7%	30	4%
I am working harder in the courses I am taking	86	37%	278	34%
I am getting help outside of the class	19	8%	27	3%
I am repeating a course to learn the material better	5	2%	12	1%
I will stay in school an additional year to learn the required material	15	6%	31	4%

Table A36

*Distribution of responses for Question 12: If you do not pass the CAHSEE in this administration, what are you most likely to do?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	80	34%	259	32%
I will stay in school and try again to pass the CAHSEE	107	46%	431	53%
I will take courses at a community college and try again to pass	7	3%	34	4%
I will participate in some other type of program that will help me pass	25	11%	58	7%
I will try to get a GED certificate	4	2%	3	0%
I will give up trying to get a diploma	3	1%	3	0%
I really do not know what I will do	9	4%	23	3%

### Rural SPED students compared to General Ed

Table A37

*Distribution of responses for Question 1: How did you prepare for this test?*

Response	SPED		General Education	
	Total	%	Total	%
No response	33	48%	78	19%
I practiced	9	13%	58	14%
Teacher prep	18	26%	153	37%
Special class during school day	2	3%	7	2%
Special class after school/summer	0	0%	0	0%
Did nothing	7	10%	118	29%

Table A38

*Distribution of responses for Question 2: What materials did you use to prepare for this test?*

Response	SPED		General Education	
	Total	%	Total	%
No response	33	48%	78	19%
Textbook	11	16%	42	10%
ELA student guide	5	7%	40	10%
On-line CAHSEE prep	1	1%	12	3%
Released (sample) test questions	5	7%	57	14%
Other resources	4	6%	52	13%
Used no material	10	14%	133	32%

Table A39

*Distribution of responses for Question 3: Do you think you will receive a high school diploma?*

Response	SPED		General Education	
	Total	%	Total	%
No response	36	52%	81	20%
Yes, with my class	24	35%	300	72%
Yes, after taking more classes	5	7%	20	5%
Yes, in adult school	0	0%	4	1%
No, I won't receive a diploma	3	4%	4	1%
No, I will take the GED	1	1%	4	1%
No, I will go to a community college	0	0%	1	0%

Table A40

*Distribution of responses for Question 4: What might prevent you from receiving a high school diploma?*

Response	SPED		General Education	
	Total	%	Total	%
No response	33	48%	78	19%
May not pass all of my courses	9	13%	48	12%
Not passing the CAHSEE	5	7%	14	3%
Drop out before the 12th grade	0	0%	3	1%
Not meeting other graduation require.	2	3%	17	4%
I am confident I will earn a diploma	20	29%	254	61%

Table A41

*Distribution of responses for Question 5: What do you think you will do after high school?*

Response	SPED		General Education	
	Total	%	Total	%
No response	42	61%	97	23%
Military	3	4%	9	2%
Community College	8	12%	76	18%
4-year college or university	11	16%	205	50%
Vocational or trade school	1	1%	7	2%
Work full-time	2	3%	6	1%
Other	2	3%	14	3%

Table A42

*Distribution of responses for Question 6: How well did you do on this test?*

Response	SPED		General Education	
	Total	%	Total	%
No response	33	48%	78	19%
I did as well as I could	31	45%	293	71%
I was too nervous to do as well as I could	4	6%	15	4%
I was not motivated to do well	0	0%	8	2%
I did not have time to do as well as I could	0	0%	3	1%
The room conditions made it difficult to do well	1	1%	12	3%
Other reasons	0	0%	5	1%

Table A43

*Distribution of responses for Question 7: Were the topics on the test covered in courses you have taken?*

Response	SPED		General Education	
	Total	%	Total	%
No response	33	48%	78	19%
Yes, all of them	13	19%	195	47%
Most, but not all of them	17	25%	124	30%
Many topics on the test were not covered in my courses	6	9%	17	4%

Table A44

*Distribution of responses for Question 8: Were any of the questions on the test different from the types of questions or answer options you have encountered in your homework assignments or classroom tests?*

Response	SPED		General Education	
	Total	%	Total	%
No response	33	48%	79	19%
Yes, many questions were different	10	14%	32	8%
Yes, a few questions were different	19	28%	159	38%
No, all questions were similar	7	10%	144	35%

Table A45

*Distribution of responses for Question 9: Were the questions on this test more difficult than questions you were given in classroom tests or homework assignments?*

Response	SPED		General Education	
	Total	%	Total	%
No response	34	49%	82	20%
Yes, generally more difficult	13	19%	39	9%
Generally about as difficult	21	30%	165	40%
Generally easier	1	1%	128	31%

Table A46

*Distribution of responses for Question 10: If some topics on the test were difficult for you, was it because?*

Response	SPED		General Education	
	Total	%	Total	%
No response	34	49%	84	20%
I did not take courses that covered these topics	6	9%	25	6%
I had trouble with these topics when they were covered in courses I took	10	14%	65	16%
I have forgotten things I was taught about these topics	12	17%	102	25%
None of the topics were difficult for me	7	10%	138	33%

Table A47

*Distribution of responses for Question 11: Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?*

Response	SPED		General Education	
	Total	%	Total	%
No response	33	48%	78	19%
I do not need to work any harder to meet the CAHSEE requirement	10	14%	201	49%
I am taking additional courses	2	3%	8	2%
I am working harder in the courses I am taking	17	25%	105	25%
I am getting help outside of the class	4	6%	8	2%
I am repeating a course to learn the material better	3	4%	6	1%
I will stay in school an additional year to learn the required material	0	0%	8	2%

Table A48

*Distribution of responses for Question 12: If you do not pass the CAHSEE in this administration, what are you most likely to do?*

Response	SPED		General Education	
	Total	%	Total	%
No response	37	54%	86	21%
I will stay in school and try again to pass the CAHSEE	24	35%	260	63%
I will take courses at a community college and try again to pass	2	3%	19	5%
I will participate in some other type of program that will help me pass	1	1%	7	2%
I will try to get a GED certificate	0	0%	5	1%
I will give up trying to get a diploma	1	1%	5	1%
I really do not know what I will do	4	6%	32	8%

### Suburban SPED students compared to General Ed

Table A49

*Distribution of responses for Question 1: How did you prepare for this test?*

Response	SPED		General Education	
	Total	%	Total	%
No response	45	51%	69	9%
I practiced	19	22%	288	39%
Teacher prep	12	14%	157	21%
Special class during school day	5	6%	88	12%
Special class after school/summer	2	2%	8	1%
Did nothing	5	6%	129	17%

Table A50

*Distribution of responses for Question 2: What materials did you use to prepare for this test?*

Response	SPED		General Education	
	Total	%	Total	%
No response	47	53%	71	10%
Textbook	4	5%	79	11%
ELA student guide	6	7%	117	16%
On-line CAHSEE prep	14	16%	151	20%
Released (sample) test questions	6	7%	161	22%
Other resources	7	8%	60	8%
Used no material	4	5%	100	14%

Table A51

*Distribution of responses for Question 3: Do you think you will receive a high school diploma?*

Response	SPED		General Education	
	Total	%	Total	%
No response	48	55%	71	10%
Yes, with my class	26	30%	535	72%
Yes, after taking more classes	5	6%	91	12%
Yes, in adult school	2	2%	18	2%
No, I won't receive a diploma	6	7%	23	3%
No, I will take the GED	1	1%	1	0%
No, I will go to a community college	0	0%	0	0%

Table A52

*Distribution of responses for Question 4: What might prevent you from receiving a high school diploma?*

Response	SPED		General Education	
	Total	%	Total	%
No response	47	53%	70	9%
May not pass all of my courses	7	8%	161	22%
Not passing the CAHSEE	21	24%	110	15%
Drop out before the 12th grade	2	2%	6	1%
Not meeting other graduation require.	1	1%	36	5%
I am confident I will earn a diploma	10	11%	356	48%

Table A53

*Distribution of responses for Question 5: What do you think you will do after high school?*

Response	SPED		General Education	
	Total	%	Total	%
No response	48	55%	101	14%
Military	5	6%	38	5%
Community College	8	9%	88	12%
4-year college or university	19	22%	440	60%
Vocational or trade school	1	1%	21	3%
Work full-time	4	5%	30	4%
Other	3	3%	21	3%

Table A54

*Distribution of responses for Question 6: How well did you do on this test?*

Response	SPED		General Education	
	Total	%	Total	%
No response	45	51%	71	10%
I did as well as I could	31	35%	601	81%
I was too nervous to do as well as I could	6	7%	35	5%
I was not motivated to do well	1	1%	10	1%
I did not have time to do as well as I could	1	1%	4	1%
The room conditions made it difficult to do well	2	2%	5	1%
Other reasons	2	2%	13	2%

Table A55

*Distribution of responses for Question 7: Were the topics on the test covered in courses you have taken?*

Response	SPED		General Education	
	Total	%	Total	%
No response	46	52%	73	10%
Yes, all of them	18	20%	352	48%
Most, but not all of them	18	20%	283	38%
Many topics on the test were not covered in my courses	6	7%	31	4%

Table A56

*Distribution of responses for Question 8: Were any of the questions on the test different from the types of questions or answer options you have encountered in your homework assignments or classroom tests?*

Response	SPED		General Education	
	Total	%	Total	%
No response	47	53%	73	10%
Yes, many questions were different	10	11%	63	9%
Yes, a few questions were different	19	22%	316	43%
No, all questions were similar	12	14%	287	39%

Table A57

*Distribution of responses for Question 9: Were the questions on this test more difficult than questions you were given in classroom tests or homework assignments?*

Response	SPED		General Education	
	Total	%	Total	%
No response	47	53%	75	10%
Yes, generally more difficult	17	19%	84	11%
Generally about as difficult	14	16%	415	56%
Generally easier	10	11%	165	22%

Table A58

*Distribution of responses for Question 10: If some topics on the test were difficult for you, was it because?*

Response	SPED		General Education	
	Total	%	Total	%
No response	47	53%	79	11%
I did not take courses that covered these topics	6	7%	50	7%
I had trouble with these topics when they were covered in courses I took	10	11%	141	19%
I have forgotten things I was taught about these topics	16	18%	301	41%
None of the topics were difficult for me	9	10%	168	23%

Table A59

*Distribution of responses for Question 11: Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?*

Response	SPED		General Education	
	Total	%	Total	%
No response	46	52%	74	10%
I do not need to work any harder to meet the CAHSEE requirement	3	3%	234	32%
I am taking additional courses	2	2%	39	5%
I am working harder in the courses I am taking	19	22%	292	40%
I am getting help outside of the class	7	8%	40	5%
I am repeating a course to learn the material better	4	5%	20	3%
I will stay in school an additional year to learn the required material	7	8%	40	5%

Table A60

*Distribution of responses for Question 12: If you do not pass the CAHSEE in this administration, what are you most likely to do?*

Response	SPED		General Education	
	Total	%	Total	%
No response	51	58%	166	22%
I will stay in school and try again to pass the CAHSEE	20	23%	433	59%
I will take courses at a community college and try again to pass	7	8%	15	2%
I will participate in some other type of program that will help me pass	5	6%	93	13%
I will try to get a GED certificate	2	2%	5	1%
I will give up trying to get a diploma	0	0%	4	1%
I really do not know what I will do	3	3%	23	3%

**Urban SPED students compared to General Ed**

Table A61

*Distribution of responses for Question 1: How did you prepare for this test?*

Response	SPED		General Education	
	Total	%	Total	%
No response	62	60%	174	18%
I practiced	16	16%	368	39%
Teacher prep	13	13%	221	23%
Special class during school day	2	2%	10	1%
Special class after school/summer	1	1%	4	0%
Did nothing	9	9%	166	18%

Table A62

*Distribution of responses for Question 2: What materials did you use to prepare for this test?*

Response	SPED		General Education	
	Total	%	Total	%
No response	63	61%	175	19%
Textbook	12	12%	144	15%
ELA student guide	8	8%	155	16%
On-line CAHSEE prep	5	5%	70	7%
Released (sample) test questions	6	6%	187	20%
Other resources	6	6%	94	10%
Used no material	3	3%	118	13%

Table A63

*Distribution of responses for Question 3: Do you think you will receive a high school diploma?*

Response	SPED		General Education	
	Total	%	Total	%
No response	63	61%	182	19%
Yes, with my class	26	25%	582	62%
Yes, after taking more classes	4	4%	122	13%
Yes, in adult school	5	5%	27	3%
No, I won't receive a diploma	3	3%	19	2%
No, I will take the GED	1	1%	4	0%
No, I will go to a community college	1	1%	7	1%

Table A64

*Distribution of responses for Question 4: What might prevent you from receiving a high school diploma?*

Response	SPED		General Education	
	Total	%	Total	%
No response	62	60%	177	19%
May not pass all of my courses	9	9%	197	21%
Not passing the CAHSEE	11	11%	104	11%
Drop out before the 12th grade	3	3%	13	1%
Not meeting other graduation require.	7	7%	77	8%
I am confident I will earn a diploma	11	11%	375	40%

Table A65

*Distribution of responses for Question 5: What do you think you will do after high school?*

Response	SPED		General Education	
	Total	%	Total	%
No response	65	63%	229	224%
Military	0	0%	52	6%
Community College	14	14%	205	22%
4-year college or university	11	11%	368	39%
Vocational or trade school	2	2%	18	2%
Work full-time	8	8%	45	5%
Other	3	3%	26	3%

Table A66

*Distribution of responses for Question 6: How well did you do on this test?*

Response	SPED		General Education	
	Total	%	Total	%
No response	63	61%	177	19%
I did as well as I could	23	22%	662	70%
I was too nervous to do as well as I could	7	7%	55	6%
I was not motivated to do well	3	3%	17	2%
I did not have time to do as well as I could	2	2%	6	1%
The room conditions made it difficult to do well	2	2%	13	1%
Other reasons	3	3%	13	1%

Table A67

*Distribution of responses for Question 7: Were the topics on the test covered in courses you have taken?*

Response	SPED		General Education	
	Total	%	Total	%
No response	63	61%	180	19%
Yes, all of them	19	18%	431	46%
Most, but not all of them	17	17%	291	31%
Many topics on the test were not covered in my courses	4	4%	41	4%

Table A68

*Distribution of responses for Question 8: Were any of the questions on the test different from the types of questions or answer options you have encountered in your homework assignments or classroom tests?*

Response	SPED		General Education	
	Total	%	Total	%
No response	62	60%	180	19%
Yes, many questions were different	7	7%	100	11%
Yes, a few questions were different	27	26%	346	37%
No, all questions were similar	7	7%	317	34%

Table A69

*Distribution of responses for Question 9: Were the questions on this test more difficult than questions you were given in classroom tests or homework assignments?*

Response	SPED		General Education	
	Total	%	Total	%
No response	62	60%	179	19%
Yes, generally more difficult	11	11%	134	14%
Generally about as difficult	19	18%	422	45%
Generally easier	11	11%	208	22%

Table A70

*Distribution of responses for Question 10: If some topics on the test were difficult for you, was it because?*

Response	SPED		General Education	
	Total	%	Total	%
No response	62	60%	194	21%
I did not take courses that covered these topics	7	7%	59	6%
I had trouble with these topics when they were covered in courses I took	9	9%	154	16%
I have forgotten things I was taught about these topics	12	12%	337	36%
None of the topics were difficult for me	13	13%	199	21%

Table A71

*Distribution of responses for Question 11: Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE?*

Response	SPED		General Education	
	Total	%	Total	%
No response	62	60%	183	19%
I do not need to work any harder to meet the CAHSEE requirement	9	9%	272	29%
I am taking additional courses	3	3%	44	5%
I am working harder in the courses I am taking	19	18%	345	37%
I am getting help outside of the class	4	4%	42	4%
I am repeating a course to learn the material better	0	0%	17	2%
I will stay in school an additional year to learn the required material	6	6%	40	4%

Table A72

*Distribution of responses for Question 12: If you do not pass the CAHSEE in this administration, what are you most likely to do?*

Response	SPED		General Education	
	Total	%	Total	%
No response	66	64%	273	29%
I will stay in school and try again to pass the CAHSEE	20	19%	518	55%
I will take courses at a community college and try again to pass	2	2%	39	4%
I will participate in some other type of program that will help me pass	8	8%	75	8%
I will try to get a GED certificate	1	1%	6	1%
I will give up trying to get a diploma	1	1%	5	1%
I really do not know what I will do	5	5%	27	3%

**Rural (Math) ELLs compared to EO's**

Table A73

*Distribution of responses for Question 5: What do you think you will do after high school?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	17	41%	127	29%
Military	0	0%	19	4%
Community College	9	22%	74	17%
4-year college or university	11	27%	196	44%
Vocational or trade school	0	0%	5	1%
Work full-time	3	7%	4	1%
Other	1	2%	17	4%

**Urban (Math) ELLs compared to English-only**

Table A74

*Distribution of responses for Question 1: How did you prepare for this test?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	64	27%	190	23%
I practiced	95	40%	321	40%
Teacher prep	37	16%	105	13%
Special class during school day	6	3%	8	1%
Special class after school/summer	4	2%	7	1%
Did nothing	29	12%	180	22%

Table A75

*Distribution of responses for Question 2: What materials did you use to prepare for this test?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	65	28%	190	23%
Textbook	55	23%	126	16%
ELA student guide	34	14%	102	13%
On-line CAHSEE prep	10	4%	35	4%
Released (sample) test questions	29	12%	152	19%
Other resources	18	8%	70	9%
Used no material	24	10%	136	17%

Table A76

*Distribution of responses for Question 5: What do you think you will do after high school?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	77	33%	235	29%
Military	10	4%	37	5%
Community College	47	20%	164	20%
4-year college or university	66	28%	302	37%
Vocational or trade school	6	3%	19	2%
Work full-time	23	10%	40	5%
Other	6	3%	14	2%

Table A77

*Distribution of responses for Question 6: How well did you do on this test?*

Response	ELL		English-Only	
	Total	%	Total	%
No response	65	28%	192	24%
I did as well as I could	123	52%	514	63%
I was too nervous to do as well as I could	24	10%	46	6%
I was not motivated to do well	12	5%	27	3%
I did not have time to do as well as I could	2	1%	3	0%
The room conditions made it difficult to do well	3	1%	12	1%
Other reasons	6	3%	17	2%

## APPENDIX B

## CAHSEE QUESTIONNAIRE

Please take a moment and answer the following questions honestly.

Your input will provide important information for the CAHSEE program.

**1. How did you prepare for this test? (Mark all that apply)**

- a. I practiced on questions similar to those on the test
- b. A teacher spent time in class helping me to get ready to take the test
- c. I took a special class during the regular school day that covered the topics on the CAHSEE
- d. I took a special class after school or during the summer that covered the topics on the CAHSEE
- e. I did not do anything in addition to regular course work to prepare for this test

**2. What materials did you use to prepare for this test? (Mark all that apply)**

- a. Textbooks
- b. ELA student study guide (mathematics student guide)
- c. CAHSEE On-line prep
- d. Released (sample) test questions
- e. Other resources
- f. I did not use any materials to prepare

**3. Do you think you will receive a high school diploma?**

- a. Yes, with the rest of my class (or earlier)
- b. Yes, but I will likely have to take classes after my original graduation date
- c. Yes, but I will pursue a diploma in adult school
- d. No, I probably will not receive a high school diploma
- e. No, I plan to take the GED
- f. No, but I plan to go to a community college

**4. What might prevent you from receiving a high school diploma? (Mark all that apply)**

- a. I may not pass all the required courses
- b. I may not pass the CAHSEE exam
- c. I may drop out before the end of 12<sup>th</sup> grade
- d. I may not meet some other graduation requirements
- e. I am confident I will receive a high school diploma

**5. What do you think you will do after high school?**

- a. Join the military
- b. Go to a community college
- c. Go to a 4-year college or university
- d. Go to a vocational, technical, or trade school
- e. Work full-time
- f. Do something else (besides school, work, or the military)

**6. How well did you do on this test? (Mark all that apply)**

- a. I did as well as I could
- b. I was too nervous to do as well as I could
- c. I was not motivated to do well
- d. I did not have time to do as well as I could
- e. Conditions in the testing room made it difficult to concentrate
- f. There were other reasons why I did not do as well as I could

**7. Were the topics on the test covered in courses you have taken?**

- a. Yes, all of them
- b. Most, but not all of them (two-thirds or more were covered)
- c. Many topics on the test were not covered in my courses (less than two-thirds were covered)

**8. Were any of the questions on the test different from the types of questions or answer options you have encountered in your homework assignments or classroom tests?**

- a. Yes, many were different from anything I had seen before
- b. Yes, a few were different from anything I had seen before
- c. No, all were similar to ones used in my classes

**9. Were the questions on this test more difficult than questions you were given in classroom tests or homework assignments?**

- a. Yes, the test questions were generally more difficult than the questions I encountered in my course work
- b. The test questions were generally about as difficult as the questions I encountered in my course work
- c. The test questions were generally easier than the questions I encountered in my course work

**10. If some topics on the test were difficult for you, was it because:**

- a. I did not take courses that covered these topics
- b. I had trouble with these topics when they were covered in courses I took
- c. I have forgotten things I was taught about these topics
- d. None of the topics were difficult for me

**11. Have you worked or will you work harder to learn the ELA skills tested by the CAHSEE? (Mark all that apply)**

- a. I do not have to work any harder to meet the CAHSEE requirement
- b. I am taking additional courses
- c. I am working harder in the courses I am taking
- d. I am getting help outside of the classroom
- e. I am repeating a course to learn the material better
- f. I will stay in school an additional year to learn the required material

**12. If you do not pass the CAHSEE in this administration, what are you most likely to do? (Mark the most likely option)**

- a. I will stay in school and try again to pass the CAHSEE
- b. I will take courses at a community college and try again to pass the CAHSEE
- c. I will participate in some other type of program that will help me pass the CAHSEE
- d. I will try to get a GED certificate
- e. I will give up trying to get a diploma altogether
- f. I really do not know what I will do