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A CASE STUDY ON THE IMPLEMENTATION OF COMMON CORE STATE
STANDARDS IN AN URBAN CHARTER SCHOOL OF NEW JERSEY AND ITS
INFLUENCE ON COLLEGE READINESS OF HIGH SCHOOL STUDENTS

MURSEL GUNES

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Submitted in partial fulfillment of
the requirements for the degree of

Doctor of Education
Department of Education Leadership Management & Policy
Seton Hall University

2020

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COLLEGE OF EDUCATION AND HUMAN SERVICES
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APPROVAL FOR SUCCESSFUL DEFENSE

Mursel Gunes has successfully defended and made the required modifications to the text of the doctoral dissertation for the Ed.D. during this **Spring Semester 2020**.

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ABSTRACT**A CASE STUDY ON THE IMPLEMENTATION OF COMMON CORE STATE STANDARDS IN AN URBAN CHARTER SCHOOL OF NEW JERSEY AND ITS INFLUENCE ON COLLEGE READINESS OF HIGH SCHOOL STUDENTS**

For this research, four college readiness metrics were examined with the aim of analyzing the effects that implementing the Common Core State Standards (CCSS) in an urban charter school in New Jersey will have on the college readiness of the school's high school students. These metrics used were (a) participation rates in PSAT/PLAN, SAT, and AP/IB tests; (b) percentage of students who took SAT and scored 1,550 or above; (c) percentage of students who took AP/IB tests and scored three or more; and (d) schoolwide post-secondary program enrollment rates. Using a sequential mixed methods design, the researcher first analyzed these quantitative data, followed by a qualitative analysis of teacher and administrator feedback. The research question was, "How do Common Core State Standards (CCSS) influence the college readiness of high school students in an urban charter school in New Jersey?" This research question was divided into six sub-questions and investigated using descriptive statistics and NVivo outputs.

The analysis showed a perception among educators at this school of challenges associated with the early implementation of Common Core. CCSS relies on the leaders who are responsible for its implementation. The educators felt that they needed more professional development and training to help the students make a smooth transition to college. The success of such an implementation would be validated by increased AP participation and increased post-secondary enrollment rates. The results indicated a need for examining more case studies in traditional public schools as well as charter schools.

ACKNOWLEDGMENTS

This study would not have been possible without the full support and encouragement of Dr. Stedrak, my mentor. I would like to express my sincere gratitude to Dr. Stedrak for his guidance throughout this process. I would also like to thank my committee members, Dr. Galloway and Dr. Mezzina, for their valuable feedback, which helped to make this study more rigorous. Their resourcefulness and wisdom were helpful throughout my dissertation experience. I cannot forget Dr. Babo's contribution to this study. Rest in Peace Great Teacher! I learned a lot from you. My appreciation also goes to Dr. Kelchen for his time and commitment to assist me throughout the pre-IRB review process.

I'm extremely grateful to my expert panel for all that they've done to help design the interview questions for the qualitative portion of this study. Special thanks is due to the Central Jersey College Prep Charter School administrators and teachers who generously took time from their busy schedules to share their views with me. Their experience and expertise as education leaders contributed immensely to the second part of the study, which uncovered factors contributing to the college readiness of high school students.

Finally, I want to thank my wife, Havva, for inspiring me to persist in this professional endeavor.

DEDICATION

I would like to dedicate this dissertation to my parents. They always motivated me to do my best and reach my goals. I want to also dedicate this study to my wife, Havva, and my children, Ilayda, Ahmet, Alara, and Rana, who prayed for me and supported me unconditionally throughout this long journey.

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CHAPTER I

INTRODUCTION

Background

American policymakers have long been concerned with how best to prepare high school students for post-secondary education (Venezia & Jaeger, 2013). Since academic achievement provides a dependable roadmap for a student's future success, the Common Core State Standards (CCSS) were introduced to help high school students acquire the requisite skills and knowledge for success in the global economy and higher education (Jones & King, 2012). However, many researchers are opposed to these standards and do not deem them to be appropriate tools for college and career readiness success or national economic growth (e.g., Bracey, 2003).

Though debated, the fact is that the Common Core State Standards are still in place in the education system, and the influence they have had on the education system cannot be ignored. The current research study examined the implementation of Common Core State Standards in a New Jersey urban charter school and examined their influence on the college readiness of high school students. The school was founded in 2006 and serves grades K–12. It is best known for teaching students critical thinking skills with in-class problem solving. Recognized for community engagement and academic discipline, the school received accolades from all corners and was awarded with National Blue Ribbon School Award in 2016 (Central Jersey College Prep Charter School Profile 2017–2018, 2018). This award corroborates the fact that the school is committed to preparing students for college and offers a rigorous, best-in-class curricula and coursework.

The Common Core standards were a major change incorporated into the U.S. education system to provide local school districts with precise and clear benchmarks in specific content

areas, including mathematics and language arts/literacy. CCSS is a potent instrument, which is why it has been implemented in the education system on a large scale. This research left out the debate over whether or not CCSS is helpful to the education system and whether or not the language arts and math assessment tools sufficiently measure the students' preparedness for college. Regardless, CCSS does have a strong influence on schools, and the current research study analyzed and evaluated the implementation of Common Core State Standards at the charter school and its effects on the college readiness of high school students.

The CCSS was brought to the table following a famous fact-finding report produced in 1983 by the National Commission on Excellence in Education (NCEE), titled *A Nation at Risk*, for the purpose of presenting the issue of educational reform and building standards-based education in the United States (Hunt & Staton, 1996). The report established a groundwork for understanding the quality of learning and teaching in both public and private schools by reviewing the data and related literature, with a particular emphasis on advocating for vulnerable students and their needs (USDept. Ed., 1983a).

The term "college readiness" does not provide a clear definition of what actually makes a student ready for post-secondary life. However, there is general agreement among all U.S. states that a student is set to be college or career ready when they can get admission in post-secondary collegiate or vocational programs and complete their educations without assistance or remedial academic work (Conforti, 2013). College readiness is not influenced only by the standards of education in schools, however, and there are many other factors that have an effect on how ready a student is for higher studies. For example, poverty remains a potent factor that negatively influences college readiness. It is because of the negative correlation between poverty and

“college readiness” that the federal government reauthorized the Elementary and Secondary Education Act of 1965 (ESEA).

The ESEA, first enacted as part of President Johnson’s War on Poverty legislation, focused on spending more federal money on students with low achievement results. The passage of Improving America’s Schools Act of 1994 (IASA) and the reauthorization of the ESEA set goals for the year 2000 that considered the needs of all students, not just disadvantaged ones, and encouraged states to utilize the provided resources for the development of standards and assessments. The new standards and aligned assessments gained even more influence on school districts’ accountability systems. Some educational leaders in school districts stated that to make significant enhancement in students’ learning, the curriculum and instruction must be aligned and updated regularly (Massell & Goertz, 2002). These efforts were supported by a series of federally funded initiatives. For instance, since 1965, ESEA has been updated several times, most recently in 2002 as the No Child Left Behind (NCLB) Act.

The NCLB requirements synthesized the significant educational goals that had been in place for more than a decade before the law’s enactment by requiring adequate yearly progress (AYP) measurements of students’ proficiency levels in language arts and math, as measured by annual standardized testing after improving educational opportunities for children from low-income families (20 U.S.C. 6311 et seq.). The new standardized tests, designed for reading and mathematics subjects, need to be administered annually in grades 3 through 8 and once annually in grades 10 through 12. A science test was also required for grades 3 through 5, 6 through 9, and 10 through 12. NCLB also required that school districts and states make the cumulative test results and the details on specific student subgroups publicly available, including low-income

students, students with disabilities (SE), English language learners (ELL), and major racial and ethnic groups.

All of these efforts, as noted, were made with the clear goal of improving students' college and career readiness. Likewise, one of the major purposes of Common Core State Standards (CCSS) is to equip high school students with sufficient knowledge and skills, thus providing them the boost required for college readiness. CCSS was incorporated with the same approach as NCLB—that is, identify the set of skills needed at each grade level to ensure that the students smoothly master them and attain college readiness.

Researchers have found that the new standards proposed by the Common Core State Standards are more demanding and rigorous than past standards. This means not only that curriculum-related grade level procedures have been changed but that many instructional level teaching practices have transformed as well. For example, Gwynne and Cowhy (2017) found that 40% of high school teachers and two-thirds of elementary teachers reported that the implementation of CCSS forced them to interact with their colleagues frequently, and they also began to observe their colleagues' classrooms to update themselves on the new standards. The elementary teachers also reported that due to the many instructional changes made in response to CCSS, they felt more prepared and informed than the high school teachers. At the same time, other research has suggested that many teachers deem the implementation of CCSS as uneven, and they perceive changing their practices and aligning them with the new standards as challenging (Kane et al., 2016).

No matter how good an idea looks on paper, its goals can only be attained if it is successfully implemented, and successful implementation includes proper interactions and cooperation among people, places, and policies (Honig, 2006). As Tyack and Cuban (1995)

argued, implementing new reforms in the education system does not mean that institutions wipe clean their previous systems; instead, past patterns and new patterns are assimilated. While reforms can change schools, schools can also change reforms. For that reason, it is not simple to implement a new policy, and teachers tend to find gaps in how the new systems are understood, filling them in with familiar concepts (Darling-Hammond, 1990).

Problematically, meanwhile, as Hamilton et al. (2007) noted, teachers believe that the activities that keep students engaged in learning activities inside school are mostly those that schools tend to cut in order to show sufficient yearly testing progress. As a consequence, teachers are helpless to execute those activities that they deem most helpful for students' progress. Smith and Kovacs (2011) added that this situation can deteriorate pedagogical creativity, as teachers might become less creative with their lessons. In the same way, Palmer and Rangel (2011) reported a great deal of displeasure among teachers who found themselves entangled in the rush to cover test materials. Further, as Deniston and Gerrity (2010) argued, in the race to prepare students for tests, teachers disregard the concept of active learning, which implicitly forces students to depend on "repetition." Rothman (2011) also questioned whether CCSS aligns with curricular goals or just helps students to pass tests. Crocco and Costigan (2007) pointed to another critical factor that impacts standards implementation. Administrators often influence teachers to use specific instructional methods. This can create a tense learning environment and conflict between what teachers believe is helpful for students and what an administrator enforces.

On the other hand, many researchers believe that the standards and tests have been incorporated into the educational system to diagnose the student's progress successfully, to find and rectify weaknesses in the system, to find out what a student is unable to grasp, to measure

the ongoing progress of the student, and most of all, to better align teaching practices with concepts that students need to learn (McMurrer, 2008; Mertler, 2011; Pedulla, 2003). Such researchers have found that the new testing and standards were made for the sole purpose of raising student achievement and the college readiness standards.

Given these complicated effects of standardized testing on classroom dynamics, it remains imperative to check teachers' and administrators' perceptions of how the implementation occurred and its influence on students' college readiness. In other words, the fidelity of the implementation of CCSS needs to be checked through the eyes of administrators and teachers because it is crucial to gauge how teachers perceive the impact of CCSS on the education system and to what degree they are impacted by the new system.

Statement of the Problem

There has been a lot of support in favor of CCSS, but the reviews and empirical evidence of many experts have suggested ways that common core standards are problematic. Bracey (2003), for instance, noted that high test scores do not actually reflect competitiveness or ensure a thriving economy. This implies that they oppose the idea that college readiness can be achieved through the currently accepted CCSS. To address this critical question, it was necessary to meticulously test college readiness and its relationship with CCSS. For example, Firestone (1989) and Wixson et al. (2003) found in their study that student achievement did not meet the expectations of the standards-based reform movement of the 1980s. Vinovskis (2009), further, highlighted the fact that the U.S. education system in the first decade of the 2000s did not achieve the proposed targets set by the (NCLB) reform. Tanner (2013) argued that despite high expectations set by "Race to the Top" reforms, the U.S. education system did not witness significant academic achievement gains.

Such studies have raised critical questions about the influence and proper implementation of CCSS. For instance, if the CCSS was structured in a bid to achieve college readiness and to incorporate reasoning and critical thinking into the curriculum, then it becomes necessary to test its influence with both quantitative and qualitative analyses. This is because descriptive data alone cannot disclose the intricacies of interactions between administrators and teachers in the context of proper implementation. Therefore, more research has been needed to test the influence of CCSS on the college readiness of high school students.

The current study aimed to test this issue. Even though the parent's socioeconomic status has a proven impact on children's academic performance, the influence of other college readiness factors needs to be better understood with empirical studies (Marzano, 2000; Tienken & Rodriguez, 2010). As a remedy for the problem of student preparedness for college-level courses, Common Core State Standards (CCSS) were endorsed by almost all of the States' governors in 2009, which (according to them) places a greater emphasis on the comprehension of informational text and math problems (National Governors Association Center for Best Practices, 2010). However, there is a lack of consistent findings concerning the effectiveness of this costly reform. Therefore, further research and testing were needed.

For instance, it has been observed that despite the integration of CCSS in schools, college readiness is still significantly influenced by the students' socioeconomic status. Schools all across the nation are still struggling, though educational communities are working to increase student achievement to close achievement gaps. Based on the research studies, because the achievement gap between white and non-white students gets wider after third grade (Hursh, 2007), disadvantaged students who become a part of the college population are more likely to take remedial courses, and they graduate 2 to 3 years later than the expected graduation date

(ACT, 2010). This outcome suggests that CCSS might have less influence on college readiness than the socioeconomic differences/statuses of the students. Tanner and Tanner (2007) stated that because of inadequate learning resources and unsafe environments, it is hard for many urban schools to develop a desire in students to learn. Considering the inconsistent findings of the previous studies and expecting a big shift in CCSS in terms of college and career readiness of high school students in urban high schools, the research to date should be supported with more quantitative and qualitative studies.

The proponents of Common Core State Standards point to the findings showing that CCSS provides a stable ground for effective teaching practices and profound learning skills (Conley, 2011c), so it has a boosting effect on college readiness as well. When students who lack the crucial skills necessary to attain a college degree get into college to earn their respective degrees, it might be too late for them to get back on track. Statistical data have shown that despite a significant increase in college enrollment, there is a large number of students who do not attain a college degree because they were not academically ready to meet the demands of a college education (Synder & Dillow, 2012). Sparks and Malkus (2013) revealed that in the year 2007–2008 alone, 20% of first-year undergraduate students took remedial courses during their degree programs. Many graduating students, in other words, are not college ready.

Some prominent researchers, like Allensworth (2005) and Heckman et al. (2014), have argued that off-track students can be identified much earlier, before they graduate high school. For example, Neild and Balfanz (2006) researched 8th and 9th grade students in Philadelphia public schools and unearthed various factors that are highly likely to contribute to alleviating college readiness and increase dropping out of schools, including students being unable to secure adequate course credits, falling prey to poor attendance, or showing poor results in earlier grades.

Research has also revealed that resiliency, non-cognitive skills, and intrinsic motivation, which are referred to as psychosocial skills, also contribute to college readiness. According to Kuh et al. (2006), student success in college also depends on the parents' education as well as on family income. Hence, CCSS alone may not be effective if students lack academic self-confidence and steadiness, social connection, communication, goal striving, and general determination (Le et al., 2005). Hence, testing the influence of CCSS on college readiness against all the possible indicators was a must, and there was a gap in the literature on this topic.

Purpose of the Study

The purpose of this study was to examine the implementation of Common Core State Standards in an Urban Charter School of New Jersey and its influence on the college readiness of high school (HS) students. The primary purpose of this study was to analyze the influence and implementation of CCSS both descriptively (quantitatively) and empirically (qualitatively). A mixed method was adopted because there was a considerable gap in the literature on analyzing CCSS using both approaches. Relying on the descriptive method while leaving out the qualitative analysis does not suffice to examine this topic. The purpose of this study was to analyze descriptive data (2010–2015), qualitatively analyze semi-structured interview data, and then map the findings of the qualitative analysis with the descriptive data to figure out to what extent personal experiences match or differ from the descriptive data and to what extent the findings confirm or differ from the literature findings (secondary data) in order to reach a better conclusion/recommendation on whether or not the implementation of CCSS in the urban charter school of New Jersey has any influence on the college readiness of its students.

Research Questions

The overarching research question for this study was, “How do Common Core State Standards (CCSS) influence the college readiness of high school students in an Urban Charter School of New Jersey?” The following research questions were asked to create a complete understanding of the research problem:

1. Did the PSAT/PLAN, SAT, and AP participation rates improve after the adoption of Common Core State Standards (CCSS)?
2. Did the percentage of students who took the SAT and scored at 1,550 or above increase after the adoption of Common Core State Standards (CCSS)?
3. Did the percentage of students who took AP or IB courses in English, Mathematics, Science, and Social Studies and scored three or above improve after the adoption of Common Core State Standards (CCSS)?
4. Did post-secondary enrollment rates after the adoption of Common Core State Standards (CCSS) change?
5. What differences currently exist between the instructional strategies used for teaching the content-based standards in ELA/math and the Common Core State Standards at this school? How has this change influenced the college readiness of high school students? How do teachers feel about this change process?
6. In an integrative mixed methods analysis, do the findings of qualitative interviews with teachers, the principal, and the curriculum and instruction supervisor corroborate the predicted relationship between the adoption of Common Core State Standards and the college readiness of high school students?

Delimitations

Following are the delimitations of this study:

1. This study focused on only one urban charter school in New Jersey to examine the college readiness of high school students after the adoption of Common Core State Standards.
2. In addition to examining the targeted tests and curriculum standards after CCSS incorporation, this research study also explored the fidelity of CCSS implementation through the lenses of administrators and teachers to understand their perceptions.
3. For the descriptive analysis, school data from five different cohorts (2010–15) were studied.

Limitations

The limitations of this study include the following:

1. Since this study was conducted to examine data from an urban charter school in New Jersey, there might be a potential for bias due to the different strategies used by the school district for implementing the Common Core State Standards (CCSS), which might affect the student outcomes on school report cards.
2. Another limitation was the assumption that there was adequate planning to meet interdisciplinary goals in the curricular development for Language Arts, Mathematics, Science, and Social Studies and appropriate processes in place to evaluate the curricular goals for high school students. This study used data from the selected school's report cards to determine the average percentage rate of students taking at least one AP or IB course in four core areas, rather than just considering Language Arts and Mathematics, to compare scores in AP ≥ 3 or in IB ≥ 4 .

3. When the selected urban charter school's data were compiled for quantitative analysis from the online archives of the school and New Jersey Department of Education (NJDOE), it was assumed that the five consecutive academic years of data were accurate and that the NJDOE's website is reliable.
4. A possible threat to this research study's validity was that the administrators and teachers who participated in the study might not reflect the viewpoint of the majority. Another possibility is that some teachers might not be willing to speak against Common Core State Standards, which could have deterred some from participating. However, as the researcher has never been a teacher at the study site, it was assumed that the participants would be more truthful and would volunteer correct information in response to the interview questions.

Significance of the Study

This study examined the relationship between the adoption of Common Core State Standards (CCSS) and the college readiness of high school students in an urban charter school of New Jersey.

In the last decade, the most cooperative approach to embracing rigorous standards in language arts and mathematics for K-12 students in American public schools has been the development of the Common Core State Standards adopted by 41 states and the District of Columbia since 2010. Because the PARCC/NJSLA testing results designed to measure the outcomes of CCSS were not available until November 2015 and there are insufficient quantitative studies on this topic (Tienken & Orlich, 2013), local district educational leaders and policymakers statewide have not been able to promote positive findings.

The implications of this research study are twofold. First, it provides a detailed analysis (both quantitative and qualitative) of the implementation of Common Core State Standards in an Urban Charter School of New Jersey and its influence on the college readiness of high school students. Second, it provides valid first-hand information that can open doors to research on the implementation of Common Core State Standards in other schools.

The aim of this research was to contribute to the literature on CCSS and the augmentation of college readiness of high school students in urban schools. To assess the students' readiness for college, four research criteria—PSAT/PLAN, SAT, AP/IB, and secondary school enrolments—were considered. The study also extended existing research on this topic by linking rigorous standards in a grades 9–12 setting with the college readiness of high school students.

Theoretical Framework

In this study, three theoretical lenses were used to gain an understanding of the effects of the implementation of CCSS in an urban charter school of New Jersey. The first lens was the efficiency of school leadership and teaching practices, which are the most relevant components of student success. Mintzberg's efficiency theory, which recognizes non-hierarchical and dynamic administrative structures, might provide a valid basis for understanding the philosophy behind adopting more rigorous school standards nationwide. Such structures cannot be explained with Max Weber's constructs, which are limited to hierarchical concepts. According to Mintzberg, all organizations have comparable mechanisms, which, in response to a number of conditions, are usually designed in seven different ways, thus allowing individual organizations to function desirably.

To increase the efficiency of the expected student learning outcomes, the transformations of the skills and methods utilized by teachers can be explained with the Change Theory. For

instance, developing new curricular goals by aligning rigorous standards (CCSS) with the college readiness criteria of HS students requires considerable well-informed strategic planning, yet there might be gaps between aligning *efficiency* with *college readiness*. For example, in ordinary cases, if someone hears that a restaurant is efficient at serving fast food to their customers, this might create doubts about the food quality in the eyes of the customers, so that efficiency needs to be aligned with the goal of customer satisfaction (in the case of a restaurant). In the same way, there might be a strong need to align efficiency with proper standards to meet the goal of achieving college readiness.

Two prominent theorists who extensively studied “Change Theory” are Michael Fullan (2006) and Kurt Lewin (1946). Fullan (2006) stated that “Change Theory” can be applied effectively in the education system if used properly. Change theorists have identified several critical steps in the change process (Fullan, 2006, 2008; Morrison, 1998). It is imperative to utilize change processes carefully for the purpose of bringing about successful change in an organization. Previous research has shown a failure to bring about change in low-performing schools or districts and identified the possible misuse, or lack, of Change Theory as a cause.

Change theory was included in the theoretical framework for this study because a recent report by Sforza et al. (2016) revealed that the previous New Jersey Core Curriculum Content Standards (NJCCCS) were better than the newly incorporated Common Core State Standards (CCSS). This finding was investigated by gaining insight into the levels of thinking needed by CCSS for grades 9–12 in English language arts and math with those required by the New Jersey Core Curriculum Content Standards (used previously) in grades 9–12 English language arts and math. If the previous CCSS change was needed in the system, was it incorporated by keeping in view the change metrics presented by the Change Theory (see Figure 1).

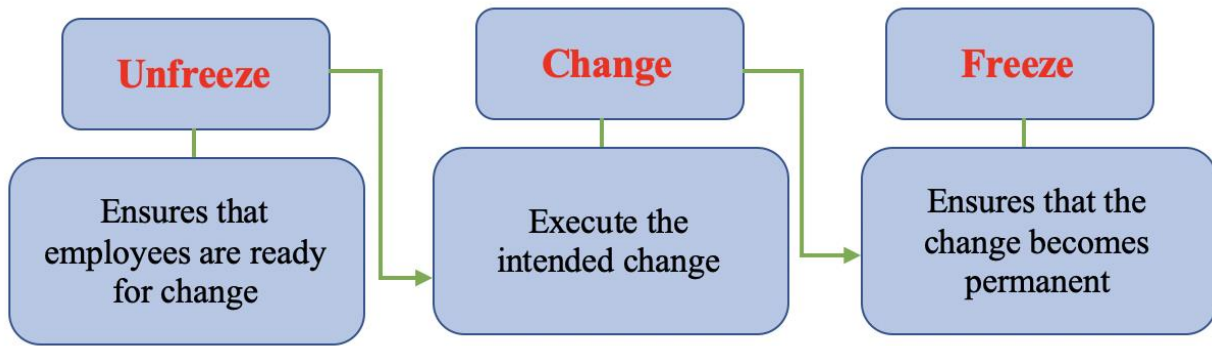


Figure 1. Three Step Change Model

Source: Lewin, (1947). *Frontiers in Group Dynamics*

Step 1, Unfreezing: A quasi-stationary equilibrium tagged with a complex set of driving and opposing forces exist in a system wherein the change should be incorporated after turning the equilibrium into an unfrozen stage first.

Step 2, Changing: This step involves a learning approach in which the organization forecasts the predictable change after the unfreezing stage.

Step-3, Refreezing: This is the stage wherein the change is stabilized in the system so that people embrace it with an open heart and full support.

If we take the above rules as standards of Change Theory, was the new CCSS incorporated keeping in view these standards, or was it incorporated with an empty argument about the need to achieve college readiness and ultimate educational outcomes?

Finally, Human and Social Capital Theory (Becker, 1964; Coleman, 1988) presents the view that the value of an education goes beyond what is learned in school. While human capital refers to the nature of the workforce as a product and resource, social capital theory focuses on mostly intangible values associated with human relationships between individuals or groups. Becker and Coleman (1994), meanwhile, argued that there are significant public and private returns on investments in education. The fundamental implication of a human and social capital

perspective is that investments in knowledge, skills, and collaboration bring about economic gains, individually and, therefore, collectively. Putnam (2000) argued that the quality of life at the level of community, enterprise, or nation will be higher if membership in the community brings about active involvement. Human and social capital theory was also included in the theoretical framework because there might be some concrete social elements behind the college readiness factor.

For example, Tienken (2011) pointed out that the standards of a curriculum alone do not make the difference; instead, the comprehensive social system for mothers and children drives college outcomes (college readiness) as well. Tienken stated that it is extremely difficult to separate curricular standards from social aspects such as social development, home environment, experiences in life, family backgrounds, emotions, and culture. As noted, the research has also revealed that resiliency, non-cognitive skills, and intrinsic motivation, which are referred to as psychosocial skills, also contribute to college readiness. For example, Yeager et al. (2013) argued that those students who know that they can improve with hard work are highly likely to withstand past failures and improve their academic performance.

Definition of Terms

The following operational definitions and technical terms were used for this study:

Advanced Placement (AP): A program administered by the College Board to offer more than thirty college-level courses to high school students in the U.S. and Canada. Students who score between 3 and 5 on AP tests may qualify for higher advancement or receive credits in American colleges/universities (College Board, 2016).

College and Career Readiness: The students' performances on standardized college entrance test scores such as the ACT and SAT tests (ACT, 2005); students' knowledge, skills, and behaviors to complete a college course of study successfully without remediation (College Board, 2010) and students' readiness to be successful in entry-level careers and workforce training programs (NGA Center, 2015).

Common Core State Standards (CCSS): The academic standards in English Language Arts/Literacy and Mathematics and for students in grades K–12. The learning objectives of each standard specify the knowledge and skills that students should master at the end of each grade to prepare for college and careers (NGA Center, 2010).

Composite SAT Score: The sum of scores on the three sections (Reading, Math, and Writing) of the SAT, which is scored on a 200–800 scale in each section (College Board, 2016).

Economically Disadvantaged Student: A student who is eligible for free or reduced-price meals under the National School Lunch and Child Nutrition Program (PEIMS Data Standards, 2007–2008).

International Baccalaureate (IB) Course: A rigorous course designed with an intense curriculum for high school juniors and seniors that emphasizes intercultural understanding and

enrichment. An IB course is assessed on a grading scale ranging from 1 to 7 (International Baccalaureate, 2016).

Partnership for the Assessment of Readiness for College and Careers (PARCC): A testing model for common assessments in Language Arts and Mathematics for Grades 3 through 11. The consortium of states aligned the assessments with the Common Core State Standards (CCSS) to determine students' readiness for college and career (PARCC, 2016).

Post-Secondary Enrollment: The percentage of high school students enrolled in higher education within sixteen months of high school graduation. The data also can be sorted by "Institutional characteristics such as Type (public/private), Level (2yr/4yr), and Location (in-state/out-of-state)" (National Student Clearinghouse, 2015).

Preliminary American College Test (Pre-ACT / PLAN): A test typically administered to high school students in the fall of their sophomore years to predict their ACT scores and college readiness by measuring their academic achievement competencies in English, Mathematics, Reading, and Science (Pre-ACT, 2016).

Preliminary Scholastic Assessment Test (PSAT): A National Merit Scholarship Qualifying Test that provides an opportunity for students to preview the SAT. Students in grades 10 and 11 are asked the same types of questions in the same subject areas that are on the SAT (Reading, Writing and Language, and Math), but at a grade-appropriate level (PSAT/NMSQT-Official SAT Study Guide, p. 39).

Scholastic Assessment Test (SAT): Measurement of the math, literacy, and writing skills required for academic success in college. The SAT composite score ranges from 600 to 2400; this scale was used between March 2005 and January 2016 for Mathematics, Critical Reading, and Writing. High school students usually take the SAT in their junior and senior years

to assess how well they analyze and solve problems (College Board, 2016, SAT Suite of Assessments).

Urban Schools: Schools that are likely to serve the minority children of families with low-socioeconomic status (SES) in an inner-city neighborhood populated with mainly African Americans or Hispanics. On average, urban schools are larger than suburban or rural schools (NCES 96-184).

CHAPTER II

REVIEW OF LITERATURE

Introduction

In New Jersey, the shift from existing content-based standards in ELA and Math to standards that emphasize the comprehension of informational texts and multiple representations of mathematical concepts has raised the question of what instructional practices are most effective during this transition (Kindall, 2013). Therefore, the researcher examined literature pertaining to the adoption the new set of standards in ELA and Math and its influence on the college readiness of High School (HS) students in an urban charter school of New Jersey.

Literature Research Procedures

As Webster and Watson (2002) suggested, this literature review chapter was designed on a concept-matrix, defining the main topics and their subtopics in each category while analyzing the related articles and studies. For secondary data collection, the researcher searched the online databases ERIC, JSTOR, Academic Search Premier, SAGE, and the American Educational Research Association (AERA) for scholarly articles. The researcher reviewed seminal works, peer-reviewed research, government reports, experimental, quasi-experimental, and non-experimental research studies.

This chapter is composed of the following sections: (a) on the necessity of adopting rigorous standards in ELA and math; (b) on development more rigorous standards in ELA and math; (c) on the implementation of Common Core State Standards; (d) on benchmarks for college and career readiness such as PSAT/PLAN, SAT, AP/IB, and Post-secondary enrollment; and (e) on the theoretical framework that can be used to understand the adoption of CCSS and its expected outcomes (see Figure 2; Wallace & Mintzes, 1990).

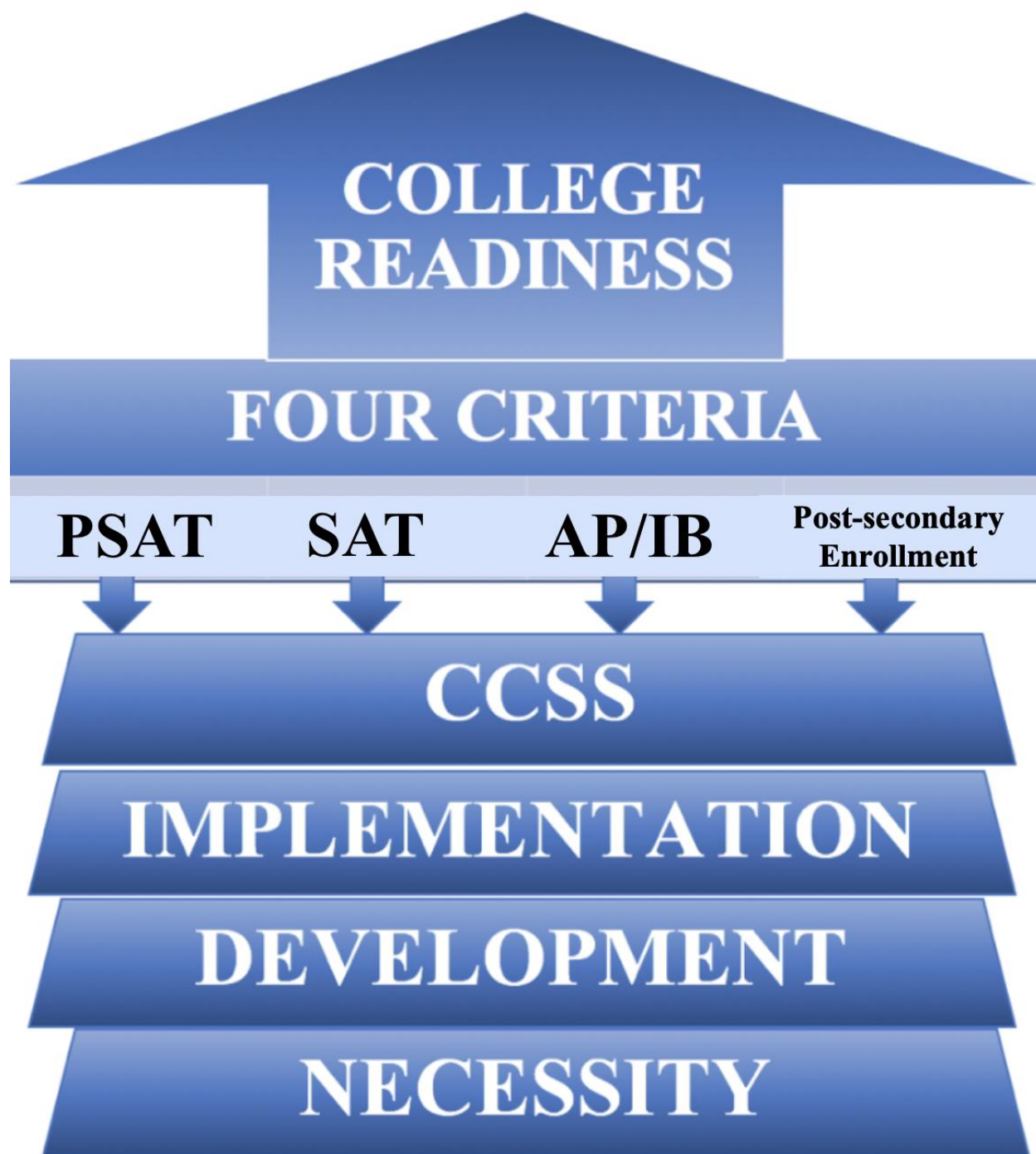


Figure 2. The Guiding Concepts for Literature Review

Source: Common Core State Standards Initiative, 2010

Criteria for Inclusion and Exclusion of Related Literature

The following guidelines were used in the inclusion and exclusion of related literature; the majority of the studies covered in this review were published in the last 15 years (Randolph, 2009).

Selection Criteria

The selection criteria for the literature review were that the articles were in peer-reviewed published journals or were dissertations, government and professional association reports, seminal works, and books on standards-based education. Experimental, quasi-experimental, and non-experimental research studies on standards in ELA and Math for grades K–12 and benchmarks for preparing high school students for college were selected. To address the historical context of standardized testing and accountability in American educational reforms, the peer-reviewed articles were all published in the late twentieth and early twenty-first centuries.

Necessity of Adopting Rigorous Standards in ELA and Math

1-Creating Equity for the Students in Different States

When the current research study uses the phrase “rigorous standards,” it points towards those educational standards that significantly map towards college readiness and success in practical life. The rigorous standards in ELA or Math enable students to think critically, grow well, and reach specific knowledge and skill levels for a particular grade and then move to higher levels of education without repeating classes or requiring remedial academic work.

Holding states accountable for their students’ assessment resulted in mandating the requirements of the No Child Left Behind (NCLB) Act for K–12 education while, at the same time, allowing districts to define their own proficiency levels, especially in ELA and Math, which has created considerable differences among states’ yearly progress reports (Linn, 2005).

State assessments have even more importance at the high school (HS) level, as they are used for graduation requirements. Although no state exam has been developed that focuses on connecting with post-secondary education readiness, it is essential to understand the links between the standards taught in HS and the expectations of colleges across the country (Brown & Conley, 2007). There are two conflicting practices in this area. Brown and Clift (2010) stated that while better performing schools challenge students with high standards and strive to prepare them to be college ready, low-performing schools are more likely to target meeting minimum standards to make the high school students graduate with diplomas.

The researchers have been studying for so many years to identify the independent factor(s) that contribute to student success for all, not just for the advantaged. Darling-Hammond et al. (2007) conducted a study at Stanford University, in collaboration with the Justice Matters Institute, focused on redesigning high schools. To find a school model that supports excellence and equity for all students, five high schools were selected as samples. In the study, the researchers defined the characteristics of high performing schools that sustain remarkable levels of student success. They also identified the need for adopting new policies for the standards in curricula needed to maintain quality and equity. The significant findings in that study were recommended as generalizable/workable on a broader scale.

In another study, Brown and Clift (2010) analyzed the knowledge and skills needed for success in entry-level university courses. Their study included 60 math and English assessments from 20 states. On average, compared to math assessments, the English assessments were slightly more aligned with content that did not require higher-order thinking. The findings of that research can provide a basis for states that require designing new sets of standards in English and Math to determine college readiness.

Providing equity to all students has been the biggest but the most important challenge for educators. Equity in education means that there should be no obstacles to achieving academic potential based on students' ethnic origins and gender differences, for example, so that every child in the education system meets at least a minimum level of educational attainment (OECD, 2011). Field, Kuczera, and Point (2007) found that the key challenges to providing equity in education exist on two dimensions: (a) fairness, which means that ethnic origin, gender differences, social circumstances, and personal appearance should not hinder the educational potential of the child; and (b) inclusion, which means that the education system should provide a basic minimum standard of education for all the participants—for instance, every child should have no difficulty with writing, reading, and solving simple arithmetic problems. The report also presented ways to improve the design of the educational system, improve practices in and out of the classrooms, and improve resourcing options.

Providing equity to high school students in different states should not be limited to their secondary and post-secondary educations but should include access to equal career opportunities. Addressing educational inequalities across different states is important to increasing the global competitiveness of the American labor force (Cogan, Schmidt, & Houang, 2013). Based on U.S. census data, there will be no racial or ethnic majority in the United States by 2050. In addition, new immigrants and their children who live in the U.S. between 2000 and 2050 will represent 83% of the growth in the working-age population. Stakeholders who are preparing the diverse workforce should perceive this reality as an opportunity rather than a challenge. A 2011 Forbes study surveyed 321 large global enterprises with a minimum of \$500 million in annual revenue and found that 85% agreed or strongly agreed that diversity is crucial to nurturing innovation in the workplace (Kerby & Burns, 2012).

Synthesis

Educational standards in all of the U.S. states should be set in such a manner that student outcomes as a whole become more equitable and no one is deprived of the opportunity to meet the basic learning standards deemed necessary for college readiness. Such educational equity among the states should be attained even at the pre-primary level since, according to Wils and Bonnet (2015), the high success rate of school readiness assessments depends on the standards that are set for pre-primary education.

There are, however, various challenges to achieving educational equity among all U.S. states. The first challenge is that of fairness, which implies that the states should ensure that students achieving their educational potential should not be comprised due to their ethnic origin, socioeconomic status, or gender (Simon, Malgorzata & Beatriz, 2007). The second challenge is inclusion, which means that the education system should be organized in such a way that it provides the basic minimum educational standards to every individual. There has been a lack of inclusion and fairness among OECD countries, including the U.S. (OECD, 2011). That lack of fairness is especially evident among students from low-socioeconomic backgrounds.

The evidence shows that one in five students across OECD countries does not attain the minimum skills necessary for college readiness. Hence, providing equity in education among the states is one of the most significant challenges to ensuring equitable educational standards for all. Whether the Common Core State Standards are beneficial for attaining educational equity is likely to remain a question until strong evidence emerges. Meanwhile, it is extremely important to keep an eye on equity indicators to ensure that equity in education is maintained.

2-Improving Test Results in ELA and Math

Despite the fact that there are many contributing factors to closing students' achievement gaps, such as poverty, one cannot rule out the effectiveness of teaching practices, which is important to the most disadvantaged students' outcomes (Gordon, Kane & Staiger, 2006). Educators in low performing schools can assume that improving the quality of teachers will result in decreasing intergroup inequalities (Stewart, 2002). When Ferguson, Clark, and Stewart (2002) surveyed more than 34,000 students in middle and high schools across the nation, they found that empowering teachers with content knowledge, pedagogical recommendations, and relational skills can minimize the achievement gap among students. Many researchers have supported these conclusions, showing that teachers who get supported with appropriate professional development resources become effective facilitators of the learning processes (Hmelo-Silver, 2004; Hmelo-Silver, & Barrows, 2008; Kirschner, Sweller, and Clark, 2006).

Over time, the indicators of teaching effectiveness have been changed. The traditional methods of assessing teaching effectiveness (such as determining if a teacher is equipped with particular educational standards, experience, or credentials) are not fully associated with the effectiveness of teachers promoting student achievement in general (Wayne & Youngs, 2003). For that reason, policymakers have started identifying and defining non-traditional metrics of teaching effectiveness, such as measuring their effectiveness at achieving students' academic growth and incorporating those metrics into human resource policies (Districts, 2012). Hanushek, Kain, and Rivkin (2004) and Goldhaber (2008) noted that there is a tendency among teachers to shift to higher achieving schools, which can create a gap of effective teachers in high need schools. In this context, policies should be crafted to provide incentives for teachers who are delivering their services in high-need schools. According to the researchers, there should be

continuous monitoring to compare the effectiveness of teaching practices in the high achieving schools and the high need schools.

The State of New Jersey has been setting academic standards in nine subject areas since 1996. Every five years, all of the standards have been revised and updated to increase student achievement. A major change in Math and English Language Arts was initiated after the adoption of Common Core State Standards in 2010 (New Jersey Department of Education [NJDOE], 2014). To analyze the major shifts in these two subject areas, one needs to understand the CCSS. The CCSS defines what students are expected to know and be able to do by the end of each grade level. In New Jersey, school districts have an obligation to develop rigorous curricula that will assist teachers in meeting the CCSS. This is only possible after identifying the key shifts that occurred between content-based standards and the Common Core State Standards, which required changes in teachers' classroom methods (NGA Center & CCSSO, 2010).

Shifts in English Language Arts & Literacy

1-Reading: Students are expected to build knowledge and vocabulary for academic English to read and comprehend literature/informational texts of increasing complexity.

2-Writing: Students in K–12 use text-based evidence for argumentative and informative writing for the purposes of purposes analysis and presenting knowledge gained through research.

3-Language and speaking: Students understand the multiple perspectives of each discipline and present ideas by including their own experiences and opinions (see Goatley, 2012; NGA Center & CCSSO, 2010; Pearson, 2013).

Shifts in Mathematics

1-Fewer topics: Students learn fewer topics, with details described in the standards meant to develop their problem-solving skills ability to make connections between required knowledge and real-life applications.

2- Coherence: Students master each prerequisite and make a connection with the next one as an extension of their previous learning. Because the mathematical concepts are not detached from each other, the teachers convey the standards in a coherent way so that the students have a solid body of knowledge.

3-Rigor: Students learn mathematical notions in a systematic way to build their conceptual development ability and procedural fluency.

In 2009, the average reading test scores of 12th graders, as reported by the National Assessment of Educational Progress (NAEP), was four points lower than in 1992. The large achievement gap between groups of students persists. When comparing the math and reading scores of the same group of students, a 5% difference in achievement scores was more recently indicated among the Whites, Blacks, and Hispanics, which has not changed since 1992 (NCES, 2010; see also Cogan, Schmidt & Houang, 2013; NGA Center & CCSSO, 2010; Reston, National Council of Teachers of Mathematics, 2000; Robelen, 2012).

Synthesis

In the context of the percentage of students at the proficient and advanced proficient levels in English and Mathematics in New Jersey for the years 2009–2014, the Performance Division of NJDOE retrieved data from the Student Achievement Outcomes report 2014 (Nj.gov, 2017) showing that the K–12 learning standards for ELA and math used in the State of New Jersey were unable to produce 100% proficiency in either subject as of 2014. The NCLB Act had

set ambitious goals and monitored state's yearly progress. The discrepancy between the targeted growth in ELA and Math for each year and the realized growth revealed wide gaps between the cohorts' performance levels. This outcome was not much different when student testing was aligned with the national benchmarks approved by the National Assessment Educational Progress (NAEP).

The proponents of CCSS presented the transition from content standards to CCSS as a means of improving test results in ELA and Math and claimed that they were supporting research- and evidence-based standards (Kolen, 2011; Patz & Yao, 2007; Yen, 2007). However, Gamson, Lu, and Eckert (2013) highlighted that the complexity of the CCSS reading materials and textbooks across grade levels was unnecessary. Their research showed that the complexity of reading textbooks at the 3rd and 6th grade levels has either increased or remained consistent during the last 25 years. The authors rejected arguments posited by the proponents of CCSS with regard to the decreased difficulty level of school reading textbooks since they conducted more extensive research, drawing from a corpus of over 10 million words, far more than the other investigations. So, they suggested, efforts to quickly increase textual complexity seemed to be rushed, and the effectiveness of the change has not yet been validated. These findings have important practical implications. For example, if current students are falling short in their academic achievement due to text complexity, then there is no need to sanction the text complexity calls raised by the proponents of CCSS. On the other hand, if students are falling short of college readiness due to simplifications of the texts used in early grades followed by more complex texts in post-secondary grades, then the increased textual complexity demands of CCSS might be entertained.

3- Increasing Efficiency in Utilizing Educational Resources

One of the objectives of Common Core State Standards (CCSS) is to change the individual state standards to national standards that include a consensus on the need for increasing the efficiency of how educational resources are utilized, reducing the cost of education, and strengthening collaborative partnerships among educators (NGA Center & CCSSO, 2010; Porter, McMaken, Hwang, & Yang, 2011a). Consolidating resources eliminates duplication and helps schools to save money while planning their educational goals more strategically. In addition, school districts will have numerous educational partners with whom they can collaborate, as will the states. With shared educational resources, the purchase of educational materials and services from state-approved vendors will not fluctuate based on the number of students in each state.

In a review of economic studies, Benabou (1996) outlined the causes of socioeconomic stratification and its consequences and proposed that the state equalization of school resources would balance inter-generation inequalities. Benabou found that the decentralization of school funding does not improve efficiency and creates segregation across communities. One of the implications of his findings was that control of how funds are allocated should be left up to each state for the purpose of improving efficiency and closing the wide gaps in school budgets among different school districts. The second prominent implication of Benabou's study was that there is a need to adopt a new school finance configuration that distributes resources and financial capital appropriately (Benabou 1996; Rusk, 1993). Lotkowski, Steven, and Richard (2004) and Roza (2009) found that all school districts do not operate efficiently to save money and that the degree of inefficiency differs noticeably among them. To minimize inefficiency, educators need

indicators that guide them to make informed decisions about the allocation of resources in ways that sustain and improve the district's academic performance and priorities.

As an independent variable, the effectiveness of how states utilize resources is one of the indicators that is closely correlated with student achievement results. Even though the per-pupil expenditures in a school may vary based on factors such as subject and course level, outsourcing electives and redesigning high schools may reduce the cost of education in some districts with high schools. The findings of a study conducted in three districts with 17 high schools revealed that while average spending for Advanced Placement (AP) course per student is 2.32 times more than spending for the regular course, the cost is only 0.97 times more for a remedial course compared to a regular one. Even though these numbers are slightly different in each district, in all three, the average salary paid for the teachers who teach electives was significantly higher than the salaries paid to teachers (Roza, 2009).

Synthesis

Lowering the cost of education while trying to increase student outcomes creates ambiguous situations that require collaboration and careful planning among states, policymakers, and educators to prevent the impacts of cutbacks. Producing sufficient outcomes for all students in any circumstances and meeting their diverse needs will not be easy. Therefore, educational leaders at every level should work together to reconsider current policies and reformulate the existing funding system, which has been embedded in the school system for decades. To achieve a well-organized fund allocation and maintain education quality, some states are already thinking about new funding models, using technology to deliver instruction, or changing their budgeting practices.

Much has been written about integrating technology, which is believed to be playing an essential role in increasing educational efficiency at every grade level, into the education system (Buckingham, 2013; Luckin, 2010; Plowman & Stephen, 2010; Sipila, 2010). Utilizing open educational resources, promoting online learning communities for the professional development of teachers, and the further development of best practice guidelines for effective online teaching practices are some of the benefits of moving towards digital platforms. Moreover, making resources available through online educational technologies and designing accessible learning opportunities for all students may better fulfill the needs of diverse learners, including English Language Learners (ELL), students with low SES, or gifted and talented students. Transitioning to web-based systems can provide both short- and long-term cost savings and efficiencies to school districts.

Development of More Rigorous Standards in ELA and Math

Providing standards-based education in K–12 settings based on each state’s defined learning standards in core subjects has been occurring for about the last thirty years. One of the most significant advantages of the standardization movement has been its ability to build common ground so that educators across the U.S. can talk about standards using the same language. Yet, because of federal policies and the accountability measures of NCLB, in some states the movement has resulted in the adoption of the low standards that are misaligned with higher education benchmarks. Even though the students may attain proficient levels in Language Arts/Literacy and Math tests according to the state, those achievement levels were not confirmed with the similar assessments sponsored by NAEP (Swanson & Stevenson, 2002). Such discrepancies triggered the opening of more remedial college courses for students who graduated from high school but were not ready to take credit-bearing courses at their colleges. Some

research studies have even claimed that only 50% of high school graduates are academically prepared for higher education (Greene & Winters, 2005). Lack of curricular alignment was one of the critical reasons that the states decided to develop the Common Core State Standards in 2009.

Throughout the literature on the development of new standards, three important categories were identified and studied: the timeline of the development process, the key stakeholders, and the guidelines of new standards (Mislevy, 1991). Those concepts are discussed in the following sections.

The Timeline of Development Process

The idea of defining a new set of standards for K–12 education was first introduced and discussed in November of 2007 at the Council of Chief State School Officers' (CCSSO) Annual Policy Forum. A year later, in December 2008, NGA, CCSSO, and Achieve Inc. released a report to “upgrade state standards by adopting a common core of internationally benchmarked standards in math and language arts for grades K–12 to ensure that students are equipped with the necessary knowledge and skills to be globally competitive” (Benchmarking for Success, p. 24). As part of the action plan decided on at the NASCA Convention in April of 2009, NGA and CCSSO invited the state governors to sign the Memorandum of Understanding (MOU) and commit to a CCSS development process for English Language Arts/Literacy and Mathematics.

In May of 2009—one month later—the first draft of college-and career-ready standards was arranged for review by the initial feedback group. Forty-nine states and territories endorsed this state-led initiative in June of 2009. Before releasing the final version of CCSS in June of 2010, with feedback provided on the grade-by-grade standards, the college and career readiness standards were improved and updated (CCSS Initiative, 2010). As of 2009, “41 states, the

District of Columbia, four territories, and the Department of Defense Education Activity (DoDEA) have adopted the Common Core and are implementing the standards according to their timelines” (CCSS “Development Process,” 2009). In New Jersey in 2015, almost 5 years after the adoption of CCSS, state officials reviewed and revised the CCSS again. One year later, the CCSS in Mathematics, English Language Arts, and seven other content areas were collectively named NJ Student Learning Standards (NJSLS).

The quick adoption of CCSS in New Jersey (just two weeks after it was proposed) raised serious doubts about the decision. The proponents of CCSS argued that Asian Nations that have shown considerable economic progress had high test scores (Bracey, 2003). In other words, they strongly correlated economic good times with high test scores. As Bracey (2003) claimed, though, such arguments were a bit empty since they were based on the unfounded assumptions of American educators who visited Japanese schools that the Japanese system was superior and should be incorporated into American schools. The visitors did not see the bad side of Japanese schools since they only visited top-level schools because outside visitors generally do not have a chance to visit schools other than those at the top. The recently bleak Japanese economy also presents a contrary situation.

The quick adoption of CCSS also led to many serious concerns that factors strong enough to impact educational outcomes in the past had not been considered. For instance, many studies regarding the College Board’s Scholastic Aptitude Tests conducted from 1963 to 1980 showed a considerable decline in scores accompanied by contributing factors like more students from low-income families, more with mediocre high school records, more women, and more minorities (Slack, 1980). In other words, focusing on the adoption of the new standards to raise test scores

and ignoring other contributing factors might not address the long-term problems behind student underachievement.

The Key Stakeholders

Identifying key stakeholders and involving them in the planning, development, and implementation processes are fundamental strategies for helping organizations to meet their obligations, fulfill their assignments, and construct public value (Bryson and Hand, 2007). In this regard, CCSS standards mainly relied on experienced ELA/Math teachers and experts from across the country:

The National Education Association (NEA), American Federation of Teachers (AFT), National Council of Teachers of Mathematics (NCTM), and the National Council of Teachers of English (NCTE), among other organizations, were instrumental in bringing together teachers to provide specific, constructive feedback on the standards. Teachers were members of teams' the states convened to provide regular feedback on drafts of the standards (Development Process of CCSS Initiative, 2009).

This representation raises doubts about whether the groups who were supporters of the standards had enough significant input based on empirical reviews.

Broken into working groups, teachers were asked to provide feedback on CCSS during two public comment periods. Likewise, under the guidance and authority of governors and chief state school officers, educational leaders, such as superintendents and college professors, collaborated to improve K–12 standards by aligning them with post-secondary education benchmarks. For instance, 34 states now support an initiative called the American Diploma Project (ADP) to ensure that every high school student graduates with quality education and can make a smooth transition to college or work (Cohen, 2008). The challenge of improving college

readiness among high school students had been overwhelming. For example, Conley (2007b) found that while about 67% of U.S. graduating high school students were admitted into college in 2004, rising enrolment would be of no use if the majority of students would not be able to complete a bachelor's degree. Conley underscored the fact that in 1998, only 35% of students who enrolled in colleges were able to attain their degrees in four years, whilst 56% were those who were able to earn degrees did so in 6 years. This underachievement, even after taking account of the implemented measures, has raised serious questions about whether college readiness was achieved.

A report presented by ACT (Common Core State Standards, 2010c) highlighted the differentiation of skills between students who meet or exceed the benchmark on the reading section of the ACT college admission test from those who were unable to meet it. Past ACT research favors the opinion that those students who were able to attain or exceed the reading benchmark score had better chances of getting a C or better in an introductory, credit-bearing course or a 50% chance of getting a B or higher in such a course. In the 2004–2005 academic year, only 51% of students had a probability of earning their degrees. In the 2008–2009 academic year, only 53% of students achieved the desired reading benchmark score, which was a negligible increase.

The Guidelines of New Standards-CCSS

The goal of the standards writers was not to make minor changes to the available standards but to create new ones. In other words, “These standards are not intended to be new names for old ways of doing business” (CCSSM, p5). Instead, they were believed to be rigorous, coherent, and tightly aligned with curricular goals and standardized assessments.

The Education Policy Improvement Center (EPIC) conducted two important studies in 2011 to explore the readiness of high school graduates being educated with new standards. According to the standards writers, *readiness* refers to the ability required to be successful in college-level courses and the workplace. In the first study, a survey conducted of professors teaching first-year college courses at the University of Oregon revealed that students need more knowledge and skills to be successful in their courses (Conley, Drummond, deGonzalez, Rooseboom, and Stout, 2011a). These findings were supported in the second study, conducted separately by EPIC, which found that the new standards (CCSS) match well with the goal of students reaching International Baccalaureate (IB) Program standards (Conley et al., 2011b). Opponents argued that these findings were based on empty arguments since they were biased toward people who were optimistic about CCSS and in terms of their sampling methods. Others argued that the newly adopted CCSS did nothing but add to the complexity of textbooks (Gamson, Lu Eckert, 2013).

It is often argued that poor PISA results in the context of testing U.S. students' preparedness for global competitiveness was a key reason for adopting new educational standards. However, Tienken (2013) negated the results of PISA, based especially on the fact that the sample of students who took part from 65 countries was aggregated. For example, in Japan, only the best students took part. Likewise, in China's educational system, multi-millionaire residents of wealthy Chinese cities are able to enroll their kids in the best schools (by comparison, in the U.S. students are enrolled based on the school district in which they live, though there is an exception for school choice). Levin (2012) also corroborates that this difference in enrolment patterns creates super schools within the system, so the PISA results were not an actual reflection of average Chinese students but only of a minute portion of the best

students. If an exact comparison were made for only U.S. students in the top 10% economically, then they would score first on the PISA tests, followed by students from Shanghai.

CCSS for Mathematics

Analyzing the mathematics standards in the U.S. public schools, Wiggins (2011) argued that mathematical concepts are presented shallowly and are not sufficiently thought-provoking as a result of CCSS. The Common Core State Standards for Mathematics (CCSSM) were designed with three criteria meant to ameliorate this problem. The first criterion is to focus on major topics, which requires narrowing down the scope of content in each grade so that students thoroughly experience the most important concepts. At the high school level, this is interpreted as developing knowledge and skills that are generally pertinent to the prerequisites for post-secondary education.

The second criterion of the CCSSM revolves around developing coherence between content and grade levels so that students can build their knowledge and skills consistently. This also helps teachers and curriculum developers to present mathematical knowledge in a well-integrated way (McCallum, Zimba, and Daro, 2011). The CCSSM was built on the work of the National Council of Teachers of Mathematics (NCTM) to align the progression of topics vertically, to promote readiness for post-secondary education, and to create future career opportunities for students (Carnevale & Desrochers, 2003; Gamoran & Hannegan, 2000; Rose & Betts, 2001).

The last criterion addressed the rigor of content, which covers three important areas: conceptual understanding, procedural skills and fluency, and application of concepts (Daro, McCallum, and Zimba, 2012). Here, rigor means that educators have to pursue all three of these goals with equal intensity. For instance, mathematics resources in grades K–12 are deployed to

help students make growth toward mathematical fluency, but making progress toward these goals is interlinked with students' conceptual understanding and the applicability of the presented topic (Daro, McCallum, and Zimba, 2012).

Opponents of CCSS have question whether the current level of complexity required to meet these standards were proactively measured or just the consequence of the wishful thinking of policymakers. Sforza et al. (2016), for instance, raised the question, given the low results after the implementation of the new standards compared with the previous standards in the State of New Jersey, of to what extent the CCSS was filled with creative and strategic thinking rather than data-based goals. The researchers also argued that even if, for the sake of argument, they accept that CCSS is replete with rigorous standards that make it more difficult than the previous state standards, difficulty itself cannot be considered a better option for strategic and creative thinking. In the context of CCSSM, Wiggins (2014) also argued that the unclear parts of some standards, alongside convoluted questions and prompts, undermine creative and strategic thinking among the students.

CCSS for English Language Arts (ELA)/Literacy

To prepare K–12 students for college readiness and provide them a solid foundation in English Language Arts/Literacy, teachers must utilize high-quality, increasingly thought-provoking literary and informational texts. The proponents of CCSS underscore that with the advent of CCSS, the focus on narrative readings and writings has been transferred significantly toward informational texts (NGA & CCSSO (2010). While the previous state standards emphasized the reader's response and comprehension, CCSS focuses on interpretation, argumentation, and literary analysis (McLaughlin & Overturf, 2012). The new standards require

aligned ELA curriculum materials in grades 6–12 to include a blend of literature—fiction, poetry, drama and substantial sampling of literary nonfiction, including essays, speeches, opinion pieces, biographies, journalism, and historical, scientific, or other documents written for a broad audience. (CCSS, 2010, p. 57).

Since the CCSS for ELA/literacy created a framework for focusing on the knowledge and skills that are widely approved for post-secondary success, students who can understand complex texts and quantitative information derived from charts and other visual formats have a greater chance of success (ACT, 2006; Coleman and Pimentel, 2012).

The CCSS assessments for ELA/literacy require students to draw evidence from the text and explain that evidence, both orally and in writing. More complex texts have been selected for the students, so they will need more academic vocabulary. Therefore, varied contexts from different disciplines must include those words so that readers can learn to determine their meaning from the text alone. (Coleman and Pimentel, 2012). The criteria for developing CCSS for writing were also based on the textual interpretation, requiring students to draw evidence from a given text to support their analyses, reflections, or research. The writing standards increasingly ask students to write arguments or informational analyses based on the presented sources.

The CCSS criteria for writing, listening, and speaking require students in grades 3–12 to read complex texts with fluency and engage in discussions about grade-level topics that students have researched in advance. Teachers should also use CCSS-aligned materials by integrating multimedia and technology into their teaching practices so that students can express the details of the text and reach an adequate mastery level for each standard (Coleman and Pimentel, 2012).

CCSS emphasizes that even kindergarten children should master more than 90 skills and that their early childhood reading should be based on gaining mastery skills, such as studying the character, clutching the key idea, rhyming, patterning, and identifying the elements of a story (UNION, 2014). However, this arguably runs against the developmental appropriateness of such small kids, for whom reading should be based on pleasure so that they prioritize learning to read over mastering skills. CCSS has underemphasized the importance of pleasure reading and significantly overemphasized the use of standardized tests, broadening the curriculum, scripted teaching, and long hours of didactic instruction. The overwhelming demand for the mastery of skills in K–3 has resulted in significant inconvenience and a call to withdrawal the requirements from these grades.

Opponents of CCSS argue that schools have become test-prep factories that ironically fail to live up to the “No Child Left Behind” concept, especially having a negative impact on the educational ladders of Latino and underserved Black students (Strauss, 2012) while inconveniencing the education system. Researchers have also raised many questions regarding the exemplars provided to 11th or 12th grade teachers in the fields of math, science, and technical subjects. They say that neither the architects of the standards nor the teachers themselves understand what should be taught in which grades (“What’s Wrong with Common Core ELA Standards?”, 2013). For example, “Executive Order 13423: Strengthening Federal Environmental, Energy, and Transportation Management,” issued in 2009 by the U.S. General Services Administration asks teachers to focus on practical scientific applications, begging the question of whether a science teacher should delete the very important topics of gravity in physics or atomic properties in chemistry to make students learn about environmental, energy, and transportation management issues in the U.S.

Synthesis

The concept of “benchmarking” is slightly different in the United States’ accountability system than in other top-performing countries. In the U.S., while only student performance outcomes are compared with the peer schools that are educating similar students, education leaders in other countries interpret these results differently and use them to improve their own performance and adopt policies to attain better results (Conley, Aspengren, Stout, & Veatch, 2006).

Research has shown that many first-year college students find their courses profoundly different from their secondary level courses, and that this is one of the main reasons they struggle in college. Being ready for college and careers means that high school graduates learn rigorous English Language Arts/Literacy and Mathematics knowledge and develop the skills necessary for success in credit-bearing college courses without taking remedial courses in their first year (Achieve, 2008).

The Implementation of Common Core State Standards

The implementation of CCSS encompassed the following steps to make the new nationwide initiative successful: unpacking the CCSS, identifying assessments aligned with curricular goals to evaluate the student performance levels, and providing professional development (PD) and ongoing support to teachers and administrators. The CCSS is not a curriculum. Rather, the path to implementation was left up to the discretion of school districts. Therefore, school districts coordinated plans for implementing the Common Core to ensure that their curricula were fully aligned with the new standards (Calkins, Ehrenworth, & Lehman, 2012), which required unpacking the standards. According to Wiggins and McTighe

(2011,2012), this idea was not new, and the authors have recommended various ways of unpacking standards using the Understanding by Design (UbD) framework.

First, Wiggins and McTighe (2011, 2012) identified four broad categories in the blueprints for new curricula: long-term goals, overarching understandings, essential questions, and recurring cornerstone tasks. Then, specific details on the curriculum maps for English Language Arts/Literacy and Mathematics at each grade level are derived through backward planning. For instance, the CCSS for K–12 mathematics were unpacked in the following order:

The [mathematics] standards’ refer to all elements of the design—the wording of domain headings, cluster headings, and individual statements; the text of the grade level introductions and high school category descriptions; the placement of the standards for mathematical practice at each grade level. The pieces are designed to fit together, and the standards document fits them together, presenting a coherent whole where the connections within grades and the flows of ideas across grades...” (Publishers’ Criteria for the CCSS for Mathematics, July 2012).

Over the course of curriculum development for both subjects, the high quality of the new academic standards in mathematics is ensured by balancing the conceptual understandings expected at each grade level, following procedural skills, ensuring operational fluency, and developing opportunities to apply knowledge in real world situations. This is provided for in CCSS-ELA by focusing on skills and knowledge related to interpretation, argumentation, and literary analysis (CCSS Shifts in Mathematics, n.d.; McLaughlin & Overturf, 2012; NGA Center & CCSSO, 2010).

CCSS was implemented in a bid to unify educational standards across the U.S., but the question of whether the evidence favors standardized education and shows its relation to college

readiness and a thriving economy remains open. For example, even if some countries with a uniform education system, such as Singapore and Finland have a higher rank than the U.S., other countries have lower rank despite having uniform education, such as Russia, Greece, Italy, and Portugal. For success, setting a minimum teaching time is necessary during the implementation stage for each standard (Dacey and Polly, 2012), and curriculum writers need to examine standards carefully in relation to previous learning objective(s) rather than treating them as a disconnected, new learning goals (CCSS Shifts in Mathematics, n.d.). The nouns and verbs in each Common Core standard need to be identified, and its entire definition paraphrased on a literal level so the digestible chunks of change can be scaffolded in a sequential order (Tantillo, 2014). Further, the more thorough a standard is, the more support is needed for students, particularly those with special needs.

In an attempt to increase rigor of ELA curriculum, the genre of K–12 reading texts is expected to be 50% nonfiction in elementary school and 75% percent nonfiction in high school. This change was made with the perception that it would decrease students' dependency on narrative fiction in the new curricula designs and show students how to write more expository essays utilizing the new writing standards. This goal can be met with a “staircase” of textual complexity that includes non-print texts such as film, art, and cultural compositions (Wiggins and McTighe 2011, 2012). Consequently, teachers and students should expect to deliver more thought provoking reading materials and more complex real-world situations in the activity sections of their curricula. In addition, curricular alignment with the new expectations would effectively address student achievement by using strategies that target the technical and adaptive nature of real-world problems (Elmore, 2000; Marzano, 2000).

In September of 2010, two consortia—the Partnership for Assessment of Readiness for College and Careers (PARCC) and SBAC—were awarded grants to develop next-generation assessment systems to evaluate the effectiveness of the new standards. The assessments were administered in grades 3–8 and high school with the efforts of participating states for the first time in 2014—2015 (Herman, 2013). As of December 2017, 13 states adopted SBAC as an assessment of CCSS, while only seven states and the District of Columbia chose to use PARCC. In addition, the Alternative Performance Assessments (APA) were developed for students who cannot be tested with regular assessment systems.

CRESST conducted a study in 2013 using the Evidence-Centered Design (ECD) framework to guide assessment development and validation for both the PARCC and SBAC consortia. The report provided an initial evaluation of the deeper learning represented in both consortia's summative assessments. Based on the findings of the study, both PARCC and SBAC End of Year (EOY)/summative assessments are likely to include questions with core academic content and deeper learning. According to a recent study by the RAND corporation, such deep levels of mathematical knowledge on state tests were not available (Yuan & Le, 2012). The authors of the CRESST study analyzed the state tests using Norman Webb's Depth of Knowledge (DOK) methodology to remain consistent with previous research (Webb et al., 2005). The assessments require students to comprehend and analyze texts at a higher level of complexity than previously required on many state tests (CRESST Report 823, 2013). Since students tend to learn fewer topics in ELA and Math subjects, they have more time to master the content, and higher scores can be expected from them (Ginsburg et al., 2005).

Nonetheless, opponents of national standards have raised concerns. For example, one of the many arguments for advocating CCSSM in the education system was that these standards

would prepare students for college so that they can smoothly enter into the fields of science, technology, engineering, and math. When professor James Milgram of Stanford University, a Mathematics expert, was requested to sign the CCSSM standards, he straightforwardly refused to do so after noticing that the CCSSM standards were lower than the previous standards in math (Bishop, 2013). He argued that the delay of algebra until 9th grade and not including calculus in high school failed to help students master STEM courses. The CCSS also lag high ranking countries such as Singapore or Korea. For example, Singapore introduces the concept of counting money in the 1st grade whereas the CCSS does so in the 2nd grade, and the CCSSM completely overlooks prime factorization. Bishop (2013) highlighted many other gaps in CCSSM, arguing that they will predispose the students to the dysfunctional skills.

The State of New Jersey is one of the PARCC states that administers technology-based assessments with a fixed set of questions in its school districts. The state's fifth test administration occurred in the spring of 2019 (Doorey, 2012). The PARCC administration initially offered the states four types of assessments for Grades 3–11: diagnostic, mid-year, performance-based, and end-of-year (EOY)/summative assessment, and formative assessments. However, because of cost-related problems and other infrastructure difficulties, only EOY/summative assessment are currently available to the states. The results of EOY assessments identify the strengths and weaknesses of students throughout the school year, helping teachers and parents to create targeted interventions (Tanner and Tanner, 2007).

Spillane (2005) suggested that the successful implementation of standards is possible with their correct interpretation at the classroom level. Therefore, it is essential to empower instructional leaders and teachers to make sound instructional decisions and develop appropriate pedagogical approaches for teaching the new standards. Schmidt and Burroughs (2013) noted

that the results expected of CCSSM would not be achieved if the standards were not implemented well. They also found that only 50% of the teachers in grades 1–5 and 60% of the teachers in grades 6–8 who participated in their study felt ready to teach CCSSM (Schmidt & Burroughs, 2013). In a survey of American teachers' perspectives about the new standards, 85% of participants strongly believed that all students should graduate, and 86% of teachers believe that having high expectations for students will improve student achievement (MetLife's Survey, 2010). The gap between teachers' perspectives on their readiness to teach new standards and their potential to teach them can be narrowed significantly by providing them with quality professional development (PD) that builds their content knowledge, increases their collaboration across grade levels, and shows them how to effectively utilize formative assessments.

Rothman (2013) stated that CCSS has the potential to change teaching methods significantly and that the teachers who understood this shift and adapted appropriately were much more successful in their pedagogical practices than those who did not have the same willingness to change or have the same depth of understanding. Manley and Hawkins (2013) claimed that with the advent of CCSS, a great deal of emphasis was placed on designing a quality curriculum that informs the daily instructional practices of teachers. They also underscored the importance of targeted PDs for teaching new standards and empowering teachers to make meaningful changes to their teaching methods.

In 2014, the Education Week Research Center conducted a survey to explore teachers' perceptions of professional development opportunities related to CCSS. Five hundred and forty-seven teachers from the states that had adopted CCSS participated. The results of the study showed that PDs on the mathematics standards lagged behind those on ELA, with only 55% of

participants agreeing that they were covered. Half of the participants also agreed that the PDs were of high quality.

According to Fullan (2001), McGlinn, and Parrish (2002), meanwhile, the successful implementation of CCSS depends not only on teachers but also on school leaders who need to implement school-wide literacy programs in a bid to sustain an influential culture of lifelong learning. Having an effective principal in a school is nearly as important as having an effective teacher in each classroom (Halawah, 2005). As leaders, principals should modify the teachers' schedules to allow them better collaborate with their colleagues, which is among the most significant issues for the teachers, who do not have common time for collaboration, which is a key factor in achieving and supporting instructional change (Murawski & Hughes, 2009). Further, to deliver genuinely differentiated instruction with the implementation of CCSS, teachers should keep an eye on the complexity of the texts that their students use in English and be equipped with the tools necessary to measure their students' comprehension skills. Therefore, instructional leaders/principals should encourage teachers to find appropriate texts for their students, which will require additional training in evaluating the appropriateness of their classroom materials (Fisher & Frey, 2013).

CCSS Implementation & College Readiness

Opponents of CCSS argued that the implementation of the standards would trigger even higher rates of remediation among college students. One of the creators of CCSS, Jason Zimba, commented on record that the CCSS is unable to prepare students for STEM careers because it represents only the minutest definition of college readiness (LEGAL, 2014). Zimba stated that this is because the focus of CCSS is on preparation for non-selective colleges. The CCSSM, according to Zimba, only focuses on the functional aspects of education but neglects its technical

and computational aspects, which results in weak support for learning new mathematical concepts in the future. Algebra, for instance, is not an objective in itself, but is a tool to support further mathematics and science. Hence, neglecting algebra's computational and technical aspects would result in weak support for the study of other quantitative sciences. Zimba further emphasized that replacing the conventional approach of Euclidean geometry with an experimental approach would lower college readiness, since this approach had already failed in countries like Russia, where even gifted and talented were unable to grasp the essential concepts of geometry. Indeed, findings presented by the California State University System for 11th graders showed that only 7% of students who opted for Algebra 2 were college ready and only 22% were conditionally prepared. On the other hand, 22% of students taking higher-level math courses beyond Algebra 2 were college-ready and 67% of these students were conditionally prepared (Bishop, 2013).

Researchers have also raised serious concerns over the implementation of ELA standards that require teachers at every grade level to spend half their instructional time on literary texts and half on informational texts since this 50/50 division appears highly likely to degrade the students' analytical thinking. Moreover, it degrades the value of English teachers who became English teachers on the basis of literature studies. So, this implementation not only decreases college readiness, but it also devalues the skills of teachers who were not prepared to teach informational text as part of their English majors.

Synthesis

The backbone of successful curriculum designs in K–12 settings is vertically aligned and well-articulated student learning standards. Implementing the new CCSS requirements necessitates collaboration among teachers and administrators to produce significantly improved

student outcomes. The mastery levels of students in grades 3–11 are now measured with technology-enhanced items in the ELA and Math assessments prepared by PARCC and SBAC administrations. Since student achievement results are closely correlated with the effectiveness of professional development training, teachers and administrators should be empowered with targeted PDs and consistent follow-ups about shifts in English Language Arts/Literacy and Mathematics standards. Building principals and administrators should create professional learning communities with their staff members to maintain high academic standards for all learners. Cohesiveness among curriculum resources, assessments, professional development, and teacher evaluation systems would produce better student outcomes (Kober & Rentner, 2011).

The opponents, on the other hand, see these reforms as replete with errors. They hold that the bitter realities of these so-called reforms are much worse than anticipated and that their implementation is likely to do more harm than good. In Los Angeles alone, \$1 billion worth of construction bonds have been used for purchasing the iPads required software for these tests (Core, 2013), and the costs are even higher in terms of instructional time. For example, the expanded set of tests in New York City emphasize that a 5th grade student is entitled to use 500 minutes when taking benchmark and baseline tests. During the spring, they would spend 540 minutes for the same tests. All of these measures have been taken without existing evidence that the measures will raise academic standards and college readiness in the long run. Researchers have also noted that the initial results of these costly reforms showed widening achievement gaps and the failure of schools and students. Only 31% of students were rated proficient in New York, and there were similar drops in the other states (The Core, 2013).

Benchmarks for College and Career Readiness

The proponents of CCSS argue that the new learning standards have been successfully planned around the overarching goal of ensuring college and career readiness for all high school students (Darling-Hammond, 2014). Since the content of curriculum is a significant predictor of student achievement gains, educators, they note, can use the rigorous curricular targets of CCSS to minimize the achievement gaps between White, Hispanic, and African American students (Porter, 2003).

In 2003, the first set of college readiness standards was developed by Standards for Success, which had conducted a study in collaboration with more than a dozen universities around the country. The American Diploma Project (ADP) used those standards as a guide for dealing with the college and workplace readiness of HS students (American Diploma Project, 2004; Conley, 2003). Two years later, a survey of U.S. employers revealed that more than 33% of high school graduates felt that they were unprepared for college or workplace; 39% of those participants answered that they were unprepared for entry-level work; and 45% believed that they were not adequately prepared for jobs beyond the entry level (Peter D. Hart Research Associates, 2005).

In another study, Brown and Conley (2007) examined the relationship between the content of state-mandated assessments and the student success in entry-level post-secondary courses. In that study, 66 math and English assessments from 20 States were evaluated, along with a number of alignment measurements. According to the findings of the study, the state assessments were moderately aligned with a subset of the university standards. English exams were slightly more aligned than math exams, but math exams had high alignment in some standard areas and English exams aligned poorly in areas requiring more cognitive processing. In

another study, Papay, Murnane, and Willett (2008) revealed a significant effect of state testing scores on students' life decisions about whether to remain in school or pursue higher education, especially if that student is from an urban setting (Brown & Clift, 2010).

Together, those post-secondary survey studies revealed that the more aligned content knowledge and skills were with entry-level college courses, the better prepared students would be for post-secondary school and work. In addition, the states would benefit by examining their standards and reducing the focus only on knowledge and skills. Following the adoption of CCSS, states began working collaboratively to align their assessments to the new standards, which research has shown is essential to college readiness and post-secondary success (ACT National Curriculum Survey, 2009).

When used correctly, large-scale assessments can provide remarkable advantages to students and educators. Through valid and reliable standardized assessments, decision-makers are empowered with data. Understanding the cluster and individual results of assessments also helps parents to understand their children's performances, assists subject teachers with creating interventions for those who are in need of differentiated instruction, and allows educational system stakeholders to determine how best to serve their communities (Ravitch, 2011). On the other hand, the oversimplification of test results could lead to misinterpretations of school quality. Therefore, individual school factors, as independent variables, should be considered less than the background factors of students in understanding the variances in student performance (Coleman et al., 1966; Hanushek, Rivkin, & Taylor, 1996).

Research has also shown that high school students who can understand complex texts are more likely to be successful in college (ACT, 2006). High school students actually demonstrate motivation and enthusiasm for college readiness on a small scale before they graduate from high

school by, for instance, following a challenging track with rigorous coursework, taking the PSAT/PLAN and college entrance exams such as the SAT and AP/IB, and registering for dual enrollment courses.

While only the participation rates of PSAT/PLAN for grades 10 and 11 are considered a college readiness benchmark for 12th graders, the percentage of students who take the SAT and score above the SAT benchmark are utilized in the New Jersey school report card. Moreover, the percentage of 11th and 12th graders who take at least one AP/IB exam in English, math, social studies, or science, and the percentage of those students who score 3 or higher on AP/IB exams, are also counted as a benchmark for HS students' college and career readiness and included in the school performance reports (Baber, Castro, & Bragg, 2010).

In 2011, the College Board conducted independent research, an extension of the work of Kobrin (2007), to examine the correlation between the SAT benchmark score of 1,550, which represents the composite score for critical reading, mathematics, and writing sections on a 600 to 2,400 scale, and attaining a first-year college GPA of B- or higher. The analytical results of the College Board's study unearthed the fact that, with a 65% probability, the students meeting the benchmark score, compared to the students who did not get 1,550, were more likely to enroll in a 4-year college, maintain high first-year GPAs, and continue into their second and third years, which will increase the high likelihood of college success (College Board Research Reports, 2011; Kobrin, Patterson, Shaw, Mattern, & Barbuti, 2008).

Another important result of this study was that it illuminated the close relationship between the benchmark score for SAT Writing (W) on a 200 to 800 scale and the AP English Language and English Literature Exams on a 1 to 5 scale. Of those students who scored 3 and above on those AP exams, 79% met the benchmark score of 500 and higher. Similarly, an

examination of the relationship between SAT Mathematics (M) and AP Mathematics, AP Calculus, and AP Statistics exams, showed that the students who scored 3 and more on those exams—61% percent and 83%, respectively—met the benchmark score on the SAT-M, which is 500 and higher (College Board Research Reports 2011). Consequently, based on this study’s results, students meeting the benchmark scores on the SAT-W and SAT-M are much more likely to be ready for college-level coursework than students not attaining the benchmark scores (Camara, 2011; College Board Research Reports 2011).

Another college readiness benchmark is enrollment in dual programs that allow HS students to enroll in college courses before their graduations, experiencing the requirements of college-level work while earning college credit (Bailey, Hughes, & Karp, 2002). In some cases, high school curricula may not be challenging enough for some high achievers. As an alternative experience, dual enrollments, which ease the transition between high school and post-secondary education, were established.

Earning an associate’s or a bachelor’s degree has large economic returns (Grubb, 1999). Many research studies have supported the economic benefits of continuing education (National Center for Education Statistics [NCES], 2001). Nowadays, HS students understand the importance of getting a post-secondary degree. Consequently, student aspirations to attend college have risen noticeably in the last 2 decades, and a majority of 12th graders plan to earn a bachelor’s degree (NCES, 2001). This change is not limited to the students from high-income families (Schneider & Stevenson, 1999).

Synthesis

It will not be clear whether the CCSS will be successful at improving HS students’ college and career readiness until states collect evidence to determine whether students who meet

CCSS' minimum proficiency levels perform successfully in post-secondary education and the workplace. On the other hand, based on the research, we know the strength of the relationship between taking rigorous coursework and readiness for college and college degree completion (Baum & Ma, 2007). Yet, disagreements on which independent variables influence high school students' college and career readiness the most have not been resolved. Based on the current literature review, the prominent variables that tend to influence HS students' achievement can be categorized as (a) providing a quality curriculum framed with rigorous standards, (b) pre-college experiences such as taking PSAT/PLAN, SAT, and AP exams, and (c) enrolling in dual enrollment programs.

Theoretical Framework

To prepare students for post-secondary environments, there must be some alignment across the K-12 curricular goals, K-12 assessments, and the benchmarks used to measure the college readiness of HS students (Boswell, 2000). The use of different benchmarks for measuring mastery levels in English Language Arts/Literacy and Mathematics have caused inconsistencies across different states. According to the proponents of CCSS, this problematic situation, which is related to the inequality of students, especially those of low-socioeconomic status, could be improved by increasing the efficiency of teachers, by providing them with resources, and by adopting the same ELA and Math standards. In this context, Mintzberg's Efficiency Theory was preferred as one of the theoretical frameworks for this study. According to this model, organizations such as school districts begin strategy formulation by carefully articulating their missions and goals, and then they engage in comprehensive analysis to choose the most appropriate strategies for accomplishing them. Mintzberg (1990) stated that these strategies are appraised based on two criteria: methodological soundness and factual evidence.

The states committed to providing a world-class education to the students are in the process of fine-tuning their learning standards, empowering their teachers/administrators with targeted professional development, and assessing students with CCSS tests, either the Smarter Balanced or Partnership for Assessment of Readiness for College and Careers (PARCC). These states will play a key role in the success of NCLB. The two main testing consortia, along with other groups, have been developing computer-based tests to measure student mastery of the new standards. All of these efforts are aimed at increasing efficiency through a collaboration between internal and external stakeholders.

According to the initial research findings on the implementation of CCSS in Language Arts/Literacy, ELA teachers met with some challenges finding the appropriate resources to support their students. However, over time, with careful literacy planning across the disciplines to include non-fictional reading tasks and text-based writing, students' proficiency levels increased significantly (National Council of Teachers of English [NCTE], 2013). Therefore, organizational structures not only influence the behavior of individuals toward achieving a collective goal but also affect their own overall efficiency (Mintzberg, 1992).

As another lens through which to understand the major shifts in ELA and Math subjects and HS students' readiness for college, the researcher used Change Theory because global competitiveness and the evolving conditions in the education field, such as adopting more rigorous standards or providing more practical training to teachers, require some major changes to current practices (Fullan, 2006; Lewin, 1946). Lewin's three-stage model of change, known as Unfreeze-Change-Refreeze, can be applied to the efforts of states at upgrading their standards through the development and implementation stages. While creating a new set of operating procedures, which occurs during the second step in this model, empowering key stakeholders

such as parents, teachers, and administrators is crucial to constructively executing the desired changes.

Fullan (1982, 1991) recommended that four phases of the change process should be followed diligently: initiation, implementation, continuation, and outcome. Fullan (1993) also indicated that successful change requires some internal connection, such as within a school district that also has external connections to the community. (Maintaining a healthy balance between state accountability systems and the flexibility required for local autonomy, will bring about successful changes). Finally, supporting individual competencies by providing appropriate resources and motivation is also essential for capacity building. Individuals and groups become productive if they follow the change stages in sequential order (Fullan, 2008a).

As early as 1891, Hall claimed that curricular content focused on the development of a child with individual differences best meet students' needs. Today, this approach is driven by the theory of human capital, where emphasis is placed on the individual development of a child rather than all students having to learn the same content at the same pace (Tanner & Tanner, 2007). The new standards are a reaction to the realities of the economic conditions in the United States. The overarching goal of the new learning standards is to ensure that all students are prepared to be economically successful in workplaces that will continue to change at an incredible pace throughout their lifetimes.

Through the lenses of human capital and social capital theories, we get a picture of the value of providing quality education to students in K–12 settings, which is that the value of their experiences go well beyond what is taught to them in schools (Becker, 1976, 1993; Coleman, 1988). Despite the advantages and disadvantages of adopting CCSS, it is critical for educators to find conceptual frameworks that will guide their instruction. Understanding the dynamic

relationship between human and social capital will increase the preparedness of students for demanding workplace conditions and boost economic activity by preparing high-skilled labor.

Many research findings suggest that obtaining a college degree produces countless economic and societal benefits to individuals. For instance, earning a college degree will provide higher wages and eliminate the financial burden on the federal government of public health and welfare (Baum & Payea, 2004). Moreover, generations educated with high standards will not only earn college degrees but will also take active roles in citizenship, political engagement, and lawful conduct. Such positive, long lasting effects for the nation are the reason for public support of higher education institutions (Bybee & Fuchs, 2006). The percentage of students going directly from secondary to post-secondary education, meanwhile, continues to grow. Consequently, secondary institutions must bring their programs into closer alignment with post-secondary ones (Putnam, 2000).

When it comes to analyzing the influence of Common Core State Standards on the college readiness of students, one cannot rule out how administrators and teachers perceive the fidelity of implementation of CCSS. George et al. (2006) and McGurn (2014) revealed that most teachers are concerned about the implementation of CCSS, especially how implementation will personally affect them. The number of teachers with this concern was greater than those who wanted to get more information about the CCSS and its implementation in general. Furthermore, there was also a noticeable resistance among teachers who did not want to transfer their old teaching systems to the new system. Further, many teachers examined in the research were so concerned about the personal implications of CCSS that they ignored the importance of refocusing, collaboration, consequences, and management related concerns. The researchers investigated the teachers using an online survey of two questions: (a) “How prepared do you feel

about the implementation of Common Core State Standards?” and (b) “What do you think about the additional training and tools which would be beneficial for you?” The researchers received responses from 96 teachers; about 33% of teachers felt unprepared for the implementation of CCSS in their teaching practices, while 67% felt that they were prepared for a smooth transition to the new system.

In another important study, Balch (2014) studied 19 factors connected with Mathematics teachers’ resistance to instructional changes with the new CCSS. The researcher analyzed 128 9th to 12th grade mathematics teachers in Lancaster and Bakersfield, California. They were asked to respond to an online survey using a 5-point Likert scale from *not at all* to *a great deal*. After analyzing the data, Balch found that there were many factors that contributed to ambiguity, such as lack of adequate procedures, lack of informative procedures, unclear implementation processes, enhanced burdens, and negative impacts on energy, money, and time. The data showed that mathematics teachers were mostly reluctant about the new CCSS transition due to ambiguity prevailing all along the line. The second factor contributing to their reluctance to change their teaching practices was lack of communication.

Ghods (2014) investigated a sample of 402 teachers in the areas of Michigan, Illinois, and Indiana, who taught mathematics from kindergarten through 5th grade. An online 7-point Likert scale survey with options between *least important* through *most important* was used. When an exploratory data analysis was conducted, the results revealed that 58.5% of surveyed teachers valued reform while 62.5% were highly likely to implement a reform provided they had faith in it. Hence, these results corroborated the fact that teachers need guidance and support before a reform is implemented in the system. The findings also revealed that 68.9% of teachers believed that having aligned workbooks and textbooks is helpful to implementing CCSS. The same study

revealed that there were many teachers who did not implement the new standards in their daily Mathematics teaching. In addition, the majority of teachers were not aware of whether or not they changed their instructional practices after the incorporation of CCSS.

Many prominent researchers, such as Jerald (2006), Fullan (2007), and Hess and McShane (2013), have argued that the implementation phase makes or breaks educational reforms. Dunn and Rakes (2010) and Hall (2013) furthered this argument, finding that it is critically important to minutely observe the perceptions, beliefs, and feelings of teachers, who are the main catalyst for implementing the change. When their importance is ignored, the new system fails because their perspectives are not given the importance and, if teachers do not feel engaged, the educational reforms will not produce the desired results. That is why mixed methods were adopted for the current research study, which entails using descriptive data and also focuses on the qualitative analysis of teachers' and administrators' perspectives.

CHAPTER III

METHODOLOGY

Introduction

This chapter provides a discussion of the procedural framework within which the research was conducted. The research method and study design will be clarified and discussed. A discussion of the research methodology will be presented, along with how the data were obtained and analyzed.

Research Method

Qualitative or Quantitative

There are two primary types of research methods commonly adopted: quantitative and qualitative. Researchers have also adopted a mixed methods approach. According to Smith (2012), the selection one makes between these two approaches depends on the type of research being conducted, its purpose, and the data analysis procedures to be used. For this research study, a sequential mixed methods design was used, wherein the researcher analyzed the quantitative data, followed by a qualitative analysis (Creswell & Creswell, 2017). Qualitative analysis was conducted on semi-structured and flexible interviews with the school's administrators and teachers.

Prominent researchers like Patton (2002) and Vogt et al. (2012) favor the viewpoint that when both quantitative and qualitative approaches are applied, it makes it easier for the researcher to refine, clarify, and formulate their answers based on results obtained from both methods. The first phase in this research study involved examining the quantitative data on five different cohorts of students between the years 2010 and 2015 from a chosen Urban Charter School in New Jersey (Central Jersey College Prep Charter School). The information obtained

from the quantitative analysis played a critical role in developing the semi-structured interviews for the qualitative analysis that followed.

Below are the key characteristics of a qualitative research methodology (Cook & Reichardt, 1979):

- qualitative analysis is basically centered on examining the point of view of participants;
- qualitative analysis is based on an interpretative approach;
- participants are interviewed in natural settings so that the researcher can obtain the necessary data; and
- qualitative analysis is based on a process-oriented and exploratory approach.

Hence, the current research study sought statistically reliable quantitative results as well as data gathered based on participants' understandings and perceptions.

Inductive and Deductive Method

Inductive methods, wherein the researcher makes empirical observations and gathers the appropriate evidence to accomplish the research aim, are normally applied in qualitative research studies. According to Prince and Felder (2006), inductive research methods include problem-based learning approaches, discovery-based scenarios, and case-based studies. On the other hand, deductive methods draw conclusion by testing the mathematical validity of results (Bowling, 2014). Both deductive and inductive methods were appropriate because the study involved measuring available student performance data (deductive method) as well as the experiences of administrators and teachers (inductive method).

Research Design

Qualitative Side

For this research study, a qualitative research methodology was used to obtain the best results that serve the purpose of suggesting solutions to particular research problems. According to Kumar (2005), this type of research design is normally opted for in research studies wherein investigating a particular problem is a key objective but there is not much known about that area. Given the fact that the CCSS was brought into the education system in 2010, there has not been much exploratory work done with the purpose of investigating the personal experiences and perceptions of administrators and teachers in implementing CCSS in an Urban Charter School in New Jersey as well as its influence on the college readiness of high school students. Furthermore, the researcher opted for a planned set of exploratory methods—semi-structured interviews with the respondents (administrators and teachers)—so that the researcher would obtain relevant and precise answers to the problem at hand.

Quantitative Side

On the quantitative side, this research was designed as cross-sectional, non-experimental, and explanatory. Non-experimental research designs involve variables that are not manipulated by the researcher but, instead, are studied as they exist. In these studies, one cannot be as certain as they can in experimental studies whether discovered differences are due to the independent variable(s) under investigation (Leedy & Ormrod, 2014). However, this cannot be construed to mean that comparative research is better than the correlational research for determining a causal relationship between two variables (Johnson, 2002). Consequently, alternative means to jointly analyze several variables and proffer interpretations without making conclusive causal

statements were utilized in this study (Cross & Belli, 2004). The researcher also used explanatory research methods (Johnson, 2002).

For the SAT data, the composite SAT scores of students were selected. Data were also gathered on the students' PSAT/PLAN participation rates, their participation rates in AP/IB tests for English, social studies, science, or math, and their SAT participation rates. To determine the percentage of students taking the SAT and scoring at 1,550 or above, the participation rate of the students who scored 1,550 or above on their SATs was selected. In addition, to determine the value of taking an AP/IB course in English, mathematics, science, and social studies and scoring at 3 or above, the rates of the students who took AP/IB tests and scored 3 or more in AP and 4 or more on the IB tests were selected. Finally, the value of the post-secondary enrollment rates of students was selected.

Research Questions

The overarching research question for this study was, "How do Common Core State Standards (CCSS) influence the college readiness of high school students in an Urban Charter School of New Jersey?" The following research questions were established to create a complete understanding of the research problem:

1. Did the PSAT/PLAN, SAT, and AP participation rates improve after the adoption of Common Core State Standards (CCSS)?
2. Did the percentage of students who took the SAT and scored at 1,550 or above increase after the adoption of Common Core State Standards (CCSS)?
3. Did the percentage of students who took AP or IB courses in English, Mathematics, Science, and Social Studies and scored three or above improve after the adoption of Common Core State Standards (CCSS)?

4. Did post-secondary enrollment rates after the adoption of Common Core State Standards (CCSS) change?
5. What differences currently exist between the instructional strategies used for teaching the content-based standards in ELA/math and the Common Core State Standards at this school? How has this change influenced the college readiness of high school students? How do teachers feel about this change process?
6. In an integrative mixed methods analysis, do the findings of qualitative interviews with teachers, the principal, and the curriculum and instruction supervisor corroborate the predicted relationship between the adoption of Common Core State Standards and the college readiness of high school students?

Data Collection Procedures (Secondary vs. Primary)

There are two key procedures around which the process of data collection generally revolves: primary data collection and secondary data collection. According to Kotler and Fox (1995), secondary data is data that is already available on various resources, which the researcher organizes for the specific problem at hand. Ghauri and Gronhaug (2005) noted that secondary data is critically important for a research study because it provides a factual foundation. However, few research studies rely only on secondary data. According to Hox and Boeijs (2005), the key sources of secondary data are published literature, published books, magazines, government records, catalogs, websites, academic databases, and newspapers.

Primary data, by contrast, is not already present, but it serves as a substitute for the secondary data. One of the drawbacks connected with primary data collection is that it takes much time, and this procedure can prove costly as well. Another drawback of collecting primary data is that it fully depends upon the willingness of study participants. Parry and Mauthner

(2004) stated that there are moral and ethical considerations involved in collecting primary data. For instance, participants can simply reject a question by answering “no comment.” They can even exit the interview in the middle if they want. In other words, the findings of the researcher completely depend upon the mood, willingness, and likings of the participants, which raises the question of whether the obtained data is unbiased and valid.

In spite of these limitations, primary data collection through semi-structured interviews was required in the current research study because the perceptions and experiences of the people on the ground play a central role in determining the successful implementation of CCSS in an urban charter school of New Jersey and its influence on the college readiness of high school students. In fact, qualitative analysis was required to derive a consensus on the research problem because the study phenomenon was rooted in the concept of real-world experience. Therefore, the major part of this research study was qualitative, using an exploratory interpretivist approach. The researcher analyzed the real-life experiences, perceptions, and viewpoints of the participants and then mapped the findings of the qualitative analysis with the secondary data.

Selecting the Semi-Structured Interview Method

One of the most widely used methods for gathering qualitative data is the interview method. There are many ways to conduct interviews, such as in-person (face-to-face) or through the telephone (in case that respondents are far away from the researcher). For this research study, the researcher conducted in-person interviews. According to DiCicco-Bloom and Crabtree (2006), three types of interviews are normally conducted: (a) a structured interview, (b) a semi-structured interview, and (c) an unstructured interview. Structured interviews produce quantitative data, and the researcher did not use them for the current study. Unstructured interviews are those that are unorganized, and they do not entail any preconceived

theories. Gill et al. (2008) noted that because unstructured interviews normally start with an opening question, after which the researcher does not rely on predetermined questions, these interviews take more energy and time than the other types. If researchers know virtually nothing about the research problem and want to gain first-hand knowledge without a preconceived idea or theory, they are likely to opt for unstructured interviews.

On the other hand, semi-structured interviews contain various main questions in advance, which helps the researcher to critically explore the research problem at hand. As DiCicco-Bloom and Crabtree (2006) stated, on many occasions, semi-structured interviews become the only data collection option for qualitatively analyzing research problems. Mays and Pope (1996), further, argued that semi-structured interviews allow the interviewer and the interviewee to deviate from the topic, which helps the researcher to track the research problem in more detail. Since semi-structured interview methods allow for flexibility, they were used for the primary data collection in this research study.

The reasons for using semi-structured interviews rather than structured interviews for this study were simple. First, qualitative analysis, which entails an exploratory type of investigation, is more likely to uncover in-depth detail if it is aligned with semi-structured interview protocols. For instance, Stewart et al. (2006) conducted a study in the UK using semi-structured interviews to investigate school children's food preferences. Due to their use of semi-structured interviews, the researchers uncovered the critical fact that peer pressure was the highly motivating factor that influenced their food choices. Had that study only opted for structured interviews, it would not have been possible to unearth such in-depth detail. The reason for this is that in semi-structured interviews researchers are free to ask critical exploratory questions.

Sampling Procedure

Qualitative Phase

The sampling procedure for the qualitative phase of this study involved choosing a specific group of participants from a population: i.e., administrators of an urban charter school and at least four teachers who are actually on the ground implementing and experiencing CCSS implementation in their school (Kuzel, 1992). The richness and breadth of the data is ensured by the sampling procedure. Two samples were separated from the school's population. The first was administrators involved in managing the school affairs and the second was four teachers from the school's teaching staff who had experiences to relate about the implementation of CCSS and its influence on the college readiness of students. For the purpose of accuracy and proper interpretation, the researcher recorded and transcribed the interviews. If participants wanted to see their transcripts, the researcher provided them with the transcripts for the purpose of member checking (Creswell, 1998; Doyle, 2007; Merriam, 1998).

Quantitative Phase

For the quantitative phase, the researcher selected the academic records of cohorts (2010–2015) at the charter school (CJCP). Four benchmarks indicative of the college and career readiness of the HS students were identified: (a) PSAT/PLAN; AP/IB, and SAT test participation rates; (b) SAT scores; (c) AP/IB exam performance scores; and (d) the total post-secondary program enrollments of students at either a 2- or 4-year institution. Using these indicators, the researcher identified changes (if any) in the college readiness of the high school students.

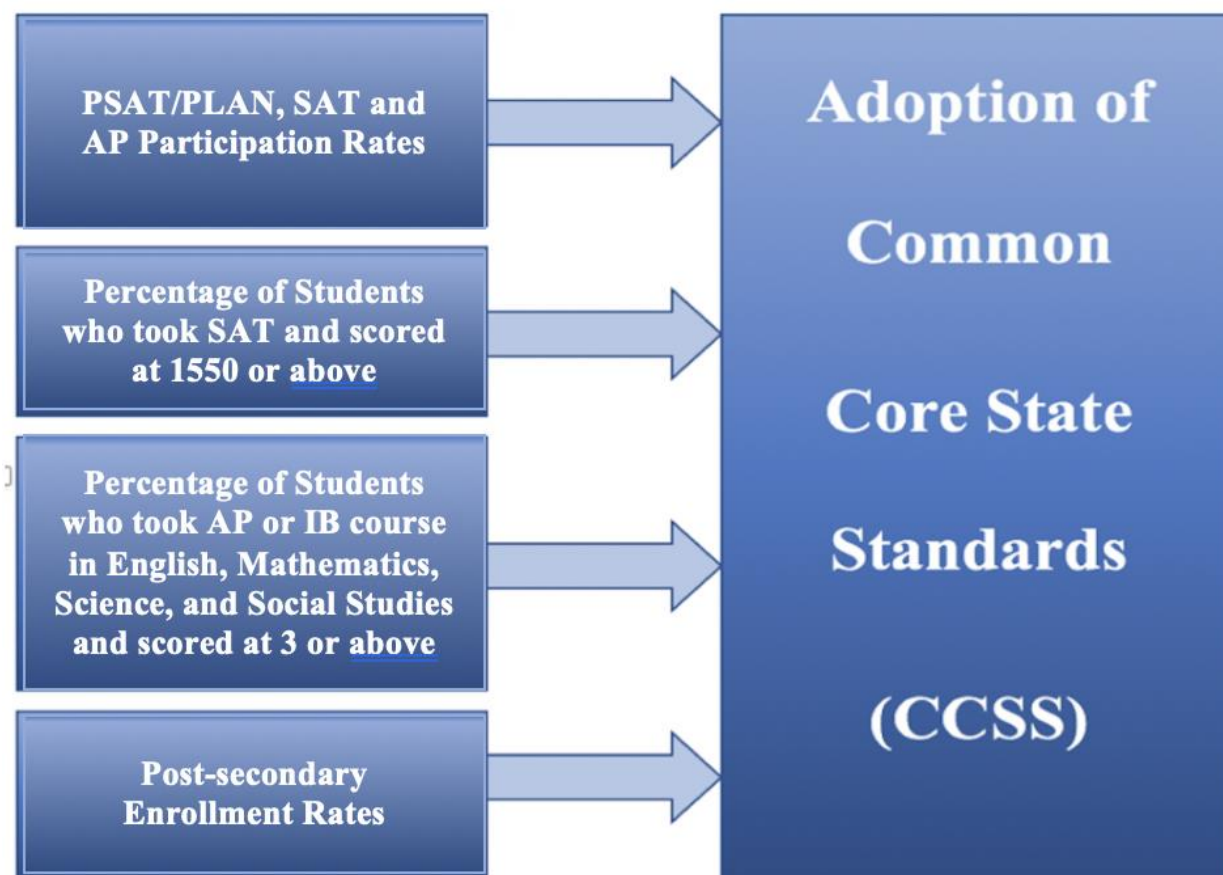


Figure 3. Conceptual Framework Diagram for the Quantitative Method

Unit of Analysis

The sample unit for this research was students at an urban charter school in New Jersey. This study leveraged cohorts from the years 2010 to 2015. Since the college readiness of these cohorts was measured using their PSAT, SAT, AP, and post-secondary enrollment rates/scores, the analysis included benchmarking the mean scores/rates of the cohorts. In other words, the unit of analysis was each cohort group, not the individual.

Instrumentation

The instrumentation for this study was school-level data on student participation rates on the PSAT, SAT, and AP/IB tests and their SAT composite scores, AP/IB scores, and post-secondary enrollment rates.

The Scholastic Assessment Test (SAT) is used as an instrument to test HS students' college readiness. The total amount of time required to take the SAT is 3 hours and 45 minutes (pre-March 2016). It includes critical reading, mathematics, writing, and essay components and focuses on general reasoning skills. The SAT administration uses complex scoring. A blank response has no impact on scoring, a deduction is made for an incorrect answer, and a point is given for each correct answer. The required essay section is given at the beginning of the test. The time allotted for this section is 25 minutes. Students are expected to take a position on the given topic and write their essays. The total scale score ranges from 600 to 2,400. Each component—critical reading, mathematics, and writing—ranges from 200 to 800 points. The essay results are scaled to multiple-choice writing. Seventy minutes are allotted for 67 critical reading questions, 60 minutes for 49 writing questions, 70 minutes for 54 mathematics questions, and 25 minutes for one essay topic (Collegeboard SAT Suites of Assessments, n.d.-a).

Research Instrument Review

Yin (2014) noted the fact that interviews tend to be more informative than questionnaires as they can accommodate further probing of grey areas that may emerge from the study. Furthermore, according to Saunders et al. (2012), interviews also provide an in-depth clarification of issues or questions to the participants, which, in turn helps, to establish the validity and trustworthiness of the study. To this end, an interview guide was developed that comprised a set of base questions addressing the key research objectives. The interview guide and the interview questions were developed based on the Delphi technique, as suggested by Silverman (2016).

The Delphi technique (Yin, 2014) entails recruiting and engaging an expert panel to assist in the development of exhaustive and valid instruments based on the consensus of the experts.

Their recruitment is based on their level of knowledge with respect to the area under study. Ideally, academics who have published at least two journal papers in the current area of study should be included. Practitioners in the field should be experienced as well. In this study, the route B, shown in Figure 4, was followed, and five practitioners were identified to develop the qualitative research instrument.

At the heart of the Delphi rounds of review is iterative pretesting executed by the experts. This systematic way of developing the instrument is an essential element in the trustworthiness of qualitative research. For the purpose of pretesting, the research instrument was administered to the experts, who deliberated on the validity of the items. Their concerns and revisions were considered and added in the questionnaire and interview guide.

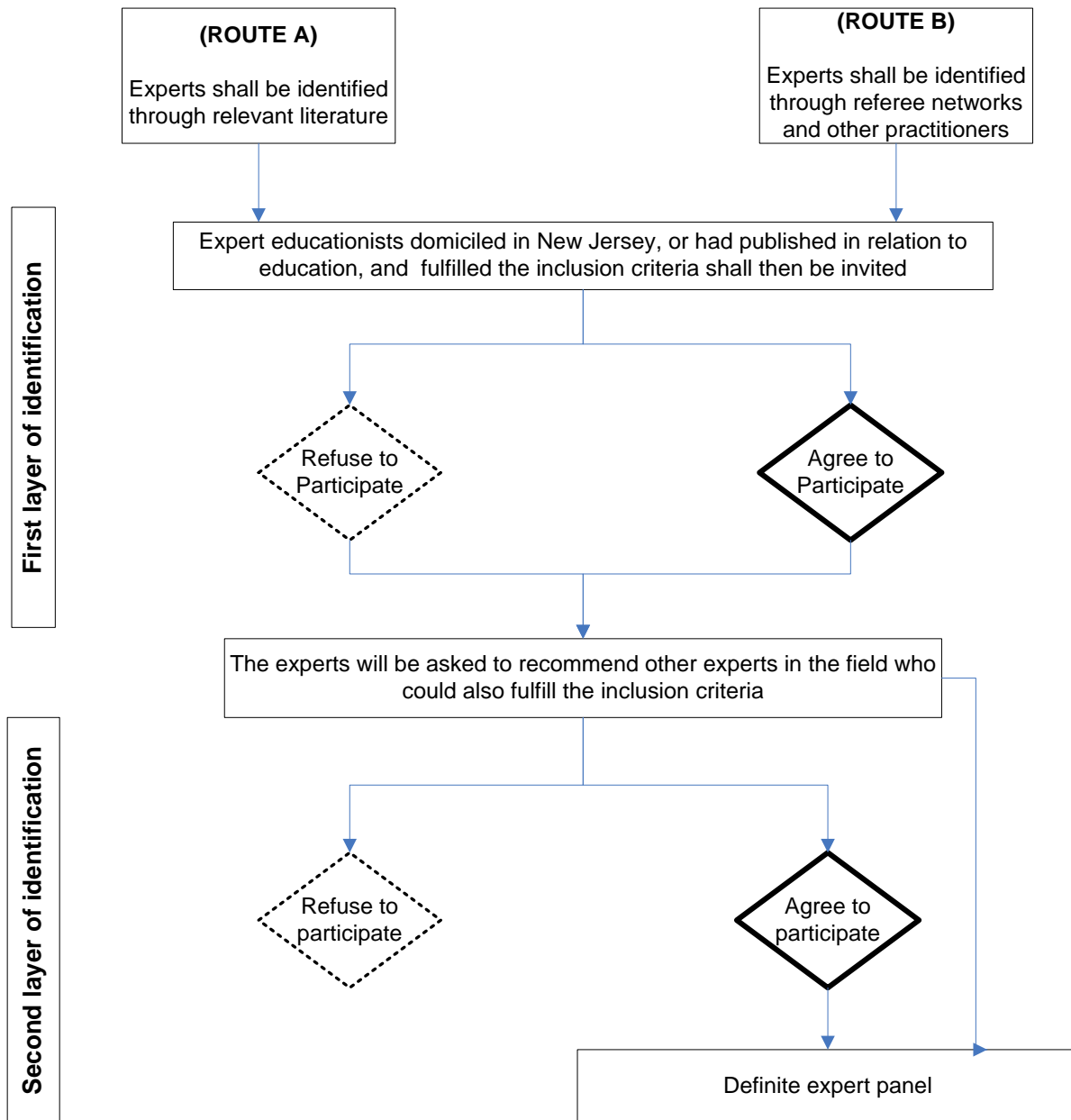


Figure 4. Delphi Technique – Expert Identification Process

Source: Silverman, (2016). *Qualitative research*

In the first stage, brainstorming, a draft of the interview guide was discussed with the panel. This was followed by subsequent rounds for discovery and consensus building. Based on the expert recommendations, the final interview guide was refined and confirmed until the panel confirmed them to be sufficient, as illustrated in Figure 5.

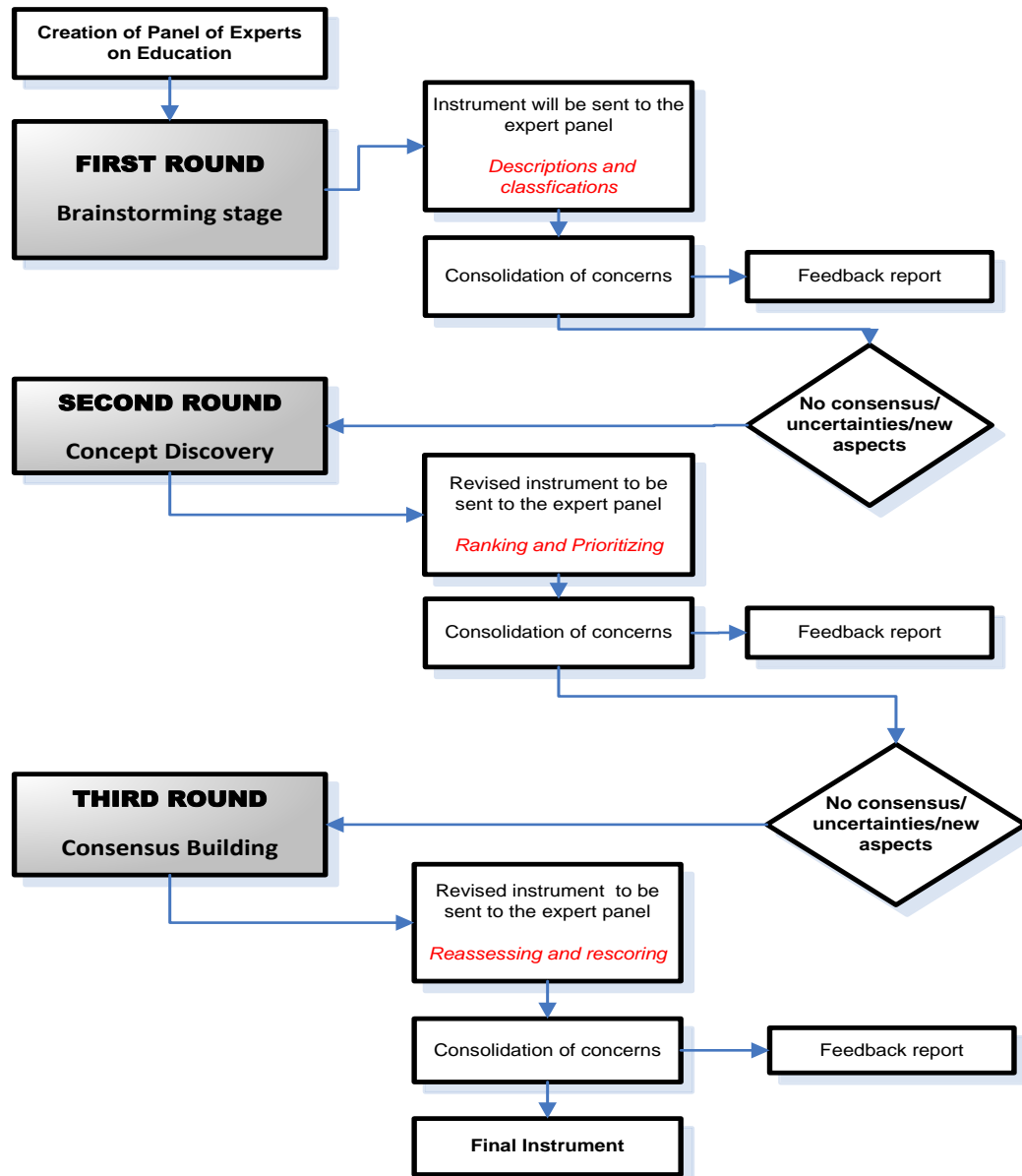


Figure 5. Delphi Rounds Taken in Developing the Research Instruments

Source: Silverman, (2016). *Qualitative research*

Designing the Semi-Structured Interview Questions

According to Mays and Pope (1996), one of the very important factors for designing effective semi-structured interviews is to ask good in-depth questions. The questions should be open-ended to ensure that respondents can answer them in detail. They should also be arranged in a manner that easier questions are placed at the beginning of the interview, with complex and sensitive questions following the easy questions. This ensures that respondents do not feel stressed, do feel confident, and are able to describe their true perceptions and experiences. After designing the semi-structured interview questions in accordance with the findings of previous literature, the researcher set appointments with the respondents through calls/emails. The interview questions are available in the Appendix E and F.

In the case of qualitative analysis, judging the validity of data is a bit hard because the objective of the research and the interview questions should be logically associated. To ensure that the interpretation and detailed examination of the interview questions would result in some tangible findings, the researcher established a link between the interview instrument and the literature to date. The interview questions for teachers were cross-referenced to the original research questions (see Table 1).

Interview Questions for Teachers

Table 1

Interview Questions for Teachers

Interview Questions for Teachers	Referenced Research Questions
<p>1. Are you optimistic OR pessimistic about the influence of Common Core State Standards on the college readiness of students?</p> <p>→ Do you think that the current CCSS groom the students with psychosocial skills such as resiliency, non-cognitive skills, and intrinsic motivation which play their role in successful transition to university education?</p>	<p>5. What differences currently exist between the instructional strategy for teaching the content-based standards in ELA/math and the Common Core State Standards at this school?</p> <p>How this change has influenced the college readiness of the high school students? How do teachers feel about this change process?</p>
<p>→ Do you think that the ratio of remedial courses in degree programs has increased after the incorporation of CCSS or decreased?</p>	<p>4 & 5</p> <p>4. Did the post-secondary enrollment rates after the adoption of Common Core State Standards (CCSS) change?</p> <p>5. What differences currently exist between the instructional strategy for teaching the content-based standards in ELA/math and the Common Core State Standards at this school? How this change has influenced the college readiness of the high school students? How do teachers feel about this change process?</p>
<p>→ How do you handle the situation when a student has a poor attendance record or is unable to secure sufficient credit courses? Do you think those students are as unprepared for college or do you take a different approach?</p>	<p>It points towards all the first 5 questions for the reason that if the teachers are noticing more on students with poor attendance records & poor credit courses, then it would make an impact on the percentages and participation rates of students mentioned in first 4 research questions.</p>

Table 1

(continued)

Interview Questions for Teachers	Referenced Research Questions
<p>2. Are you optimistic / pessimistic about the influence of Common Core State Standards on instructional practices of teachers? Why are you optimistic/pessimistic?</p> <p>→ With all the new changes incorporated in CCSS, do you feel more or less prepared in teaching?</p> <p>→ Do you think that you need training and tools in addition to the refresher courses in order to better implement the CCSS in your classroom and prepare the students for college readiness?</p> <p>→ Do you feel that in a bid to align your teaching standards with the CCSS, you observe your colleague's classroom every now and then?</p> <p>→ Do you think that the administrator (principal) influences your teaching style by dictating you to stick to certain instructional practices inside the classroom? What are your views about this?</p>	<p>5. What differences currently exist between the instructional strategy for teaching the content-based standards in ELA/math and the Common Core State Standards at this school? How this change has influenced the college readiness of the high school students? How do teachers feel about this change process?</p>
<p>3. Do you think that the education system was in great need of the new CCSS OR the previous system of New Jersey Core Curriculum Content Standards (NJCCCS) was better than the newly incorporated Common Core State Standards (CCSS)?</p>	<p>1,2,3,4,5</p>

Table 1

(continued)

Interview Questions for Teachers	Referenced Research Questions
<p>→ Can you present with one or two points regarding the new standards of ELA and Math, are the new standards helpful in providing a positive influence on college readiness OR a negative influence on college readiness?</p> <p>→ Do you think that the CCSS curriculum is narrow, rushes to cover many standards or overemphasizes testing situations?</p> <p>→ Do you feel that the CCSS has promoted the “rote memorization” concept OR you feel that CCSS has furthered the “active learning concept” in students?</p> <p>→ Do you think that the increased complexity in the ELA and Math standards in CCSS has increased college readiness OR it has further deteriorated the college readiness in students due to the complexity in textbooks at all grade levels?</p>	<p>3 & 5 3. Did the percentage of students who take AP or IB course in English, Mathematics, Science and Social Studies and score at or above 3 improve after the adoption of Common Core State Standards (CCSS)?</p> <p>5. What differences currently exist between the instructional strategy for teaching the content-based standards in ELA/math and the Common Core State Standards at this school? How this change has influenced the college readiness of the high school students? How do teachers feel about this change process?</p> <p>1,2,3,4,5</p> <p>1,2,3,4,5</p> <p>1,2,3,4,5</p>
<p>4. Do you see any noticeable difference in PSAT/PLAN, SAT, and AP participation rates after the implementation of CCSS in your school?</p>	<p>1. Did the PSAT/PLAN, SAT, and AP participation rates improve after the adoption of Common Core State Standards (CCSS)?</p>
<p>5. In your eyes, what is the cumulative influence of CCSS implementation on the percentage of students who take the SAT and score at or above 1550?</p>	<p>2. Did the percentage of students who take the SAT and score at or above 1550 increase after the adoption of Common Core State Standards (CCSS)?</p>

Table 1

(continued)

Interview Questions for Teachers	Referenced Research Questions
<p>6. What is the key point in CCSS which you see as a trigger that students are most likely to succeed in AP course?</p> <p>→ Do you think that the CCSS implementation impacted underrepresented student groups in terms of their enrollment into the AP Program? What is that impact, can you express your personal experience?</p> <p>→ In your eyes, what is the cumulative influence of CCSS implementation on the percentage of students who take AP or IB course in English, Mathematics, Science and Social Studies?</p> <p>→ Could you roughly tell me that before CCSS, I mean before 2010, when your students appear in AP or IB course in English, Mathematics, Science and Social Studies, roughly what score they were achieving before 2010, and what score they started achieving from 2011 onward?</p> <p>→ I feel that AP is one of the most famous exams which gives an advantage to students not only to enter in a rigorous curriculum, but also it is beneficial when they are applying to competitive colleges and universities. In this context, what is the influence or effect of CCSS in preparing students for the AP courses in your school?</p>	<p>1,3,5</p> <p>1,3,5</p> <p>1,3,4,5</p> <p>1,3,5</p> <p>1,3,5</p>
<p>7. Does CCSS negatively or positively affected the post-secondary enrollment rates in your school?</p>	<p>4,5</p>

Table 1

(continued)

Interview Questions for Teachers	Referenced Research Questions
→ During your experience in the past years of teaching in this Urban Charter School, do you see a positive relationship of CCSS with post-secondary enrollment, negative relationship with post-secondary enrollment, or no significant relationship at all?	4,5
<p>8. Do you think that as the CCSS seems good on the paper, teachers took it with same aptitude and acceptance which also reflects on its implementation or you have a different viewpoint?</p> <p>→ With the incorporation of CCSS standards, were the teachers provided with suitable refresher courses to facilitate the implementation, and if not, did it negatively influence the college readiness of students?</p> <p>→ What do you think was necessary to implement the new CCSS in the education system OR should government have paid attention to other equity indicators in schools such as financially aiding the students, keeping a check on the students results and their varying family income and finding solutions etc.?</p> <p>→ Were the new CCSS implemented in an organized step by step systematic manner OR, were they implemented all at once?</p>	<p>5,6</p> <p>5,6</p> <p>5,6</p> <p>5,6</p>
9. Feel free to share anything else about CCSS that you feel was missed in my questions...	1....6

Interview Questions for Administrators

The interview questions for administrators (Table 2) were also cross-referenced to the original research questions.

Table 2

Interview Questions for Administrators

Interview Questions for Administrators	Referenced Research Questions
<p>1. Are you optimistic OR pessimistic about the influence of Common Core State Standards on the college readiness of students?</p> <p>→ Do you think that the current CCSS groom the students with psychosocial skills such as resiliency, non-cognitive skills, and intrinsic motivation which play their role in successful transition to university education?</p> <p>→ Do you think that the ratio of remedial courses in degree programs has increased after the incorporation of CCSS or decreased?</p> <p>→ How do you handle the situation when a student has a poor attendance record or is unable to secure sufficient credit courses? Do you think those students as unprepared for college or do you take a different approach?</p>	<p>5. What differences currently exist between the instructional strategy for teaching the content-based standards in ELA/math and the Common Core State Standards at this school? How this change has influenced the college readiness of the high school students? How do teachers feel about this change process?</p> <p>4,5</p> <p>4. Did the post-secondary enrollment rates after the adoption of Common Core State Standards (CCSS) change?</p> <p>5. What differences currently exist between the instructional strategy for teaching the content-based standards in ELA/math and the Common Core State Standards at this school? How this change has influenced the college readiness of the high school students? How do teachers feel about this change process?</p> <p>It points towards all the first 5 questions for the reason that if the teachers are noticing more on students with poor attendance records & poor credit courses, then it would make an impact on the percentages and participation rates of students mentioned in first 4 research questions.</p>

Table 2

(continued)

Interview Questions for Administrators	Referenced Research Questions
<p>2. Are you optimistic / pessimistic about the influence of Common Core State Standards on instructional practices of teachers? Why are you optimistic/pessimistic?</p> <p>→ With all the new changes incorporated in CCSS, do you feel that the teachers in your school are more prepared in teaching or less prepared?</p> <p>→ Do you think that your teachers need training and tools in addition to the refresher courses in order to better implement the CCSS in the classroom and prepare the students for college readiness?</p> <p>→ Being an administrator (principal) of your school, do you recommend or dictate that the teachers adopt a particular teaching style and certain instructional practices inside the classroom OR do you give them flexibility to teach in the way they want?</p>	<p>5. What differences currently exist between the instructional strategy for teaching the content-based standards in ELA/math and the Common Core State Standards at this school? How this change has influenced the college readiness of the high school students? How do teachers feel about this change process?</p>
<p>3. Do you think that the education system was in great need of the new CCSS OR the previous system of New Jersey Core Curriculum Content Standards (NJCCCS) was better than the newly incorporated Common Core State Standards (CCSS)?</p> <p>→ Do you think that the CCSS curriculum is narrow, rushes to cover many standards or overemphasizes testing situations?</p> <p>→ Do you feel that the CCSS has promoted the “rote memorization” concept OR you feel that CCSS has furthered the “active learning concept” in students?</p>	<p>1,2,3,4,5</p> <p>1,2,3,4,5</p> <p>1,2,3,4,5</p>

Table 2

(continued)

Interview Questions for Administrators	Referenced Research Questions
4. Do you see any noticeable difference in PSAT/PLAN, SAT, and AP participation rates after the implementation of CCSS in your school?	1. Did the PSAT/PLAN, SAT, and AP participation rates improve after the adoption of Common Core State Standards (CCSS)?
5. In your eyes, what is the cumulative influence of CCSS implementation on the percentage of students who take the SAT and score at or above 1550?	2. Did the percentage of students who take the SAT and score at or above 1550 increase after the adoption of Common Core State Standards (CCSS)?
<p>6. What is the key point in CCSS which you see as a trigger that students are most likely to succeed in AP course?</p> <p>→ Do you think that the CCSS implementation impacted underrepresented student groups in terms of their enrollment into the AP Program? What is that impact, can you express your personal experience?</p> <p>→ In your eyes, what is the cumulative influence of CCSS implementation on the percentage of students who take AP or IB course in English, Mathematics, Science and Social Studies?</p> <p>→ Could you roughly tell me that before CCSS, I mean before 2010, when your students appear in AP or IB course in English, Mathematics, Science and Social Studies, roughly what score they were achieving before 2010, and what score they started achieving from 2011 onward?</p> <p>→ I feel that AP is one of the most famous exams which gives an advantage to students not only to enter in a rigorous curriculum, but also it is beneficial when they are applying to competitive colleges and universities. In this context, what is the influence or effect of CCSS in preparing students for the AP courses in your school?</p>	<p>1,3,5</p> <p>1,3,5</p> <p>1,3,4,5</p> <p>1,3,5</p> <p>1,3,5</p>

Table 2

(continued)

Interview Questions for Administrators	Referenced Research Questions
<p>7. Does CCSS negatively or positively affected the post-secondary enrollment rates in your school?</p> <p>→ During your experience in the past years of administering in this Urban Charter School, do you see a positive relationship of CCSS with post-secondary enrollment, negative relationship with post-secondary enrollment, or no significant relationship at all?</p>	<p>4,5</p> <p>4,5</p>
<p>8. Do you think that as the CCSS seems good on the paper, teachers took it with same aptitude and acceptance which also reflects on its implementation or you have a different viewpoint?</p> <p>→ With the incorporation of CCSS standards, were the teachers provided with suitable refresher courses to facilitate the implementation, and if not, did it negatively influence the college readiness of students?</p> <p>→ What do you think it was necessary to implement the new CCSS in education system OR that the government should have paid attention to other equity indicators in schools such as financially aiding the students, keeping a check on the students results and their varying family income and finding solutions etc.?</p> <p>→ Did the implementation of the new CCSS was done step by step OR it occurred without ensuring that the change is implemented in a systemic / organized manner?</p>	<p>5,6</p> <p>5,6</p> <p>5,6</p> <p>5,6</p>
<p>9. Feel free to share anything else about CCSS that you feel was missed in my questions...</p>	<p>1....6</p>

Validity and Reliability

Validity generally refers to whether the research instrument measures what it is intended to measure (Rourke & Anderson, 2004), and valid findings should accurately represent the phenomenon that the researcher aims to explain (Litwin, 1995). Reliability, meanwhile, entails the reproducibility of the study within a similar context. The researcher focused on ensuring the validity, trustworthiness, and reliability of the instrument by eliminating the following errors and biases.

Participant Error

To help avoid participant error due to misunderstandings of the question, the participants were informed about the purpose and context of the study before the interviews as well as on the date of the interview (Cresswell, 2014).

Participant Bias

While some participant bias is inevitable because the study was carried out only in one school, to avoid that bias, other common core implementations across the U.S. were referenced and compared (Yin, 2014).

Researcher Bias

To avoid potential researcher bias, computational content analysis was conducted with QSR NVivo v12 to extract emerging themes. Other themes were later manually added through the template analysis based on key themes found in the extant literature.

Researcher Error

With a view to preventing systematic errors from promulgating as a result of the error of the researcher, peer review through pre-testing (Silverman, 2016), as noted, was at the core of

this study. The use of computer-aided thematic extraction through QSR NVivo was also pivotal to reducing researcher error, as it made the content analysis more scientific and repeatable.

Validity of Quantitative Measures

To create the SAT, subject matter experts (SMEs), including cognitive psychologists, measurement experts, and content specialists, were called upon by the college board to lay down a set of hypothetical skill categories for each SAT test section (Writing, Mathematics, and Critical Reading). Upon completing hypothetical models, the skill categories were identified by coding items. For Critical Reading, the internal consistency estimates ranged from 0.69 to 0.84; for Mathematics, it ranged from 0.68 to 0.81; and Writing it ranged from 0.40 to 0.67. After measuring the fewest items on both forms, it was found that the estimates were the lowest for Writing Sk2. Interpretations of reliability estimates can be subjective, but many internal consistency estimates are fairly objective (Ewing, Huff, Andrews, & King, 2005).

In March of 2005, the SAT underwent significant adjustments in an attempt to figure out the effects of changes to the validity of SAT test scores. According to College Board Research Report No. 2008–4, in the context of SAT test scores and college success,

Beyond doubt, the standards (AERA/APA/NCME, 1999) underscore the significance of evaluating the test fairness in every sense of the word. In a bid to determine the function of the test across sub-populations, two analyses are applied (Drasgow & Kang, 1984). First off, there should be an examination of all items for differential item functioning (DIF), and this should be exercised during the course of the test development process (Rajuand & Ellis, 2003). All of the SAT items should be pretested for differential item functioning.

To ascertain the equivalence of the measurements, items should first be excluded from the operational forms that tend to show a moderate DIF. Second, the evaluation of tests should be conducted through equivalent associations with criterion variables (such as first-year GPAs); this is also called differential prediction and differential validity (Drasgow & Kang, 1984). If there is a marked variation between the test criterion and the subgroup, the existence of differential validity is shown. For example, upon analyzing the data from males, if the correlation between their first-year GPAs (FYGPA) and the SAT scores differs from those of females, this would show SAT differential validity by gender (Kobrin, Patterson, Shaw, & Mattern, 2008).

In College Board Research Report No. 20013-2, which includes a summative evaluation of the exams with regard to placing students into 10 credit-bearing college courses, the validity of student scores on AP exams in predicting course placements was examined. In the matter of course placement decisions, there have been a number of arguments in favor of using AP exam scores. First, exam scores show the student's mastery of the skills required for mastering the target domain. Second, these scores provide suitable grounds for making course credit and/or placement decisions.

Validity can be established through both empirically-based and judgment-based evidence (Kane, 2006). The judgment of experts in the content field with respect to teaching content knowledge and skills in the AP course and the resulting assessments on the exam provide concrete evidence with respect to the appropriateness of the chosen content for helping students to master the target domain. Content experts can assist with these types of judgments by using the empirical data from studies on introductory college course curricula. Such studies help the expert panels to ascertain the best possible alignment between the learning goals of college courses and HS AP courses. Such standards setting is a recognized procedure for collecting

judgments from experts on subject matter and cut scores (Cizek & Bunch, 2007). Shorter versions of the AP exam also take into account college comparability studies to determine AP placements based on cut scores (Patterson & Ewing, 2013).

Data Analysis

As noted, this research used both quantitative and qualitative data analysis tools. Quantitative data from five different cohorts spanning from 2010 to 2015 were analyzed using IBM SPSS v25. Due to the small sample size, the research was limited to descriptive statistics (Orcher, 2016), as the sample size could not justify further inferential tests. The descriptive statistics were limited to the mean, median, and standard mean error, the standard deviation, skewness, kurtosis, and the contingency tables' results. While the mean and median were used as the measures of a central tendency, the latter statistics were used to measure the association between two categorical variables. The phi (Φ) correlation coefficient was also calculated to measure the strength of the association between two nominal variables.

These statistics were applied to the following variables: free and reduced lunch rates, English language learner rates, rates of students receiving special education, total school enrollments, male enrollments, female enrollments, Hispanics rates, Black rates, White rates, Asian rate, two or more races rates, rates for students who scored 1,550 or above, composite SAT scores, Critical Reading scores, Math scores, Writing scores, average Critical Reading scores for students at the 75th percentile, average Mathematics scores for students at the 75th percentile, average Writing scores for students at the 75th percentile, average Critical Reading scores for students at the 25th, average Mathematics scores for students at the 25th percentile, average Writing scores for students at the 25th percentile, participation rates for English, social, science, or math AP/IB tests, PSAT/PLAN participation rates, schoolwide post-secondary

enrollment rates, post-secondary enrollment rates in 2-year institutions, and post-secondary enrollment rates for 4-year institutions.

This research also entailed the need to use a qualitative content analysis to extract themes. Cohen, Manion, and Morrison (2007) and Yin (2016) have confirmed the thematic extraction process as a valid means of organizing common phenomena and discourses from the data collected. In this research, the data were collected from the key informants who were administrators and teaching staff at the study site. The data were collected through interviews and computational data handling tools to ensure the objectivity of the thematic extraction process (Saunders, Lewis, & Thornhill, 2012). QSR NVivo v12 was used in this study owing to its multifarious advantages over other systems, such as Atlas.ti, its ease and intuitiveness, and its breadth of features (Boeije, 2010). Yin (2009) and Hsieh and Shannon (2005) suggested three possible approaches to help with the extraction of themes: the directed approach, the conventional approach, and the summative approach. The conventional approach is mainly data-driven, and themes emerge from the data provided; in the directed approach, themes are identified through contextual reference to the literature (Hsieh and Shannon, 2005; QSR, 2017).

This study was driven by inductive reasoning. On that basis, a grounded approach and theme extraction procedures were used for the template analysis, following the conventional and summative approaches suggested by Boeije (2010) and King (2012). The thematic analysis included the generation of the word trees (QSR, 2017) to show the contextual discourse for a particular theme. A second form of visualization—thematic maps—were used for the presentation of themes, showing hyper themes along with corresponding sub-themes, as recommended by Folley (2012).

Chapter Summary

For this research study, both quantitative and qualitative research approaches were adopted. The qualitative analysis was conducted through semi-structured and flexible interviews with the school's administrators and the teachers, and the resultant data were qualitatively analyzed. The first phase of this study involved examining quantitative academic data from five different cohorts between the years of 2010 and 2015 from an urban charter school in New Jersey. The quantitative phase of this research was cross-sectional, non-experimental, and explanatory. The data were labeled, coded, and uploaded to SPSS for statistical analysis:

The school's cohort composite SAT scores and participation rates for each year were included, along with their PSAT/PLAN participation rates, the participation rates and scores for the English, Social Science, and Math AP/IB tests, and the participation rates and scores for the SAT. For the SAT, the participation rates of students who scored 1,550 or above was determined. In addition, the rates of the students who took the AP/IB tests in English, Mathematics, Science, and Social Studies and scored 3 or above were included, as were the rates of students who scored 3 or more on the AP and 4 or more on the IB tests. Finally, post-secondary enrollment rates were selected for examination. These quantitative data were analyzed in SPSS. In the second phase, information obtained from the quantitative analysis was used to develop the semi-structured interview questions for qualitative analysis using QSR NVivo.

CHAPTER IV

RESULTS

Introduction

This study was designed for the purpose of exploring the implementation of Common Core State Standards (CCSS) in an urban charter school in New Jersey and its influence on the college readiness of high school students. This chapter reports the results and findings obtained from the procedures described in the methodology section. According to Naoum (2012), the presentation of the results is a critical factor in studies as it forms a basis for answering research questions. Researchers should not only provide an outline of the results, but also ensure that the frameworks are outlined as well (Joyner, Rouse, & Glatthorn, 2018). After presenting the data, this chapter includes a discussion of the outcomes of the research methodology and shows how the analysis serves to answer the research questions (Tracy, 2019).

Both quantitative and qualitative approaches were used to complete this study (Creswell & Clark, 2017). Furthermore, both deductive and inductive methods were exploited because the research involved testing statistically available data as well as empirical evidence and the experiences of participants. The fact that the study involved observing respondents' perceptions of events and the analysis of the quantitative data required deploying both inductive and deductive methods.

Quantitative Analysis

The school-level data used in this study were retrieved from the school's online archives of and the New Jersey Department of Education School Performance Reports. These data were formatted, cleaned, and imported into IBM SPSS Version 25. The resulting statistical analysis provided answers to subsidiary research questions 1–4 and subsidiary research question 6.

Qualitative Analysis

The interviews with teachers and administrators were transcribed and then uploaded into NVivo 12 for thematic analysis. Descriptions, definitions, and illustrations of the categories that emerged from that analysis were identified and examined. The results of the qualitative analysis was used to answer subsidiary questions 1–6.

Research Questions

The main research question for this study was, “How do Common Core State Standards (CCSS) influence the college readiness of high school students in an Urban Charter School of New Jersey?” The following six subsidiary questions were answered with the results explained in this chapter:

1. Did the PSAT/PLAN, SAT, and AP participation rates improve after the adoption of Common Core State Standards (CCSS)?
2. Did the percentage of students who took the SAT and scored at 1,550 or above increase after the adoption of Common Core State Standards (CCSS)?
3. Did the percentage of students who took AP or IB courses in English, Mathematics, Science, and Social Studies and scored three or above improve after the adoption of Common Core State Standards (CCSS)?
4. Did post-secondary enrollment rates after the adoption of Common Core State Standards (CCSS) change?
5. What differences currently exist between the instructional strategies used for teaching the content-based standards in ELA/math and the Common Core State Standards at this school? How has this change influenced the college readiness of high school students? How do teachers feel about this change process?

6. In an integrative mixed methods analysis, do the findings of qualitative interviews with teachers, the principal, and the curriculum and instruction supervisor corroborate the predicted relationship between the adoption of Common Core State Standards and the college readiness of high school students?

Quantitative Analysis

The study was conducted at a New Jersey charter school focused on college prep. As such, the students in the school were the study population. To align the quantitative data analysis with the research questions, four metrics were identified and studied: (a) participation rates in the PSAT/PLAN, SAT, and AP/IB tests, (b) performance scores on the SAT, (c) performance scores of AP/IB exams, and (c) the sum of post-secondary program enrollment rates in either a 2- or 4-year institution.

Demographic Parameters

The total school enrollment for Grades 6–12 at the charter school increased from 285 students in academic year (AY) 2010–11 to 316 in AY 2014–15 (see Table 3). The average enrollment for the five years was 308, with a median of 313. The female enrollment is higher than the male enrollments, averaging 52.7% female and 47.3% male. The highest percentage of female students was in AY 2012–13, when 54.3% of the students were female (see Table 3).

Table 3

School Enrollment, 2010–2015

Variable	2010-11	2011-12	2012-13	2013-14	2014-15	Mean	Median
Total School Enrollment	285	318	313	306	316	308	313
Male Enrollment	140	155	143	143	147	146	143
(% of total school enrollment)	49.0%	48.7%	45.7%	46.7%	46.5%	47.3%	
Female Enrollment	145	163	170	163	169	162	163
(% of total school enrollment)	50.9%	51.3%	54.3%	53.3%	53.5%	52.7%	

Note. Grades 6-12.

Source: *New Jersey School Performance Reports, 2010–2015*

Table 4 shows the students' race and ethnicity indicators from 2010–2015. For these years, 60.7% of the students were Black, 20.4% were Hispanics, 10.3% were Asian, 8.1% were White, and 0.2% are from other races. In AY 2010–11, the majority of the students were black; however, their percentages have reduced from 66.7% in AY 2010–11 to 47.5% in AY 2014–15. Fewer than half (40.9%) of the students were enrolled in the free or reduced-price lunch program, while 8.2% received special education. The students who qualified for the free or reduced-price lunch decreased from 45.3% in AY 2010–11 to 39.2% in AY 2014–15. The percentage of students receiving special education also decreased from 9.5% to 7.0% during the same reference school years. No students participated in English language learner programs.

Table 4

Student Characteristics (% of total enrollment), 2010–2015

Variable		2010-11	2011-12	2012-13	2013-14	2014-15	Mean	Median
Race	Hispanics	18.9	20.4	21.4	20.9	20.3	20.4	20.4
	Black	66.7	73.3	62.3	53.9	47.5	60.7	62.3
	White	6.6	4.6	8.0	9.5	12.0	8.1	8.0
	Asian	5.7	3.2	7.7	15.4	19.6	10.3	7.7
	Two More Races	0.0	0.0	0.3	0.3	0.3	0.2	0.3
Programs	Free Reduced Lunch	45.3	33.0	44.4	42.5	39.2	40.9	42.5
	English Language Learners	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Students Receiving Special Education	9.5	8.5	9.3	6.9	7.0	8.2	8.5

Note: Grades 6-12. , Totals may not add up to 100 due to rounding.

Source: *New Jersey School Performance Reports, 2010–2015*

Percentage of Students who Participated in

PSAT/PLAN, SAT, and AP/IB Tests

This metric was studied to answer the first subsidiary research question: “Did the PSAT/PLAN, SAT, and AP participation rates improve after the adoption of Common Core State Standards (CCSS)?” The percentage of students who participated in the PSAT/PLAN, SAT, and AP/IB tests are shown in Table 5. Nearly all of the students took the SAT (96.2%) and PSAT/PLAN (96.8%) from 2010–15, while fewer than 20% of the students took AP/IB. However, there was a significant increase in the percentage of students who took AP/IB tests from 6% in AY 2010–11 to 33.8% in AY 2014–15. By AY 2014–15, all students enrolled at CJCP took the PSAT/PLAN test.

Table 5

Participation Rates (%) of SAT, PSAT/PLAN, and AP/IB Tests, 2010–2015

Variable	2010-11	2011-12	2012-13	2013-14	2014-15	Mean	Median	Standard Mean Error	Standard Deviation	Skewness	Kurtosis
SAT	94.0	96.0	100.0	100.0	91.0	96.2	96.0	1.7	3.9	-0.3	-1.7
PSAT/PLAN	90.0	96.4	97.6	100.0	100.0	96.8	98.0	1.8	4.1	-1.5	2.3
AP/IB Tests English, Social Studies ,Science, or Math	6.0	9.3	8.6	39.4	33.8	19.4	9.0	7.1	15.9	0.7	-2.9

Source: *New Jersey School Performance Reports, 2010–2015*

After the school adopted Common Core State Standards, the average participation rate in the PSAT/PLAN, SAT, and AP/IB tests increased by 11.6 %, from 63.3% in AY 2010–11 to 74.9% in AY 2014–15, as shown in Table 6.

Table 6

The Average Participation Rate of Three Tests- PSAT/PLAN, SAT, and AP/IB Tests

Variable	2010-11	2011-12	2012-13	2013-14	2014-15
Participation rate of PSAT/PLAN, SAT, and AP/IB tests	63.3	67.2	68.7	79.8	74.9

Source: *New Jersey School Performance Reports, 2010–2015*

Figure 6 illustrates the participation rates in these three tests from AY 2010–15. Although the lowest participation rates are in the AP/IB tests, the figure shows that the proportion of students who took the tests in academic years 2013–14 and 2014–15 increased. In AY 2013–14, the AP/IB participation rate rose to 39.4% from 8.6%. The average participation rate of 96.2%

for the SATs and of 96.8% for the PSAT/PLANs indicates that adopting CCSS has played a role in increasing participation in these tests.

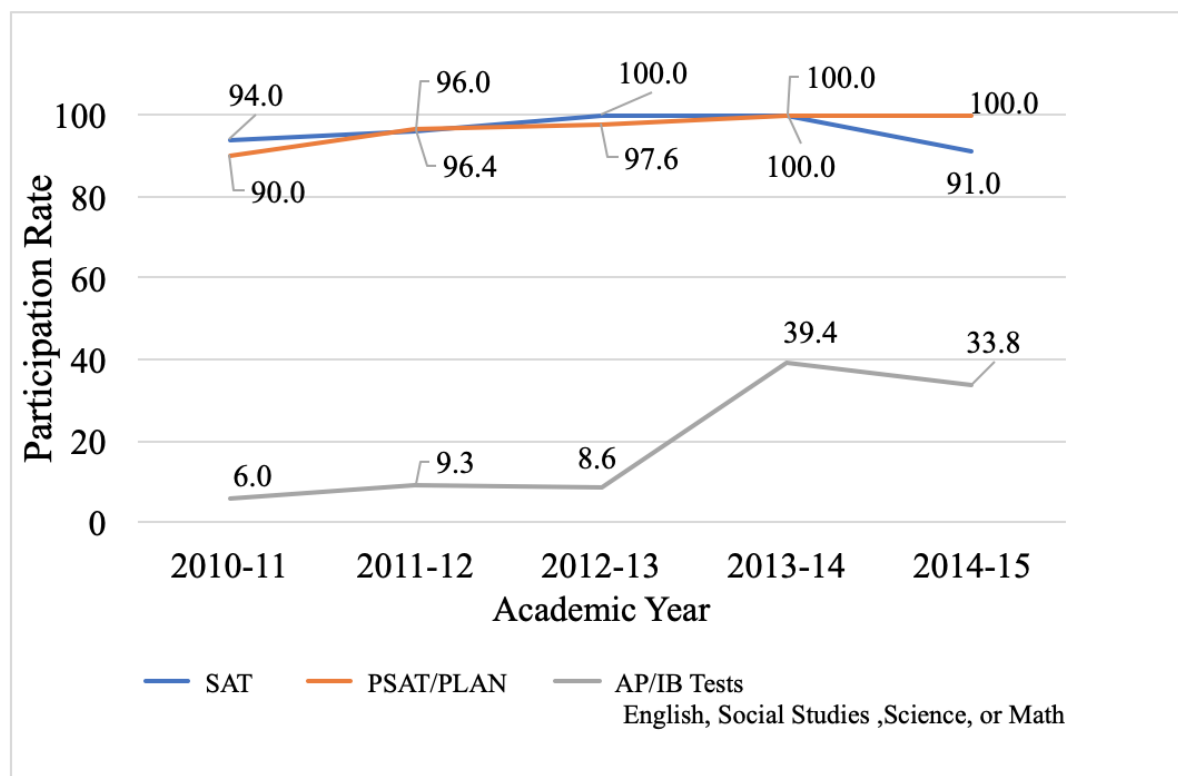


Figure 6. Participation Rates of PSAT/PLAN, SAT, and AP/IB Tests

Source: *New Jersey School Performance Reports, 2010–2015*

The change in the descriptive data for the participation rates on the PSAT/PLAN, SAT, and AP/IB tests was verified with a chi-square test of independence. In this test, the first two years (2010–12), before the full implementation of CCSS, and the last three years (2012–15), after the full implementation of CCSS, were considered.

Participation in PSAT Test and Implementation of Common Core State Standards

H₀: There is no association between the full implementation of CCSS and the participation rates in the PSAT/PLAN test.

H_a: There is an association between the full implementation of CCSS and the participation rates in the PSAT/PLAN test.

A chi-square test of independence was performed to examine the relationship between participation in the PSAT/PLAN test and full implementation of CCSS. The relationship between these variables was significant, $\chi^2(1, N = 409) = 9.85, p = .001697$, at $p < .05$. As shown in Table 7, the PSAT/PLAN participation rate of CJCP students was dependent upon the full implementation of CCSS. Therefore, the null hypothesis was rejected.

The phi (Φ) correlation coefficient was also used to estimate the degree of relationship between the two variables/groups. The phi value calculated was 0.16, which shows the strength of the effect between categorical variables. According to Cohen (1988), the effect size magnitude of 0.16 can be interpreted as small.

Table 7

Number of Students who participated in PSAT/PLAN Test, 2010–2015

			Participated in PSAT Test		Marginal Row Totals for Count
			Yes	No	
Implementation of CCSS	Before full implementation 2010 -12	Count	162	11	173
		Expected Count	(167.5)	(5.5)	
	After full implementation 2012-15	Count	234	2	236
		Expected Count	(228.5)	(7.5)	
Marginal Column Totals for Count			396	13	409 (Grand Total)

a: 0 cells have Expected Count less than 5. The minimum Expected Count is 5.5

b: Computed only for a 2X2 Table

c: df:1, $p < .05$ d: Phi (Φ)= 0.16**Participation in SAT Test and Implementation of Common Core State Standards**

H₀: There is no association between the full implementation of CCSS and SAT participation rates.

H_a: There is an association between the full implementation of CCSS and SAT participation rates.

A chi-square test of independence was performed to examine the relationship between SAT participation and the full implementation of CCSS. The relationship between these variables was insignificant, $\chi^2 (1, N = 208) = 1.35, p = .394802$, at $p < .05$. As shown in Table 8, the SAT participation rates of students were not dependent on the full implementation of CCSS. As the chi-square value is smaller than the critical value and the p -value is larger than the

significance level, the null hypothesis was not rejected. A phi (Φ) correlation coefficient was also calculated to estimate the relationship between two variables/groups (before and after CCSS implementation). The phi value calculated was 0.08, which shows a small effect size between categorical variables.

Table 8

Number of Students who Participated in SAT Test, 2010–2015

			Participated in SAT Test		Marginal Row Totals for Count
			Yes	No	
Implementation of CCSS	Before full implementation 2010 -12	Count	90	7	97
		Expected Count	(91.87)	(5.13)	
	After full implementation 2012-15	Count	107	4	111
		Expected Count	(105.13)	(5.87)	
Marginal Column Totals for Count			197	11	208 (Grand Total)

a: 0 cells have Expected Count less than 5. The minimum Expected Count is 5.13

b: Computed only for a 2X2 Table

c: df:1, $p > .05$

d: Phi (Φ)=0.08

Participation in AP/IB Tests and Implementation of Common Core State Standards

H₀: There is no association between the full implementation of CCSS and AP/IB test participation rates.

H_a: There is an association between the full implementation of CCSS and AP/IB test participation rates.

A chi-square test of independence was performed to examine the relationship between AP/IB test participation and the full implementation of CCSS. The relationship between these variables was significant, $\chi^2 (1, N = 409) = 9.85, p = .001697$, at $p < .05$. As shown in Table 9,

the AP/IB participation rate of students was dependent on the full implementation of CCSS. Since the full implementation of CCSS influenced AP/IB participation, the null hypothesis was rejected. The phi (Φ) correlation coefficient was also calculated to estimate the relationship between the two variables/groups. The calculated phi value was 0.25, which shows a medium strength of effect between categorical variables.

Table 9

Number of Students who participated in AP/IB Tests, 2010–2015

			Participated in AP/IB Tests		Marginal Row Totals for Count
			Yes	No	
Implementation of CCSS	Before full implementation 2010 -12	Count	13	174	187
		Expected Count	(32.4)	(154.6)	
	After full implementation 2012 -15	Count	57	160	217
		Expected Count	(37.6)	(179.4)	
Marginal Column Totals for Count			70	334	404 (Grand Total)

a: 0 cells have Expected Count less than 5. The minimum Expected Count is 32.4

b: Computed only for a 2X2 Table

c: df:1, $p < .05$

d: Phi (Φ)=0.25

SAT Performance Scores

The second metric, SAT performance scores, was tested to provide an answer to the next subsidiary question: “Did the percentage of students who took the SAT and scored at 1,550 or above increase after the adoption of Common Core State Standards (CCSS)?” The response to this research question was answered by analyzing the data from composite scores first, which showed a trend of changes in the sum of Critical Reading, Mathematics, and Writing scores.

Composite SAT Scores

The school's composite SAT scores increased from 1,195 in AY 2010–11 to 1,497 in AY 2014–15 (see Table 10). Among the three sections, the Math portion had the highest score across all the years for all three groups, with a mean score of 460.6 within the study years. Writing had the second highest scores, with a mean of 428.8, and Critical Reading was the lowest scored SAT section, with a mean score of 421.2. The composite scores were the combined scores of students at the 75th and 25th percentiles. For students in both the 75th and the 25th percentiles, there has been a gradual increase in composite SAT scores from academic year 2010–11 to 2014–15, with Mathematics being the highest scored test for both groups.

Table 10

Composite SAT Scores, Average Scores for students at the 75 percentile, and Average Scores for students at the 25 percentile, 2010–2015

Variable	2010-11	2011-12	2012-13	2013-14	2014-15	Mean	Median	Standard Mean Error	Standard Deviation	Skewness	Kurtosis
Composite SAT Score	1195	1218	1311	1332	1497	1310.6	1311	53.5	119.5	0.1	0.9
Critical Reading Score	380	390	421	428	487	421.2	421	18.8	42.0	1.0	1.1
Math Score	420	426	462	471	524	460.6	462	18.7	41.8	0.8	0.4
Writing Score	395	402	428	433	486	428.8	428	16.0	35.9	1.2	1.4
Average score for students at 75 percentile											
Critical Reading	445	450	460	470	545	474	460	18.3	40.8	1.9	3.9
Mathematics	481	483	520	540	615	528	520	24.5	54.8	1.2	1.2
Writing	450	460	480	490	565	489	480	20.3	45.3	1.6	2.8
Average score for students at 25 percentile											
Critical Reading	340	360	365	360	430	371	360	15.4	34.4	1.8	3.7
Mathematics	364	378	410	420	435	401	410	13.2	29.6	-0.3	-2.0
Writing	345	350	375	390	420	376	375	13.7	30.7	0.6	-0.7

Source: *New Jersey School Performance Reports, 2010–2015*

Based on the figures outlined in Table 10, it appeared that the data set used to derive these quantitative results were light tailed, despite having high standard deviation figures. For the composite SAT scores, the skewness value was very low (0.1), indicating that the scores within the five academic years are almost symmetrical. The kurtosis value (0.9) indicated that there were no massive outliers among the SAT scores of students within 5 academic years. Kurtosis and skewness values being positive figures indicated that the composite SAT scores were skewed to the right (higher than the mean).

The mean and median of the composite SAT scores for all students from AY 2010–11 to AY 2014–15 had almost the same value (mean=1310.6; median=1311). However, the composite SAT scores of high school students at CJCP increased after the adoption of the Common Core State Standards. Figure 7 illustrates the changes in composite SAT scores from AY 2010–11 to AY 2014–15.

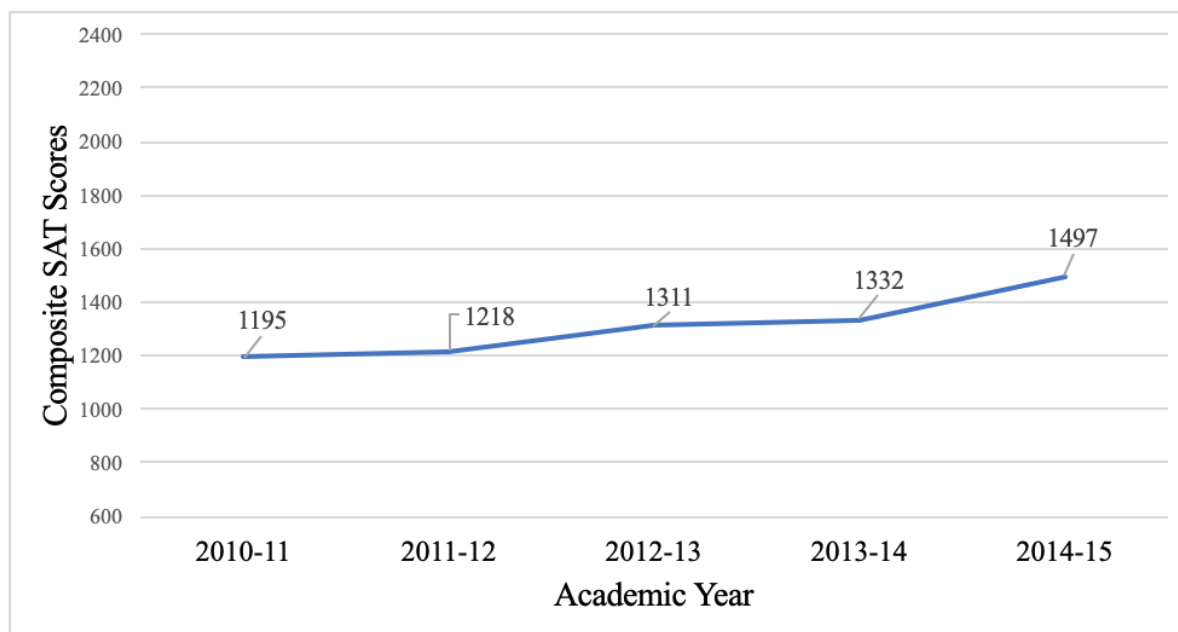


Figure 7. The Composite SAT Scores, 2010–2015

Source: *New Jersey School Performance Reports, 2010–2015*

Percentage of Students who took SAT and scored at 1,550 or above

Table 11 shows the percentage of students who scored 1,550 or above on their SATs from AY 2010–11 to AY 2014–15. The average (mean) percentage of students who scored at 1,550 or above from AY 2010–2015 was higher (19.7%) than the median (15.0%). The trend for this indicator is shown in Figure 8. The percentage of students who took the SAT and scored at 1,550 or above has increased since 2010.

Table 11

The Rate of Students who scored at 1,550 or above, 2010–2015

Variable	2010-11	2011-12	2012-13	2013-14	2014-15	Mean	Median	Standard Mean Error	Standard Deviation	Skewness	Kurtosis
Rate for the students who scored 1550 and above (%)	10.2	11.4	15.4	19.5	41.9	19.7	15.4	5.8	12.9	1.8	3.4

Source: *New Jersey School Performance Reports, 2010–2015*

Figure 8 outlines the trend of the group of students who scored 1,550 or above from AY 2010–11 to AY 2014–15.

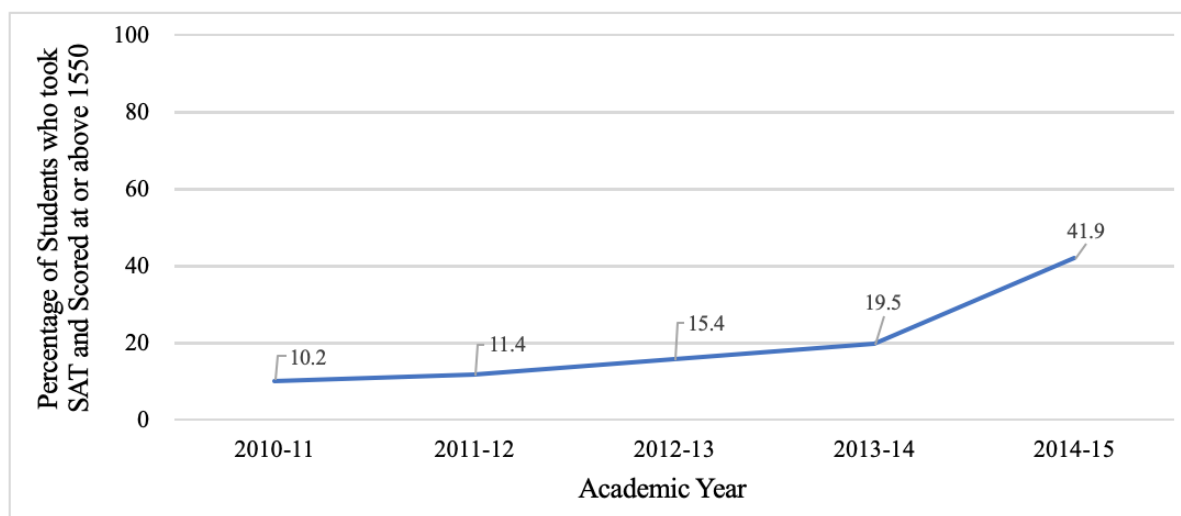


Figure 8. Percentage of students who took SAT and scored 1,550 or above, 2010–2015.

Source: *New Jersey School Performance Reports, 2010–2015*

The researcher used the chi-square test to check the statistical significance of the number of students in the study who took the SAT and scored 1,550 or above. In this test, the first 2 years (2010–12) were considered before the full implementation of CCSS and the last 3 years (2012–15) were considered after the full implementation of CCSS.

Number of Students who Scored at 1,550 or above on the SAT and the Implementation of CCSS

H₀: There is no association between the full implementation of CCSS and participation rates in the PSAT/PLAN test.

H_a: There is an association between the full implementation of CCSS and the participation rates in the PSAT/PLAN test.

A chi-square test of independence was performed to examine the relationship between the number of students who scored 1,550 or above on SAT and the full implementation of CCSS. The relationship between these variables was significant, $\chi^2(1, N = 197) = 6.40, p = .011467$, significant at $p < .05$. As shown in Table 12, the percentage of students who met the benchmark

score on SAT was dependent on the full implementation of CCSS. Therefore, the null hypothesis was rejected. The phi (Φ) correlation coefficient was also calculated to estimate the degree of relationship between two variables/groups. The calculated phi value was 0.18, which shows a small effect size between categorical variables.

Table 12

Number of Students who Took the SAT and Scored 1,550 or above, 2010–2015

			Scored at or above 1550 in SAT Test		Marginal Row Totals for Count
			Yes	No	
Implementation of CCSS	Before full implementation 2010 -12	Count	10	80	90
		Expected Count	(16.9)	(73.1)	
	After full implementation 2012 -15	Count	27	80	107
		Expected Count	(20.1)	(86.9)	
Marginal Column Totals for Count			37	160	197 (Grand Total)

a: 0 cells have Expected Count less than 5. The minimum Expected Count is 16.9

b: Computed only for a 2X2 Table

c: df:1, $p < .05$

d: Phi (Φ)=0.18

The third metric, the percentage of students who took the AP/IB tests and scored 3 or more, was examined to answer the third subsidiary research question: “Did the percentage of students who took AP or IB courses in English, Mathematics, Science, and Social Studies and scored three or above improve after the adoption of Common Core State Standards (CCSS)?”

The percentage of students who took AP/IB tests and scored 3 or more on the AP or 4 or more on the IB tests from AY 2010–11 through AY 2014–14 is presented in Table 13. The mean and the median values of these students are almost the same, at 13.1% and 13.0%, respectively.

Although the proportion of this group of students has been increasing, the findings indicate that in the academic years 2010–11 and 2012–2013, there were no students who took AP/IB tests and scored 3 or more on the AP or 4 or more on the IB test. The skewness for this data set is 0, indicating a symmetrical data set. The kurtosis is -2.9, showing that some values fell far below the mean for the data set.

In AY 2010–11, the percentage of students who took AP/IB tests and scored 3 or more on an AP test or 4 or more in an IB test was 0%; this number increased to 13.0% in AY 2011–12. The percentage declined to 0% in AY 2012–13 before rising to 25% in AY 2013–14 and, finally, to 27.3% in AY 2014–15. Despite the decline in the percentage of students who took AP/IB tests and scored 3 or more on the AP or 4 or more on the IB in academic years 2010–11 and 2012–13, the trend indicates an increase in 3 of the 5 academic years examined (2011–12, 2013–14, 2014–15). These data explain the influence of adopting CCSS on the percentage of students who took the AP/IB tests and scored 3 or more on the AP or 4 or more on the IB.

Table 13

Percentage of Students who Took the AP/IB Tests and Scored 3 or More

Variable	2010-11	2011-12	2012-13	2013-14	2014-15	Mean	Median	Standard Mean Error	Standard Deviation	Skewness	Kurtosis
Percentage of Students who got AP/IB Tests and scored 3 or more	0.0	13.0	0.0	25.0	27.3	13.1	13.0	5.9	13.1	0.0	-2.9

Source: *New Jersey School Performance Reports, 2010–2015*

After the adoption of CCSS, the percentage of students who took the AP/IB tests and scored 3 or more on the AP or 4 or more on the IB increased, although the number occasionally fluctuated (see Figure 9).

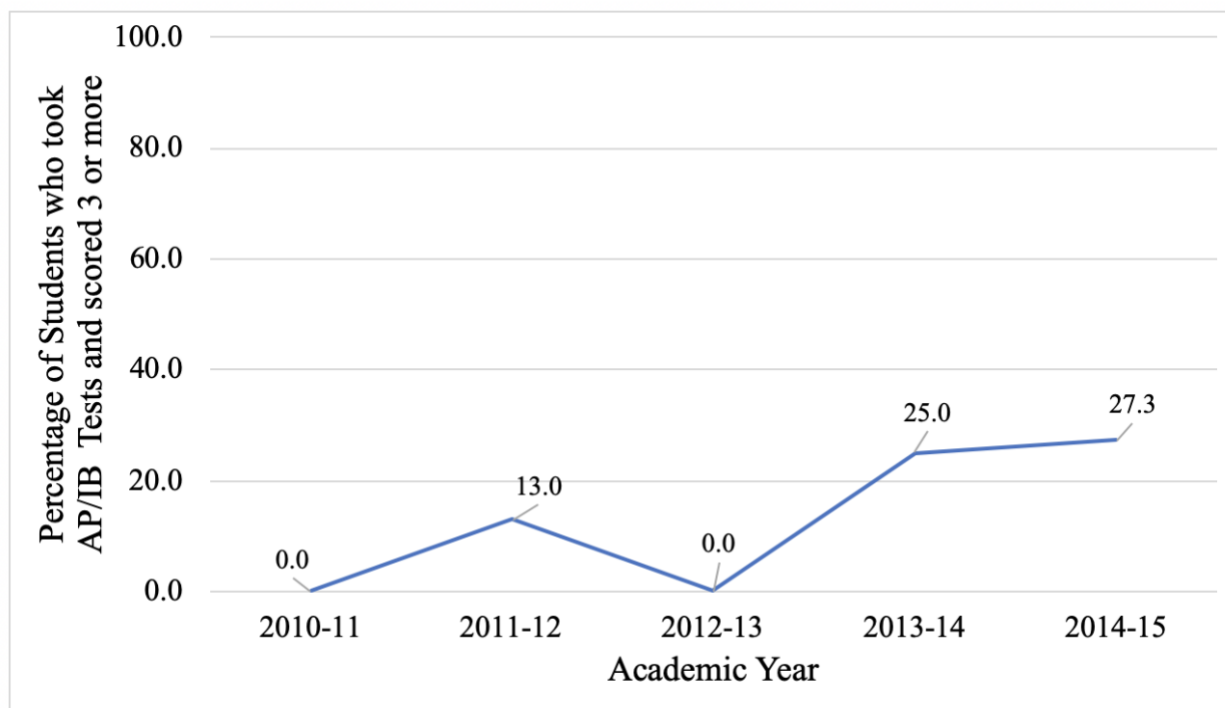


Figure 9. Percentage of students who took AP/IB Tests and scored 3 or more

Source: *New Jersey School Performance Reports, 2010–2015*

The researcher used a Fisher's exact test instead of a chi-square test (one cell has an expected count of less than 5) to check the statistical significance of the number of students at the school who took the AP/IB tests and scored 3 or more. In the Fisher's exact test, the first 2 years (2010–12) were counted as before the full implementation of CCSS and the last three years (2012–15) were considered after the full implementation of CCSS.

Number of students who scored 3 or more in AP/IB Tests and Implementation of CCSS

H₀: There is no association between the full implementation of CCSS and the number of students who took AP/IB tests and scored 3 or more.

H_a: There is an association between the full implementation of CCSS and the number of students who took the AP/IB tests and scored 3 or more.

The Fisher's exact test was run to examine the relationship between the number of students who scored 3 or more on the AP/IB tests and the implementation of Common Core State Standards (CCSS). As shown in Table 14, the Fisher's exact test statistical value was 0.4415. At $p < .05$, the result is not significant. Therefore, the categorical variables were not deemed dependent on each other, and the null hypothesis was not rejected.

Table 14

Number of Students who Took the AP/IB Tests and Scored 3 or Above, 2010–2015

			Scored at or above 3 in AP/IB Tests		Marginal Row Totals for Count
			Yes	No	
Implementation of CCSS	Before full implementation 2010 -12	Count	1	12	13
	After full implementation 2012 -15	Count	13	44	57
Marginal Column Totals for Count			14	56	70 (Grand Total)

Post-Secondary Program Enrollment Rates of CJCP Students

The fourth and the final metric was examined to answer the fourth subsidiary research question: “Did post-secondary enrollment rates after the adoption of Common Core State Standards (CCSS) change?” Table 15 displays the schoolwide post-secondary program enrollment rates. The students who enrolled in a post-secondary institution (either 2-year or 4-year) almost doubled, from 50% in AY 2010–11 to 92% in AY 2014–15, after the adoption of CCSS. The post-secondary enrollment rates among the total student population increased from

50% in AY 2010–11 to 51% in AY 2011–12, from 82% in AY 2012–13 to 87% in AY 2013–2014, and, finally, to 92% in AY 2014–15.

Table 15

Schoolwide Post-Secondary Program Enrollment Rates

Variable	2010-11	2011-12	2012-13	2013-14	2014-15
Post-secondary program enrollment rates (Schoolwide)	50.0	51.0	82.0	87.0	92.0

Source: *New Jersey School Performance Reports, 2010–2015*

As the trend shown in Figure 10 indicates, CCSS does improve the post-secondary enrollment rates of students assuming that CCSS is the sole parameter.

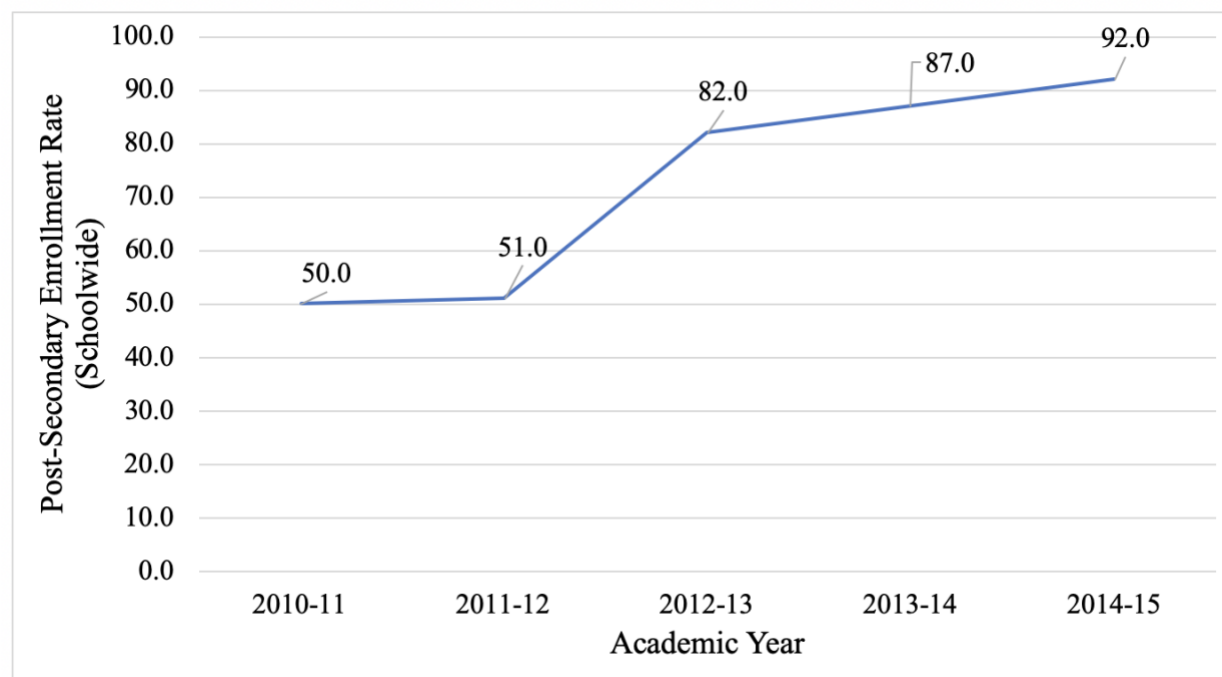


Figure 10. Schoolwide Post-Secondary Enrollment Rates, 2010–2015

Source: *New Jersey School Performance Reports, 2010–2015*

Table 16 presents the distribution of post-secondary enrollment rates in a 2-year and 4-year institution. Although the students who enrolled in a 2-year institution (as a percentage of the total number of students who enrolled in a post-secondary program) decreased from 44.4% in AY 2012–13 to 29.4% in AY 2014–15, those who enrolled in a 4-year institution increased from 55.6% to 70.6% during the same school years. On average, more students enrolled in a 4-year institution (65.3%) than in a 2-year institution (34.7%). From AY 2010–12, the distribution of post-secondary enrollment rates was not available on the school's report cards.

Table 16

Distribution of Post-Secondary Enrollment Rates, 2010–2015

Variable	2010-11	2011-12	2012-13	2013-14	2014-15	Mean	Median
2-Year Institution	n/a	n/a	44.4	30.3	29.4	34.7	30.0
4-Year Institution	n/a	n/a	55.6	69.7	70.6	65.3	70.0

Source: *New Jersey School Performance Reports, 2010–2015*

Without considering the influence of school culture, parental involvement, and peer pressure on post-secondary enrollment rates, these results would be misleading. The statistical significance of the number of students at the study site who enrolled in post-secondary institutions (either a 2- or 4-year institution) was verified with a chi-square test of independence. In this test, the first 2 years (2010–12) were counted as before the full implementation of CCSS and the last three years (2012–15) were considered after the full implementation of CCSS.

Number of Graduates enrolled in either a 2 year or a 4-year Institution.

H₀: There is no association between the full implementation of CCSS and the post-secondary enrollment rates of students.

H_a: There is an association between the full implementation of CCSS and the post-secondary enrollment rates of students.

A chi-square test of independence was performed to examine the relationship between the post-secondary enrollment rates of students and the full implementation of CCSS. The relationship between these variables was significant, $\chi^2(1, N = 209) = 31.09, p = .00001$, at $p < .05$. As shown in Table 17, the schoolwide post-secondary enrollment rate is dependent on the full implementation of CCSS. The CCSS implementation influenced the number of students who enrolled in post-secondary education. Therefore, the null hypothesis is rejected. A phi (Φ) correlation coefficient was also calculated to estimate the degree of the relationship between the two variables/groups. The calculated phi value was 0.39, which shows a medium effect size between categorical variables.

Table 17

Number of Graduates Enrolled in a Post-Secondary Institution (Either 2- or 4-year)

			Enrolled in Postsecondary Institutions		Marginal Row Totals for Count
			Yes	No	
Implementation of CCSS	Before full implementation 2010 -12	Count	50	48	98
		Expected Count	(68.46)	(29.54)	
	After full implementation 2012 -15	Count	96	15	111
		Expected Count	(77.54)	(33.46)	
Marginal Column Totals for Count			146	63	209 (Grand Total)

a: 0 cells have Expected Count less than 5. The minimum Expected Count is 29.54

b: Computed only for a 2X2 Table

c: df:1, $p < .05$

d: $\Phi (\Phi)=0.39$

College Readiness of High Students at CJCP

For this study, four college readiness metrics were used to indicate the level of college readiness of high school students at the study site. These were (a) student participation rates on the PSAT/PLAN, SAT, and AP/IB tests; (b) percentage of students who took the SAT and scored 1,550 or above, (c) percentage of students who took the AP/IB tests and scored 3 or more, and (d) schoolwide post-secondary program enrollment rates. As Table 18 shows, all of these metrics steadily increased after the implementation of CCSS.

Table 18

College Readiness of High School Students at the Study Site

Variable	2010-11	2011-12	2012-13	2013-14	2014-15
Participation rate of PSAT/PLAN, SAT, and AP/IB tests	63.3	67.2	68.7	79.8	74.9
Percentage of students who took SAT and scored at 1550 or above	10.2	11.4	15.4	19.5	41.9
Percentage of students who took AP/IB tests and scored 3 or more	0.0	13.0	0.0	25.0	27.3
Post-secondary program enrollment rate (Schoolwide)	50.0	51.0	82.0	87.0	92.0

Source: *New Jersey School Performance Reports, 2010–2015*

Summary of the Quantitative Analysis

As previously outlined, this study adopted a mixed research approach, employing both qualitative and quantitative methods to assess how CCSS influences the college readiness of high school students in a New Jersey urban charter school. To explore this topic, the main research question was divided into six subsidiary questions. Dividing the research question helps in the structuring successful research because the study parameters are reduced to manageable levels

(Creswell, 2017). Of the six subsidiary research questions, the quantitative phase of the study was designed to answer the first four questions.

The dependent variable of this study was the college readiness of high students, which was further categorized into the four metrics contained in the first four subsidiary research questions. These metrics were (a) student participation rates on the PSAT/PLAN, SAT, and AP/IB tests, (b) percentage of students who took the SAT and scored 1,550 or above, (c) percentage of students who took AP/IB tests and scored 3 or more, and (d) schoolwide post-secondary program enrollment rates. The results showed that CCSS affected all four of the metrics. The average participation rates of students in PSAT/PLAN, SAT, and AP/IB testing increased in all academic years except AY 2014–15, when there was a slight decrease in the SAT and AP/IB participation rates. The Fisher’s exact test also showed that the increase in the number of students who scored 3 or above on AP/IB was not significant after the full implementation of CCSS (2012–15).

Figure 11 summarizes the trends in the four metrics after the adoption of the CCSS from AY 2010–11 to AY 2014–2015.

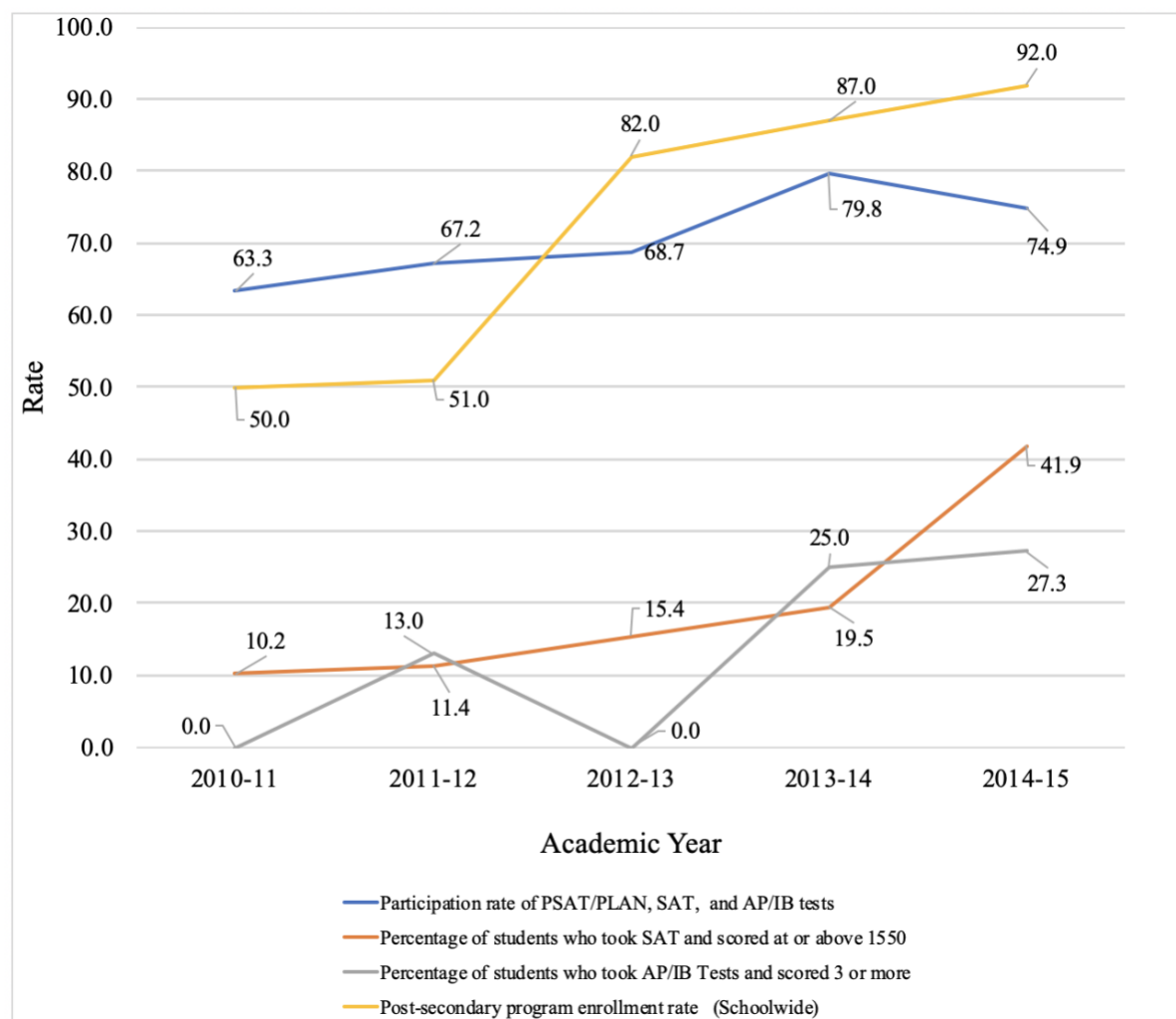


Figure 11. Summary of the College Readiness Metrics.

Qualitative Analysis

Overview and Participants

Interviews and observations were conducted at the New Jersey charter school to provide answers to the research questions. This section presents the processes that were followed to analyze the interview data using NVivo 12.

Two populations from the school were interviewed: four teachers and two school administrators. Both groups were essential to the study because they have firsthand experience of the implementation of CCSS and its effects on the college readiness of high school students.

The teachers and school administrators were interviewed using the questions outlined in Chapter 3. All questions were designed to comprehend the influence of CCSS on the school's students. All the interviews were recorded before transcribing them to Microsoft Word and Microsoft Excel transcripts. The transcripts were then used to develop the five main themes that emerged from the interviews. The researcher adhered to the practical guidelines of the thematic extraction process using NVivo 12. According to Levac et al. (2010), a thematic extraction process is composed of the following specific steps to produce quality themes and answer the research questions:

- examining data;
- codification (the codes should describe the content);
- searching for patterns across the assigned codes;
- defining the themes; and
- producing the report.

For the thematic analysis, the researcher began by reading one interview to familiarize himself with the words of the interviewees. After the first reading, the process was repeated, with a close line by line reading, to begin the coding. Each code serves as a label that is assigned to an "event" indicated in the interview transcripts. That event should be relevant to the research questions and should be understood as representing the full verbal expression of an attitude or a complete individual or collective act. Each event found in the interviews was coded following two steps: first, by describing what it was (i.e., what the code's definition was), and then by adding the relevant textual quote about the event.

After the transcripts were read line by line, codes were assigned using a word or phrase (label) that was recorded in the right margin of the document. Then, the researcher conducted a

second interview following the same process. For the second interviews, the researcher either used the codes from the first interview or created others if necessary. The same course of action was followed for the third and fourth interviews.

After the four interviews with teachers were examined, the codes were reviewed to ask the following questions:

1. What is it about?
2. What is here?
3. What are we talking about here?

These questions above were used as a guide to grouping the codes together before categories were created. At the end of this stage, the original interviews were parsed into a series of small pieces, each composed of a description, a text quote, and an associated code.

The next step was to create and name the categories. First, each category was defined based on the participant's explanations and then named according to its specific content. Comparing the different codes from the first set of interviews made it possible to specify the points of resemblance and discrepancy that constituted the description of the category. In reflecting on the categories, the researcher sought to identify a phenomenon or a part of it, which means that one category illustrated a single aspect of the whole event. Consequently, all of the categories, and the relationships established among them, led to a better understanding of the total phenomenon.

Each of these descriptive categories accounted for part of the phenomenon and the codes were grouped into them. To ensure that adequate codes were chosen, the researcher made constant comparisons between the interviews (the original source data) and the analysis. This allowed him to ensure that the codes and categories truly corresponded with what the data

showed. In the case of thematic analysis, a category can be considered a sub-theme, and some categories grouped together can be considered to comprise a theme. The researcher chose names for the themes that were meaningful enough to reflect the clustered sub-themes. In this integration stage, it is essential to return to the research questions to group all the categories that delimit the object of study. The aim is to identify, as clearly as possible, the overall unit, or central category, that would give meaning to the categories that emerged from the data analysis.

To analyze the qualitative data and derive relevant themes and emerging patterns, a word frequency query was run using NVivo 12. This query helped the researcher to list the most frequently occurring words or concepts that occurred in the interviews. The results of the query included a tree map and five word trees. Combining these visual representations was one means of increasing the study's comprehensibility for a range of audiences, who might not feel comfortable reading numerical tables or statistical analyses (Ahearn, 2012; Bletze, 2015). The rationale for constructing each figure was to illustrate the participants' comments. The grouping of codes and categorization of the data were achieved by using the word trees derived from NVivo software. The word trees present the outcomes, with their branches representing the various scenario in which given words or phrases occurred. The coding nodes for the qualitative analysis were arranged based on the word trees. This method was not only practical, helping to visualize prominent themes in the study, but were also useful for identifying areas that needed further investigation. Finally, a word frequency query was run in the early stages of identifying the nodes and formulizing the themes for qualitative analysis (Ahearn, 2014).

Word Frequency Analysis

According to Archer (2016), word frequency analysis serves a basis for analyzing qualitative data, especially when dealing with large amounts of information. Since the

transcribed interviews with the six interviewees (four teachers and two administrators) were quite lengthy, conducting a word frequency analysis was essential to providing a basis for computing the themes addressed in the interviews. Figure 12 shows a summary of the word frequency test as displayed in NVivo 12.

Word	Length	Count	Weighted Percentage (%) [▽]	Similar Words
students	8	316	3.28	student, students, students'
think	5	229	2.38	think, thinking
standards	9	205	2.13	standard, standardized, standards, standards'
ccss	4	183	1.90	ccss
college	7	156	1.62	college, colleges
courses	7	154	1.60	course, courses
school	6	135	1.40	school, schools
core	4	122	1.27	core
common	6	113	1.17	common
teachers	8	109	1.13	teacher, teachers, teachers'
feel	4	100	1.04	feel, feeling, feels
implementation	14	96	1.00	implement, implementation, implemented, implementing, implements
need	4	91	0.94	need, needed, needs
know	4	85	0.88	know, knowing
readiness	9	77	0.80	readiness, ready
new	3	72	0.75	new
teaching	8	71	0.74	teach, teaching, teachings
preparing	9	69	0.72	preparation, prepare, prepared, prepares, preparing
level	5	68	0.71	level, levels
like	4	65	0.67	like, liked, likely

Figure 12. Summary of the Word Frequency Criteria

For the purpose of grouping words, a “words with stemmed words” approach was used, such that the words “standard,” “standardized,” “standards,” and “standards’”, for example, were considered similar. This approach was fundamental to reducing the bulkiness of the study. As a measure of word frequency, a tree map from NVivo 12 was also exploited. Tree maps match frequent words in a particular data set in a more structured manner (Jadeja & Shah, 2015; see Figure 13).

Students	College	Teachers	New	Years	Influence	One	Take	Different		Also			
	Courses	Feel	Teaching	Kind	Get	Better	Really	Score	Grades	Definitely			
					Just	Giving	State	Terms	Program	Time	Class		
Think	School	Implementation	Preparing	See	Curriculum	High	Things	SAT	Well	Question	Requires	Success	
						Enrollment	Change	Optimistic	Training	Now	Second	Started	Good
Standards	Core	Need	like	Lot	Working	Learning	Much	Support	Post	Instruction	Little	Negative	Practice
						Classroom	Positive	Incorporate	Relationship	Something	English	Math	Setting
CCSS	Common	Readiness	Skills	Help	Far	Use		Administrator	Expect	System	Step	Addition	Mathematics
							Going	Attend	Way	Look	Problem	Always	
			Test	Educators	Able	Increase	Make	Higher	Algebra	Provides	Rates		

Figure 13. Tree Map

In developing word trees for the words most related to the research questions, the following words were used:

- CCSS,
- curriculum,
- implementation,
- prepared, and
- college.

Figures 14, 15, 16, 17, and 18 are the trees for these words developed using NVivo 12.



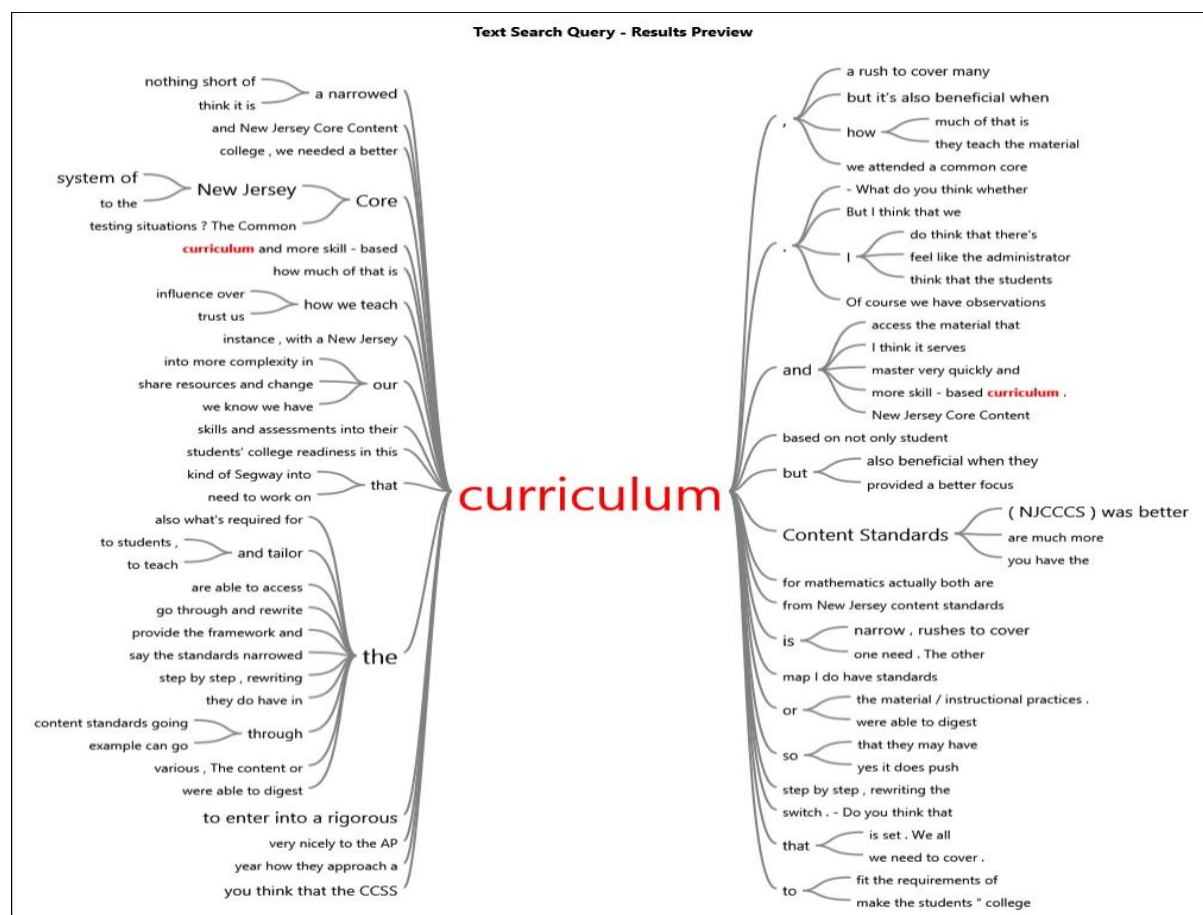


Figure 15. Word tree for the word "curriculum."

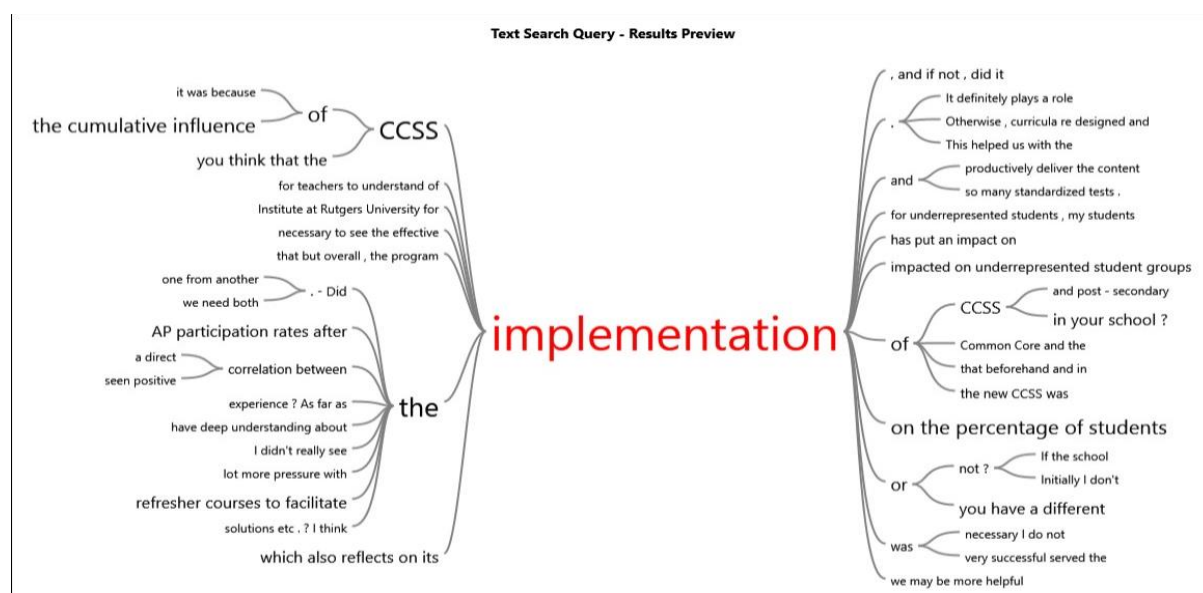


Figure 16. Word tree for the word "Implementation"

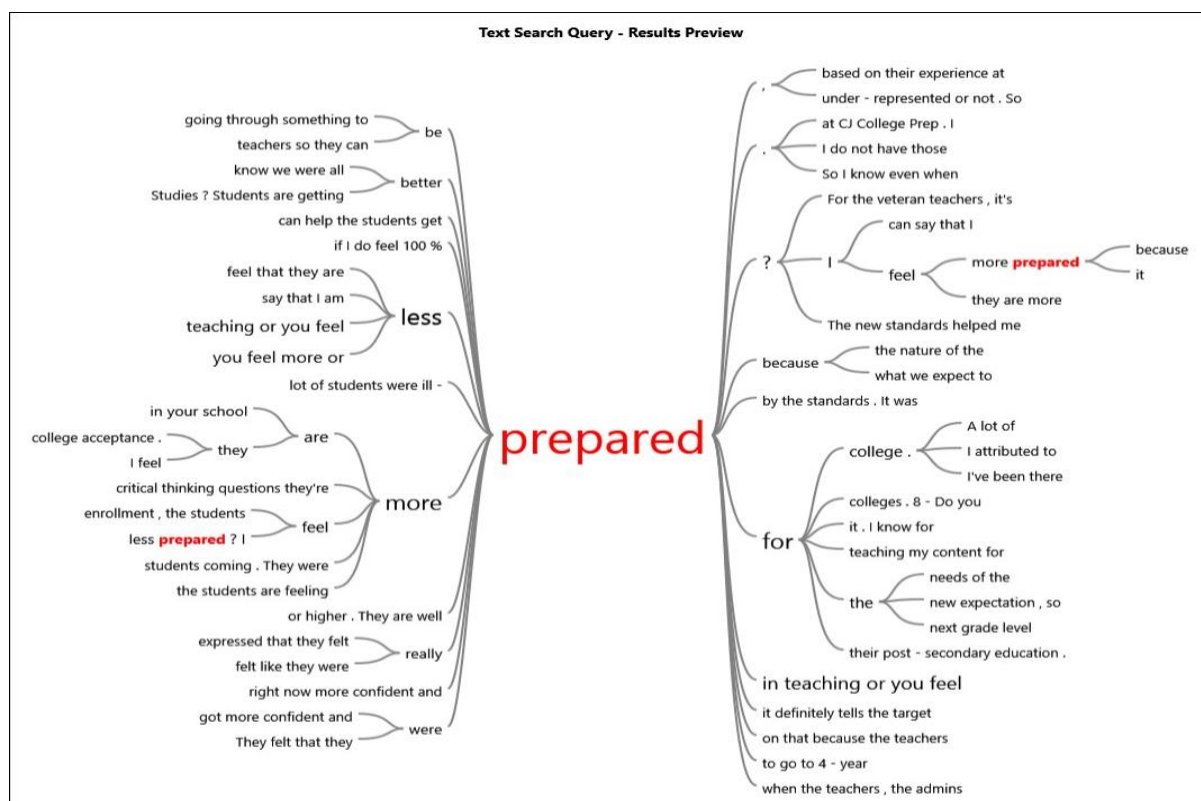


Figure 17. Word tree for the word "Prepared."

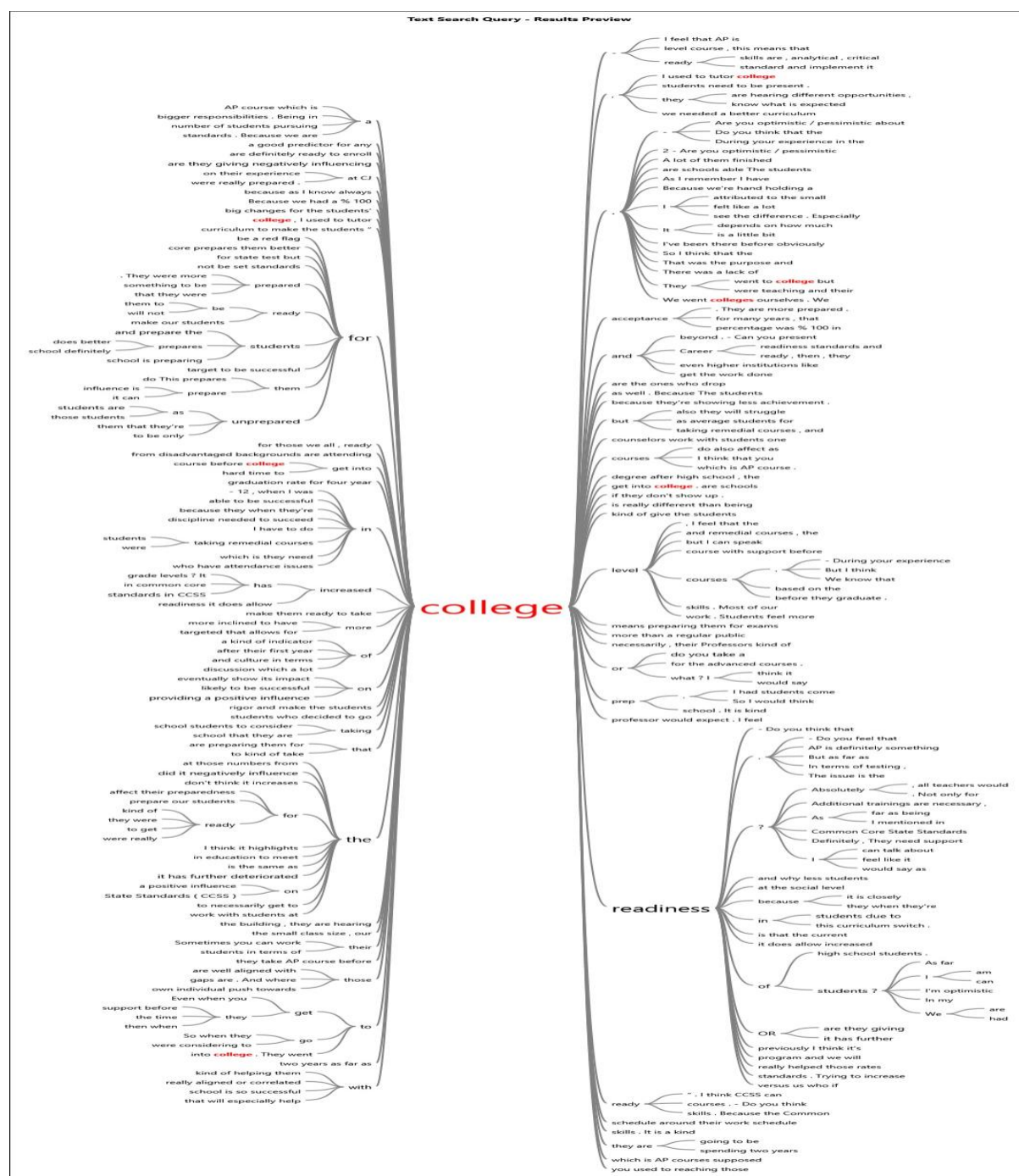


Figure 18. Word tree for the word “College.”

Standards and implementation were classified in the CCSS main node because, in most cases, these words were used together to convey similar messages about a particular context. Also, “prepare” was classified as a sub-node of “college” (see Figure 19).

Name	Files	References
ccss	1	181
implementation	1	91
standards	1	184
college	1	134
prepare	1	58
curriculum	1	48
skills	1	51
students	1	286
teachers	1	102

Figure 19. Nodes for coding.

Emerging Patterns and Trends

Identifying patterns and trends is among the critical tools in qualitative analysis (Denzin & Giardina, 2016). According to Preissle and Roulston (2016), the success of qualitative research relies upon the researcher's ability to identify trends within a data set. As such, it was imperative to develop an understanding of the emerging trends in the answers provided by the study's six participants in this study. This was achieved by reviewing the word trees and nodes. Upon coding and analyzing the qualitative data, the following patterns and trends were identified:

- o The education system changed after the adoption of the Common Core State Standards (CCSS), and most stakeholders needed to adapt to the new system;
- o participation rates of PSAT/PLAN, SAT, and AP/IB increased after the adoption of CCSS, but the respondents could not attribute this participation increase to CCSS alone;

- o students' scores for the SAT and IP/AB exams improved after the adoption of the CCSS, although most interviewees could not link the improvement of the scores to CCSS;
- o post-secondary enrollment rates rose to 100% after the adoption of CCSS;
- o teachers, as stakeholders in the school, had to alter their instructional strategies after adopting CCSS;
- o after the introduction of CCSS, the college readiness of students has improved; and
- o administrators' opinions of the impact of CCSS on instructional practices differed from most of the teachers' opinions.

Based on these emerging trends and patterns, the following themes were formulated to help address the research questions:

- o CCSS influenced instructional strategies;
- o positive effects of CCSS on the education system;
- o immaturity of CCSS in the education system;
- o positive effects of CCSS on the college readiness of high school students;
- o positive effects of CCSS on post-secondary enrollment rates;
- o neutral effect of CCSS on PSAT/PLAN and SAT participation rates;
- o neutral effect of CCSS on the ratio of students who took the SAT and scored 1,550 or above; and
- o positive effect of CCSS on the percentage of students who took AP or IB courses in English, Mathematics, Science, and Social Studies and scored 3 or more.

Qualitative Findings

First Research Question

1. Did the PSAT/PLAN, SAT, and AP participation rates improve after the adoption of Common Core State Standards (CCSS)?

To answer this research question, a theme was developed called *The Impact of CCSS on Long-Term Student Learning*. This theme focused on the participants' points of view regarding the possible influence of the new CCSS on the rates of student participation in the PSAT/PLAN, SAT, and AP/IB tests. The theme focused on the effects that CCSS adoption has on the development of students' abilities. The data analysis showed the point of view of administrators and teachers who had been working with the CCSS. According to them, it can be affirmed that CCSS played a role in the performance of students who finished high school and decided to undertake college education. However, none of them linked this increase to CCSS. In fact, they portrayed doubts about the influence of CCSS on students' participation rates on the PSAT/PLAN, SAT, and AP/IB tests.

This theme is composed of six sub-themes: PSAT-SAT differences after studying under the CCSS program; CCSS's possible effects on college performance; CCSS's influence on SAT scores; CCSS's influence on participation in AP/IB courses; CCSS's influence on success in AP; and CCSS's effects on the performance of underrepresented students. Each sub-theme will be explained in the following paragraphs. Figure 20 illustrates Theme 1.

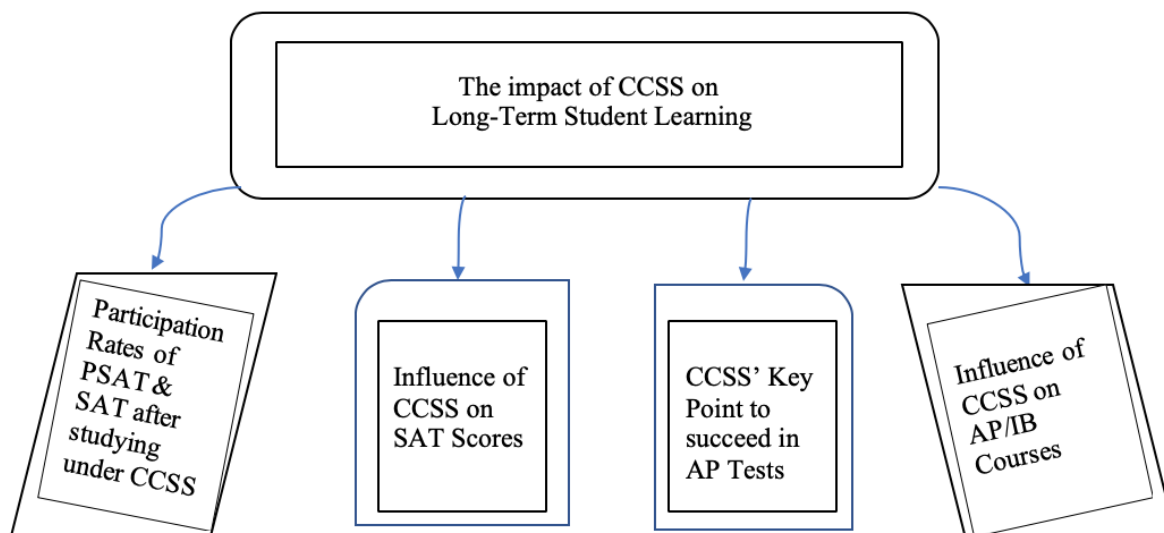


Figure 20. The Impacts of CCSS on long-term student learning.

The first sub-theme—*Participation Rates of PSAT & SAT After Studying Under CCSS*—was defined using the interviewees’ words concerning the influences of CCSS on PSAT/SAT testing. Participants agreed that CCSS had a positive influence on PSAT/SAT participation rates. However, they were unable to specify the aspects of CCSS that could be responsible for such an increase. For instance, an administrator acknowledged, “I have seen a remarkable difference in PSAT/SAT and AP participation rates, but I can’t say it was only because of CCSS” (E1). As another administrator noted,

We have been trying to increase participation in all of those programs, so I don’t know if that’s really because of Common Core. I think it was just our own individual push towards those college readiness standards. We are trying to increase participation in AP courses because we know that if you’re taking AP courses in high school, students will more likely be successful in taking college courses. I think that you know, we were doing that on a more organic basis even before Common Core was a mandate. There is a system in place for increasing participation.

Likewise, teachers could not link CCSS to increased participation rates on PSAT/PLAN, SAT, and AP. One teacher noted that although the participation rates have improved, he could not entirely peg that improvement on CCSS:

As I remember in the last three years . . . we offered lots of AP courses. In terms of PSAT or SAT scores, I do not know if it is because of the CCSS or not. But I have seen the improvement of taking AP courses or passing AP tests, like having a 3 or higher score. We made a tremendous improvement in terms of the results of the SAT or PSAT. However, I am not a hundred percent sure if it is because of Common Core or parental involvement or the culture of students. When we offer AP courses, as I remember having students get around two or three AP courses starting from freshman year to senior year, and that was overwhelming for a freshman. I mean, think about that a student having an AP course in 9th grade.

Another teacher discounted the idea of that the higher student participation rates of students in PSAT/SAT at the school was because of CCSS, specifying that,

I think the student participation rates of PSAT and SAT is a little bit different for our school because everyone participates in PSAT and SAT. But it's not related to the standards. Because we are a college prep school, it is kind of tied into (E6).

Similarly, another teacher stated the following:

Student participation rates of PSAT, SAT, and AP were increasing over the years. I cannot definitely say that it was because of the Common Core; however, creating more awareness and culture in terms of college readiness really helped those rates go up every year (E4).

Addressing the first research question, the participants could not expressly point out which characteristics of the CCSS might have provoked the increase in PSAT/PLAN, SAT, and AP participation rates.

Second Research Question

2. Did the percentage of students who took the SAT and scored at 1,550 or above increase after the adoption of Common Core State Standards (CCSS)?

Addressing the second research question, the second sub-theme—*Influence of CCSS on SAT Scores*—was derived from the data. This sub-theme refers to the participants' views about whether the CCSS increased SAT scores. This theme could be traced to the CCSS's node. As was the case with the participation rates theme, most respondents acknowledged the increase in the ratio of students who took the SAT and scored 1,550 or above, but they did not directly link this to the adoption of CCSS. However, some participants said that CCSS must have played a role, although it is hard to single out Common Core as the primary reason why students scored 1,550 or above on the SAT. Indeed, it seemed that CCSS had an effect on SAT scores. As one teacher admitted, "I need some data, but I would imagine that the scores went up" (E6). One of the school administrators also admitted the possible relationship between CCSS and SAT scores: "This is a great question. I do not think I can answer that effectively. I really have to look at the numbers for that. I know that there is a correlation."

Other participants were more explicit, stating that although scores improved, they could not attribute success to the implementation of the CCSS. For instance, as administrator declared, "Again, we had students who scored above 1,550, but I can't say it was because of CCSS implementation. It definitely plays a role, but it's hard to say, 'That was it!'" (E1).

In the same vein, a teacher also comments,

The scores increased over the years at CJCP. I cannot say if it is because of Common Core or the school culture. Again, that's the question mark for me. I cannot answer with the current knowledge that I have right now. But we have seen lots of improvements in terms of SATs, as I know lots of students got the Benchmark score at [the school] and they went to colleges. But if that's the Common Core, I do not know. (E3)

A teacher admitted that there is no direct relationship between CCSS and SAT benchmark scores but stressed that no direct correlation could be established. He highlighted the following:

Common Core is really helping the students to master grade-level skills, so the student is getting ready for the next grade level. SAT is not directly linked to those standards. However, for a high school student, a sophomore or a junior who is really on top of these standards can get better scores on the SAT and reach the benchmark score, which is 1,550. So even though there is no direct relationship between learning Common Core Standards and getting a high score on SAT, I believe there is an indirect but strong relationship between the mastery level of these standards and getting a high score on SAT test. (E4)

Based on the participants' responses, it can be concluded that even if there is no direct link between CCSS and SAT outcomes, it is possible that some connection must exist given the fact that both teachers and administrators acknowledged that CCSS provides students with the skills necessary to enhance their SAT scores. Their doubts might be attributable to the fact that CCSS is still a relatively new program in this educational setting.

Even though the majority of the interviewees showed support for CCSS, some still believed that CCSS, an immature program, needs development or more time before its SAT outcomes can be assessed. An administrator delineated that it is important to give the program

more time to develop before looking at its results. He stated, “I am optimistic“ but, ”Any change you will make in the education system takes time to produce some measurable results.”

The immaturity of the CCSS program is evident in the participants’ answers. For instance, another participant stated that CCSS could not instill in the students the requisite psychological skills, such as resiliency, non-cognitive skills, and intrinsic motivation. He said, “I didn’t see any major changes in terms of non-cognitive skills and intrinsic motivation. I don’t have much insight to share for this question right now because I cannot see any major changes.” The immaturity of the CCSS program was evident in various parts of all the interviews. As such, it is important to give the program time to develop while devising suggestions to aid in improving the program. After a while, the results can be assessed and used to decide whether to retain or do away with the program.

Third Research Question

3.- Did the percentage of students who took AP or IB courses in English, Mathematics, Science, and Social Studies and scored three or above improve after the adoption of Common Core State Standards (CCSS)?

To answer the third research question, two sub-themes were developed: (a) *CCSS’s Key Points to Succeed in AP Tests* and (b) *Influence of CCSS on AP/IB Courses*. The first sub-theme was related to the AP program exposing students to the CCSS’s key points and how that exposure influenced the number of students earning 3 or more on AP tests, while the second sub-theme was related to AP/IB courses in general.

The third sub-theme was *CCSS’s Key Points to Succeed on AP Tests*. It refers to the features of CCSS that the participant evaluated in terms of how much they prepare students for better performance on AP tests.

The participants were inclined to admit the strong relationship between the CCSS and the increased number of students with access to AP programs. An administrator commented, “The key points CCSS stresses is critical thinking ability and analyzing, which are the skills that we want students to learn in order to succeed in AP courses” (E1). Meanwhile, a teacher enthusiastically expressed the following:

I would say the culture of the families is maybe the most effective factor with the CCSS. As I mentioned before, at CJCP we offer high school courses to middle school students, and because of that, they had lots of AP courses. They were kind of ready for the college courses, which is an AP course. They did great in terms of scores. I can say that when I compare CCSS with the NJCCCS, the common core is a little bit organized in terms of the courses and grades. I think this is the main factor. That’s why we had a chance to give our students high school courses when they are in middle school. (E3)

Likewise, a teacher affirmed that there was a strong correlation between the CCSS and the number of students taking AP courses: The number of students who took AP courses increased after the adoption of CCSS. He pointed out the following:

If a student is taking an AP course, which is a college-level course, this means that most likely, they are already doing great in their regular classes. In other words, this student is proficient or advanced proficient in the grade-level standards; he or she will most likely do better in an AP course. I see a strong correlation between the mastery of common core standards and getting AP courses. (E4)

Another teacher agreed but pointed out a different aspect of the CCSS as pivotal to helping students succeed in the AP program. According to his experience, training and perseverance are new skills acquired by the students since the implementation of CCSS:

The Common Core Standards require the students and force them to persevere. It does so if they get stuck because of the type of problems that they have to really stop and explain their answers. Think about what they to do for higher-level courses. Even when they get to college, this gives the students more skills in order to be successful in those higher-level classes. And . . . they are trained to do that with the Common Core. Critical thinking skills are much stronger. (E6)

Finally, the last teacher highlighted the capability to analyze and discuss a problem in class as key to helping students in the AP program. She mentioned,

As far as these standards, they keep the point in the standards that students are most likely to succeed in AP courses. It is really just about making sure that they know how to adjust and know how to analyze and attempt to have a class discussion as well. I know a lot of the AP courses require academic writing but also being able to have a class discussion, which a lot of college courses do also affect as well. (E5)

Strongly related to the third sub-theme, the fourth sub-theme was *Influence of CCSS on AP/IB Courses*. It is defined by the interviewees' words referring to the support that CCSS provided to students taking the AP/IB courses.

All the participants agreed that CCSS has had a positive influence on the percentage of students taking AP/IB courses. For instance, an administrator stated that, "The courses designed according to CCSS to prepare students for higher-level standards and make them ready to take college-level work" (E1). The CCSS provides students with critical thinking skills while instilling in them a high level of confidence. The administrator continued by saying, "Students feel more confident and ready, although they feel very challenged, which I believe is a very important part of the learning process. It definitely has a positive impact" (E1).

In the same fashion, a teacher commented,

Students are getting better prepared for the next grade level, and I believe that as long as they are mastering the standards at each grade level especially, at the proficient and advanced proficient level, this will help them get more rigorous courses such as AP courses. So, I cannot definitely say that Common Core is causing all of these results, but is most likely pushing high school students to consider taking college-level courses before they graduate.

Hence, critical thinking skills and well-organized prerequisites seemed to play an essential role in the students' performance.

However, another teacher emphasized the role of parents in students' success, pointing out,

The percentage of students . . . I do not have a definitive answer in terms of numbers in my head right now, but as I mentioned before, we had lots of students who started getting AP courses in English, Mathematics, Science, and Social Studies (in four major areas), and they received great results. I don't have a specific percentage on that, but overall, the program implementation was very successful and served the purpose of school. I cannot really differentiate; maybe it is because parental involvement and the Common Core State Standards together gave us these results, but I don't know which one is more, which one is less, I cannot say. I know that parental involvement was a big impact (E3).

Equally, smaller group of students working together seems to have played a role in the students' success. A teacher specified the following:

It has increased because of the way the Common Core is structured, and you have smaller groups with a fewer set of standards in each grade level. Advanced students, for example,

can go through the curriculum and master quickly and be promoted faster. Because of this, there are some standards that can be mastered quickly, even though it is common core. That allows students to participate in the high-level classes (E6).

Lastly, another teacher stated,

I would say that the influence is to prepare them for college, which is . . . what AP courses are supposed to do. It definitely gives them that set of standards that they know they need to live up to. And even though there may not be any set standards for college necessarily, their professors, kind of outlines, this is what I want you to reach, so they're used to them by the time they get to college. You used to reach those standards. (E5)

CCSS provides students with particular skills that allow them to improve their scores at the college level. The participants especially highlighted critical thinking skills, which involves analyzing and synthesizing. However, the acquisition of such skills comes with the requirement of student perseverance and training—i.e., the more the students persevere and train, the more easily and quickly they will acquire the skills necessary to succeed in college courses. As stated in the CCSS guidelines, training should occur in small groups to improve each student's performance.

Although participants could not provide a specific number to demonstrate the effects of CCSS on college readiness, their experiences allowed them to suggest an indirect relationship between CCSS and the number of students who were interested in taking AP/IB courses, improving SAT scores, or taking the PSAT/SAT tests. Overall, there was considerable improvement, probably due to readiness, training, perseverance, and confidence, acquired during high school.

Fourth Research Question

4. Did post-secondary enrollment rates after the adoption of Common Core State Standards (CCSS) change?

This research question was examined by creating the theme *Higher Education and CCSS: The Best-Skilled Students*. This theme was defined as the participants' perception of the performances achieved by students: their enrollment and performance in college, their outcomes after using CCSS program, and the probability of underrepresented students achieving higher goals after studying under the CCSS program. Figure 21 illustrates the theme and sub-themes for RQ4.

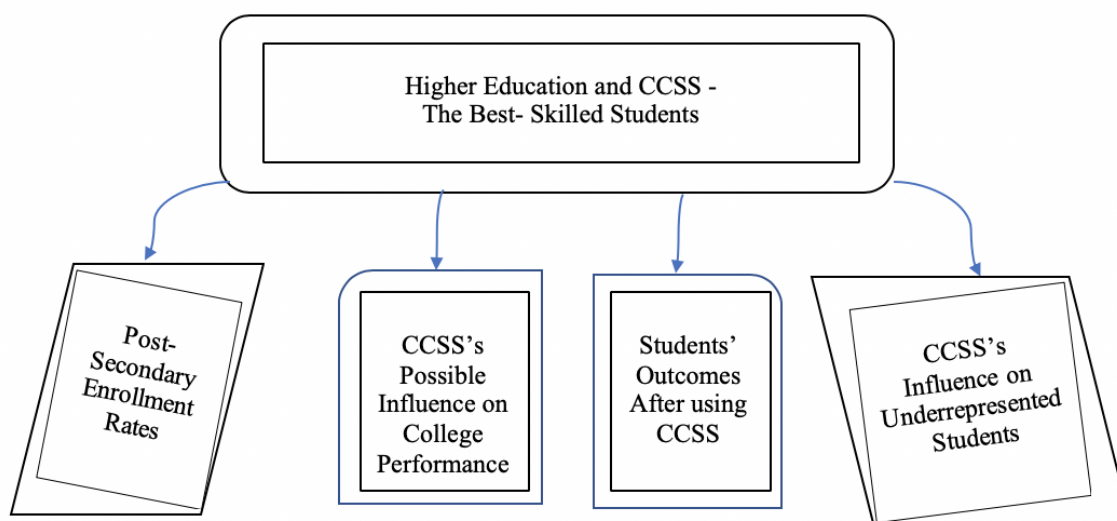


Figure 21. Higher education and CCSS: The best skilled students.

The theme is composed of four sub-themes. The first—post-secondary enrollment rates—was defined as the change observed by the participants in the number of students who entered a college after finishing high school. Indeed, the answers in the interviewees regarding the number of students with satisfactory college performance are remarkable. However, many of them were not able to contrast the outcomes from working with the CCSS with the outcomes before the

implementation of CCSS. For instance, an administrator commented, “I was not in CJCP before 2010, so it’s hard for me to compare. Over the years, I see a slight improvement in AP scores after 2011” (E1). Another administrator mentioned that she was also not present before 2010: “I was not here until 2010. I do not think I can effectively answer that question (E2)”. Also, a teacher declared: “I am not sure about the scores. I started here in 2011” (E6).

Nonetheless, when they were asked about the enrollment rates after CCSS implementation, many of them noted that the majority of the graduating students went on to college. All of the respondents believed that CCSS played an essential role in improving post-secondary enrollment rates.

One respondent proposed that CCSS has positively affected post-secondary enrollment rates because the tests provided them with a glimpse of what to expect in the college syllabus. She said, “Again, the students know what standards they need to target exactly and what they need to work on. This gives them an outline in terms of what needs to be done in college.”

Another respondent believed that CCSS prepares students for college-level courses, something he confirmed by conversing with the school’s alumni. He stated,

Post-secondary enrollments in our school almost every year is 100%. The only difference, maybe, is getting more acceptance from 4-year colleges compared to community colleges. So, yes, with the new changes, the students are feeling more prepared to go to 4-year colleges and even selective colleges. How I know that is we are talking to the alumni, and they say that they were ready for college-level courses.

Another respondent concurred, saying,

. . . our [college] enrollment was a 100% during my time; I don't see any changes on that one. Because we never got less than a 100% acceptance rate. When I was there, we always had a 100% enrollment rate among the students, our seniors.

An administrator affirmed that the CCSS has an influence on post-secondary enrollment rates: "I haven't conducted any survey specifically for that purpose, but I believe it affected positively when I consider overall change I have observed in classrooms. I have seen a positive correlation between the implementation of CCSS and post-secondary enrollment." The second administrator affirmed that conclusion:

I am not sure how much of this increase is directly linked to the Common Core.

However, we were just trying to do better in our processes to send students to colleges.

We started in 2006, once we began to have our middle school students go up into high school. I think that also had an influence on our post-secondary enrollment rates because . . . you know our students . . . They had a better foundation with us, hopefully.

These statements confirmed the positive influence of CCSS on post-secondary enrollment rates. It appears that CCSS provides a strong foundation for the AP test and college enrollment.

Some participants mentioned the specific features of CCSS that make students successful in college. For instance, they mentioned the confidence, motivation, and critical thinking skills that students acquired. As one teacher explained,

For this question, I don't have the data, but definitely, the scores are getting better and the students are more motivated. Teachers have become more supportive after they understand the new standards. Can we say that there's a direct correlation between the implementation of Common Core and the scores in AP. I'm not sure about that, but

definitely the culture of the school and support services, on top of the new rigorous standards, all together help the students score better. (E4)

Another teacher agreed and pointed out the following:

They felt that they were prepared for college. A lot of them finished within the 4 years or less at a 4-year institution, and they felt like they were really prepared at [our school]. I had students come back, and they are now working in industry or hospital; they graduated from universities; they expressed that they felt really prepared, based on their experience [here]. (E6)

Indeed, the CCSS not only affects students' cognitive preparation but also their mental readiness to confront rigorous college courses. With cognitive skills such as critical thinking and other analytical skills developed, the students also increased their self-confidence and motivation, and they wished to become successful individuals.

The second sub-theme, *CCSS's Possible Influence on College Performance*, refers to the different points of view of the teachers and administrators about the effects of CCSS implementation on students' college admissions. Although the interviewed administrators and teachers did not have direct data to affirm a correlation between CCSS and college performance, they were able to draw their conclusions from other points of reference. For instance, a teacher indicated,

I do not have much information about it. It depends on the school population. So, I know in our school, it changes from year to year, depending on the student population.

Common Core State Standards have a positive influence on the college readiness of high school students. Because the teachers are more aware of the next grade-level expectations, they close students' needs before they move on to the next grade level. And

I think the students are also challenged a lot while they are still in high school. So, when they go to college, they know what is expected of them and how they can better perform with the new expectations. (E4)

Likewise, an administrator commented, “I have not looked at those numbers from the college level, but I can speak about just the high school students that I have seen. I think that this shift has definitely had an impact on our students” (E2).

For these participants, the points of reference were the awareness of what must be taught at each level and what skills the students should acquire. Briefly, students’ understanding of what is expected from them in college is more real than it was before. Another participant prudently affirmed such influence. An administrator said,

I don’t have any data that I can show to prove that. I think nobody has it yet. I think it will eventually show its impact on the college readiness program, and we will see a smaller number of students taking remedial courses in college. (E1)

However, not all of the participants were optimistic regarding the college admissions outcomes from adopting CCSS. One of them stated,

In my experience, I did not see any major changes from the previous standards, which is New Jersey CCCS in terms of Mathematics. I am neither optimistic nor pessimistic. There are no really big changes for the students’ college readiness in this curriculum switch. I didn’t see any major changes in terms of non-cognitive skills and intrinsic motivation. (E3)

Lastly, a teacher working with special education commented,

I am kind of in the middle on that. Just like the first question, I would say that the standards are good for us to try to reach but as far as the standards are set in stone, it

doesn't necessarily allow so much for students, especially in the setting that I work in—the special education setting. (E5)

From these statements, it can be inferred that there was not exact data to affirm a relationship between CCSS and college admissions. However, some students were showing positive outcomes, as was exposed in the next sub-theme.

The third sub-theme, *Students' Outcomes after Using CCSS*, refers to teachers' and administrators' perceptions of the new skills and performance levels that the students acquired while learning under the CCSS program. According to the respondents' perceptions, the motivation and academic resilience of students at the school increased after using CCSS. As one teacher declared,

I believe that the Common Core helps the students face difficulties while they are learning complex texts, and this helps them get challenged and also overcome certain barriers in their learning. I believe that they are not just only motivated by how to survive in a very difficult situation but also face very new information for them, so they can use their analytical skills to attack the problems. I believe that CCSS helps them make a good transition to university education. (E4)

The Common Core provides abilities to the students that assists them to understand the subjects they are learning. An administrator stated, "That makes the learning more meaningful and increases their motivation but also requires them to be more resilient and learn from their mistakes" (E1).

Another teacher pointed out the following: "I would say they would definitely help them. I feel that the skills are also important as far as regular academic skills; I think that it does motivate them to be successful" (E5). The last statement from a teacher corroborated these

perceptions: “It does [improve college performance] because the type of activities that they are required to do forces the students to persevere through a roadblock, sometimes, and pull from different parts of mathematics to solve problems. So it does, versus the old standards” (E6). The respondents confirmed that CCSS provides students with high-level tools and skills that allow them to enter college education.

The fourth sub-theme, *CCSS’s Influence on Underrepresented Students*, refers to the impact that CCSS may have on students who usually do not take AP program courses. An administrator commented as follows:

Underrepresented students tend not to enroll because of their perception of the difficulty level of AP courses. Students who start our program early in middle school or take prerequisite courses feel more comfortable and succeed. Recently, I see more and more underrepresented students taking AP courses and becoming good examples for the younger grades. (E1)

A teacher concurred with the administrator’s view concerning the success of students from underrepresented groups:

We have students from different cities in our school, and later, as I know, we have a good number of underrepresented students who are having AP courses and exams as well. I think they did a great job. For instance, I was teaching AP Statistics at [the school], and I remember one of my students went to John Hopkins University. She did a great job of passing the AP exam. Another student of mine went to Princeton, and I remember that she was very successful in AP statistics. The other student, who went to California Berkeley, got a high score as well in AP courses. Those are the ones I remember belonging to the underrepresented group. (E3)

Interestingly, a teacher focused on the influences that the CCSS has on teachers. According to this participant, the readiness of teachers seemed to be a focal point of the learning process. She said,

I think it really depends on the instructors. If the instructors are making the learning meaningful for an underrepresented group of students, yes, it provides opportunities for those students. But the content itself is not everything, so it's about the teachers. The new Common Core is providing the tools to the teachers. (E4)

She used an analogy to illustrate her point:

With an analogy of a cook who has good vegetables to cook for a meal, if the cook is not really good at cooking so the materials, the vegetables will be wasted. In a similar analogy, if the teachers are not able to tailor the instruction based on the needs of the underserved population, then nothing will change. (E4)

Likewise, another teacher commented:

In our school, we push everyone, and we have high expectations for everyone. So, it could be a combination of common core and just the way that our school is structured, but definitely, with this higher order of critical thinking questions, they're more prepared, under-represented or not. So, I'm not sure what the difference is but, in our school, we try to push everyone. (E6)

Finally, the theme *Higher Education and CCSS—The Best-Skilled Students* can be summarized by saying that even if the participants did not have supporting data indicating a correlation between CCSS and college admissions, it is sure that more students were taking AP courses, had more motivation to pursue a college education, and gained better cognitive and critical thinking skills. Lastly, there was a group of well-performing underrepresented students

who were achieving increased college admissions. Thus, in answer to RQ4, CCSS did change the enrollment rates of students, likely because they gained better cognition and the qualities of endurance, resilience, and perseverance necessary to undertake college education.

Fifth Research Question

This research question involved three sub-questions that were answered separately:

1. What differences currently exist between the instructional strategy for teaching the content-based standards in ELA/math and the Common Core State Standards at this school?
2. How has this change influenced the college readiness of high school students?
3. How do teachers feel about this change process?

To answer the first sub-question, the theme *Differences of Instructional Strategies* was developed. This theme refers to the differences observed in the strategies for teaching ELA-Math with the CCSS compared to the strategies used with the previous New Jersey Core Curriculum Content Standards. This theme was composed of four sub-themes (see Figure 22).

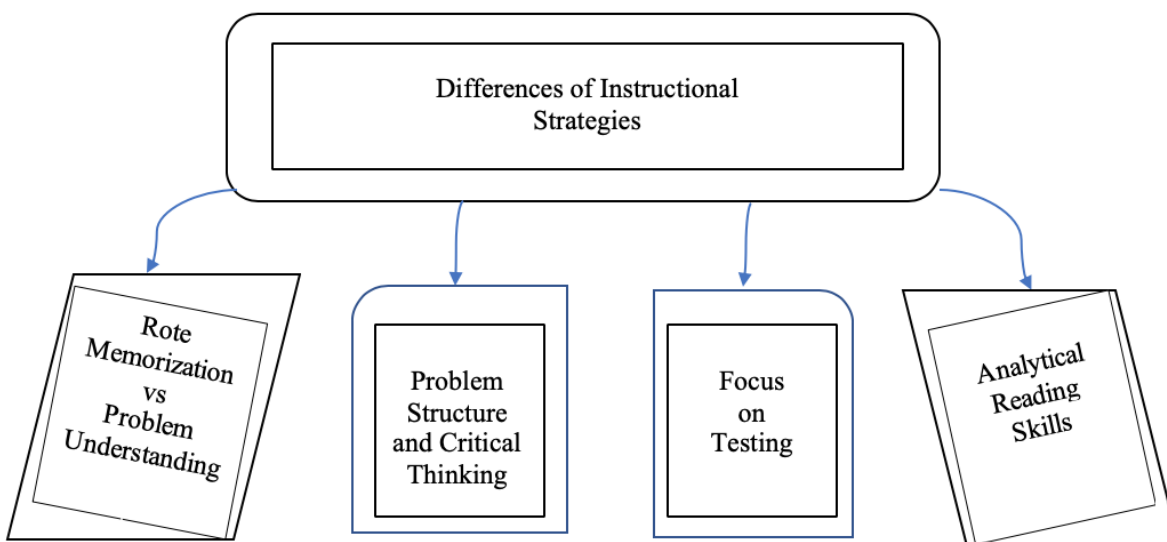


Figure 22. Differences of Instructional Strategies

The first sub-theme, *Rote Memorization Versus Problem Understanding*, indicated the participants' views regarding the main effects that the CCSS is exerting on both students and teachers. It was clear from the participants' statements that the CCSS demands high-level thinking skills and helps students to develop these cognitive skills. An administrator commented in this regard,

CCSS requires more critical thinking and problem-solving skills and ask the students to make connections with real life. . . . I wouldn't say the standards narrowed the curriculum but provided a better focus on what needs to be worked on. It seeks for more reasoning, evidence, and explanation of the questions instead of asking for a simple answer. To answer a question on a test designed with CCSS, you really need to show your understanding by supporting it with evidence and explain your reasoning.

As this administrator underscored, memorization does not have a place in the CCSS. Another administrator pointed out this characteristic: "I don't think CCSS has promoted 'rote memorization' and it actually devalued it by requiring more critical thinking and problem-solving skills" (E1). A teacher agreed, saying, "in general, the CCSS focuses on Active Learning Concepts rather than rote-memorization" (E3).

Similarly, another teacher introduced the idea that active learning is the type of learning that students are acquiring through the use of CCSS in the school. He said, "I think that Common Core really helped the students to understand the concepts rather than just memorizing them. So, I believe this also helps the teachers use active learning more effectively and give less attention to rote memorization" (E4). Another teacher concurred with the new importance of active learning: "In Pre-Algebra and Algebra I, the teacher can mainly focus on active learning. I think the main goal is not memorization; rather, it is active learning" (E3).

Lastly, another teacher declared,

I am optimistic; the Common Core Standards push the students to perform at a higher level. It requires more critical thinking skills and more than just rote memorization. There are fewer standards, and they are more in-depth verses; for instance, a New Jersey Core Curriculum Content Standard would be in grade 6, 7, and 8 being repeated over and over. Now it is broken up into different parts. (E6)

There was a consensus among participants that CCSS is mainly focused on the development of critical thinking and problem solving through active learning, which includes a process by which students express and justify the steps they take to solve a problem. In pairs, working under the facilitation of the teacher, the students persist in the task and explain their conclusions. In this manner, students are acquiring endurance, persistence, the ability to express a rationale, resilience, and motivation in both Mathematics and Language Arts.

The second sub-theme, *Problem Structure and Critical Thinking*, refers to the interviewees' words concerning the focus of CCSS. Administrators and teachers agreed that CCSS focuses on creating a better structure for the development of students' critical thinking skills. For instance, a teacher, discussing his work in Algebra following the CCSS requirements, pointed out,

I am teaching Algebra I. Solving equations and solving systems are clear, and almost 50% of the course is about solving equations and solving systems. Their standards are very clear. Students know what to do; teachers know what to teach considering endpoint. We know that these are fundamental standards. They prepare our students for college as well.

Along the same lines, another teacher highlighted the following:

[CCSS requirements] are mostly focused on analytical thinking skills and requiring evidence from the given text. Common Core requires lots of critical thinking, critical writing, rather than just procedural engagement or procedural learning; they require students to think deeply and produce more productive results.

Based on these statements, it can be said that CCSS requires students to show arguments, compare and associate concepts, and provide a reasoned answer to a math problem or a reasoned response to an ELA text.

Other statements noted the relationship between the CCSS and the students' preparation for college courses. An administrator stated, "What we ask students to accomplish is more challenging than before because we want them to be ready for college. That was the purpose why people came with the idea of CCSS." Finally, a teacher stated, "They have actually to persevere and struggle through solving problems, and they use a different set of skills to solve more challenging problems which are they need in college." The same teacher pointed out the way in which problems are structured in CCSS:

Common Core, I feel like it is more specific per grade level. I feel like it has a positive influence because of the way the problems are structured; the students can see the connection with other disciplines outside Mathematics. Also, it helps them to persevere versus, just as I said, memorizing facts or answering the question. They are able to struggle and when they achieve success at the end of that struggle it helps to build more confidence. This prepares them for college and even higher institutions, like more top-rated universities. (E6)

The latter statement suggests that the organization of content based on the grade level, which is a requirement of CCSS, and effective skills, such as confidence and persistence, must be developed to prepare high school students for college.

The third sub-theme, *Focus on Testing*, refers to the opinions of participants regarding the mandates of CCSS to test students continually. A teacher stated, “In terms of testing, definitely there is a lot of emphasis on testing after Common Core initiative” (E4). Along the same lines, another teacher declared, “They do data analysis not only on standardized tests but also on the teachers’ tests as well. I am a big proponent of looking at the classroom work as opposed to standardized testing. I do feel that there is a slight overemphasis on testing” (E5).

Finally, the last teacher highlighted,

I know there is an overemphasis on testing. . . . I can say the testing situation in our school is the main goal. To prepare students for the test, for instance, for the PARCC exam, SAT, or ACT. Because the mentality of the school is preparing students for college means preparing them for exams. So that the point is, our administrators are emphasizing a lot, and always evaluating the teachers based on, the student achievement results. (E3)

Thus, it seemed that the respondents believed that CCSS overemphasizes testing.

The fourth sub-theme, *Analytical Reading Skills*, refers to the participants’ views on students’ improvement in critical reading and understanding problems. This type of preparation allows students to acquire the skills required for college, where they will have to take tests as complex as those are promoted by CCSS.

In the opinion of an administrator, “It is obvious that the standards ask for more complex texts in English, using academic language, and [that students] check their analytical thinking skills in informational texts” (E1). Likewise, another participant commented, “. . . you may

know about how to read a passage effectively, but are you able to apply that in multiple settings? Which I think the Common Core does better” (E2).

Finally, a teacher, highlighted some of the skills that students need to develop in English Language Arts, especially analyzing quotes and finding evidence in the text:

As far as being defined, finding evidence from the text, being able to analyze quotes from the text as far as writing, being able to connect your thoughts. In writing, to be able to write not only a general essay about a topic for something specific using specific quotes from the text. The benchmarks are successful as far as giving students multiple-choice questions related to different passages [and] things of that nature. So, not only do you have those specifics in regular classes, but you also have specific targets that they need to hit on standardized tests as well. (E5)

Summarizing this theme and answering the research question, both teachers and administrators outlined that the CCSS has influenced the instructional strategies they use. The teachers had to adopt new strategies to fit into the new system. The main difference between the school’s former strategies and the current CCSS guidelines is the new emphasis on Active Learning. According to the participants’ statements, it is possible to infer that CCSS supports high-level cognitive skills, while the former guidelines were based on repetition and the memorization of procedures. The new Common Core standards also demand analysis, the analysis of evidence, explanation, and justification of the steps done by the students in both Mathematics and English Language Arts. In this context, the CCSS presents more content-related materials that point to the achievement goals of students at every grade level. It seems that this organization of content lets both students and teachers to know what is expected of them.

However, respondents also noted a possible limitation in the use of CCSS, which is the emphasis that CCSS places on testing. It could be argued that assessing students through standardized tests is not compatible with the active learning that CCSS promotes. Assessing the students' problem solving and their ability to show their rationales is a more congruent way to measure knowledge acquisition and skills mastery.

Related to the second research sub-question, "How has this change influenced the college readiness of high school students?," the theme *Effect of Change on College Readiness* was developed. This theme was defined through the participants' views on the effect that CCSS had on student readiness, as illustrated in Figure 23.

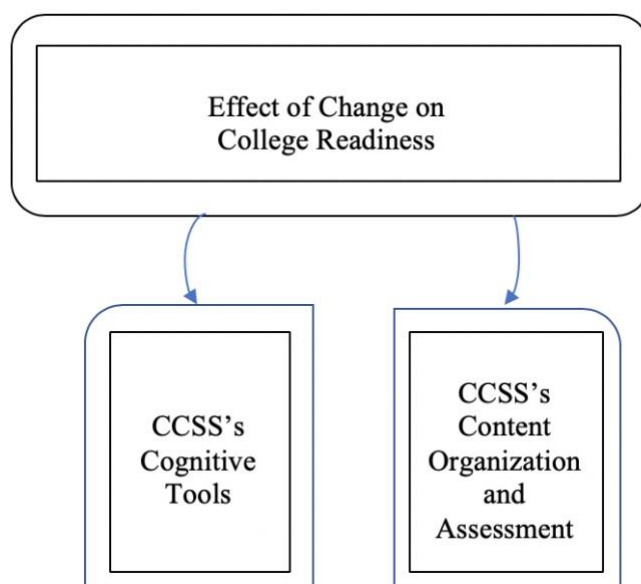


Figure 23. The Effect of Change on College Readiness

It can be affirmed that the CCSS has had a positive effect on the number of students who decided to take college-level courses and also a positive effect on the college readiness of these students, as shown in the next two sub-themes. The sub-theme *CCSS's Cognitive Tools* refers to the tools that students have developed through their high school courses under the CCSS. High-level competencies such as critical thinking are among the most valuable skills that prepare

students to confront new learning situations at the college level. In this context, an administrator commented that CCSS “pushes towards higher-level thinking, and they have more analytical thinking skills that allow students to answer why they thought that or explain themselves. I think it plays a critical role in being able to achieve at a collegiate level” (E2).

Some teachers shared this point of view. For instance, one teacher declared that CCSS does allow increased college readiness because . . . when they’re in college, they are going to be using very similar textbooks, if not the same ones, just at a higher level. So that’s definitely something that prepares them for that, and colleges have standards as well that are fairly rigorous, so that could definitely be something.

Another teacher validated these previous statements by saying, “It has increased college readiness because it is closely aligned, I feel AP type questions . . . require a lot more critical thinking skills and explanation and depth of knowledge, and I feel that the common core provide that.”

The second sub-theme, *CCSS’s Content Organization and Assessment*, emphasized the content organization required by CCSS. Indeed, the content organization aspect of CCSS was mentioned by the participants many times. They referred to CCSS’s clarity of goals and content. Both teachers and students knew what had to be taught/learned at a particular level/grade. For instance, as a teacher highlighted,

Because the students are going to deal with calculus standards, we know that solving equations is really important; it is kind of necessary for the students to understand the standards in Algebra I to get ready for the college level courses. . . . It’s kind of clear now because I know what to teach in each grade level or course to make our students ready for college or for the advanced courses.

Finally, an administrator pointed out the effectiveness of the PARCC assessment:

I think that the PARCC assessment is a much richer test than the old test that we had. I think that the old test that we had was not a good predictor of anything, really. It was a low-level test; I do not think it was really aligned or correlated with college-level skills. Most of our students passed without trouble. The PARCC aligns a lot better and serves as a better predictor for college skills. It is a kind of indicator of college readiness.

Within this theme, respondents highlighted two aspects of CCSS that directly influenced students' readiness to pursue a college education. According to the participants, CCSS delivers the cognitive tools that students require as they pass from one grade to another in middle and high school. Critical thinking, emphasis on the analysis of problems, and complex texts all allowed students to enhance their competencies. The new organization of content also allowed teachers and students to perform effectively.

To answer the third sub-question, "How do teachers feel about this change process?," the theme *Teachers' Perceptions about CCSS* was created. This theme encompassed participants' personal views about the implementation of CCSS in the school. Some of the aspects of this theme concerned the teachers' classroom performances as linked with the evaluation system used by the administration. Other aspects were related to teachers' feelings about the necessity to implement CCSS. For instance, particular training and specific knowledge about CCSS were demanded from teachers to accomplish its implementation. This theme was composed of seven sub-themes (see Figure 24).

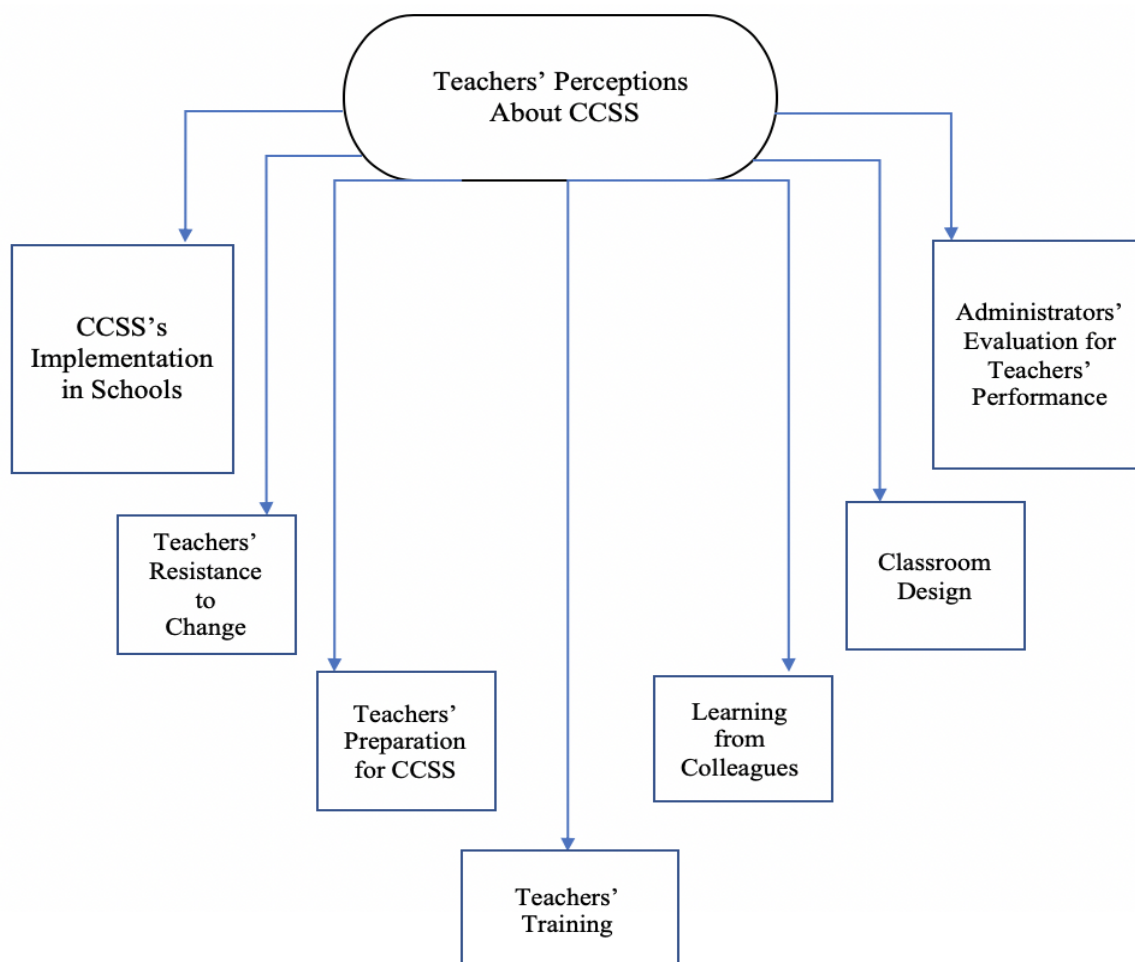


Figure 24. Teachers' perceptions about CCSS.

This theme revealed the effects of CCSS on the teachers, who needed to change many of their instructional strategies to achieve the new goals. These changes included employing a new set of classroom activities. Adapting to the new standards was difficult for both teachers and students. The first sub-theme, *CCSS's Implementation in Schools*, was defined by the manner in which CCSS was initiated at the school. In this context, an administrator commented on his views about the implementation:

I think the development of CCSS was organized and step by step, but the way standards were examined was a little bit fast and unorganized. When the schools were introduced to PARCC, they were not ready to administer the exams properly. There were so many

schools that had a lack of technology infrastructure, and the exams took months to finish. Students didn't have computer literacy to complete their exams properly with the new structure. I would say in the first 2 years, the tests were not exactly reflecting the true mastery level on standards.

These opinions were shared by a teacher who also stated that the implementation of CCSS occurred all at once without any previous preparations:

Common Core Standards were implemented all at once. At least in our school, when the standards were first introduced to us, it was said that they are mandatory standards, and we need to implement them as soon as possible. Then they were all implemented at once.
(E3)

Another teacher commented, "it took some time to make this transition as smooth as possible. I think it was a learning process for administrators, for teachers, for students, and even for the parents" (E4). In the words of another teacher, "Some standards were implemented step by step and some of them were implemented altogether. Both ways were utilized" (E5).

The following two statements allowed us to have a better understanding of how CCSS was assumed by the teachers of that time. A teacher commented,

They [the standards] were all done at once. Because those were required. Also, the state test was based on the common core standards. That's why we had to do it. I felt like it should have been in a systematic way. You could start with Kindergarten and first grade first and move up. Those couple of years, we had to not only implement the Common Core, but we had to remediate a lot. Because it was a big transition from NJCCCS to Common Core. Some of the standards, for instance, Algebra I and even Algebra II, we moved them to 8th grade. Some 8th grade standards were moved down to 7th grade. If a

student was in Algebra I, the standard that we moved, they would have missed that standard. So, we, as a Math department, were aware of this, and we had to remediate. So that was a little tough transition. We had to make sure all of the students get the standards in this transition. (E6)

The requirement to make crucial changes seized the school's staff, and nobody was able to discern the right direction for the new school year. In this sense, an administrator remembered that,

The first two groups, that would have been the class of 2016, was the first ones for the graduation requirements. I think for that group of kids it was, I do not want to say it was harmful, but I don't think it was helpful. Those kids were stressing out so much about the graduation requirements, and we were waiting until their senior year to tell them what their graduation requirements were. That could have been better and served their actual academic skills versus, you know, just the logistics of it. So, I think that class, in particular, had a hard time with it. I think it got easier every year down the line because, you know, we are all better prepared when the teachers, the admins, and counseling staff are more aware of what the issues are and how to fix them, and then we can help the students. But when we don't even know what to communicate, this makes it very difficult.

Regardless of the benefits of the new program, it was implemented abruptly and poorly for both teachers and students, who were immersed in uncertainty about what was expected of them.

The second sub-theme, *Teachers' Resistance to Change*, refers to the attitude of teachers about the new CCSS and their disposition toward adapting their instructional practices. Some teachers did not share optimism about the new CCSS, as one administrator commented: "Not all

veteran teachers will buy into the change and implement it as it should be in their classrooms. They see it as just another name for what they have been doing already” (E1). Veteran teachers did not seem inclined to incorporate new instructional strategies because, for them, the new CCSS requirements were similar to the former ones. Another administrator mentioned,

For the veteran teachers, it’s a shift of mindset in their way of approaching the education of children. It’s kind of moving from that drilling mindset into really digesting the material on a deeper level and being able to look at the skills on a holistic level.

Regarding the teachers’ acceptance of CCSS, one participant specified that the implementation of changes depended on the teachers’ teaching styles (i.e., how they conceived of the teaching-learning process). For instance, as an administrator pointed out, “I think for the teachers who believed in the student-centered approach, it landed very nicely. . . . I think teachers who believed in lecturing and things like that are now having to change a lot of their practices.” (E2).

Some teachers continued using the lecture style of teaching and added few changes to their practice. As the same administrator commented, “although a lot of teachers still prefer lecturing, and although we would try to give them the tools and strategies to limit their lecturing, you know some of them still do this kind of things. I mean, we use both strategies” (E2). Moreover, the teachers’ acceptance of CCSS depended on how the school leaders presented it. The compulsory impositions did not lead to adequate incorporation of the new CCSS requirements, while introducing CCSS as a new challenge would have met with more acceptance. In this respect, an administrator noted,

It depends on how much the school leaders care and implement it in their programs. It depends on how the school administrator approached and how it is presented. If it is

presented as it is a requirement mandated by state and seems extra work to do, you shouldn't expect to see any remarkable positive gain. If the administrators see it as an opportunity to improve the level of rigor and make the students college and career ready, then they work with faculty, organize training, provide ongoing support, and help them to buy in. This is actually how you start seeing some results.

Thus, while teachers' resistance to change might be expected, this tendency can be modified by presenting the new requirement as a better approach to teaching, which allows the students to achieve the goals of post-secondary education, and supports teachers in their modification of practices.

The next sub-theme, *Teachers' Preparation for CCSS*, regarded the changes that the teachers needed to make to their instructional strategies. While administrators seemed to be optimistic about the teachers' readiness to use and implement CCSS in their daily practices, the teachers demanded more time to adapt to the new requirements and additional training courses to assure their adequate performance. For instance, as an administrator commented,

I feel they are more prepared because what we expect to see is a challenging job and changing the routine, and asking them to leave their comfort zone. . . . If the school leaders believe in its importance, they provide teachers professional development and encourage them to take courses to improve their skills. I would say that it changes from district to district. (E1)

However, a teacher emphasized,

I can say that I am less prepared for that because the teachers could not get enough training when we started implementing new programs in the school. As I also heard from

other colleagues, it was a big issue because what they were saying that this is the program we're going to use and let's start. (E3)

It appeared that the first year of the CCSS implementation was hard for teachers and that communication from the district was inadequate.

In a firm tone, an administrator indicated,

I think because it was very political when it was first introduced, and not a lot of details were provided to us. It made it very challenging, and it made it very frustrating for both students and teachers, and also for us as a school team. I was a counselor at the time, and I was working with the kids who didn't know how they were going to meet the graduation testing requirements, what those requirements are. I don't think it is fair for a 16- [or] 17-year-old to hear. And the fact that we were the ones having communication with those kids, this was not fair for either. (E2)

A teacher commented in this context,

As far as I remember, in the first years of Common Core State Standards, teachers were kind of confused in terms of the expectations and delivering their instruction properly to their students. So, it took some time for them to settle down and organize their teachings based on grade-level expectations. This could influence the students who were considering going to college. There was a lack of communication between the state and school districts at that time. (E4)

Another teacher agreed:

The initial transition was difficult; it was just a different way of thinking as far as you are explaining the concept and the nature of the questions. I think the teachers overall felt that Common Core does better prepare students for college. (E6)

Yet another teacher pointed out difficulties and issues that the necessity of the teachers mastering the new standards imposed:

It does seem reasonable on paper, but I feel that it can occasionally hinder some teaching. It can put some pressure on students and teachers. Then, we're doing our students a disservice because other students in schools definitely 100% accepted it without issues. They might be more inclined to have more college readiness versus us who don't want to know the standards; that could be a problem for our students. I do not think anything is missing. They are all targeted for the standards that are needed.

Although the initial introduction of CCSS was difficult for teachers and students, the teachers' practices have evolved and their initial resistance has reduced. As one teacher stated, I am optimistic; the Common Core has evolved since it was first implemented. It has forced the teachers to kind of revisit every year how they approach a curriculum, how they teach the material to students, and tailor the curriculum based on not only student needs but also what's required for the curriculum. So, yes, it does push teachers to make sure that, you, know they're trying to teach or trying to explain some concepts in multiple ways in order for students to grasp the material. It definitely pushes teachers. (E6)

Another teacher commented on his teaching evolution after using CCSS as follows:

The new standards helped me grow a lot in my teaching area. I learned new strategies to implement in my classes so I can help my students. In the first years of Common Core, I was changing my teaching methods a lot, but I feel right now more confident and prepared for teaching my content for different grade levels. (E4)

The final statement described the feelings that one teacher had about adhering to CCSS:

I feel more prepared. It definitely tells the target you need to be hitting. And if the students are not hitting those targets, then you really have to pause to step back for a minute and think how we are going to get the students to master these standards. (E5)

To help them in these moments, the teachers welcomed more training courses.

Teachers and administrators agreed on the need to offer continuous training to keep teachers updated on the best practices for meeting CCSS standards. As one teacher said, “most of the teachers tried to learn by themselves with the discussion during the break times, but is it enough? No, I, we need more training, more PDs in terms of every single program initiated” (E3). An administrator agreed:

More courses need to be implemented at the undergrad level to prepare teachers before they come to the field. If the teachers start their first year with that mindset, it will be easier to implement CCSS in schools and develop more rigorous curriculums. (E1)

Thus, the initial resistance to changing instructional practices was reduced in favor of more comprehension about the philosophy behind CCSS. In consequence, new pedagogical practices were adopted.

The next sub-theme, *Teachers’ Training*, refers to the training activities needed to support the effective implementation of CCSS. The need for additional training was emphasized among all the administrators and, especially, the teachers. Indeed, all participants agreed that, “Absolutely, all teachers would benefit from refreshers with the Common Core. . . . You have to be trained on how to implement it in your class” (E6). Another teacher specified,

Additional training is necessary, not only to get familiar with the new standards but also being updated with the latest strategies. It is important to provide additional refresher courses in Math and Language Arts to the teachers so they can be prepared for the new

expectations, so they can help the students get prepared for their post-secondary education. (E4)

As one of the administrators stated, “Not only for novice but also for veteran teachers, training and ongoing support are necessary to see the effective implementation. . . . We will not see that excitement if we can’t build awareness with training and support among teachers” (E1).

The other administrator agreed:

Definitely, they need support in terms of best practices and how to teach those standards . . . because the Common Core classroom does look a little bit different than the old standard classroom. So, I think that they would need kind of more support in terms of what they look like, what that feels like in their field. (E2)

A teacher’s statement summarizes the participants’ general response to this sub-theme: Most of the teachers, including me, think that implementing a new program is important, but to better follow the standards of Common Core in terms of mathematics, as I said before, more training or more PDs would definitely be helpful. We may be more helpful for our students in terms of their college readiness. (E3)

Thus, it can be concluded that teachers welcome the new CCSS guidelines but want training and support to ensure that the Common Core Standards have been reached, which means that students will attain college readiness.

The next sub-theme was *Learning from Colleagues*. The teachers noted interacting among themselves to exchanging ideas about the best strategies for teaching the CCSS curriculum. In this vein, one teacher said,

Observing different teachers’ classes, I think it helps anybody to see the differences and also understand the best practices. As a teacher, I think this is very important. So, I visit

my colleagues' classrooms every now and then. I try to get their best strategies into my class. (E4)

Another teacher also stated, "I do observe my colleagues but not regarding the Common Core, though. I think that would be beneficial. For teachers, generally getting feedback from a colleague will allow them to compare their own style versus theirs" (E6). In the words of another teacher,

Yes, what I'll do is I'll go and see my mentor's class and watch how she does things. I'm also in-class support for another teacher of mine in the English Department. I do get to observe the kind of things that he does in his classroom, and that gives me ideas for how to formulate thoughts in my class. (E5)

Finally, this sub-theme reinforces the teachers' need for continuous training and support since they decided to observe their colleagues' classrooms to learn more best practices. Support and training, in other words, are vital for teachers.

The next sub-theme, *Classroom Design*, refers to the benefits conferred and the difficulties confronted when a teacher has to change instructional strategies. As one of the administrators stated, "CCSS sets a high bar in education to meet the college and career readiness standards, and it will not be easy to design classrooms addressing what's needed (E1).

The other administrator pointed out that,

Indeed, a sort of support have been prearranged to help teachers in the school. We build a framework and model that we asked them to use in the planning and delivery of instruction. But we also give them the flexibility to develop activities and use strategies to meet the standards. To give an example, we don't provide a script for a lesson that we asked them to follow, but we asked them to follow our school-wide lesson plan structure.

A teacher, however, had the opposite viewpoint. He pointed out, I'm neutral. To me, there's not much difference. Because instruction is instruction, Common Core provides the standards that need to be taught; then, teachers will modify their lessons based on these mastery levels. The pedagogical approach is not going to change a lot (E4).

This declaration indicates a neutrality regarding CCSS standards combined with an understanding that teachers must modify their practices. However, considering the previous sub-themes, it should be noted that teachers cannot change their instructional practices alone. They need training sessions to feel comfortable teaching the new standards.

The next sub-theme, *Administrators' Evaluations for Teachers' Performance*, refers to establishing a system of consistent surveillance, counseling, and suggestions provided by the principal or other administrators to improve the teachers' performance. In this context, a teacher declared,

Administrators want us to do our best in our teaching areas. So, sometimes they provide the framework and the curriculum that we need to cover. But, in terms of instructional practices, they are not really mandating certain styles. Instead, they mostly share effective practices and provide feedback after the classroom observations. We identify the areas that can be improved; this is done with a consensus between the teacher and administrator. (E4)

Another teacher also commented:

He does give us the instructional practices as far as hitting the standards, but I don't feel it's an overbearing type thing. I feel it's just really suggestions and things like that, and administrations check in with us on a regular basis. They'll come and observe our

teaching, and they'll let us know if there are things that we need to change or fix. They let us know what they liked about it, and I think that is helpful. (E5)

The last statement from a teacher explained the assessment process:

I chose to teach at a charter school because the teachers have autonomy. So, we know that we have a set of standards that we need to cover not only for state tests but for college readiness. But as far as how those standards are taught, we have, as teachers, autonomy. (E6)

While the curriculum and programs are provided, teachers are free to implement their preferred instructional strategies. Most important, they have the administration's support, and both teachers and administrators appeared to work as a team to discuss the issues raised during the assessment period and the best ways to fix them.

The theme *Teachers' Perspectives about CCSS* provided valuable information to shape future curricula change/modifications. The implementation of any new program needs to be done slowly and with full communication between administrators and the teachers who need to implement the program. Ongoing training sessions need to be designed before the implementation of CCSS to support both teachers and administrators. Finally, avoiding uncertainty and providing examples of adequate instructional strategies could be useful to combating the natural resistance of teachers when new programs are adopted.

Sixth Research Question

6. In this integrative mixed methods analysis, do the findings of qualitative interviews with teachers, the principal, and the curriculum and instruction supervisor corroborate the predicting relationship between the adoption of Common Core State Standards and the college readiness of high school students?

As noted, a mixed method approach was adopted to enhance the quality of the results obtained in this study (Bulsara, 2015). This research question was addressed to compare the results derived from both the qualitative and quantitative approaches.

The quantitative findings indicated CCSS had a positive impact on four student performance metrics: PSAT/SAT, SAT, and AP/IB test participation rates; b) percentage of students who took the SAT and scored 1,550 or above; c) percentage of students who took the AP/IB tests and scored 3 or more; and d) schoolwide post-secondary program enrollment rates.

The qualitative conclusions were consistent with the quantitative findings. Administrators and teachers clearly noted a rise in the participation rates of high school students in the previously mentioned tests. However, the participants could not explicitly indicate which characteristics of the CCSS were linked to the increase in test participation rates. In addition, the qualitative findings included consensus among the participants that CCSS's high-level analysis/synthesis skills and reasoning/problem-solving benchmarks had a positive influence on the new rates of participation in PSAT/SAT testing.

The quantitative and qualitative outcomes also affirmed that CCSS has a direct influence on the students scoring 1,550 or above on the SAT. Thus, participants' particular practices and experiences since CCSS implementation have led to the belief that, indeed, there is a link among the high-level cognitive strategies developed by the students with CCSS and SAT scores.

The quantitative and qualitative outcomes also concurred on the strong relationship between CCSS and the increase in the number of students who enrolled in an AP program. However, the number of students who took AP tests and scored 3 or more did not change significantly between 2012 and 2015, after the full implementation of CCSS. The participants believed that CCSS provides students with the skills and abilities necessary to score 3 or more on

the AP/IB tests. Passing scores on these tests are an early indication that students will have satisfactory performance when they begin their college educations.

Finally, the findings of the qualitative and quantitative data were consistent regarding post-secondary program enrollment rates. Indeed, the qualitative data confirmed that CCSS has had a positive influence on the school's rate of post-secondary enrollment. One of the specific features of CCSS that make students more successful in college is its emphasis on confidence, motivation, and critical thinking skills. These competencies have had a positive influence on students' cognitive preparation. Additionally, the students were better prepared psychologically to meet the demands of high level of college courses since their self-confidence and motivation increased.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Introduction

In modern learning institutions, assessment of programs, educators, management, and learners symbolize an age of accountability that has spread through American Education. The successful implementation of new standards is dependent on the practices of educators, school management, and district administrators, whose professional training affects student learning in the classroom, both directly and indirectly.

This chapter provides a detailed analysis of the practices utilized during the implementation of CCSS for English Language Arts/Literacy and Mathematics at a New Jersey college prep charter school. The chapter also builds upon existing conclusions regarding the impact of CCSS on college the readiness of high school students. For instance, there have been widespread challenges, shortcomings, and complications encountered in the process of aligning higher learning with Common Core (Conley & Gaston, 2013). An account of the answers provided by this research to the overarching research question and subsidiary research questions will provide an accurate and in-depth understanding of the most effective implementation procedures and the best improvements and modifications that school administrators can make to curriculum and instruction.

Finally, this chapter covers a discussion of the conclusions drawn from the findings on the implementation of CCSS in similar settings. The chapter concludes with recommendations for additional research relevant to the implementation of the CCSS and its influence on the college readiness of high school students.

Purpose of the Study

The purpose of this case study was to explore the implementation of CCSS at a New Jersey college prep charter school by utilizing a mixed research approach wherein the researcher would analyze the quantitative data, followed by a qualitative analysis. In addition to that, the college preparedness of high school students in the selected school was also examined by using SPSS v25 and NVivo v12 software.

In the quantitative phase of data analysis, four college readiness benchmarks were identified and examined to answer the first four subsidiary research questions. These benchmarks are (a) student participation rates in the PSAT/PLAN, SAT, and AP/IB tests; (b) the percentage of students who took SAT and scored 1,550 or above; (c) the percentage of students who took the AP/IB tests and scored 3 or more; and (d) schoolwide post-secondary program enrollment rates. The quantitative findings were supported with the qualitative findings of six interviews (with four teachers and two administrators). The qualitative data analysis was based on thematic extraction and word frequency analysis of these interviews for the purpose of identifying emerging patterns and trends in the process of addressing all of the subsidiary research questions.

Research Questions and Answers

This section combines the quantitative and qualitative data findings to answer the overarching research question: “How do Common Core State Standards (CCSS) influence the college readiness of high school students in an urban charter school in New Jersey?” To achieve that goal, the main research question was divided into six subsidiary research questions.

Research Question 1

Did the PSAT/PLAN, SAT, and AP participation rates improve after the adoption of Common Core State Standards (CCSS)?

After adopting CCSS, the average PSAT/PLAN, SAT, and AP/IB test participation rates increased by 11.6 %, from 63.3% in AY 2010–11 to 74.9% in AY 2014–15 (see Table 6). There was improvement in the percentage of students who took AP/IB tests from 6% in AY 2010–11 to 33.8% in AY 2014–15. The participation rates in these three tests had an upward trend in all academic years except AY 2014–15 (see Figure 6). In 2019–2020, there was a slight decrease in SAT and AP/IB test participation rates. Based on the results of descriptive data, the average participation rates of 96.2% for the SATs and 96.8% for the PSAT/PLANs suggested that adopting the CCSS played a role in improving these rates.

The change in PSAT/PLAN, SAT, and AP/IB test participation rates was substantiated with the chi-square tests (χ^2), which is a nonparametric statistical test consisting of three different types of analysis: goodness of fit, test for homogeneity, and test of independence. A test of independence is used to address a null hypothesis in which two criteria of classification are independent. If they are not independent, then there is a relationship between them. Chi-square tests were appropriate for this research since its purpose was to examine differences in categorical data and determine whether observed frequencies were statistically different from expected frequencies. The chi-square tests allowed the researcher to exclude chance as an explanation of these differences.

The chi-square tests were run to determine how likely it was that the differences between the two groups (before the full implementation of CCSS, in AY 2010–12, and after the full implementation of CCSS, in AY 2012–2015) was the result of something other than chance. The outputs of descriptive data used to answer subsidiary research questions (research question 1, 2, and 4) were verified with this test to be at the $p < .05$ significance level. After the chi-square test,

the phi (Φ) correlation coefficient was also calculated to estimate the degree of relationship between the two groups.

First, the relationship between participation in the PSAT/PLAN test and the full implementation of CCSS was found to be significant (see Table 7). The PSAT participation rate of the charter school's students was dependent on the full implementation of CCSS. Therefore, the null hypothesis was rejected. The calculated phi value was 0.16, which can be interpreted as a small effect size. Next, the relationship between participation in the SAT test and the full implementation of CCSS was tested and found to be insignificant (see Table 8): The SAT participation rates of the school's students was not dependent on the full implementation of CCSS. The calculated phi value was 0.08, which can be interpreted as a small effect size. Finally, the relationship between participation in AP/IB tests and the full implementation of CCSS was found to be significant (see Table 9), as the AP/IB participation rate of the students was dependent on the full implementation of CCSS. The calculated phi value was 0.25, which can be interpreted as near a medium effect size. These quantitative outcomes were cross-checked in the qualitative analysis.

According to the interviews findings, even though the participants stated that the CCSS had a positive influence on students' PSAT/SAT participation rates, they were not able to identify the specific qualities of CCSS that contributed to this change. On the other hand, both the quantitative and qualitative findings supported that the increase in AP/IB test participation followed CCSS program implementation.

Research Question 2

“Did the percentage of students who took the SAT and scored 1,550 or above increase after the adoption of Common Core State Standards (CCSS)?

To answer this research question, composite SAT scores from AY 2010–11 to AY 2014–15 were examined using descriptive data analysis. The findings of this analysis showed a gradual increase in SAT scores after the introduction of the CCSS. Among the three sections, the Math portion had the highest scores across all the years, with a mean score of 460.6 within the study years. Writing was the second highest, with a mean score of 428.8, and Critical Reading was the lowest scored SAT section, with a mean score of 421.2. The kurtosis value (0.9) indicated that there were no considerable outliers in the SAT scores of students across the five academic years. Since kurtosis and skewness were positive figures, it is evident that the composite SAT scores were more skewed to the right (higher than the mean).

Additionally, the percentage of students who took the SAT and scored 1,550 or above was studied, and the findings of quantitative analysis revealed that the average rate of students who scored 1,550 and above from AY 2010–2015 was higher (19.7%) than the median (15.0%), which means that the data was skewed to the right, with an increasing trend after the adoption of Common Core (see Table 11 and Figure 8).

As a follow-up, another chi-square test was run to check the statistical significance of the number of students at the school who scored 1,550 or above on the SATs. In this test, the first 2 years (2010–12) were counted as occurring before the full implementation of CCSS, and the last 3 years (2012–15) were considered as occurring after the full implementation of CCSS. The relationship between the number of students who scored 1,550 or above on SAT and the full implementation of CCSS was significant (see Table 12). In other words, the SAT benchmark score was dependent on the full implementation of CCSS. The phi (Φ) correlation coefficient was also calculated to estimate the degree of the relationship between two variables/groups. The calculated phi value was 0.18, which can be interpreted as a small effect size. In other words,

from the results of this test it can be deduced that the number of students who scored at 1,550 or above on the SAT increased after the full implementation of CCSS, although it may not have been completely dependent on the treatment (i.e., CCSS). Out-of-school factors, such as students' background, family economic status, and parental involvement, could also significantly influence the students' SAT benchmark scores.

With respect to RQ2, however, the results of the qualitative analysis did not corroborate the results of the quantitative analysis. Most of the participants' comments and insights under the second sub-theme, *CCSS's Influence on SAT scores*, reiterated that there was no direct link between improved SAT scores and the implementation of CCSS. While some of the respondents' experiences and observations suggested that CCSS must have played a role in increasing the number of students who attained an SAT score of 1,550 and above, no concrete evidence exists to conclude that Common Core is the primary reason for the increase in the percentage of students who took the SAT and attained that score.

Research Question 3

“Did the percentage of students who took AP or IB courses in English, Mathematics, Science, and Social Studies and scored 3 or above improve after the adoption of Common Core State Standards (CCSS)?”

To answer RQ3, the researcher first evaluated the percentages of students who took AP/IB courses in Mathematics, English, Science, and Social Studies and scored 3 or more by using the outputs of SPSS V25. Based on the findings of this analysis, the percentage of students who took AP/IB tests and scored 3 or more was 0% in AY 2010–11, and this rate rose to 13.0% in AY 2011–12. The percentage declined to 0% in AY 2012–13 before rising to 25% in AY

2013–14 and, eventually, to 27.3% in AY 2014–15. The mean and the median values of these students were almost the same, at 13.1% and 13.0%, respectively.

The quantitative data indicated that in AY 2010–11 and AY 2012–2013, no students who took the AP/IB tests scored 3 or more. Despite the decline in these years, the trend exhibited an increase in 3 of the 5 academic years studied (2011–12, 2013–14, 2014–15). According to the results of the quantitative analysis, the CCSS did influence the percentage of students who took AP/IB tests and scored 3 or more, although the number occasionally fluctuated (see Table 13 and Figure 9).

To understand the statistical significance of this change in AP scores, the researcher used the Fisher's exact test instead of a chi-square test (one cell had an expected count of less than 5). The statistical value of the Fisher's exact test was 0.4415, which was not significant, at $p < .05$ (see Table 14). Therefore, it was concluded that there was no association between the full implementation of CCSS and the number of students who took AP/IB tests and scored 3 or more since the categorical variables were not dependent on each other. Therefore, the null hypothesis was not rejected.

To explore the findings of qualitative data for RQ3, two sub-themes were developed: *CCSS's Key Points to Succeed in AP* and *CCSS's Influence on AP/IB courses*. The first sub-theme refers to the CCSS features that the participants evaluated as key to preparing students for better AP test performance. A close assessment of this sub-theme's results led to the conclusion that CCSS contributes to the number of students taking AP/IB courses. All of the participants in this study declared that there was a relationship between the CCSS and the increase in the percentage of students with access to AP programs. The research findings also suggest that

CCSS has been providing students with critical thinking skills while preparing them with a high level of confidence.

Kettler (2014) found that the introduction of the CCSS has intensified “attention to teaching critical thinking skills to all students.” Kettler investigated and compared the critical thinking performance scores of gifted and general education 4th grade students. The researcher sought to establish whether the test scores of the gifted students correlated with the gifted education program’s differentiated model of instruction. The study found that while critical skills are innate among gifted students and cannot be attributed to their learning program, teaching critical thinking skills to general education has a direct, positive influence on their cognitive ability.

A report by the Bill & Melinda Gates Foundation that chronicled teacher perceptions 1 year after the adoption of CCSS summarized the impact of the CCSS model on learning outcomes. Of 1,600 elementary and high school teachers from 43 states, 53% showed significant improvements in their reasoning and critical thinking skills. There was continued optimism among teachers that students would also improve in their abilities to understand information from texts and gather ideas from evidence. The teachers reported significant improvements in collaborative learning among peers and in student ability to use practical tools and resources (Kenna & Russell III, 2014).

Fast (2014) found a disconnect between teacher abilities and the instructional skills required to teach cognitive learning in schools across the state of Arizona. The study reported inadequacies among 3rd to 5th grade teachers in identifying the ineffective practices they use for teaching creative thinking. Primarily, a majority of the teachers interviewed were confident in

their competence to teach cognitive learning, a notion that, arguably, affects the professional development learning provided to teachers to prepare them for CCSS.

The second sub-theme focuses on the interviewees' words that referred to the support provided by the CCSS to students taking AP/IB courses. The participants' remarks implied that the critical thinking skills and well-organized prerequisites of Common Core Standards seemed to play an important role in the students' improved AP course performances. The results of this sub-theme revealed that the improvement in the percentage of students who took AP courses and scored 3 or more was probably due to the readiness, training, perseverance, and confidence they acquired during high school.

Research Question 4

Did post-secondary enrollment rates after the adoption of Common Core State Standards (CCSS) change?

The fourth research question evaluated how the post-secondary enrollment rates changed after the implementation of Common Core Standards. The quantitative results revealed that the students at the school who enrolled in either a 2-year or a 4-year post-secondary institution almost doubled from 50% in AY 2010–11 to 92% in AY 2014–15. The post-secondary enrollment rates increased from 50% in AY 2010–11 to 51% in the AY 2011–12, from 82% in AY 2012–13 to 87% in AY 2013–2014, and lastly, to 92% in the AY 2014–15 (see Table 15). The distribution of post-secondary enrollment rates in a 2- or 4-year institution showed that while the percentage of students who enrolled in a 2-year institution decreased from 44.4% in AY 2012–13 to 29.4% in AY 2014–15, those who enrolled in a 4-year institution increased from 55.6% to 70.6% during those school years. On average, the majority of students enrolled in a 4-

year institution (65.3%) as compared to a 2-year institution (34.7%). This trend (see Figure 10) indicates that CCSS may have improved the post-secondary enrollment rates.

This interpretation would not be credible without including the results of an appropriate statistical test. A chi-square test of independence was run to check the association between the number of students at the school who enrolled in post-secondary institutions (either a 2- or 4-year institution) and the full implementation of CCSS. In this test, the first 2 years (2010–12) were counted as occurring before full implementation of CCSS, and the last three years (2012–15) were considered as occurring after full implementation of CCSS. The results revealed a significant relationship between the post-secondary enrollment rates of students and the full implementation of CCSS. The phi value was 0.39, which can be interpreted as a medium effect for the degree of relationship between the two groups.

Subsidiary research question 4 was examined under the theme *Higher Education and CCSS*. This theme was broken into four sub-themes: *Post-Secondary Enrollment Rates*, *CCSS's Possible Influence on College Performance*, *Students' Outcomes after Using CCSS*, and *CCSS's Influence on Underrepresented Students*. In the analysis of these sub-themes, many participants agreed that the majority of the students at the school went to college. All respondents confirmed that post-secondary enrollment rates improved after the adoption of CCSS. Based on their statements, the influence of CCSS on the rates of post-secondary enrollment was of high importance. It seems that CCSS provides a strong foundation to students by exposing them to rigorous college-level coursework before their college enrollment.

The majority of participants declared that CCSS prepares students for success in college. For instance, they mentioned the confidence, motivation, and critical thinking skills that their students acquired. According to the third sub-theme results, because the organization of new

standards (CCSS) provided skills to the students and assisted them in understanding the subjects they are learning, the students at the school were more motivated and resilient and, hence, able to enroll in post-secondary institutions.

The results related to the last sub-theme, *CCSS's Influence on Underrepresented Students*, revealed that the perceptions of underrepresented students about the difficulty level of AP courses have changed over the years. More students of this group have started taking AP courses and become good role models for students in lower grades.

Finally, the *Higher Education and CCSS* theme, considering all the responses to the related sub-themes, revealed that even if the participants did not have supporting data to indicate a correlation between CCSS and college admissions, it was evident that more students began taking AP courses, were motivated to pursue a college education, and improved their cognitive and critical thinking skills. Moreover, the college admissions of underrepresented students increased. Thus, the enrollment rates of students increased after the adoption of CCSS due to qualities such as resilience and perseverance required to undertake college education.

Research Question 5

What differences currently exist between the instructional strategy for teaching the content-based standards in ELA/Math and the Common Core State Standards at this school? How has this change influenced the college readiness of high school students? How do teachers feel about this change?

To answer this research question, three different themes were isolated from the interviews and studied. This first theme was *Differences of Instructional Strategies*, which has four sub-themes: *Rote Memorization versus Problem Understanding*, *Problem Structure and Critical Thinking*, *Focus on Testing*, and *Analytical Reading Skills*. In relation to the first theme,

both teachers and administrators stated that CCSS enormously influenced the lesson plans and teaching strategies used at the school. The teachers had to adopt new strategies to meet the new standards. The respondents identified the increased use of active learning strategies as the main difference between the former New Jersey Core Curriculum Content Standards (NJCCSS) and CCSS. Based on the respondents' statements, it is possible to conclude that the CCSS supports advanced cognitive skills. Formerly, the school's lesson plans were mostly based on repetition and the memorization of procedures. The new ELA and Math standards also demand a search for evidence that explains and justifies the pedagogical steps. It seems that the organization of the Common Core Standards has allowed both students and teachers to know what is expected of them at each grade level. Notwithstanding this change, CCSS places extensive emphasis on standardized testing, and the reliance on standardized testing as a fundamental assessment tool arguably overrides the CCSS's active learning requirement.

To understand the second part of the research question, another theme, *Effect of Change on College Readiness*, was examined. This theme consisted of two sub-themes: *CCSS's Cognitive Tools* and *CCSS's Content Organization and Assessment*. The analysis of this theme revealed two aspects of the CCSS that influence the college readiness of high school students directly. According to the participants' comments and insights, CCSS provides the cognitive tools that students need as they pass from one grade to another in middle and high school. Critical thinking, analysis of problems, and exposure to complex texts provides high school students with the opportunity to improve their academic competencies. In addition, the horizontal and vertical alignment of content gives teachers and students an opportunity to perform more effectively at each grade level.

The third theme, *Teachers' Perceptions about CCSS*, addressed the last part of RQ5. This theme sheds light on the effect of CCSS on the teachers who had to change their instructional strategies to meet the needs of their students studying under Common Core Standards. This theme was composed of seven sub-themes: *CCSS's Implementation in Schools*, *Teachers' Resistance to Change*, *Teachers' Preparation for CCSS*, *Teachers' Training*, *Learning from Colleagues*, *Classroom Design*, and *Administrator's Evaluation for Teachers' Performance*.

Because teachers played active roles in the implementation of CCSS-ELA and CCSS-Math, their perceptions and experiences were valuable for answering the last piece of the research question. The findings led to the conclusion that the implementation of any new education program needs to be done gradually and with full communication among those who implement the program. Professional development sessions need to be planned before program implementation to support both teachers and administrators. Providing clear directions and including examples of effective instructional strategies could help to minimize the resistance of the teachers when new programs are implemented.

Research Question 6

In an integrative mixed methods analysis, do the findings of qualitative interviews with teachers, the principal, and the curriculum and instruction supervisor corroborate the predicted relationship between the adoption of Common Core State Standards and the college readiness of high school students?

This research question compared the findings of quantitative and qualitative data to explore the relationship between the adoption of CCSS at the school and the college readiness of its students. The quantitative findings showed that CCSS had a positive impact on three metrics: (a) participation rates in PSAT/PLAN and AP/IB tests; (b) percentage of students taking SAT

and scoring at or above 1,550; and c) post-secondary program enrollment rates. The analysis of participants' responses indicated a corroborative predictive relationship between the adoption of CCSS at the school and the college readiness of its students.

Regarding the first college readiness benchmark, while quantitative data for participation rates on the PSAT/ PLAN test did not corroborate with the qualitative findings, AP/IB test participation rates did corroborate the descriptive statistics. Concerning the second college readiness benchmark, the quantitative and qualitative outcomes did not affirm that the quality of CCSS directly influences the number of SAT scores at 1,550 or above. Additionally, participants agreed that some connection must exist between CCSS and the SAT because students' scores improved after the adoption of CCSS. Thus, participants' practices and experiences led to the belief that there is an indirect link between the high-level cognitive strategies developed by students after the adoption of CCSS and their SAT benchmark scores.

For the third benchmark, the qualitative findings indicated that critical thinking and training, which involves the development of analytical and synthesizing skills, are among the major acquisitions that permit students to achieve on the AP tests; however, the number of students at the school who took the AP/IB tests and scored 3 or above was not significant based on the statistical test results. Finally, with respect to the fourth college readiness benchmark, the results of the qualitative and quantitative data analyses were consistent regarding post-secondary program enrollment rates. Indeed, the qualitative data confirmed that the CCSS had a positive influence on the rate of post-secondary enrollments.

Specifically, some of the CCSS-acquired skills that allowed students to be successful in college were confidence, motivation, and critical thinking. These competencies have an impact on students' cognitive preparation. Additionally, the students have developed better

psychological abilities in the process of enhancing their readiness to confront high-level college courses, given the fact that they have also increased their self-confidence and motivation.

Review of Findings and Interpretations

Adoption of New Standards

From the analysis of findings regarding the adoption of CCSS, the sections that are important to improving learning standards were identified through each of the research questions. Primarily, the time frame and protocols of the adoption process were considered. For instance, many studies on the SAT confirmed a substantial decline in scores from 1963 to 1980 (Slack, 1980), but that decline was accompanied by many contributing factors, such as more students with low SES, more students with average high school GPAs, and more minority students. In other words, simply focusing on the adoption of CCSS and ignoring the other contributing factors might not address the long-term problems behind students' achievement gap.

As a result of the extensive changes encountered in the new education system during the adoption of CCSS, the establishment of a timeline required prior consensus on the new set of goals for from 1963 to 1980 learners. It is clear from the research that unless such a consensus is reached, the standards will not be approved for adoption. The main reason that an agreement was necessary was to reduce doubts that might arise when CCSS is adopted too quickly. There were also some concerns that the quick development of CCSS could fail to result in the target standards outcomes among learners, which might cause a disruption to the existing education system.

Implementation of New Standards

As shown in the literature review, CCSS implementation was done in the interest of developing an education system that embraces uniformity and unity across the country.

However, this concept is challenged by the fact that some nations with uniform systems of education still had low outcomes. Even though the implementation of CCSS into the education system depended on the efforts of teachers and education leaders, the new Common Core requirements were not easy to implement efficiently. Often, institutional leaders demand instant positive results without considering the need for a process that should be unfolded in steps. Therefore, educational leaders at different institutions might speed the implementation of CCSS to obtain the desired results. Studies have indicated that just as teachers in the classrooms are expected to perform well, principals are required to act as a motivating force among teachers during the implementation of CCSS.

Education leaders and stakeholders are required to make numerous and diverse investments to ensure the seamless adoption and efficient implementation of Common Core standards. Primarily, vast resources continue to be committed towards the professional development of teachers as CCSS implementation is being backtracked. There is an urgent need to empower teachers, through local-level engagement plans, to own the implementation process. Educational leaders must also invest adequate time into overseeing comprehensive implementation. Implementation projects also need to allow students enough transition time to adapt to the rigorous requirements of the new standards. Along with these interventions, there is a need to undertake teacher-parent engagement initiatives to explain the rationale for learning and assessments under the new model (Coburn, Hill & Spillane, 2016). Additionally, education leaders must provide the tools and resources required to achieve efficient implementation.

There is, further, a need to evaluate the holistic changes that accompany the implementation of the CCSS framework and how they impact particular components of the existing instructional model. Alongside instruction, it is necessary to align and reinforce

curricula, students assessments, and teacher evaluation systems to ensure that teachers perceive CCSS as a core component of the overall teaching process. Indeed, CCSS is based on the growing demand for a shift from a model that ranks students based on the scores earned in a high-stake test to one that focuses on a formative student assessment. The assessment design toolkit in the CCSS implementation guidelines provides valuable insights to guide teachers in selecting and writing high-quality student assessments.

Common Core does not limit teachers' portfolios of pedagogical techniques, nor does it direct educators on how to instruct, yet its fruitful execution does require instructors to apply demonstrated procedures that are adjusted to CCSS principles. Regardless, although it is important for educational leaders to assess the quality and adequacy of educators' methods, it is increasingly imperative to concentrate on learner activities and search for proof of learning, especially with respect to the higher reasoning and thinking required under CCSS (Elias, 2014).

Federal policies have also contributed to the lag in the implementation process by suppressing the accountability that was originally required by No Child Left Behind. Several studies have found that the implementation process has been slowed because of the lack of alignment between policies and post-secondary education benchmarks. Lack of approval of the system also played a major role in slowing the adoption process (Galey, S. 2015; McDonnell, L. M., & Weatherford, M. S. 2013; Pompa, D., & Hakuta, K. 2012). In this context, the fifth research question—"What differences currently exist between the instructional strategy for teaching the content-based standards in ELA/Math and the Common Core State Standards at this school? How has this change influenced the college readiness of high school students? How do teachers feel about this change process?"—played an important role in the process of implementation examined within this study.

An evaluation of the success of learners towards meeting curricular goals and objectives that are in support of the standards will determine the success of the implementation of CCSS-ELA or CCSS-Math at the school and its students' college readiness. Understanding the perceptions and practices of teachers and administrators provides a more reflective understanding of the implementation stage. Such research offers a window into the most effective practices during implementation that are instrumental to its efficacy. The ELA and math teachers at the study site, for example, reviewed the curriculum with the administrators and made modifications to it based on CCSS to encompass an integration of competencies, which facilitated buy-in among the classroom and special education teachers. The qualitative findings of this study suggested that CCSS enhances such cooperative approaches directed towards students' active learning. The new active learning processes adopted include collaborative learning and personalized goals. The college readiness benchmarks also provide high school students with the tools for learning and planning a smooth transition to post-secondary education.

The full implementation of the ELA and Math curriculum with common core standards was successfully completed at the school examined in this study in two years. During this process, a curriculum implementation committee workshop was held by the New Jersey State Curriculum and Education Agency, which the educators throughout the state attended and were remunerated for. Agenda items about how to put the curriculum into effect were discussed in an open forum for professional learning that allowed educators to take part in dialogue regarding the CCSS-ELA and CCSS-Math curriculum.

The results of this study confirmed previous research showing that teachers and students would expect to see more thought provoking reading materials and more complex real-world situations in the activity section of their curricula. In addition, curricular alignment with the new

expectations would effectively address student achievement by using strategies that target the technical and adaptive nature of problems (Elmore, 2000; Marzano, 2000). Research also has suggested that the successful implementation of standards is possible with their correct interpretation at the classroom level (Spillane, 2005). Therefore, it is essential to empower the instructional leaders and teachers to make sound instructional decisions and develop appropriate pedagogical approaches for teaching the new standards.

Getting the CCSS reform initiative right increases students' levels of rigor and contributes to instructor learning. Within the CCSS model, there are numerous professional learning and specialization opportunities for K–12 teachers. To begin with, there is an increasing demand for teachers with experience in the implementation of CCSS to participate in liaison initiatives with higher education and other national institutions. Such initiatives enable these institutions to understand the opportunities, obligations, and challenges associated with CCSS reforms. Teaching professionals can also aid in developing mechanisms to communicate and engage with higher education institutions for implementation and resource support.

The state of California, for instance, provides 13 professional learning modules to prepare educators for the successful implementation of CCSS (Best & Cohen, 2013). The introductory module elaborates on the foundation of the CCSS initiative, outlining the specific objectives of both the Math and ELA sections. For example, the CCSS Mathematics module for kindergarten through 12th grade establishes mathematics content and process standards. The module imparts a more in-depth understanding of California's CCSS standards and is divided into constituent units to address teaching and learning needs, understand common mental habits, improve reasoning and the development of explanations, and aid in the effective utilization of learning and teaching

resources. In addition, there is a mathematics K–8 learning progression module to elaborate on the sequencing of learning advances up to 8th grade.

There also are two ELA standards modules that address learning needs in reading, comprehending informational texts, and writing to analyze, argue, and inform. Moreover, professional learning opportunities exist for content literacy in complex subjects. The module deals with how the benchmarks influence guidance and learning in specialized subjects. The data and exercises in the module support teachers to incorporate education guidance into specialized subject areas to help all learners. Content literacy modules exist for other subjects, as well, such as Science and History/Social Sciences, each of which has a different sequencing approach (Moyer-Packenham, Boyer-Thurgood, Legler & Larsen, 2014). Further, administrators and mentors provide a module to guide teachers during the comprehensive implementation of the CCSS framework in their respective states.

Increasing Rigor in ELA and Math Standards

A close investigation of the research findings suggests that rigorous standards support the success of students in AP courses and help them to understand what it takes to achieve success in academic life. According to a recent study by the RAND institute, these high levels of deep mathematical knowledge were not evident in state test results (Yuan & Le, 2012). CRESST researchers analyzed the rigor of current state tests using Norman Webb’s Depth of Knowledge (DOK; Webb et al., 2005) methodology to be consistent with prior research findings. The assessments, they determined, require the students to comprehend and analyze texts at a higher level of complexity than those previously used for many state tests (CRESST Report 823, 2013).

The administrators at the study site for this research separated the practical complications of connecting the new CCSS standards, which require an enhancement of rigor, the development

of different competencies, and the increased use of complex informational text in the classroom, to the present curriculum. All parties involved in the integration of CCSS took part in a significant and intentional curriculum development process based on the competencies required by, and content inherent within, CCSS-ELA or CCSS-Math.

Students, therefore, were given enough time, attention, and focus on disciplines that strengthen their thinking skills and their ability to independently attain new knowledge without seeking support. This indicated that, alongside monitoring and controlling for the impacts of No Child Left Behind, learners should be allowed to make their own decisions in core areas such as ELA and Math. Additionally, the rigorous new standards emphasize the importance of attaining good grades in high school ELA and Math courses since these are central to post-graduation activities. State exams had to be put in place nationally to equalize the standards in schools throughout the U.S., as research showed the students who can understand complex texts and quantitative information derived from charts and other visual formats have a greater chance of success after high school (ACT, 2006; Coleman & Pimentel, 2012). In this setting, equity in education is the most fundamental aspect advocated by CCSS.

College Readiness of High School Students

It is likely, based on the findings of this study, that student college enrollments will depend on the effectiveness of CCSS programs. Proper preparation and a selective approach to assigning courses—in which students choose courses they prefer and are well qualified for, especially in technology and career preparation—are likely to enhance post-secondary education enrollments. Notably, CCSS influences proficiency in English, Mathematics, Science, and Social Studies by considering the need for specialty courses before students engage in AP courses, which has a positive effect on post-secondary enrollment rates. It can be concluded from the

results that the CCSS program improves the students' overall ability to handle academic challenges. The rigorous standards of CCSS help students to develop abstract mental readiness and encourages them to confront rigorous post-secondary education with better analytical, critical, and cognitive skills (Miri, B., David, B. C., & Uri, Z., 2007).

The results from an ACT curriculum survey illustrated the possible missing link between learning and testing students seasonally (ACT National Curriculum Survey, 2009). The study proved that having a strong purpose for learning remains crucial to setting the goals of future studies. Essentially, a sustainable learning system should test students progressively. The sub-themes of the third research question, analyzing *CCSS's Key Points to Succeed in AP* and *CCSS's Influence on AP/IB Courses*, highlighted the need for assessments aligned with the expectations of post-secondary education, with some assessments in place to stress critical thinking skills.

The current study's findings regarding the quality of benchmarking were aligned with the literature review. Benchmarking was entirely concerned with college readiness and collaboration to ensure that learning objectives met the expectations of the American Diploma Project (American Diploma Project, 2004; Conley, 2003). The qualitative analysis presented a more detailed learning context to help to explain the gap between what was learned and what is easily testable and whether the program meets the existing strategic goals (DePalma, 2015). In particular, the analysis of the fifth and sixth research questions did prove that effective instructional strategies for ELA/Math would increase the effectiveness of CCSS. Bridging differences between instructional strategies remains fundamental to maintaining the qualities of CCSS used to improve students' cognitive levels.

Moreover, the success of the change in the instructional practices of teachers throughout the implementation of CCSS depends on leadership quality. Building sound leadership in support of CCSS helps with innovation and facilitating stakeholders' collaboration while ensuring that the change is implemented effectively (Cohen, 2008). Furthermore, instructional leaders should inspire, develop, and implement professional development approaches to handling classroom material. Based on the literature review, experienced teachers are more likely to encourage good communication skills that help to ensure commitment to the college readiness of students (Lotkowski, Steven, & Richard, 2004; Roza, 2009). The results of this study also indicated that CCSS provides a strategic goal-reaching plan that takes into consideration the ability of students. Common Core expectations are that teachers will operate on the personal level, learning to guide students to resolve their problems while inspiring more commitment to the program.

Finally, examining the influence of CCSS-ELA and CCSS-Math, Balch (2014) found that instructional changes improve teachers' competence. The stages and procedures for effective implementation depend on the quality of innovation, which is related to speaking and listening skills. Through high-level speaking and learning skills, students learn to resolve challenges based on guidance from teachers. Progressively, CCSS presents students with a range of literacy abilities and skills required for high levels of understanding. Creating positive outcomes from CCSS, therefore, requires encouraging proper content development. CCSS also provides a solid foundation for socioeconomically disadvantaged students who desire to enroll in selective colleges.

RQ1 asked whether changes in SAT, PSAT/PLAN, and AP test participation rates between AY 2010–11 and AY 2014–15 can directly be attributed to CCSS. On average, the participation rates increased by 11.6%. This figure represents a 27% increase in AP/IB test

participation and a slight drop in the already-high PSAT/PLAN and SAT participation rates. However, the AP test participation rates were found to be significantly correlated with CCSS implementation at a $p < .05$ significance level. Arguably, the correlation coefficient can be attributed to the relatively small sample size.

The answer to RQ 2 depicted a skewed data distribution in regard to increased SAT scores of 1,550 and above after the adoption of CCSS. The skewness is triggered by the proportionate differences in average and median SAT test scores between 2010 and 2015. However, the quantitative analysis produced different results than the qualitative analysis for this question. Respondents failed to establish a clear link between exemplary SAT scores and the partial or full implementation of CCSS.

RQ3 utilized a similar analytical approach to determine whether there were any significant changes in the number of students scoring 3 or above on the AP/IB tests after the adoption of CCSS. The base AY 2010–11 produced 0 students who earned a score of 3 or more on these tests. However, this number grew in the later years of the analysis period, although a Fisher's exact test revealed no significant correlation between the AP/IB test scores and the full implementation of CCSS.

With respect to RQ4, there were notable improvements in post-high school enrollments at the study site after the adoption of CCSS. Students enrolled in either 2-year or 4-year programs at post-secondary institutions, but declines were reported regarding the former type of program while positive changes were evident in the latter. Arguably, the improved rates of enrollment are attributed to better learning qualities, personal perseverance, and improved college readiness as a result of the CCSS reforms.

In addressing RQ5, a qualitative approach was used to investigate diverse themes evident in the overall CCSS implementation. Teachers and administrators in this study perceived CCSS as a teaching model that has changed how they develop lesson plans and execute their teaching strategies. Finally, RQ 6 compared the qualitative and predictive results from the mixed methods design employed by the study. It was found in the qualitative analysis that CCSS improved college readiness by triggering improvements in two study areas; AP participation and post-high school admissions. Consequently, the two study approaches produced consistent findings for two college readiness benchmarks.

Recommendations for Administrative Policy and Practice

Professional Development

Diverging opinions emerged from the data with respect to the level to which educators took part in professional development for implementing CCSS-ELA and CCSS-Math at the New Jersey charter school. Some participants claimed that they did not receive adequate professional development about the process of implementing Common Core. Some of their statements included, “We applied it without any knowledge and found the basics behind it,” “For a fact, there is nothing about PD that I can remember,” and “In Common Core, there was no PD that was offered.” In contrast, the other educators indicated receiving support and training throughout the implementation process. Some teachers claimed to have learned about Black belt training online. Another educator claimed, “To be honest, a significant proportion of professional development has been provided to us.” Some teachers felt more prepared than others because they were provided with “numerous pieces of training on the Common Core State Standards” through various meetings within the learning institution. Given these differing opinions, it was

necessary to inquire into whether the conflicting opinions amongst participants over their professional support was a hindrance to the implementation process.

To ensure that the implementation of CCSS is a success, educators should be provided with ongoing and in-depth professional development. Important aspects of the professional development of teachers include attention to their self-reflection, professional relationships, and professional competency levels. Professional development should address large areas and include the delivery of new content knowledge to educators through intensive meetings. Encouraging cooperative relationships among colleagues and the professional capacities of educators and administrators throughout the development of curriculum, its implementation, and its assessment links instruction, learning, learner achievement, and content together.

In this research, administrators at the charter school suggested that is not possible to have teachers learn through irregular and discontinuous meetings without teamwork and partnerships. To facilitate effective professional development, it is essential to create an environment conducive to educators gaining insight into their practices and sharing best practices among themselves.

Successful Implementation

CCSS-ELA and CCSS-Math requirements stipulate that learners learn to read and understand the textual information or mathematical concepts appropriate for both age and grade. The new learning standards also embrace positive interactions with literary works and the ability to assess large quantities of informational text and interpret tables (McKenna & Stahl, 2015). The effectiveness of this new policy is dependent on how well learners can meet the requirements and teachers can commitment to the learning process set forth by CCSS-ELA or CCSS-Math. The policy intermediaries who play a significant role in assisting learners to meet

the goals of CCSS-ELA or CCSS-Math include district administrators, school leaders, and educators whose influence is central to the provision of classroom instruction and learning.

Practical Leadership Implications

To date, many scholars have researched and provided proposals for programs and policies that support the implementation of the CCSS curriculum in an effort to give a national character to a set of academic standards for K–12 learners. The present national and state goals demand modifications in educator and leader assessment, the continuous use of learner achievement data to assess teachers, and new learner evaluations based on the CCSS standards. This research showed that the pressures of numerous initiatives can be barriers to the consistent support needed for effective implementation. Specifically, instructional leadership is necessary for the implementation of CCSS-ELA or CCSS-Math into contemporary educational settings (Coburn, Hill & Spillane, 2016). Effective leadership implies adhering to state and federal rules and regulations while, at the same time, implementing a well-structured curriculum with new standards while facilitating the desire, passion, and capacity of educators to put into effect CCSS-ELA or CCSS-Math through the development of responsive relationships between colleagues.

Recommendations for Future Research

Future Implications

Further research into the subject of implementing the CCSS-ELA and CCSS-Math is needed. Specifically, future research could cover all the aspects of the implementation of Common Core, the efficacy of CCSS-ELA or CCSS-Math as gauged through academic performance of the students, and policies pertaining to the demands placed on organizations by new mandates. A longitudinal research study on the implementation process of the Common

Core Standards could provide a detailed account of its full implementation for respective subject areas and grade levels. Such a longitudinal study would entail an examination of the process, the variables likely to be encountered, and the persons involved for long periods of time or at discrete intervals.

One of the prominent issues affecting the implementation of CCSS is the likely impact that its mandates will have on students' academic performance on standardized test scores. Students in the state of New Jersey are required to take PARCC/NJSLA aligned with the CCSS program. Considering that the evaluation of a given educational policy is dependent on the influence that the policy has on student achievement data, such data can be used for a larger study to assess the effectiveness of the CCSS-ELA or CCSS-Math across the state.

Finally, the data analysis revealed that the existence of multiple and apparently disconnected initiatives enhanced the belief among participants in the study that too many changes were hampering the enactment of the CCSS. The recent national call for a reform agenda is geared towards not only implementing a nationalized set of standards for students but also to school districts and states to formulating and implementing teacher and principal evaluation systems that place emphasis on measuring learner achievement as an accurate measure of the effectiveness of educators (Maranto, McShane & Rhinesmith, 2016).

Additionally, implementing new standardized evaluation techniques can potentially impact both the CCSS implementation and accountability measures put in place for school management. In situations where a complex change is experienced within a learning institution, school leadership must take responsibility for policy provisions to build up the willingness and capacity of teachers in a manner that is context sensitive, deliberate, and systematic. Policies and mandates are enacted by intermediaries through an elaborate process that is context sensitive to

changes initiated by the federal government that terminate with learners in the classroom (Liu, 2016). Through consistent and continuous evaluation of the CCSS implementation process, scholars will be able to provide accurate and detailed data and draw objective conclusions relevant to the adoption and outcomes of the CCSS initiative.

Furthermore, meticulous evaluation of the learner's achievement data derived from standardized test scores and other relevant evidenced-based sources can provide educational leaders, legislators, and society with information needed to assess whether an implementation of CCSS is achieving its intended objectives (Polikoff, 2015).

Conclusion

This case study examined the implementation of CCSS within the setting of a New Jersey charter school. The rationale was the need to identify strategic policies and curriculum implementation at the school, regardless of whether these may work or fail in similar settings (Glatthorn et al., 2018). The data collected and analyzed from the interview transcripts and school report cards conveyed crucial information about CCSS implementation and college readiness. The data also gave an indication of the level of capacity building, collaboration, motivation, and the adaptation of the CCSS-ELA and CCSS-Math implementation process within a secondary school. The collected and analyzed data highlighted the conditions that influence education quality, which ultimately depends on the notions and beliefs of the teachers as well as the instructional strategies utilized in the classrooms (Durand et al., 2016).

An education setting that is implementing CCSS requires collaboration between teachers and administrators on the new standards to ensure uniformity and compliance. This collaboration can be achieved through a planned strategy that enables school districts to begin mobilizing resources as they work within the deadlines set by the state. It is important, in the process, to

develop a better understanding of the Language Arts/Literacy and Mathematics standards outlined in the lesson plans and to align those standards with the goal of post-secondary education, which is likely to increase the college readiness of high school students.

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APPENDIX A: Solicitation Letter for Site Permission Request

12/03/2018

Dear Dr. Sercan,

My name is Mursel Gunes and I'm a doctoral student at Seton Hall University. I am conducting research about the Implementation of Common Core State Standards (CCSS) and its influence on College Readiness of High School Students and I am interested in your school's experiences as an Urban Charter School in New Jersey.

The purpose of the research is to explore the perceptions of administrators and teachers about the college readiness of high school students after the adoption of CCSS.

The participants-principal, assistant principal of curriculum and instruction, and two language arts teachers and two mathematics teachers- will involve one semi-structured interview that will last between forty minutes and an hour. I need to also spend at least a half day on your site to make observations in order to take notes and make reflections.

The research is projected to be completed by 12/31/2019. This research has no known risks.

There will be no direct benefit to your school from participating in this study, however this research will benefit the academic community because it helps us to understand the implementation of CCSS and its influence, if there is any, on high school students' readiness for college.

The information provided will remain strictly confidential and the participants will not be identified by their answers. Please know that I will do everything I can to protect each participant's privacy. Their identity or personal information will not be disclosed in any publication that may result from the study. Notes that the interviews will be digitally recorded and stored in a secure location. After the study is completed all the records will destroyed accordingly.

I really appreciate if you allow me to conduct my research study at your site.

Sincerely,

Mursel Gunes

APPENDIX B: Participation Invitation Letter

Participation Invitation Letter

Date:

Candidate's Name:

School Name:

School Address:

Dear Colleague;

My name is Mursel Gunes. I am currently employed as the Director of Elementary Education at Paterson Charter School for Science and Technology. In addition to that, I am a doctoral student in the College of Education and Human Services, Department of Education Leadership, Management and Policy, at Seton Hall University.

I am interviewing administrators and teachers of Central Jersey College Prep Charter School. The purpose of this study is to explore the implementation of Common Core State Standards (CCSS) in an Urban Charter School of New Jersey and its Influence (if there is any) on college readiness of high school students. This research is aimed to contribute to the literature of CCSS and the augmentation of college readiness of HS students in an Urban Charter School of New Jersey.

I am inviting you to participate in one in-depth interview, which could be audio recorded. The audio recording is optional, based on your consent. I anticipate that the interview will take no more than forty-five minutes. It will be conducted at your current site of employment. Participation in this research study is completely voluntary. If at any time, you decide that you do not want to participate in this study, you can simply withdraw.

The study will be conducted face-to-face with me. There will be no identifying data on you since you will be asked for a pseudonym to conceal your identity. Before interviewing, the pseudonym will be used at the beginning of the audio recording if you give permission to do so, otherwise, notes will be taken instead.

If you are willing to become part of my study or have questions as to your right as a human subject, please feel free to reach me at XXX- XXX-XXX or email at mursel.gunes@student.shu.edu by February 15, 2019. I greatly appreciate your support and participation in this study.

Sincerely,

Mursel Gunes

APPENDIX C: Informed Consent Form



COLLEGE OF EDUCATION
AND HUMAN SERVICES

SETON HALL UNIVERSITY

Informed Consent Form

Title of Study

A Case Study on the Implementation of Common Core State Standards in an Urban Charter School of New Jersey and its Influence on College Readiness of High School Students.

Research Investigator

Mursel Gunes, Doctoral Student at Seton Hall University, College of Education and Human Services, Department of Education Leadership, Management and Policy, Ed.D. Program.

Address: College of Education and Human Services
400 South Orange Ave
South Orange, NJ 07079

Cell Phone #: XXX-XXX-XXXX

Email: mursel.gunes@student.shu.edu

Purpose of Study

You are being asked to take part in a research study. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. Please read the following information carefully. Please ask the researcher if there is anything that is not clear or if you need more information.

The purpose of this study is to explore the implementation of Common Core State Standards (CCSS) in an Urban Charter School of New Jersey and its Influence, if there is any, on college readiness of high school students. This research is aimed to contribute to the literature of CCSS and the augmentation of college readiness of HS students in an Urban Charter School of New Jersey.

Study Procedures

At the beginning of the semi-structured interview, the researcher will provide reasoning on the basis for his research. Subjects will participate in one in-depth interview. If permission is given for audio recording, it will be done accordingly. Otherwise, the researcher will take notes. The interview will take about forty-five minutes and will take place at the participants' current site of employment.

The participants will be asked to provide a pseudonym, which will be used when transcribing the audio recording. The beginning questions will consist of their employment status and their number of years in the same position. Then the set of questions will be asked to record the participants' insights.



Informed Consent Form

The interview protocol will begin as follows:

You are encouraged to ask questions or raise concerns at any time about the study or the methods I am using. If you need to contact me, please use the e-mail address or telephone number listed above.

Our interviews will be digitally recorded to help me accurately capture your perceptions in your own words. The recordings will only be transcribed by me for the purpose of this study. If you feel uncomfortable with the recorder, you may ask to turn it off at any time.

You also have the right to withdraw from the study at any time. In the event, you choose to withdraw from the study, all the information you provided (digital recordings) will be destroyed. They will not be used in the research study.

Voluntary Nature of Participation

Your participation in this study is voluntary. It is up to you to decide whether or not to take part in this study. If you decide to take part in this study, you will be asked to sign a consent form. After you sign the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before data collection is completed, your data will be returned to you or destroyed.

Anonymity

The interviews will be conducted face-to-face with the researcher. There will be no identifying data on participants. They will be asked for a pseudonym to conceal their identities. Before interviewing, the pseudonym will be used at the beginning of the audio recording or note-taking from the researcher. The only audio digital recorder will be used during the interviews if given permission by the participant to do so.

The researcher will then transcribe the recordings and keep the data in a USB memory key. Only the researcher, the advisor at Seton Hall University, and dissertation committee members will have the right to listen to the audiotapes and have access to all materials. Once the interviews are transcribed, the audio recordings, interview transcripts, and the USB memory key will be kept for 3 years under lock and key with the researcher's faculty advisor at Seton Hall University. The signed consent form of participants will be kept in a locked cabinet in the researcher's office for 3 years as well. Upon that time, the audio recordings and the USB memory key will be destroyed. The transcripts and the signed consent forms will be shredded in their separate locations.

**Instruments**

An audio digital recorder will be only used during the interviews if given permission by the participant to do so.

Risks

There are no known risks associated with this research. You may decline to answer any or all questions. You may also terminate your involvement at any time if you choose.

Benefits

There are no direct benefits to the participants

Confidentiality

Your responses to this study will be anonymous. Every effort will be made by the researcher to preserve your confidentiality including the following:

- Assigning code names for the participants that will be used on all the research notes and documents.
- Keeping interview transcriptions and notes in a locked file cabinet in the personal possession of the researcher.

Compensation/Treatment

No compensation is associated with participation.

Contact Information

If you have questions at any time about this study, or you experience adverse effects as the result of participating in this study, you may contact the researcher. His contact information is provided on the first page. If you have questions regarding your rights as a research participant, or if problems arise which you do not feel you can discuss with the Primary Investigator, please contact the Institutional Review Board at 973 313-6314.

**Consent:**

I have read and understood the provided information. I have had the opportunity to ask questions. I understand that my participation is voluntary. I am free to withdraw at any time, without giving a reason and without cost. I understand that I will be given a copy of this consent form. I voluntarily agree to take part in this study.

Agreement to be Audio-Recorded or Not:

Please checkmark your preference for audio recording:

- . ☐ I agree to be audio recorded.
- . ☐ I do not agree to be audio recorded.

Participant's signature _____ **Date** _____

Investigator's signature _____ **Date** _____

If you have any further questions, contact the Director of Institutional Research at 973 313-6314, or email irb@shu.edu.

APPENDIX D: Expert Panel Members

Suzanne Infante

Suzanne Infante is a K-6 Reading Specialist/Reading Coach at Patterson Charter School for Science and Technology. As a Reading Specialist/Reading Coach, Mrs. Infante provides their help to the struggling readers as well as coaching and support to the teachers. During her time at PCSST, she developed and implemented Shooting for the Stars, a monthly K-6 reading challenge, which significantly increased student's engagement and reading stamina. Mrs. Infante also heads the annual schoolwide Read Across America celebration and is a member of the Information and Referral Team. Before PCSST, Mrs. Infante held various reading and intervention positions in public and private schools throughout New Jersey. Mrs. Infante holds a Master of Arts in Reading Specialization from Kean University where she graduated summa cum laude, holds an Orton-Gillingham Certification, completed two years of New Jersey Excel for School Administration, holds a New Jersey Supervisory Certificate and passed the New Jersey Principal's Exam. Mrs. Infante also holds Master of Arts degree in Industrial Design from Pratt Institute where she graduated summa cum laude and completed her undergraduate education at New Jersey University where she double majored in Education and Commercial Art.

Thinsha Carter

Thinsha Carter was born in Paterson, N.J and is the youngest of nine children. She graduated with a B.A in English from William Paterson University and proceeded to work as a substitute teacher for the Paterson Board of Education. From there she began her teaching career at Paterson Charter School for Science and Technology in January of 2006, initially being hired for a seventh-grade teacher who was going on maternity leave. She was then hired as the permanent seventh-grade teacher in September 2006. Since then she has been teaching grades

five, six, seven, eight, and ninth grade elective classes. Besides being a mentor to new teachers, she held titles such as Grade Chair, Department Chair and Cheerleading coach for many years. Ms. Carter has assisted teachers with classroom management by facilitating them with professional development on effective classroom management skills. Being ranked as a teacher with strong classroom management and student academic growth, her drive to pursue higher education led her to apply to Seton Hall University where she graduated with an M.A in Educational Leadership, Management, and Supervision. She now holds the title of Dean of Students at Paterson Charter School for Science and Technology. She loves working with children and is passionate about honing positive characteristics within youth in the City of Paterson. As a leader of a youth group at her religious assembly, Ms. Carter's desire is to motivate youth to make good decisions and be role models thus leaving a positive legacy for future generations.

Mustafa Aytas

Mustafa Aytas currently works as a Curriculum Supervisor at Paterson Charter School. Mr. Aytas had been a highly effective high school mathematics teacher for 10 years. Mr. Aytas got promoted to the curriculum supervisor position in the same school after serving 8 years as a Mathematics Department Chair and Mathematics teacher. Mr. Aytas currently teaches at Passaic County Community College as an adjunct professor. He holds a master's degree in Educational Technology and he completed Supervisor postgraduate certification program at Montclair University.

Necmi Coskun

Necmi Coskun is a Director of STEM Curriculum/Evaluation at Paterson Charter School for Science and Technology. He has a Bachelor of Science in Biology with minors in Education and a Master's degree in Education. He is anticipating a doctoral degree in Educational Leadership from Saint Peter's University. He worked as the Science Department Head and taught the AP Biology, Honors Biology, Biology, Intro to Anatomy and Physiology courses at Paterson Charter School for 7 years. He has been part of Passaic Curriculum Consortium since 2010. He presented at NJ Charter School Conference in 2018. He is married, father of a daughter and three sons.

Kara Thomas

Ms. Thomas is a Highly Qualified teacher serving as English Department Head for Paterson Charter School for Science and Technology. She is dual certified in English and English as a Second Language for grades K-12. She received her master's degree from William Paterson University in Curriculum and Learning with a concentration in ESL Education while a recipient of the highly selective Garden State Partnership for Teach Quality Grant. She received her bachelor's degree in English from St. John's University and is currently enrolled in Rutgers University's supervisory certificate program. In addition to her role as department head, Ms. Thomas teaches AP Language and Composition, American Literature and English I.

APPENDIX E: Questions for Teachers

- 1- Are you optimistic OR pessimistic about the influence of Common Core State Standards on the college readiness of students?
 - Do you think that the current CCSS groom the students with psychosocial skills such as resiliency, non-cognitive skills, and intrinsic motivation which play their role in a successful transition to university education?
 - Do you think that the ratio of remedial courses in degree programs has increased after the incorporation of CCSS or it has been decreased?
 - How do you handle the situation when a student has a poor attendance record or is unable to secure sufficient credit courses? Do you think those students are as unprepared for college or do you take a different approach?
- 2- Are you optimistic/pessimistic about the influence of Common Core State Standards on instructional practices of teachers? Why are you optimistic/pessimistic?
 - With all the new changes incorporated in CCSS, do you feel more or less prepared in teaching or you feel less prepared?
 - Do you think that you need additional training and tools in addition to the refresher courses in order to better implement the CCSS in your classroom and prepare the students for college readiness?
 - Do you feel that in a bid to align your teaching standards with the CCSS, you observe your colleague's classroom every now and then?
 - Do you think that the administrator (principal) influences your teaching style by dictating you to stick to certain instructional practices inside the classroom? What are your views about this?

- 3- Do you think that the education system was in great need of the new CCSS OR the previous system of New Jersey Core Curriculum Content Standards (NJCCCS) was better than the newly incorporated Common Core State Standards (CCSS)?
- Can you present one or two points regarding the new standards of ELA and Math?
Are the new standards helpful in providing a positive influence on college readiness
OR are they giving negatively influencing on college readiness?
 - Do you think that the CCSS curriculum is narrow, rushes to cover many standards or overemphasizes testing situations?
 - Do you feel that the CCSS has promoted the “rote memorization” concept OR do you feel that CCSS has furthered the “active learning concept” in students?
 - Do you think that the increased complexity in the ELA and Math standards in CCSS has increased college readiness OR it has further deteriorated the college readiness in students due to the complexity in textbooks at all grade levels?
- 4- Do you see any noticeable difference in PSAT/PLAN, SAT, and AP participation rates after the implementation of CCSS in your school?
- 5- In your eyes, what is the cumulative influence of CCSS implementation on the percentage of students who take the SAT and score at 1550 or above?
- 6- What is the key point in CCSS which you see as a trigger that students are most likely to succeed in an AP course?
- Do you think that the CCSS implementation impacted the underrepresented student groups in terms of their enrollment into the AP Program? What is that impact, can you express your personal experience?

- In your eyes, what is the cumulative influence of CCSS implementation on the percentage of students who take AP or IB course in English, Mathematics, Science and Social Studies?
 - Could you roughly tell me that before CCSS, I mean before 2010, when your students appear in AP or IB course in English, Mathematics, Science and Social Studies, roughly what score they were achieving before 2010, and what score they started achieving from 2011 onward?
 - I feel that AP is one of the most famous exams, which gives an advantage to students not only to enter into a rigorous curriculum, but it's also beneficial when they are applying to competitive colleges and universities. In this context, what is the influence or effect of CCSS in preparing students for the AP courses in your school?
- 7- Does CCSS negatively or positively affected the post-secondary enrollment rates in your school?
- During your experience in the past years of teaching in this Urban Charter School, do you see a positive relationship of CCSS with post-secondary enrollment, negative relationship with post-secondary enrollment, or no significant relationship at all?
- 8- Do you think that as the CCSS seems good on the paper, teachers took it with the same aptitude and acceptance which also reflects on its implementation or you have a different viewpoint?
- With the incorporation of CCSS standards, were the teachers provided with suitable refresher courses to facilitate the implementation, and if not, did it negatively influence the college readiness of students?

- What do you think was necessary to implement the new CCSS in the education system OR should the government have paid attention to other equity indicators in schools such as financially aiding the students, keeping a check on the students' results and their varying family income and finding solutions, etc.?
- Were the new CCSS implemented in an organized step by step systematic manner OR, were they implemented all at once?

9- Feel free to share anything else about CCSS that you feel like that was missed in my questions...

APPENDIX F: Questions for Administrators

1- Are you optimistic OR pessimistic about the influence of Common Core State Standards on the college readiness of students?

- Do you think that the current CCSS groom the students with psychosocial skills such as resiliency, non-cognitive skills, and intrinsic motivation which play their role in a successful transition of university education?
- Do you think that the ratio of remedial courses in degree programs have increased after the incorporation of CCSS or it has been decreased?
- What is your stance or what do you do if you sense that certain students fall prey to poor attendance or if they are unable to secure sufficient credit courses? Do you mark those students as unprepared for college or what?
- Are you optimistic/pessimistic about the influence of Common Core State Standards on instructional practices of teachers? Why are you optimistic/pessimistic?
- With all the new changes incorporated in CCSS, do you feel that the teachers in your school are more prepared in teaching or you feel that they are less prepared?
- Do you think that your teachers need training and tools in addition to the refresher courses in order to better implement the CCSS in the classroom and prepare the students for college readiness?

2- Being an administrator (principal) of your school, do you recommend or dictate that the teachers to adopt a particular teaching style and certain instructional practices inside the classroom OR do you give them the flexibility to teach in the way they want?

- 3- Do you think that the education system was in great need of the new CCSS OR the previous system of New Jersey Core Curriculum Content Standards (NJCCCS) was better than the newly incorporated Common Core State Standards (CCSS)?
- Do you think that the CCSS is nothing short of a narrowed curriculum, a rush to cover many standards or an overemphasis on testing situations?
 - Do you feel that the CCSS has promoted the “rote memorization” concept OR do you feel that CCSS has furthered the “active learning concept” in students?
- 4- Do you see any noticeable difference in PSAT/PLAN, SAT, and AP participation rates after the implementation of CCSS in your school?
- 5- In your eyes, what is the cumulative influence of CCSS implementation on the percentage of students who take the SAT and score at 1550 or above?
- 6- What is the key point in CCSS which you see as a trigger that students are most likely to succeed in an AP course?
- Do you think that the CCSS implementation has put an impact on underrepresented student groups in terms of their enrollment into the AP Program? What is that impact, can you express your personal experience?
 - In your eyes, what is the cumulative influence of CCSS implementation on the percentage of students who take AP or IB course in English, Mathematics, Science and Social Studies?
 - Could you roughly tell me that before CCSS, I mean before 2010, when your students appear in AP or IB course in English, Mathematics, Science and Social Studies, roughly what score they were achieving before 2010, and what score they started achieving from 2011 onward?

- I feel that AP is one of the most famous exams, which gives an advantage to students not only to enter into a rigorous curriculum but also beneficial when they apply to competitive colleges and universities. In this context, what is the influence or effect of CCSS in preparing students for the AP courses in your school?

7- Does CCSS negatively or positively affected the post-secondary enrollment rates in your school?

- During your experience in the past years of administrating this Urban Charter School, do you see a positive relationship of CCSS with post-secondary enrollment, negative relationship with post-secondary enrollment, or no significant relationship at all?

8- Do you think that as the CCSS seems good on the paper, teachers took it with the same aptitude and acceptance which also reflects on its implementation or you have a different viewpoint?

- With the incorporation of CCSS standards, were the teachers provided with suitable refresher courses to facilitate the implementation or not?
- What do you think whether it was necessary to implement the new CCSS in the education system OR the government should have paid attention to other equity indicators in schools such as financially aiding the students, keeping a check on the students' results and their varying family income and finding solutions, etc?
- Did the implementation of the new CCSS was done step by step OR it occurred without ensuring that the change is implemented in a systemic/organized manner?

9- Feel free to share anything else about CCSS you feel like that was missed in my questions...

APPENDIX G: Letter from Institutional Review Board



January 30, 2019

Mursel Gunes

Dear Mr. Gunes,

The Institutional Review Board office is in receipt of the application for your research entitled "A Case Study on the Implementation of Common Core State Standards in an Urban Charter School of New Jersey and its Influence on College Readiness of High School Students."

Your application does not fall under the purview of the IRB office because, as you describe the study in your application, it is a non-generalizable case study of administrators and teachers at the Central Jersey College Prep Charter School in Somerset, NJ.

Sincerely,

A handwritten signature in dark ink, reading "Mary F. Ruzicka, Ph.D.", is positioned above the typed name.

Mary F. Ruzicka, Ph.D.
Professor
Director, Institutional Review Board Office

Cc: Dr. Luke Stedrak