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AMONG ENGLISH LANGUAGE LEARNERS IN ADVANCED
PLACEMENT COURSES**

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ENGLISH LANGUAGE ARTS NEW YORK REGENTS SCORES AMONG ENGLISH
LANGUAGE LEARNERS IN ADVANCED PLACEMENT COURSES

A dissertation submitted in partial fulfillment
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ABSTRACT

ENGLISH LANGUAGE ARTS NEW YORK REGENTS SCORES AMONG ENGLISH LANGUAGE LEARNERS IN ADVANCED PLACEMENT COURSES

Maria Rosario-Rodriguez

With an increasing number of English Language Learners (ELLs) entering the American education system, one would expect an increasing number of ELLs as high school and college graduates. However, graduation rates for ELLs lag behind their monolingual peers, most likely due to a lack of college preparation provided to these students. With the implementation of *AP for All* in New York City schools, ELLs now have an increased chance to participate in college-preparatory and college-level courses. Therefore, an archival data correlational research study was designed to identify the association between ELLs' participation in Advanced Placement (AP) courses and their English Language Arts (ELA) Regents scores. The study focused on students' participation in one or more AP courses and their scores on the ELA Regents exam. The participants were 5,128 ELL seniors that attend public high schools in New York City during the 2018–2019 school year. The study collected pre-existing administrative data collected by the New York City Department of Education. The data consists of ELLs' academic courses and ELA Regents scores, among other control variables (such as sex, number of AP courses, free/reduced lunch status, etc.). The data was transformed, statistically analyzed, and then utilized to answer all three research questions. The

findings of this study suggest that participation in AP courses helps to improve ELL's ELA Regents scores, but does not assist them in achieving college readiness scores. Previous studies have explored ELLs and the ELA Regents, as well as Regents exams and AP course participation. However, very few studies have looked at ELLs participation in AP courses. Few studies have also explored ELA Regents scores of ELLs participating in advanced course work. This study's findings support provision of advanced opportunities for ELLs, leading to a transformation in the way ELLs are educated. The study concludes with recommendations for future research and recommendations for future practice to assist in the transformation of ELL education.

DEDICATION

To my husband, parents, and sisters. Your love and support make anything possible.

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I would like to acknowledge Dr. Clare Waterman, my mentor throughout my research. We experienced many ups and downs throughout the process. However, without her continued guidance, dedication, understanding, and patience, this dissertation would not be where it is now. I admire her in so many ways, and hope we can continue to work together in the future.

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TABLE OF CONTENTS

DEDICATION.....	ii
ACKNOWLEDGEMENTS.....	iii
LIST OF TABLES.....	vi
LIST OF FIGURES.....	vii
CHAPTER 1: INTRODUCTION.....	1
Background.....	1
Statement of the Problem.....	4
Purpose of the Study.....	5
Significance of the Study.....	7
Research Questions.....	8
Definition of Terms.....	9
CHAPTER 2: REVIEW OF RELATED RESEARCH.....	11
Theoretical Framework.....	11
Conceptual Framework.....	11
Related Research.....	15
Who are ELLs?.....	16
Who are ELLs as students?.....	18
AP for All.....	20
ELLs in other gifted and advanced settings.....	22
CHAPTER 3: METHODS.....	25
Hypotheses/Specific Research Questions.....	25
Research Design.....	27

Sample Population.....	28
Sample Participants.....	29
Instruments.....	32
Research Procedures.....	34
Data Analysis.....	35
CHAPTER 4: FINDINGS.....	38
AP Course Participation.....	38
Participation in Multiple AP Courses.....	40
College Readiness.....	47
CHAPTER 5: DISCUSSION.....	51
Implications of Findings and Relationship to Prior Research.....	53
AP Course participation.....	53
Control variables.....	56
Algebra Regents score.....	56
Age.....	57
Sex.....	58
Free/reduced-priced lunch status.....	59
SWD status.....	59
Conclusion.....	60
Limitations of the Study.....	60
Recommendations for Future Research.....	63
Recommendations for Future Practice.....	67
REFERENCES.....	71

LIST OF TABLES

Table 1	Socio-Demographic Characteristics of Participants.....	31
Table 2	Results from Linear Regression Analysis Examining the Association Between Participating in AP Courses and ELA Regents Exam Scores.....	40
Table 3	Descriptive Statistics for Association Between Regents Scores and Number of AP Courses Participated In.....	42
Table 4	Descriptive Statistics for Association Between Regents Scores and Sex.....	43
Table 5	Descriptive Statistics for Association Between Regents Scores and Individualized Education Plan (IEP) Status.....	44
Table 6	Descriptive Statistics for Association Between Regents Scores and Free/Reduced-Priced Lunch Status.....	45
Table 7	Descriptive Statistics for Association Between Regents Scores and Age.....	47
Table 8	Results from Logistic Regression Analysis Examining the Association Between Participating in AP Courses and Achieving College Readiness Scores on the ELA Regents Exam.....	50

LIST OF FIGURES

Figure 1 Conceptual Framework of the Study..... 15

Figure 2 ELA Regents Scores Histograms for Students in No APs, One AP,
and Two or More APs..... 42

CHAPTER 1: INTRODUCTION

Background

Following World War II, the United States (U.S.) sought expansion in policy-driven reform of their public schools at the federal level (Kucan & Sullivan Palincsar, 2011). Thus, a variety of programs were implemented to foster improvement in the country's education system; however, the many uncoordinated programs and services for at-risk students—such as English Language Learners (ELLs)—were unsuccessful in improving students' learning and skill development (Kucan & Sullivan Palincsar, 2011). By the 1990s, a systematic reform movement was begun, which focused on shaping a series of federal policies designed to coordinate and improve the education system for all students. With that said, one of the policies that was set in place during this reform was the *No Child Left Behind Act* (NCLB) of 2002. NCLB introduced various support programs, as well as identified a series of requirements and targets schools were expected to meet in order to reduce the achievement gap among traditionally underserved groups of students (Foorman & Connor, 2011).

As a response to the NCLB requirements, New York State created the New York State English as a Second Language Achievement Test (NYSESLAT) for ELLs. Since May 2003, this standardized exam has been used with ELLs—students who have been identified as needing English language support services—to assess their English proficiency in reading, writing, speaking, and listening (Hesson, 2013). Throughout their academic career, ELLs are required to take the NYSESLAT every Spring until they receive a score of “commanding” and test out of ELL status, reclassifying them as Former ELLs (Hesson, 2013). Reclassification for ELLs that enter the New York City

(NYC) public education system in kindergarten typically occurs after four years, or at the end of 3rd grade. Although ELLs in New York are provided with the standardized exam yearly, the rate of reclassification is only approximately 50 percent for students who enter the NYC public education system in kindergarten (Kieffer & Parker, 2016). After six years, 75 percent are reclassified, while the remaining 25 percent are referred to as long-term ELLs. This varies depending on the students' disability status and entering skill level. However, according to Kieffer and Parker (2016), the reclassification rate is much lower for ELLs who entered the NYC education system in 1st grade or later. ELLs who enter the public school system in 6th and 7th grade were not reclassified until they were well into high school and sometimes not at all.

In order to become proficient in and acquire a language, it takes approximately four to seven years (Hesson, 2013; National Research Council, 2011; Thompson, 2015). However, as mentioned above, ELLs who do not meet the proficiency level for six years are referred to as long-term ELLs (Artigliere, 2019; Hesson, 2013; Kieffer & Parker, 2016). Between 2003 and 2010, 33 percent of ELLs who began in 6th grade and 44 percent of ELLs who began in 7th grade were not reclassified by their expected high school graduation date (Kieffer & Parker, 2016). This means that these students may graduate high school maintaining their ELL status, if they graduate at all. Failure to reclassify students has previously led to higher dropout rates from and the aging out of these students. Lack of reclassification has also led to delayed graduation; ELLs who do not achieve English proficiency graduate high school in 5 or 6 years instead of the usual 4 years (Johnson, 2019).

While it is important to continue to support ELLs and provide them with services to improve their language proficiency, ELLs' college readiness abilities suffer. Due to state laws, set curriculums, test prep, lack of teacher knowledge, and other reasons, many ELLs are not provided the opportunity to develop or demonstrate their understanding of content, articulation of knowledge, and college readiness as they are placed in low-track course sequences due to their lack of English proficiency (Artigliere, 2019; Johnson, 2019; Kieffer & Parker, 2016; Reeves, 2004). For example, ELLs who are not reclassified are limited in the courses they can take due to the time in their schedule and the manner in which they receive services. ELLs may be placed in a class that provides them with services or they may be pulled from their classes to receive services. This decreases their time learning content, the availability in their course schedule, and their opportunities to learn. This means that ELL students often do not have a chance to take rigorous, honors, or Advanced Placement (AP)-level courses that are designed to assist students with developing strong reading, communication, writing, critical thinking, and analytic skills. Not only are these skills necessary to demonstrate language proficiency, but also skills that are necessary to succeed in post-secondary institutions (Kanno & Kangas, 2014). Furthermore, ELLs are still required to meet specific benchmarks for graduation. Although the NYSESLAT was originally created as an alternative to the standardized English Language Arts (ELA) state assessment, or Regents exam, all students—including ELLs—are required to take and pass the ELA Regents exam as an exit requirement for high school graduation (Hesson, 2013; Pearson, 2019b).

The reauthorization of NCLB as the Every Student Succeeds Act of 2015 (ESSA) provided a framework that allowed flexibility across states in setting their own goals

regarding students' skills, knowledge, content, and achievement. Although ESSA allowed states to set their own benchmarks, 41 states in the U.S. adopted the Common Core State Standards (CCSS), including New York (Common Core State Standards Initiative, 2019). The CCSS are a set of academic standards related to multiple content domains including ELA (Common Core State Standards Initiative, 2019). The standards serve as benchmarks and goals that students are expected to meet at the end of each grade. By the end of 12th grade, students who have met each of the benchmarks are deemed college ready. The ELA Regents exam is designed to address and test students' achievement in the grade 11–12 subset of the ELA CCSS. In New York State, high school students are expected to take and pass the ELA Regents exam with a score of 75 or above in order to be deemed college ready. Regardless of the student's language acquisition level, all students—including ELLs—are expected to pass the exam with a minimum score of 65 to graduate high school (Beltran, 2016; Menken, 2010). This is an exam that is difficult for non-ELL students, with only 62 percent passing the exam in 2019; ELLs, who struggle with English proficiency, had the lowest ELA Regents passing rates at 37 percent the same year (Menken, 2010; NYC DOE, 2019a).

This study addresses the above issue by looking at the relationship between ELL students' ELA Regents scores and their participation in AP courses. Examining exposure to advanced coursework is important to study to see if such exposure can improve ELL students' outcomes.

Statement of the Problem

Equality of educational opportunity has been the focus of the U.S. education system for several decades (O'Day & Smith, 2016; Reeves, 2004). However, research

shows that ELLs in the U.S. are not receiving the same opportunities to demonstrate their intelligence and language acquisition as some of their counterparts (Kanno & Kangas, 2014; Reeves, 2004; Rosa, 2011). Over the past three decades, there has been an increase in the number of ELLs enrolled in the U.S. education system, which includes students who are new to the country and students who are U.S.-born (Kieffer & Parker, 2016; Rosa, 2011). However, there isn't an increase in the number of ELL students entering or graduating from college (Goldenberg, 2010; Soland & Sandilos, 2021). This is, in part, due to the fact that ELLs are not being prepared to successfully participate in post-secondary institutions (Reeves, 2004). In particular, ELLs struggle with understanding content and being able to articulate their knowledge base clearly in their secondary or tertiary language—also known as language proficiency (Kanno & Kangas, 2014). This, in turn, prevents ELLs from successfully demonstrating college readiness. Therefore, this study helped to fill the gap in the literature by using an archival data correlational research design study that identified the association between ELLs' participation in AP courses and their ELA Regents scores.

Purpose of the Study

The purpose of this study was to identify and gain a better understanding of whether ELLs' ELA Regents scores vary based on their participation in AP courses. This is important because AP courses are entry-level college courses that assist high school students in improving their college readiness abilities. With the introduction of *AP for All* in New York City, an increased number of ELLs can participate in these courses and may also improve their college readiness scores alongside their monolingual counterparts.

This study adds to the literature by providing a new study regarding ELLs and AP courses, which has not been widely studied.

As previously mentioned, one way to ensure that ELLs are prepared to face the challenges of post-secondary institutions, improve language proficiency, and participate in rigorous courses is to provide them with the opportunity to engage in advanced courses, such as the College Board's AP courses. AP courses are typically offered to high school students because the courses are designed to prepare students for what they will see and do in college courses (Mattern, Shaw, & Xiong, 2009). AP teachers typically set high standards and high expectations for students due to the college-like nature of the program. Unfortunately, in high schools that offer AP courses, there are disparities among participation and performance of non-white students, ELLs, and students with disabilities (The College Board, 2019). Since The College Board identified and acknowledged the lack of ELLs participating in the program—among other groups—they have rolled out *AP For All* across public schools in NYC. This program was created to assist high schools in providing all students, including ELLs, with access to AP courses.

Generally, AP courses are offered to students who apply for or sign-up for the class, are “gifted,” and/or have exceptional grades in other courses (The College Board, 2019). However, with the implementation of *AP For All*, some schools can enroll all of their students in an AP course when they enter 11th grade. With that being the case, a teacher may teach an AP course that includes students with a range of skills and abilities. For example, some AP courses may include 32 students, 70 percent of whom are entering and emerging ELLs. Nonetheless, the goal for any student enrolled in an AP course is to take the exam and earn a score of at least a 3 based on the content and skills learned in

the classroom. Regardless of a student's relative ease or difficulty, the teacher is still expected to teach and help them prepare for the exam. But are there benefits for students, particularly ELLs, associated with participation in AP courses? Specifically, do ELLs who participate in AP courses perform better on their ELA Regents scores, a gate-keeper for high school graduation? And is participation in more than one AP course associated with ELLs' ELA Regents scores? Furthermore, could participation in AP courses be associated with being deemed "college ready" on the Regents exams? This study aimed to go beyond the current literature on ELLs, filling a gap by addressing the above questions.

Significance of the Study

This study will help unpack whether enrollment in advance coursework is a policy approach that may improve ELL performance on exams that are required for high school graduation and that indicate student college readiness. AP courses are entry-level college courses that provide a rigorous academic curriculum (The College Board, 2019). AP courses' focus is on improving students' skills and content knowledge to achieve college readiness—two things ELLs may not be afforded when they are not reclassified or able to participate in advanced courses. Via access to courses such as AP courses, and the creation of programs such as *AP for All*, ELLs may have more opportunities to interact with rigorous courses and higher-performing peers, while improving their college readiness abilities. This, in turn, may increase the number of ELLs who are graduating from high school, as well as ELLs entering and graduating from post-secondary institutions.

As *AP for All* was implemented in New York City within the last decade, there are few studies regarding ELLs in AP courses. Existing research has examined AP courses, the ELA Regents exam, and ELLs individually. There are also studies and data available regarding ELLs and the ELA Regents exam, as ELLs are one of the focus demographic groups for the New York City Department of Education (NYC DOE, 2019a). However, no study to date has explored the correlational relationship between ELL's AP course-taking and their ELA Regents scores. This study analyzed existing administrative data to identify the correlational relationship between two variables (AP course participation and ELA Regents scores), controlling for other variables that may also be associated with the outcome (e.g., sex, age, special education status, free/reduced-priced lunch status) for ELL high school seniors in New York City. Using the data to examine the ELA Regents scores of ELLs and their participation in AP courses is critical in improving the educational opportunities that are afforded to all students.

Research Questions

The research questions this study addresses are as follows:

1. Is participation in Advanced Placement (AP) courses associated with English Language Learners' (ELL) English language arts (ELA) Regents scores?
2. Is participation in more than one AP course associated with ELLs' ELA Regents scores?
3. Is participation in an AP course associated with being deemed college ready on the ELA Regents exam?

Definition of Terms

English Language Learners (ELLs): Students who are provided with English language services to assist them in improving their English language proficiency skills. They typically come from backgrounds where the home language is one other than English.

Entering and Emerging ELLs: ELL students who are at the very basic or low-intermediate level of English language proficiency and acquisition. Also known as ENEM, they are able to verbally communicate, but are unable to hold a full conversation in English and continue to struggle in most aspects of the English language.

Transitioning and Expanding ELLs: ELL students who are at an intermediate or advanced level of English language proficiency. Also known as TREX, these students are able to hold a full conversation in English and are becoming proficient in the English language.

English proficiency: One's ability to effectively communicate, read, write, and understand in the English language.

College readiness: The ability a student has to display their knowledge base and skills needed to successfully participate in college-level courses. For the purpose of this study, a cut-off score of 75 on the ELA Regents exam will be used to determine college readiness.

Common Core State Standards: Also known as CCSS. It is an education initiative that was adopted in 2015 by 41 U.S. states, including New York. It details the benchmarks and expectations of students in grades K–12 regarding English Language Arts/Literacy and Mathematics, as well as other content areas.

ELA Regents Exam: Also known as the Regents Examination in English Language Arts.

The exam is designed to test the benchmarks found in the Grade 11–12 band of the CCSS which address students’ reading, writing, speaking and listening, and language skills.

Advanced Placement: Also known as AP. It is a program developed by the College Board which offers college-level courses and exams to high school students. Depending on students' grades on the exam, they may be offered college credit at various colleges and universities.

AP for All: A New York City Initiative designed to introduce new AP courses to schools that offer no AP courses or very few AP courses. Through this initiative, students at all high schools will have access to at least five AP classes. The initiative was introduced as part of the city’s Equity and Excellence agenda.

Rigor: Providing students with an environment in which they are each expected to learn at high levels, are supported so they can learn at high levels, and are given opportunities to demonstrate their learning at high levels.

Skills: Abilities students develop over time that allow them to demonstrate their learning or understanding of a topic, subject, or idea. Skills are what students should be able to do on their own.

Content knowledge: The facts, concepts, ideas, principles, or theories that are essential to an academic subject.

CHAPTER 2: REVIEW OF RELATED RESEARCH

Theoretical Framework

The theoretical framework that this study followed was that of a transformative framework. The transformative framework is used when the researcher is interested in transforming society, wants to address injustices for groups of people, and/or wants to provide solutions to transform communities, which was the purpose of this study (Ortlieb, 2019). As discussed in Chapter 1, ELLs are often placed in low-track courses, limiting their opportunity for learning more rigorous content. My aim in conducting this study was to examine how participation in AP courses may or may not provide an avenue for ELLs to access more rigorous course content and thus be more likely to successfully complete the ELA Regents exam and demonstrate college readiness. The aim of this study was to shift the discussion regarding ELL achievement, expand their educational opportunities, and make recommendations for next steps to support ELLs.

Conceptual Framework

Theoretically, participating in AP courses should assist students in preparing for the ELA Regents exam, including ELLs. The AP Program was originally designed by the College Board to provide academically advanced students an opportunity to engage in college-level work and receive college credit. However, over the past several decades, the College Board has committed itself to providing equity of access to underrepresented and underserved students across high schools while still providing a college-level experience (Carlton, 2022; Kolluri, 2018). The AP Program encompasses 38 AP courses across seven different subjects, and is designed to provide students with rigorous and high-quality instruction (The College Board, 2019). Each AP course follows a course

framework that engages and assesses students on a variety of skills, conceptual understandings, and content knowledge that reflect college-level expectations. Thus, students who participate in AP courses are engaging in a college-equivalency course. The courses are standardized across schools and utilize various measures to ensure the integrity of the courses, such as providing curricular materials and conducting course audits (Kolluri, 2018; The College Board, 2014; The College Board, 2019). After engaging in an AP course, students who demonstrate college-level knowledge, skills, and understandings have the opportunity to receive college credit or placement. This means that these students would already be college ready since they passed an entry-level college course.

The ELA Regents exam was designed to include rigor and measure students' achievement in the ELA CCSS (Pearson, 2019b; Polleck & Jeffery, 2017). The CCSS are a set of standards in ELA and Math that were created to prepare students for success in college, careers, and life following high school graduation. Although the CCSS focus on ELA and Math only, the ELA standards establish guidelines for literacy in all other subjects. According to the CCSS's website, the standards are "aligned with college and career expectations... based on rigorous content and application of knowledge through higher-order thinking skills... [and] built upon the strengths and lessons of current state standards" (Common Core State Standards Initiative, 2019). The standards are divided into two categories and were created with college and career readiness in mind. The first set of standards—also known as the anchor standards—are the College and Career Readiness standards. These standards identify the key skills and knowledge that students should possess by the time they reach their high school graduation. The second set of

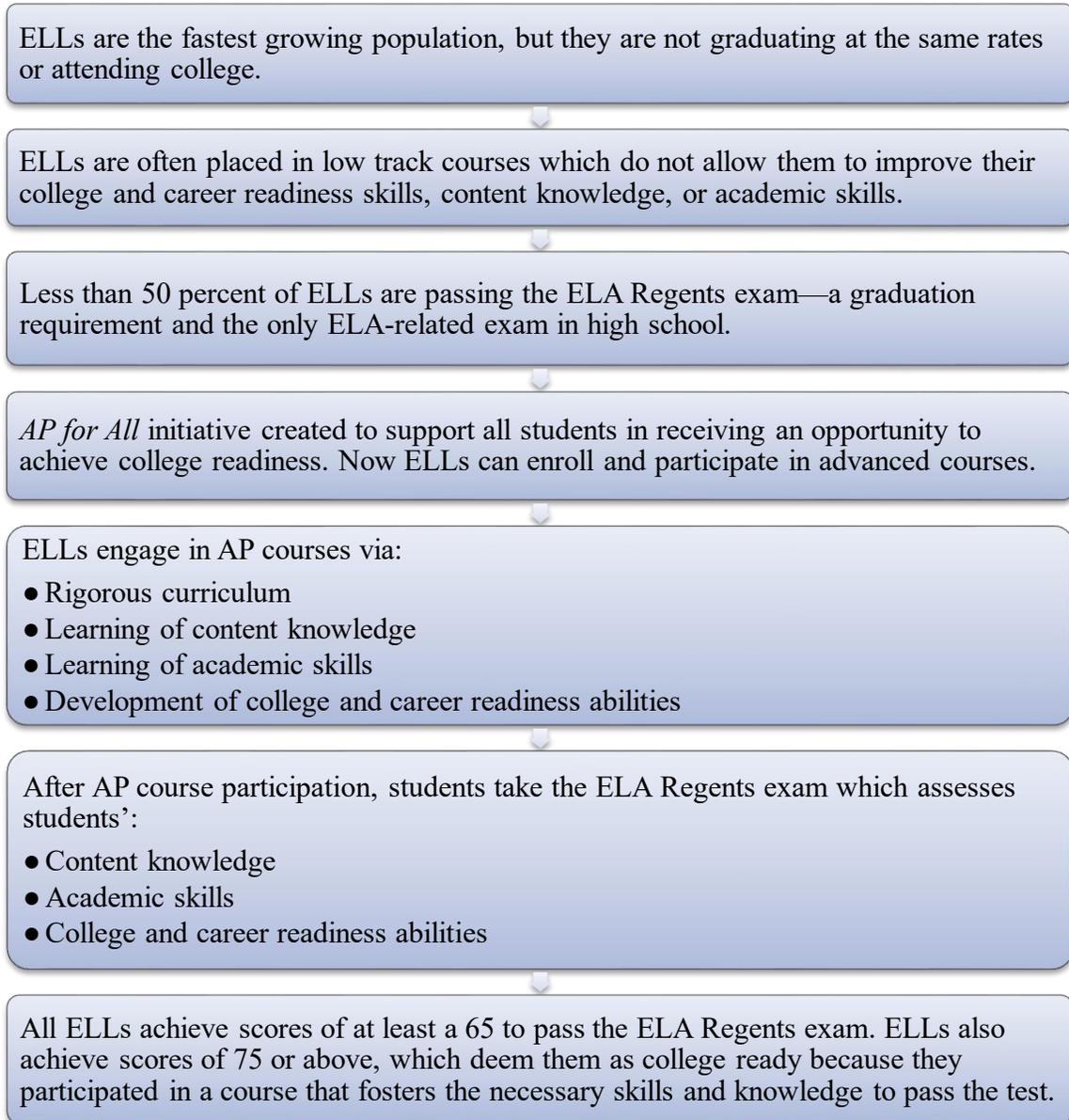
standards, known as the K–12 standards, identify a set of goals and benchmarks students are expected to meet at the end of each grade (Common Core State Standards Initiative, 2019). The K–12 standards build on one another and ultimately lead to students achieving college readiness as long as they meet each goal. For grades K–8, each grade has its own specific set of K–12 standards. However, for grades 9 through 12, the standards are grouped into grade bands of 9–10th grade, and 11–12th grade. In New York State, the ELA Regents exam specifically tests students' achievement in the 11–12th grade band of the ELA CCSS.

Although the AP program was designed to provide high school students with a college-level experience while the ELA Regents exam tests students' CCSS college and career readiness (CCR) abilities, both focus on providing students with rigor, CCR, skills, and content knowledge. In education, the focus on rigor increases with the discussion of CCR. But what is rigor? According to Blackburn (2018), rigor is providing students with a learning environment in which they are each expected to learn at high levels, are supported so they can learn at high levels, and are given opportunities to demonstrate their learning at high levels. Via rigor, all students have the opportunity to be challenged in the classroom and meet those challenges based on the support they receive. The AP program provides students with rigor by engaging them in a challenging, college-level course that includes a curriculum which ensures students meet specified goals and benchmarks to achieve college credit. The ELA Regents provides students with rigor by providing an assessment that addresses the CCSS with a focus on CCR, and by providing students with the opportunity to demonstrate their understanding via multiple avenues.

In order to meet the demands of the rigorous, college-level curriculum in AP courses, students need to learn various core skills and gain key content knowledge. Some skills students are taught in AP courses that assist in ensuring college and career success include creative thinking, problem-solving, time management, and study skills (The College Board, 2019). Developing each of these skills allows students to improve their learning, and provides opportunities to demonstrate or share their learning and understanding of the course material. In order to achieve college credit, students must exhibit what they are able to do in the context of the subject. In other words, students demonstrate their understanding and knowledge of skills learned throughout the AP course. Content knowledge addresses what students are expected to know at the end of a course, such as the key facts, concepts, ideas, principles, or theories that are essential to an academic subject. Each AP course is designed, as previously mentioned, with specific guidelines and objectives to address core knowledge needed for success in APs. The ELA Regents exam also measures students' skills and content knowledge as specified by the established CCSS. Since both AP courses and the ELA Regents exam address rigor, skills, content knowledge, and CCR, I hypothesize that there will be a relationship between the two. Participating in a course that engages students in college-level experiences should assist students in passing an assessment that tests whether or not they are academically ready for the college-level experience.

Figure 1

Conceptual Framework of the Study



Related Research

In New York City, students who are not yet proficient in the English language are referred to as English Language Learners (ELLs). These students have a home language

that is not English and they require support learning the English language (NYC DOE, 2020b). The number of students with limited English proficiency grew by 28 percent from 2000 to 2017 and is scheduled to continue to increase over the next several decades (Artigliere, 2019; Goldenberg, 2010; Mitchell, 2020). Based on the results of the National Assessment of Educational Progress (NAEP)—an assessment administered the same way across the U.S. to provide a common measure of performance—fewer than 10 percent of 4th grade and 8th grade ELLs in U.S. schools attained grade-level reading comprehension skills and literacy skills (U.S. Department of Education, 2018). Therefore, today ELL students' achievement has become a national priority as the number of students with varying demographics continues to rise, causing teachers to alter their teaching pedagogy and curriculum to accommodate students with different needs, backgrounds, and English proficiency (Goldenberg, 2010; Soland & Sandilos, 2021). This may seem like an easy feat, however, without proper training or the knowledge-base of working with ELLs, adjusting to these varying needs may be extremely difficult, especially when trying to ensure ELLs' success (Rosa, 2011).

Who are ELLs?

According to NCLB and its reauthorization as ESSA, ELLs are defined as students who have not achieved academic grade-level proficiency in English (as cited in Kanno & Kangas, 2014). ELLs' vary in their ability to speak, read, write, and/or understand the English language. Because English is the national de facto language of the United States, many believe that all ELLs are foreign born; however, most ELLs are born in the U.S., with fewer than half of ELLs being born outside of the U.S. (NYC DOE, 2019b; Meyer, Irwin, Strambler, & Coleman, 2020).

The New York City Department of Education—and this study—define ELLs as students who are not yet proficient in the English language, and have a home language that is not English. ELLs also require support learning the English language, and thus receive ELL services to support them in their learning and English proficiency (NYC DOE, 2020b). These students are a diverse group of learners. Although approximately 60 percent of ELLs in New York City are Latinos, or Spanish-speakers, ELLs originate from over 151 different language backgrounds (NYC DOE, 2019b; Kieffer & Parker, 2016).

As of Fall 2014, New York State follows the Commissioner's Regulation Part 154 (CR Part 154) which identifies the legal requirements for educating ELLs (NYSED, 2015). CR Part 154 establishes a specific identification process to identify ELLs enrolling in New York State public schools, which includes the New York City Department of Education (NYC DOE). Parents or guardians of students entering New York City Department of Education (NYC DOE) schools for the first time are required to complete a home language identification survey that identifies students' spoken language at home. If the survey indicates that the student speaks a language other than English at home or has a primary language other than English, an interview will be conducted with the student and their parent or guardian. If the interview confirms that the student's home language or primary language is that other than English, the New York State Identification Test for English Language Learners (NYSITELL) is administered to the student (NYSED, 2015; NYCDOE, 2020b). The NYSITELL is an exam that measures students' knowledge of English and determines whether or not the student will need support in learning the English language. Based on the exam results, students will demonstrate English proficiency in one of five levels: Entering, Emerging, Transitioning,

Expanding, or Commanding. All students who do not score Commanding on the NYSITELL are identified as English Language Learners, and are placed into an appropriate ELL program. This entire process must be completed within 10 days of the students' enrollment (NYC DOE, 2020b; NYSED, 2015).

Who are ELLs as students?

Educators often view ELLs from a deficit lens and may not be aware of their strengths, perhaps mostly because of the language barrier between ELLs and the majority of their teachers. With students having limited English proficiency, and teachers' lack of speaking and understanding students' first languages, it can be extremely difficult to assess ELLs' knowledge base, especially in literacy. Therefore, teachers may not be aware of how to or know where to start. However, what is known is that ELLs tend to underperform and are less proficient, with regards to reading, writing, and literacy achievement when compared to their monolingual peers (NYC DOE, 2019a; Goldenberg, 2010). This is expected due to the lack of successful communication and transfer of knowledge between ELLs and their teachers due to ELLs' lack of understanding content and difficulty with articulating their knowledge base in the English language (Kanno & Kangas, 2014). Nonetheless, ELLs are still expected to attend school and be successful (Common Core State Standards Initiative, 2019; Kanno & Kangas, 2014; Lhamon & Gupta, 2015; Rosa, 2011). With that said, the question to ask is: what can educators and schools do in order to help ELL students be successful in school and in post-secondary institutions?

In the 2018–2019 school year, approximately one in every seven New York City public school students were considered ELLs in grades K–12. Often, ELL students are

unable to fully participate in mainstream English instruction (NYC DOE, 2020b; Kanno & Kangas, 2014; Goldenberg, 2010). To adequately support their learning needs, the New York City Department of Education (NYCDOE) offers ELLs with three support programs: Transitional Bilingual Education, Dual Language, and English as a New Language (NYC DOE, 2019b). The Transitional Bilingual Education (TBE) program is designed to develop ELLs' learning concepts in their home language while they learn English. In this program, students are provided with instruction in both English and their home language in various subjects. However, as students improve their English language skills, they are provided with more classes in English and fewer classes in their home language. The Dual Language (DL) program, on the other hand, develops ELLs' home language skills and English language skills throughout their schooling (NYC DOE, 2019b). The purpose of this program is to develop bilingualism in ELLs as well as English-proficient students who elect to participate in the program. Through this program, students become proficient in the English language and their home language.

Although TBE and DL programs are offered throughout the city, only 11.70 percent and 6.21 percent of students, respectively, participate in these programs. The vast majority—81.20 percent—of ELLs participate in the English as a New Language (ENL) program (NYC DOE, 2019b). While TBE and DL programs are offered in some New York City public schools, the ENL program is offered in all New York City public schools. ENL is also different from TBE and DL programs because students in ENL are not taught in their home language, but instead in English. This is done to develop students' English language proficiency (NYC DOE, 2019b). Within the ENL program, students may be provided with stand-alone—classes with only ELLs—or integrated—

classes with a mix of ELLs and English-proficient students—ENL instruction in the core content areas of math, ELA, science, and/or social studies. This varies based on students' grade level and English language proficiency. Although approximately 17.9 percent of students were enrolled in TBE or DL programs, these students still received ENL services as it is a component of those programs (NYC DOE, 2019b). Therefore, all ELLs in the New York City public school system receive a portion of their instruction in the English language to assist in developing their English proficiency skills.

While these programs are designed to foster students' English language skills, it may be equally as beneficial for high school ELLs to be placed in advanced coursework, such as AP English courses which assist students in fostering college-level reading, writing, and communication skills (The College Board, 2019).

AP for All

If educators want to set the standards high for students, including ELLs—and want to develop their English proficiency—one option is to provide ELL students with the opportunity to enroll in AP courses (Reeves, 2004). AP courses are mainly offered at the high school level as they prepare students for what they will see and do in college classes (Carlton, 2022; Mattern, Shaw, & Xiong, 2009). According to The College Board (2019), the creators of the AP program used across the country, high schools that offer AP courses see very few Black and Hispanic students taking courses, and even fewer ELLs and students with disabilities. Being that the program has acknowledged the lack of ELLs (among other groups of students) participating in the program, The College Board opened up *AP for All* for public schools across New York City (The College Board, 2019). This program allows schools to provide AP access to all students in public high

schools, including ELLs. This supports implementation of ESSA because now ELLs have an opportunity to participate and engage in a course where they can gain the skills and knowledge needed to succeed in a college setting, which is ultimately a way of setting high standards and expectations (Mattern, Shaw, & Xiong, 2009; Godley, Monroe, & Castma, 2015).

The AP courses provide a rigorous curriculum to high school students that mimic the post-secondary experience. These courses focus on improving students' skills with regards to appropriately communicating and articulating their knowledge in a specified content area. Via access to courses such as these, and the creation of programs such as *AP for All*, students in these courses can engage with the skills and content necessary to become college ready (The College Board, 2019). According to previous studies, participation in AP courses can predict college success (Klopfenstein & Thomas, 2009; The College Board, 2019). Students who enter college having participated in AP courses tend to perform better in college than students who did not take AP courses in high school. This supports the idea that participation in AP courses improves students' college readiness abilities because AP participants perform better in the college setting. These students also tend to achieve scores of 75 or above on their Regents exams, which demonstrates college readiness (The College Board, 2019).

With regards to supporting ELLs, students must be provided with the skills and strategies needed to succeed in an academic setting. AP courses provide students with various supports in understanding the content, such as scaffolds and discussions. This is due to the fact that AP provides a rigorous, college-level curriculum which needs to be supplemented until students achieve understanding on their own. AP also addresses key

skills such as writing, comprehension, and communication of knowledge; skills in which ELLs need to practice and receive support (Mattern, Shaw, & Xiong, 2009; Godley, Monroe, & Castma, 2015; The College Board, 2019). By participating in AP courses, ELLs may improve their college readiness scores and ELA Regents scores since they are being supported with the skills necessary to do well in college and on the ELA Regents exam.

ELLs in other gifted and advanced settings

Aside from participating in AP courses, students have the opportunity to engage in other advanced course work, such as the Gifted and Talented Education (GATE) program and the International Baccalaureate (IB). ELLs who participate in GATE programs are able to perform at higher levels compared to their peers who are similar in age, experience, and environment (National Association for Gifted Children, 2012). Therefore, the GATE program serves to support students in enhancing their already advanced skills and knowledge. The identification process for gifted and talented (GAT) students varies by state and district. In the NYC DOE, GATE programs are only available to students in grades K–5, and follow a nomination, interview, and evaluation process (NYC DOE, 2022).

Aside from GATE, students ages 3–19 can participate in one of the IB’s four programs depending on their age group. Each program is designed for a different age group, with the exception of the IB Diploma Programme (IBDP) and the IB Career-related Programme (IBCP) which are available to students aged 16–19 years (International Baccalaureate Organization, 2022). Both programs offer students with a rigorous and challenging academic curriculum; however, the IBDP focuses on fostering

students' knowledge and academic capabilities while the IBCP fosters students' career-related skills. Being that the IBDP is an academic program that provides students with rigor and prepares them to succeed at the college level, it is often compared to that of AP courses (Office of English Language Acquisition, 2021). New York State is home to 114 schools that offer IB programs. However, only 15 NYC DOE schools offer IB programs (International Baccalaureate Organization, 2022).

Research shows that participation in advanced courses is beneficial for students as it assists them in preparing for life outside of high school, and provides them with access to further develop their content and language skills. ELLs cannot be excluded from being able to participate in GATE, IB, or other advanced programs available in schools because all students should have equity and access to education, as identified by the U.S.

Department of Justice and the U.S. Department of Education (Lhamon & Gupta, 2015).

For ELLs there may be a language barrier, but students can be provided with scaffolds and strategies necessary to ensure their language needs are met. Although ELLs are encouraged to participate in advanced course work, they are often placed in low track courses with only 2 percent enrolled in AP courses and GATE programs, and 4 percent enrolled in IB courses (Office of English Language Acquisition, 2021; Sanchez, 2017).

This lack of participation is due to the lack of GAT student identification, course prerequisites, and negative staff assumptions. Lack of available programs to students also plays a role as students in the NYC DOE do not have access to GATE after elementary school, and IB programs are only offered at 15 schools (International Baccalaureate Organization, 2022; NYC DOE, 2022).

While GATE and IB programs are available, this study did not pursue the relationship between the ELA Regents exam and participation in GATE or the IB because of the limited availability of programs to students in NYC DOE schools.

CHAPTER 3: METHODS

Hypotheses/Specific Research Questions

One way to ensure that ELLs are prepared to face the challenges of post-secondary institutions is to provide them the opportunity to engage in advanced courses in high school, as well as entry-level college courses. AP courses are entry-level college courses that provide rigorous curricula to promote academic skills and content knowledge (The College Board, 2019). Participating in courses such as these may assist ELLs in passing the ELA Regents exam and achieving college readiness scores. The purpose of this archival data correlational research design study was to identify and gain a better understanding of whether or not ELLs' ELA Regents scores vary depending on their participation in AP courses. Therefore, the research questions and hypotheses for this study were as follows:

- Research Question 1: Is participation in Advanced Placement (AP) courses associated with English Language Learners' (ELL) English Language Arts (ELA) Regents scores?
- Null Hypothesis: There will be no association between ELLs' participation in AP courses and ELLs' ELA Regents scores.
- Hypothesis 1: There will be a positive association between ELLs' participation in AP courses and ELLs' ELA Regents scores. AP courses assist students in fostering college-level reading, writing, and communication skills. Exposure to AP courses should improve ELL students' ELA Regents scores because the aforementioned skills are assessed on the ELA Regents exam.

- Research Question 2: Is participation in more than one AP course associated with ELLs' ELA Regents scores?
- Null Hypothesis: There is no association between ELLs' participation in more than one AP course and ELLs' ELA Regents scores.
- Hypothesis 2: There will be a positive association between ELLs' participation in more than one AP course and ELLs' ELA Regents scores. Students who participate in multiple AP courses have multiple opportunities to engage in college-level course work, which should improve EL's skills and ELA Regents scores.
- Research Question 3: Is participation in an AP course associated with being deemed college ready on the ELA Regents exam?
- Null Hypothesis: There is no association between ELLs participation in AP courses and ELLs' college readiness according to the score cutoff set on the ELA Regents exam.
- Hypothesis 3: There will be a positive association between ELLs' participation in AP courses and ELLs' college readiness according to the score cutoff set on the ELA Regents exam. AP courses introduce students to introductory-level college work which should improve their college readiness skills. This will be supported via students' college readiness scores on the ELA Regents exam.

Since AP courses are entry-level college courses that focus on rigor, skill, and content knowledge, ELLs will improve their college readiness abilities because they will have the opportunity to engage in coursework that will range in rigor and align to what

they will see in the college setting. Being that students are required to pass the ELA Regents exam to graduate high school—and the college readiness cutoff has been identified as a 75 or above—ELLs should be able to achieve the college readiness cutoff when prepared by a course that is modeled after college-level coursework. ELLs' who participate in AP courses may further increase their college readiness abilities when compared to their non-AP ELL counterparts because they are being afforded the opportunity to engage in more rigorous content and skill learning.

Research Design

This study followed an archival data correlational research design. The correlational research design methodology was appropriate for the study for multiple reasons. As previously mentioned, ELL participation in AP courses is fairly new, therefore, identifying schools willing to randomly assign ELLs to AP courses may be difficult to identify, especially during the time of COVID-19. Although I teach in a school where AP courses are provided to ELLs, in the New York City public school system it is deemed unethical to conduct studies using data for one's own students. Thus, it was most appropriate to conduct a correlational research design where the study looked to identify a relationship between two variables without conducting an experiment (Terrell, 2016).

Quantitative research methods—such as correlational research design—include numerical data (Terrell, 2016). Being that the study was not looking to conduct an experiment, archival data was utilized instead. Archival data is data that has been collected previously for a different purpose (Terrell, 2016). In this case, the data used was data previously collected by the New York City Department of Education. The data from

the NYC DOE included students' ELL status, their ELA Regents scores, and the courses ELLs took throughout their high school career. In addition, demographic data including race/ethnicity, sex, special education status, and free/reduced-priced lunch status was obtained. Algebra Regents exam assessment scores were also collected in order to control for previous assessment performance in the regression models described below. The Algebra Regents was used as a control because it is an exam that all students take in order to graduate high school and will control for student academic ability, which is important since students who take AP courses may be higher-achieving students regardless of their AP course-taking status. Students generally take the Algebra Regents prior to their Senior year in high school. NYC DOE has a robust data repository and streamlined system for submitted data requests.

A third advantage to conducting a correlational research study is that it allows the researcher to identify the extent of the relationship between the two variables, which can set the stage for future studies. Correlational studies look to determine the association between two variables. However, it is important to note that correlation does not mean causation (Terrell, 2016). Therefore, based on this study's findings, no causal claims regarding the association between AP course-taking and ELL student outcomes can be made. However, this study does set the stage for further studies to be conducted to determine additional relationships among variables or to determine causal relationships.

Sample Population

The NYC DOE is the largest public school education system in the U.S. The NYC DOE has over one million students that attend over 1,800 schools throughout the boroughs of the Bronx, Brooklyn, Manhattan, Queens, and Staten Island (NYC DOE,

2020). The student demographic breakdown was 40.6 percent Latino, 25.5 percent Black, 16.2 percent Asian, and 15.1 percent white (NYC DOE, 2020). As a multicultural education system, students speak over 151 different languages. The population of male and female students was 52 percent and 48 percent, respectively (NYSED, 2020). Approximately 73 percent of students were economically disadvantaged and receive free or reduced-priced lunch. Of the total population, 13.2 percent were ELLs and 20.2 percent were students with disabilities (NYC DOE, 2020).

During the 2018–2019 school year, the NYC DOE was home to over 150,000 ELLs in grades K–12 where 54.5 percent were in elementary school, 18.7 percent were in middle school, and 27.8 percent were in high school. Of those students, 56.8 percent were males, while 43.2 percent were females (NYC DOE, 2019b). Unlike the national average, the NYC DOE boasts more foreign-born ELL students. Approximately 46.6 percent of ELLs were U.S.-born, while 53.4 percent were foreign-born. The top ten places of birth for ELLs include the U.S., Dominican Republic, China, Yemen, Bangladesh, Ecuador, Honduras, Uzbekistan, Guatemala, and Haiti. The largest subgroups among ELL students were Spanish-speakers at 61.2 percent, followed by Chinese- and Arabic-speakers at 12.4 and 6.0 percent, respectively (NYC DOE, 2019b). Of the total ELL population, 58.1 percent were newcomers, 26.2 percent were developing, and 15.7 percent were long-term ELLs.

Sample Participants

Socio-demographic characteristics of the sample participants are presented in Table 1. Although there were 7,515 ELLs enrolled in 12th grade in NYC DOE high schools during the 2018–2019 school year, the sample participants included in this study

were 5,128 ELLs in 12th grade, which made up approximately 3.32 percent of the total ELLs in the school system. ELLs who did not take the ELA Regents exam or the Algebra Regents exam were not included in the study. Without the ELA Regents score, the study is unable to address Research Questions 1–3. The Algebra Regents exam scores serve as a control for ELA Regents exam scores. Students in 12th grade were the focus because this group of students would have had more opportunities to take AP courses throughout their academic careers and would have taken the ELA Regents exam.

Of the 5,128 12th grade ELLs, 2243 (or 43.7 percent) were female while 2885 (or 56.3 percent) were male. The participants' ages range from 15 to 24 years of age, with the majority—90.8 percent—of ELLs being in the 17–18 years and 19–20 years age brackets. Students with disabilities (SWD) in NYC DOE have an Individualized Education Plan (IEP) and encompass 17.7 percent of ELL participants. Over 80 percent of ELLs did not have an IEP. With regards to socioeconomic status, free/reduced-priced lunch status was collected. The majority of students received free or reduced-priced lunch, while 10.9 percent of students received full-priced lunch. The participants also varied with regards to race: 7.7 percent White, 9 percent Black, 20.2 percent Asian, 62.7 percent Hispanic. Less than 1 percent of ELL participants were Native American or Multi-racial.

Socio-demographic characteristics of AP participants versus non-AP participants can be found in Table 1. AP participant socio-demographics are broken down by participants in AP courses, participants in only one AP course, and participants in two or more AP courses.

Table 1*Socio-Demographic Characteristics of Participants*

	All Participants		ELLs in No AP Courses		ELLs in AP Courses		ELLs in Only One AP Course		ELLs in Two or More AP Courses	
	n	%	n	%	n	%	n	%	n	%
Sex										
Female	2243	43.7	2197	43.7	46	48.4	32	46.4	14	53.8
Male	2885	56.3	2836	56.3	49	51.6	37	53.6	12	46.2
Age										
15–16 Years	53	1.0	52	1.0	1	1.1	1	1.4	0	0
17–18 Years	2538	49.5	2478	49.2	60	63.1	44	63.8	16	61.5
19–20 Years	2116	41.3	2086	41.5	30	31.6	20	28.9	10	38.5
21–22 Years	405	7.9	402	8.0	3	3.2	3	4.3	0	0
23–24 Years	16	0.3	15	0.3	1	1.1	1	1.4	0	0
Race/Ethnicity										
Asian	1037	20.2	1027	20.4	10	10.5	6	8.7	4	15.4
Black	463	9.0	454	9.0	9	9.5	5	7.2	4	15.4
Hispanic	3215	62.7	3146	62.5	69	72.6	52	75.4	17	65.4
Native American	15	0.3	15	0.3	0	0	0	0	0	0
White	394	7.7	387	7.7	7	7.4	6	8.7	1	3.8
Multi-Racial	4	0.1	4	0.1	0	0	0	0	0	0
SWD Status										
IEP	909	17.7	860	17.1	49	51.6	38	55.1	11	42.3
No IEP	4219	82.3	4173	82.9	46	48.4	31	44.9	15	57.7
Free/Reduced-Priced Lunch Status										
Free or Reduced-Priced Lunch	4568	89.1	4476	88.9	92	96.8	66	95.7	26	100
Full-priced Lunch	560	10.9	557	11.1	3	3.2	3	4.3	0	0

Note. N = 5128 for all participants. N = 5033 for No AP Courses. N = 95 for all ELLs in AP Courses. N = 69 for Only One AP Course. N = 26 for Two or More AP Courses.

Instruments

As described above, archival data from the NYC DOE was used for this study. In order to receive access to the data, I had to submit a formal request through the NYC DOE's data request system. Data on student assessment performance, courses, demographic information (such as ELL status, SWD status, sex, etc.), and school of attendance were requested and collected. Below is a brief description of the data elements and instruments that were used in this study.

ELA Regents exam scores. The ELA Regents exam focuses on reading comprehension, analysis, and argumentative writing. The exam is designed by New York State and is graded by a variety of high school English teachers across the city. Before the teachers are able to begin grading, they must attend a norming session. In order to ensure reliability and validity, teachers are not allowed to grade exams from their home school. Teachers are provided a rubric that is reviewed during the norming session and used across the state. Teachers are also paired with a partner who will assist with grading. Both teachers grade the exam individually. Once both teachers have graded the exam, the average between the two is identified and used. If there is a huge discrepancy between the grades provided by the two teachers, a third grader will be used. The reliability estimate for the ELA Regents exam is 0.86. (Pearson, 2019b). The ELA Regents is criterion based because all students are supposed to be able to take this exam since it is a graduation requirement. Students can score anywhere between 0–100. Within the study, this was a continuous variable in Research Questions 1 and 2. Both research questions were looking at the association between participant's ELA Regents scores and their participation in AP courses. For Research Question 3, the variable is dichotomous because students will

receive a code of 1 if they achieved a college readiness score of 75 or above, and a code of 0 if the student did not meet the college readiness cutoff score.

EL status. A dummy indicator that identified student ELL status was used to select the sample for this study. Because only ELLs were included in the study, this variable is not included in statistical models.

Number of AP courses. Course data from NYC DOE was processed and two new variables were created. The first was a dummy indicator of whether a student took (coded as 1) or did not take (coded as 0) any AP courses over the course of their high school career. The second was a count of the number of AP courses they took, coded as 1 for no APs, 2 for participation in one AP course, and 3 for participation in two or more AP courses.

Algebra Regents exam scores. Eight grade assessment data was previously requested and was going to be used as a benchmark. However, it was not included in the data provided. Thus, Algebra Regents exam scores were used as a control in regression models as previous assessment performance is highly associated with subsequent assessment performance. The Algebra Regents exam scores were used because it is an exam that students typically take in 9th or 10th and it is an exam that is required for graduation in New York State, like the ELA Regents exam. It is also an exam that is typically taken before taking the ELA Regents exam and participating in AP courses. To ensure validity, New York State has documented validity evidence for its assessments. The assessments are created with the academic content standards in mind to ensure their alignment. The state also ensures that if an alternate assessment is provided, it measures students' knowledge of academic content standards so there is also alignment between the

two assessments. To ensure reliability, the state provides clear scoring rubrics, training for raters, evaluations of inter-rater reliability (Engage NY, 2014). The Cronbach's Alpha reliability coefficient for this assessment is 0.93 for the total population (Pearson, 2019a). These reliability coefficients provide a measure for internal consistency and controls for random error. Since they are high, they determine that the exam has high reliability. Like the ELA Regents, the Algebra Regents is also criterion based. Within the study, this was a continuous variable in Research Questions 1 and 2.

Student demographic information. Student sex (male or female), special education status (SWD/IEP), free/reduced-priced lunch status, and age were included in the regression models. These variables may be associated with Regents scores and are thus important to include in models. Student demographics also assist in determining the generalizability of the study by identifying whether or not the participants were a representative sample of the target population.

The data received was cleaned, transformed, statistically analyzed, and then utilized to answer all three research questions.

Research Procedures

Prior to beginning the study, I submitted a formal data request through NYC DOE's data request system. Through the data request system, the following datasets were requested for the four years the participants were expected to have been in high school: biographical data, high school courses and grades, and Regents exams and scores. The data received included a total of 12 spreadsheets that contained the requested data for school years 2015–2016, 2016–2017, 2017–2018, and 2019–2019. These years were

requested because during these years, the participants would have been in 9th, 10th, 11th, and 12th grades, respectively.

After receiving the data, I cleaned and merged them together. I was then able to match students to their high school courses and Regents exam scores by matching student ID numbers. The data was then transformed and an analysis data file that includes all of the variables listed above was created. Analyses were conducted using Statistical Package for the Social Sciences, also known as SPSS (Terrell, 2016).

Data Analysis

To address Research Question 1, a linear regression was used. The purpose of linear regression is to examine the association between an independent variable—or a set of independent variables—and a dependent variable (Statistics Solutions, 2021a). In this case, I was looking to see if participation in AP courses predicts ELLs' ELA Regents scores, controlling for student demographics and Algebra Regents exam scores. In this study, the independent response variable, and the variable of interest, was participation in AP courses. This variable was dichotomous as it was coded as 0 for students not participating in AP courses and a 1 for students who participated in at least one AP course while they were in high school. The variables of sex, SWD status, free/reduced-priced lunch status, age, and Algebra Regents score were also included as independent variables, but they were used as controls since they are variables associated with the outcome. Linear regression is generally done with a continuous outcome, also known as a continuous dependent variable. In this study, the dependent variable was ELL participant's ELA Regents scores which was continuous because the scores were measured on a continuum and indicate a numerical value with equal distances between

each score (Urdu, 2017). ELA Regents score was the dependent variable because the scores were dependent on the values of the independent variables.

To address Research Question 2, descriptive statistics was used. The purpose of descriptive statistics is to provide information about the sample participants and identify potential associations between variables (Urdu, 2017). Research Question 2 looked to identify whether or not there was an association between participation in more than one AP course and participants' ELA Regents scores. Although ELA Regents score was one of the variables of interest, the dependent variables were the ELA Regents exam scores and the Algebra Regents exam scores. Both regents scores were the dependent variables because the scores were dependent upon the independent predictor variables. Algebra Regents score was included as a control variable. The predictor variables here were number of AP courses, sex, SWD status, free/reduced-priced lunch status, and age. The number of AP courses was the second variable of interest, while the other predictor variables served as controls. Five descriptive statistics tables were created to include sample size, mean, standard deviation, and 95 percent confidence interval for both Regents exams as they were associated with each predictor variable.

To address Research Question 3, logistic regression was used. The purpose of logistic regression is to identify a relationship between a dichotomous dependent variable and one of more independent variables (Statistics Solutions, 2021b). The third research question looked to address the association between participation in AP courses and being deemed college ready on the ELA Regents exam, controlling for student demographics and Algebra Regents exam scores. Although ELA Regents exam score was previously identified as a continuous dependent variable, for this research question it was a

dichotomous variable that was coded for college readiness success. Therefore, participants who achieve a college readiness score of 75 or above on the ELA Regents exam were coded as 1 while students who did not meet the cut off score were coded as 0. The independent variables were AP course participation, sex, SWD status, free/reduced-priced lunch status, age, and Algebra Regents scores. AP course participation was the independent variable of interest, while the other independent variables were used as controls since the variables were associated with the dependent variable outcome.

CHAPTER 4: FINDINGS

This chapter presents the results of the three research questions presented in Chapter 1 and Chapter 3.

AP Course Participation

The first research question looked to identify whether or not there was a relationship between ELL participation in AP courses and the ELA Regents scores of ELLs. A linear regression was used to identify whether or not there was a relationship between ELL participation in AP courses and the ELA Regents scores of ELLs controlling for sex, SWD status, free/reduced-priced lunch status, age, and Algebra Regents score. As seen in Table 2, the adjusted R-square was .20. This means that 20% of variation in ELA Regents scores was accounted for by all independent variables in the model. We assume, in this case then, that the remaining 80% of variation was due to random variability or other variables not included in the model. The 20% of variation explained represented a statistically significant amount of variance in ELA Regents scores, $F(6, 5121) = 219.53, p = < .001, R^2_{\text{adjusted}} = .20$. Age, sex, Algebra Regents score, and AP course participation were all significant predictors of ELA Regents score.

Age was sorted into five age groups and coded as 1 for ages 15 and 16 years, 2 for ages 17 and 18 years, 3 for ages 19 and 20 years, 4 for ages 21 and 22 years, and 5 for ages 23 and 24 years. This made age an ordinal variable. An increase in age group corresponded, on average, to a 2.60-point decrease in ELA Regents score, $B = -2.60$. This means that for every unit increase in age, there was a 2.60-point decrease in ELA Regents Score, all else being equal.

Sex was coded as 0 for male and 1 for female, making this predictor a dichotomous variable. Based on Table 2, an increase in gender corresponded, on average, to a 1.81-point increase in ELA Regents score, $B = 1.81$. Because sex was a dichotomous variable, an increase in sex corresponds to a female. This means that, all else being equal, female ELLs scored 1.81 points higher than their male counterparts on the ELA Regents exam.

Algebra Regents score was a scaled variable because the scores were measured at equal intervals and had an order. An increase in Algebra Regents score corresponds to a 0.82-point increase in ELA Regents score, $B = .82$. This means that, on average with all else being equal, for every 1-point increase in Algebra Regents score students scored 0.82 points higher on the ELA Regents exam.

With regards to AP course participation, the dichotomous variable was coded as 0 for students who did not participate in an AP course and 1 for students who participated in one or more AP courses throughout their high school career. As we can see in Table 2, an increase in AP course participation corresponds, on average, to a 3.50-point increase in ELA Regents score, $B = 3.50$. Because AP course participation was a dichotomous variable, an increase in AP course participation corresponds to an ELL student participating in one or more AP courses. Thus, this means ELLs who participated in AP courses scored 3.50 points higher than students who did not participate in AP courses, all else being equal.

Based on the p -values in Table 2, special education status (noted as SWD) and free/reduced-priced lunch status were not significant predictors of ELA Regents score, $p > .05$. With regards to special education status, ELLs who had an IEP scored 0.41 points

lower than ELLs who did not have an IEP, all else being equal, $B = -0.41$. ELLs who receive free or reduced-priced lunch, on average with all else being equal, scored 0.20 points lower than ELLs who received full-priced lunch, $B = -0.20$.

Table 2

Results from Linear Regression Analysis Examining the Association Between Participating in AP Courses and ELA Regents Exam Scores

Predictors	B	$SD B$	β	t	p
(Constant)	10.81	2.10		5.15	< .001
Female	1.81	0.46	0.05	3.94	< .001
SWD	-0.41	0.63	-0.01	-0.65	.518
Free/Reduced Lunch	-0.20	0.73	-0.01	-0.28	.780
Age	-2.60	0.34	-0.10	-7.61	< .001
Algebra Regents Score	0.82	0.03	0.43	32.92	< .001
AP Course Participation	3.50	1.69	0.03	2.07	.039

Note. $R^2_{Adjusted} = 0.20$, $F(6, 5121) = 219.53$, $p = < .001$

Participation in Multiple AP Courses

The second research question looked to identify whether or not there was an association between ELL participation in more than one AP course and their ELA Regents scores. Descriptive statistics was used to provide information about the sample participants and to identify a potential association between ELL participation in more than one AP course and participants' ELA Regents scores. As seen in Table 3, 5,033 ELLs did not participate in an AP course, 69 ELLs participated in one AP course, and 26 ELLs participated in two or more AP courses. The mean ELA Regents score for each

group was 59.25 (SD = 18.22, CI = 58.75, 59.75), 60.25 (SD = 14.93, CI = 56.66, 63.83), and 67.42 (SD = 9.91, CI = 63.42, 71.43), respectively. Based on this data, we can see that ELLs who participated in two or more AP courses, on average, scored higher than ELLs who participated in only one AP course (7.17-point difference) or no AP courses (8.17-point difference). Based on the confidence intervals, Table 3 implies that, on average, ELL students who participated in two or more AP courses were more likely to achieve a passing score (a minimum of 65) on the ELA Regents exam when compared to ELLs who did not participate in an AP course or only participated in one AP course. Figure 2 includes a visual presentation of the frequency distribution of ELA Regents scores among ELLs who participated in no AP courses, one AP course, and two or more AP courses.

Aside from ELA Regents scores, Algebra Regents scores were identified and served as a dependent control variable. In Table 3, we can see that ELLs who did not participate in AP courses scored, on average, a 66.96 (SD = 9.62, CI = 66.70, 67.23) on the Algebra Regents exam. ELLs who participated in one AP course scored, on average, a 65.01 (SD = 11.41, CI = 62.27, 67.76), while ELLs who participated in two or more AP courses scored, on average, a 68.04 (SD = 6.47, CI = 65.43, 70.65). This reveals that regardless of participation in AP courses or not, ELLs achieved a passing score on the Algebra Regents exam.

Table 3

Descriptive Statistics for Association Between Regents Scores and Number of AP

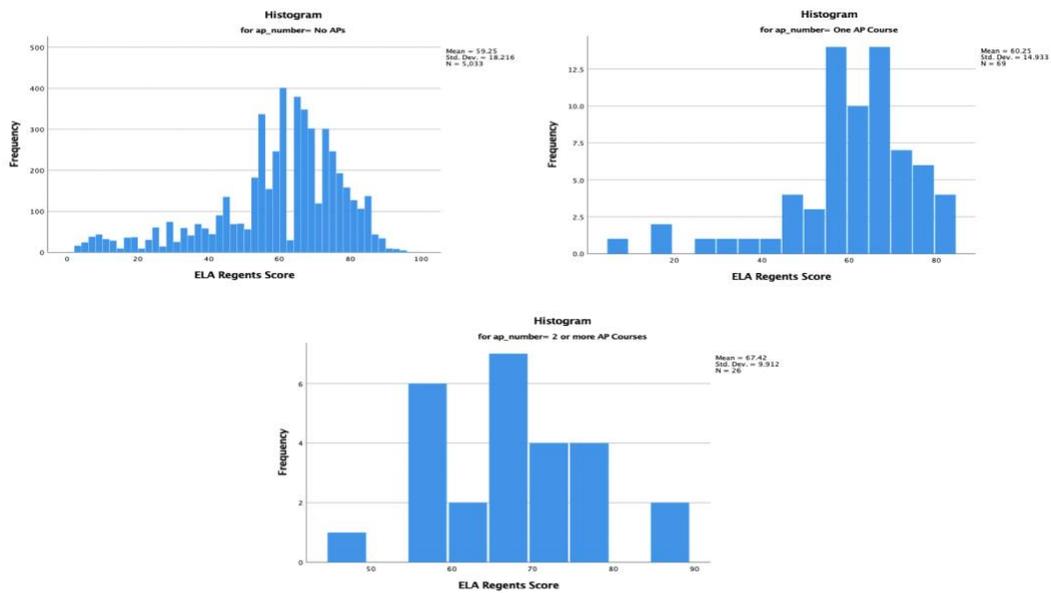
Courses Participated In

Predictors	N	ELA Regents Scores			Algebra Regents Scores		
		M	SD	95% CI	M	SD	95% CI
No AP Courses	5033	59.25	18.22	[58.75, 59.75]	66.96	9.62	[66.70, 67.23]
1 AP Course	69	60.25	14.93	[56.66, 63.83]	65.01	11.41	[62.27, 67.76]
2 or more AP Courses	26	67.42	9.91	[63.42, 71.43]	68.04	6.47	[65.43, 70.65]

Note. N indicates size. M indicates Mean. SD indicates Standard Deviation. CI indicates Confidence Intervals.

Figure 2

ELA Regents Scores Histograms for Students in No APs, One AP, and Two or More APs



AP course participation was one of the five predictor variables used to answer the second research question, and was one of the variables of interest. Sex, SWD status, free/reduced-priced lunch status, and age were the other four predictor variables used that served as control variables. When looking at sex, based on Table 4 the mean score male ELLs achieved on the ELA Regents exam was 58.46 (SD = 18.65, CI = 57.78, 59.14), while the mean score achieved by female ELLs was 60.39 (SD = 17.43, CI = 59.67, 61.11). This suggests that female ELLs scored, on average, 1.93 points higher than their male counterparts. Table 4 also includes the mean score male ELLs achieved on the Algebra Regents score which was 67.02 (SD = 9.80, CI = 66.66, 67.38), and the mean score female ELLs achieved was a 66.84 (SD = 9.41, CI = 66.45, 67.23). Looking at the confidence intervals, the overlapping numbers for male and female ELLs suggests that both sexes score, on average, the same score on the Algebra Regents exam.

Table 4

Descriptive Statistics for Association Between Regents Scores and Sex

Predictors	N	ELA Regents Scores			Algebra Regents Scores		
		M	SD	95% CI	M	SD	95% CI
Male	2885	58.46	18.65	[57.78, 59.14]	67.02	9.80	[66.66, 67.38]
Female	2243	60.39	17.43	[59.67, 61.11]	66.84	9.41	[66.45, 67.23]

Note. N indicates size. M indicates Mean. SD indicates Standard Deviation. CI indicates Confidence Intervals.

Table 5 shows us that within the study, 909 ELL participants were considered students with disabilities (SWD) or students with an individualized education plan (IEP),

while 4,219 ELL participants were not considered SWDs. On average ELLs who were SWDs scored 53.84 (SD = 17.66, CI = 52.70, 54.99) on the ELA regent exam, and ELLs who were not SWDs scored 60.48 (SD = 18.04, CI = 59.94, 61.03). Therefore, ELLs who did not have SWD status scored, on average, 6.64 points higher on the ELA Regents exam. Neither group scored an average passing score of 65.

Table 5 also shows that the mean score ELLs who were SWDs achieved on the Algebra Regents score was 60.53 (SD = 9.24, CI = 59.92, 61.13), and the mean score ELLs who did not have SWD status achieved was 68.32 (SD = 9.14, CI = 68.05, 68.60). Therefore, ELLs who did not have SWD status scored, on average, 7.79 points higher on the Algebra Regents exam. Looking at the confidence intervals for ELLs who did not have SWD status, we see that these students, on average, achieved a passing score on the Algebra Regents exam.

Table 5

Descriptive Statistics for Association Between Regents Scores and Individualized Education Plan (IEP) Status

Predictors	N	ELA Regents Scores			Algebra Regents Scores		
		M	SD	95% CI	M	SD	95% CI
No IEP	4219	60.48	18.04	[59.94, 61.03]	68.32	9.14	[68.05, 68.60]
Has an IEP	909	53.84	17.66	[52.70, 54.99]	60.53	9.24	[59.92, 61.13]

Note. N indicates size. M indicates Mean. SD indicates Standard Deviation. CI indicates Confidence Intervals.

Free/reduced-priced lunch status was another predictor variable that served as a control for Research Question 2. Based on Table 6 we can see that 560 ELL participants did not receive free or reduced-priced lunch and 4,568 ELL participants received free or reduced-priced lunch. On average, ELLs who did not receive free or reduced-priced lunch scored 59.11 (SD = 18.33, CI = 57.59, 60.63) on the ELA Regents exam. On the other hand, ELLs who did receive free or reduced-priced lunch scored 59.33 (SD = 18.13, CI = 58.80, 59.85) on the same exam.

In terms of the dependent control variable Algebra Regents score, ELLs who did not receive free or reduced-priced lunch scored an average of 66.94 (SD = 9.70, CI = 66.14, 67.75), while ELLs who did receive free or reduced-priced lunch scored the same average (SD = 9.62, CI = 66.66, 67.22). Based on the confidence intervals in Table 6, the overlapping scores imply that free/reduced-priced lunch status does not affect participants' Algebra Regents scores. On average, both groups of students achieved passing scores on the Algebra Regents exam.

Table 6

Descriptive Statistics for Association Between Regents Scores and Free/Reduced-Priced Lunch Status

Predictors	N	ELA Regents Scores			Algebra Regents Scores		
		M	SD	95% CI	M	SD	95% CI
No Free/Reduced Lunch	560	59.11	18.33	[57.59, 60.63]	66.94	9.70	[66.14, 67.75]
Free/Reduced Lunch	4568	59.33	18.13	[58.80, 59.85]	66.94	9.62	[66.66, 67.22]

Note. N indicates size. M indicates Mean. SD indicates Standard Deviation. CI indicates Confidence Intervals.

Age was the final predictor variable used in the study which also served as a control variable. Age was split into five groups with two age brackets within each group. The first group consisted of 53 ELL participants who were ages 15 and 16 years. Based on Table 7, the average score these students achieved on the ELA Regents exam was 63.23 (SD = 18.30, CI = 58.18, 68.27). The second group consisted of 2,538 ELL participants who were ages 17 and 18 years. The average score these students scored on the ELA Regents exam was 61.35 (SD = 17.17, CI = 60.68, 62.02). The third group consisted of 2,116 ELL participants, ages 19 and 20 years, with an average ELA Regents exam score of 57.46 (SD = 18.85, CI = 56.66, 58.26). The fourth group consisted of 405 ELL participants, ages 21 and 22 years, with an average ELA Regents exam score of 55.50 (SD = 19.00, CI = 53.64, 57.35). The final group consisted of 16 ELL participants, ages 23 and 24 years, with an average ELA Regents exam score of 61.94 (SD = 13.02, CI = 55.00, 68.88). The data in Table 7 suggests that although none of the groups achieved an average passing score on the ELA Regents exam, ELL participants who were aged 15 to 18 years and participants aged 23 to 24 years scored between 5.77 and 5.85 points higher on the exam compared to participants aged 19 to 22 years.

When looking at the Algebra Regents scores in Table 7, we can see that the first group achieved an average score of 66.49 (SD = 8.34, CI = 64.19, 68.79) on the Algebra Regents exam. The second group scored an average of 67.28 (SD = 8.89, CI = 66.93, 67.63) while group three achieved an average score of 66.73 (SD = 9.96, CI = 66.30, 67.15). The fourth group scored an average of 65.92 (SD = 12.16, CI = 64.73, 67.10) and the final group achieved an average of 69.25 (SD = 8.12, CI = 64.92, 73.58). Table 7

shows that, on average, each group achieved a passing Algebra Regents score. The overlapping confidence intervals of each group suggests that the average Algebra Regents score achieved by each group was similar.

Table 7

Descriptive Statistics for Association Between Regents Scores and Age

Predictors	N	ELA Regents Scores			Algebra Regents Scores		
		M	SD	95% CI	M	SD	95% CI
15–16 years	53	63.23	18.30	[58.18, 68.27]	66.49	8.34	[64.19, 68.79]
17–18 years	2538	61.35	17.17	[60.68, 62.02]	67.28	8.89	[66.93, 67.63]
19–20 years	2116	57.46	18.85	[56.66, 58.26]	66.73	9.96	[66.30, 67.15]
21–22 years	405	55.50	19.00	[53.64, 57.35]	65.92	12.16	[64.73, 67.10]
23–24 years	16	61.94	13.02	[55.00, 68.88]	69.25	8.12	[64.92, 73.58]

Note. N indicates size. M indicates Mean. SD indicates Standard Deviation. CI indicates Confidence Intervals.

College Readiness

The third research question looked to identify whether or not there was an association between ELL participation in AP courses and achieving college readiness scores on the ELA Regents exam. A logistic regression was used to assess the association of student demographics, Algebra Regents scores, and AP course participation with the likelihood that ELL participants achieve college readiness scores on the ELA Regents exam. Student demographics (sex, SWD status, free/reduced price lunch status, and age) and Algebra Regents scores were used as control variables. In order to achieve a college

readiness score, students should achieve a score of 75 or above. These students were coded as 1, while students who did not meet the cutoff score were coded as 0.

The overall logistic regression model with all six predictors was found to be statistically significant [$\chi^2(6) = 461.36, p < .001$]. The model also explained 14.1% (Nagelkerke R^2) of the variability in achieving college readiness scores on the ELA Regents exam. The model correctly predicted 99.1% of cases where college readiness scores were not achieved on the ELA Regents exam and correctly predicted 5% of cases where college readiness scores were achieved, giving an overall correct prediction rate of 82.2%. Based on Table 8, the logistic regression model indicated that SWD status [Wald = 8.83, $p = .003$], age [Wald = 27.01, $p < .001$], and Algebra Regents scores [Wald = 299.81, $p < .001$] were statistically significant predictors for achieving college readiness scores on the ELA Regents exam.

In terms of the variable SWD status, the odds of an ELL student achieving a college readiness score on the ELA Regents exam decreases when there was an increase in SWD status. Being that SWD status was coded as 0 for students who did not have an IEP and coded as 1 for students who did have an IEP, an increase in SWD status means that a student had an IEP. Therefore, on average an ELL student who had SWD status experienced a reduction of 33% in the odds of achieving a college readiness score on the ELA Regents exam when compared to their non-SWD status counterparts, after controlling for all other variables (OR = .67, 95% CI = .52 – .87).

The odds of an ELL student achieving a college readiness score on the ELA Regents exam also decreased when there was an increase in age. Age was split into five groups with two age groups included in each group, starting with 15–16-year-olds in the

first group and 23–24-year-olds in the fifth group. Thus, a unit increase in age signifies an age increase of two years. Therefore, on average each additional increase of two years in age was associated with a 27% decrease in the odds of achieving a college readiness score on the ELA Regents exam, after controlling for all other variables (OR = .73, 95% CI = .65 – .82).

With regards to the variable Algebra Regents scores, as Algebra Regents scores increased the odds of an ELL student achieving a college readiness score on the ELA Regents exam also increased. Thus, Table 8 suggests that on average and after controlling for all other variables, for every unit increase in Algebra Regents exam score, ELLs were 1.09 times more likely to achieve a college readiness score on the ELA Regents exam (OR = 1.09, 95% CI = 1.08 – 1.10).

Table 8 also posits that AP participation [Wald = .02, $p = .884$], sex [Wald = 3.16, $p = .075$], and free/reduced-priced lunch status [Wald = .19, $p = .600$] were the three variables that were not statistically significant predictors of college readiness scores.

Table 8

Results from Logistic Regression Analysis Examining the Association Between Participating in AP Courses and Achieving College Readiness Scores on the ELA Regents Exam

Predictors	<i>B</i>	<i>SE</i>	<i>Wald</i>	<i>p</i>	<i>OR</i>	<i>95% CI OR</i>
AP Course Participation	0.04	0.30	0.02	0.884	1.04	[0.59, 1.86]
Female	0.14	0.08	3.16	0.075	1.15	[0.99, 1.33]
SWD	-0.40	0.13	8.83	0.003	0.67	[0.52, 0.87]
Free/Reduced Lunch	0.06	0.13	0.19	0.660	1.06	[0.83, 1.35]
Age	-0.31	0.06	27.01	< 0.001	0.73	[0.65, 0.82]
Algebra Regents Score	0.09	0.01	299.81	< 0.001	1.09	[1.08, 1.10]

Note. OR = odds ratio. CI = confidence interval.

CHAPTER 5: DISCUSSION

The population of ELLs in the U.S. has grown over the past several decades and continues to trend in that direction. It is expected that 25 percent of public-school students will be an ELL by the year 2025 (NYU Staff, 2018). In the NYC DOE, ELLs are expected to meet the same graduation requirements as their non-ELL counterparts. However, they are not graduating at the same rates as their non-ELL peers, and less than 20 percent of ELLs go on to attend college (Johnson, 2019). In most cases, ELLs are not afforded the opportunities to participate in advanced coursework which can prepare them for college and assist them in gaining the skills needed to meet graduation requirements. One of the graduation requirements ELLs struggle to meet is passing the ELA Regents exam, with only 37 percent of ELLs passing in 2019 (NYC DOE, 2019a). It was theorized that by participating in AP courses, ELL students might achieve college readiness and gain the skills needed to pass the ELA Regents exam (see Figure 1). According to Kolluri (2018), the “AP program has been put forth as a potential means through which an expansion of college readiness might be achieved.” Thus, if students achieve college readiness in the course, they should be able to perform well on an exam that assesses their achievement against college readiness.

The purpose of this archival data correlational research design study was to identify and better understand the relationship between ELL participation in AP courses and their ELA Regents scores. In other words, the study looked to see if the ELA Regents scores of ELLs vary based on whether or not they participated in AP courses. Examining ELL exposure to advanced coursework is important to explore to see if enrollment in advanced coursework is a policy approach that may improve ELL performance on exams

that are required for high school graduation and that indicate student college readiness. This study analyzed the association between AP course participation and ELA Regents scores, while controlling for other facts that may be associated with outcome—such as sex, age, SWD status, free/reduced-priced lunch status, and Algebra Regents scores. The existing administrative data was collected for ELL high school seniors in the NYC DOE.

The first research question of the study asked whether or not participation in AP courses was associated with ELLs' ELA Regents scores. The results of the first research question imply that AP course participation was a statistically significant predictor of ELA Regents scores, when controlling for all other variables. More specifically, students who participated in AP courses, on average, scored 3.50 points higher on the ELA Regents exam compared to their non-AP participating counterparts. Age, sex, and Algebra regents scores were control variables that were also statistically significant predictors of ELA Regents scores. SWD status and free/reduced-priced lunch status were not significant predictors of ELA Regents score.

The second research question explored the association between participation in more than one AP course and ELLs' ELA Regents scores. The results of the second research question showed that ELLs who participated in two or more AP courses, on average, scored higher than ELLs who participated in only one AP course or no AP courses. The results indicate that ELL students who participated in two or more AP courses were more likely to achieve a passing score (a minimum of 65) on the ELA Regents exam when compared to ELLs who did not participate in an AP course or only participated in one AP course.

The third research question looked at the association between AP course participation and achieving college readiness scores on the ELA Regents exam. Based on the logistic regression, only SWD status, age and Algebra Regents scores—three of the control variables—were statistically significant predictors for achieving college readiness scores on the ELA Regents exam. AP participation, sex, and free/reduced-priced lunch status were the three variables that were not statistically significant predictors, the latter two being control variables.

Implications of Findings and Relationship to Prior Research

The findings in Chapter 4 suggest that participating in AP courses may be beneficial for ELLs. ELLs who participated in AP courses, on average, perform better than ELLs who do not engage in advanced course work. This indicates alignment with my conceptual framework (see Figure 1) which postulates that participating in AP courses provides ELLs with the opportunity to gain some of the content knowledge and academic skills needed to approach passing scores on the ELA Regents exam and meet graduation requirements.

AP Course Participation

The results of the linear regression suggest that participation in AP may assist students in improving their ELA Regents scores. ELLs in AP courses achieved almost four points higher on the exam than ELLs who did not participate in AP courses. It can be argued that this makes sense because students who participate in AP courses have a propensity to do better academically compared to their non-AP participating counterparts (The College Board, 2019). However, the difference in scores between ELLs in APs and ELLs in no APs was less than five points. This indicates that both groups may not be as

different as one might think. Participation in AP courses should result in higher scores because the course provides rigor and helps to leverage students' college-level reading, writing, and communication skills. Thus, the almost four-point difference may be attributed to skills picked up when participating in the course. Further studies should be conducted to identify the other factors that may have contributed to the difference in scores between both groups.

Four points can be a difference between a 65, which is a passing score, and a 61 which is not—or the difference between a 75, which is a college readiness score, and a 71 which is a passing score but does not demonstrate college readiness. The 95% confidence interval for students participating in one AP course indicated that there were scores achieved in the 60 and above range, while participating in two or more AP courses resulted in a mean score that was slightly above the minimum passing score (see Table 3). Thus, the results of the descriptive statistics suggest that participating in AP courses assists students in approaching passing scores on the ELA Regents exam. Participating in two or more AP courses was the only predictor variable that identified a mean passing score on the ELA Regents exam, based on the descriptive statistics tables (see Tables 3–7). This further supports the conceptual framework of the study because after controlling for some factors, AP participation was the only variable that aligned with successful achievement on the ELA Regents exam.

Achieving an increase in passing scores on the ELA Regents exam can lead to an increase in graduation rates. But what about college readiness abilities? The conceptual framework of the study theorizes that AP participation would help students achieve college readiness scores. According to Kolluri (2018), the College Board has “published

numerous materials offering... positive college-ready outcomes for those who engage with the [AP] program,” thus it makes sense that participation would assist students in achieving college readiness scores on the ELA Regents exam. However, the logistic regression indicated that AP participation was not a significant predictor of college readiness scores. Based on the descriptive statistics, the 95% confidence interval range for students participating in two or more AP courses was between 63 and 71 (see Table 3). Most of these are passing scores; however, the scores do not demonstrate college readiness which further supports the results of the logistic regression. Thus, while the study does not suggest college readiness scores were achieved by participating in AP courses, it does suggest that participating in multiple AP courses provides ELLs with the opportunity to achieve passing scores on the ELA Regents exam and begin to approach college readiness.

Participating in no AP courses and participating in only one AP course resulted in a similar mean for both groups (see Table 3). The overlapping range in 95% confidence intervals and histograms for both groups also indicate a similarity between the two; however, there was more variation in scores among students who do not participate in AP courses (see Figure 2). Because the distribution of scores looks so similar for ELLs in no APs and ELLs in only one AP, the 69 students who participated in one AP course may theoretically be part of a less selective group. This may be due to *AP for All*'s attempt to encourage the non-typical AP students to take on AP courses (The College Board, 2019). ELLs in the study who participated in only one AP course may have been pushed into the program, despite displaying readiness to engage in the course. Figure 2 shows that the variation in scores for students in two or more AP courses was smaller than the first two

groups. The range in scores for students participating in multiple AP courses was smaller, revealing that the scores were more clustered together. The small variation in scores among students participating in multiple APs suggest that, theoretically, the 26 ELLs were part of a more selective group of students. This tracks to why it can be difficult to find a correlation between Graduate Record Examination (GRE) scores and outcomes in Graduate school. The variation in scores is attenuated because students who select to take the GRE—or AP courses—to attend post-secondary institutions are more like one another than the general population (Moneta-Koehler, Brown, Petrie, Evans, & Chalkley, 2017). However, the range in score among ELLs in no APs displays a number of students who achieved scores above a 75, and even scores higher than those achieved by ELLs in AP courses. This suggests that there may be ELLs who are not participating in AP courses that may be prepared to engage in advanced coursework. This study did not identify how students were placed in AP courses, if they elected to participate, or if it was an option. Thus, further studies should be conducted to identify why the variation in scores might exist and how ELLs are placed into AP courses.

Control Variables

Algebra Regents score. Algebra Regents score was used to control for student academic ability. According to a study conducted by Follick (2021), Algebra Regents scores promote academic success for students in introductory college-level math courses. This makes sense because the Algebra Regents exam—and the ELA Regents—assesses the CCSS which has college readiness in mind. The linear regression suggests that ELA Regents scores improve by almost one point when Algebra regents scores improve by one point, making them predictive of one another.

With regards to AP course participation, Algebra scores may increase as a result of engaging in multiple APs. However, the descriptive statistics show passing mean scores achieved by ELLs on the Algebra Regents exam among all predictor variables (see Tables 3-7). This may be due to the fact that the Algebra exam is a math assessment and may be available to ELLs in their home language, resulting in higher opportunities to pass the exam (Beltran, 2016). On the other hand, the ELA Regents exam is only available in English and may become more of a language proficiency test than a college readiness assessment for students who may still be struggling with the English language (Beltran, 2016; Menken, 2008). This can result in lower scores on the ELA Regents exam, which was evident in the descriptive statistics tables.

In terms of college readiness, the logistic regression found Algebra Regents scores a statistically significant predictor. This makes sense because both exams are assessed on the CCSS as previously mentioned. The data suggests that as Algebra Regents scores increase, the odds of an ELL student achieving a college readiness score on the ELA Regents exam also increases. The descriptive statistics tables do not demonstrate college readiness scores; however, the scores were closer to college readiness scores compared to those of the ELA Regents. This also aligns to the findings of the linear regression. Thus, it makes sense that achieving higher Algebra Regents scores correlates to ELLs' ELA Regents scores.

Age. Age was used as a control because older age is generally associated with higher motivation and cognitive development (Kusurkar, Kruitwagen, ten Cate, & Croiset, 2010). Students who are older have presumably been in school for a longer period of time, and therefore have had more opportunities to engage in academics which

would help to further develop the knowledge and skills needed to pass exams. However, the linear regression suggests that an increase in age bracket resulted in an almost 3-point decrease in ELA Regents score. The descriptive statistics also suggest that as age increases, students' mean ELA Regents score decreases. This inverse relationship may be due to ELLs entering the program at an older age. The results of the study were in line with Beltran's findings. According to Beltran (2016), ELLs who newly arrive to the U.S. struggle to learn the English language and adjust to the new testing culture. ELLs who newly arrive to schools when they are older have a more difficult time adjusting because they have fewer opportunities to learn the language and gain the literacy skills needed to pass the ELA Regents exam. Therefore, it makes sense that younger ELLs performed better on the exam than older ELLs. The logistic regression suggests that age was a statistically significant predictor of achieving college readiness on the ELA Regents exam. The odds of students achieving a college readiness score on the ELA Regents exam decreased when there was an increase in age. While none of the age groups reflected passing scores, there was a decrease in mean score as the age bracket increased.

Sex. Sex was used as a control because gender has been associated with academic success (Reardon, Fahle, Kalogrides, Podolsky, & Zárate, 2019; Voyles, 2011). Quite often, males are the focus of studies because they tend to perform lower academically than their female counterparts. The linear regression and gender descriptive statistics of this study supports previous findings. Females scored almost two points higher on the ELA Regents exam than males. This was expected because Reardon, Fahle, Kalogrides, Podolsky, and Zárate (2019) identified various studies from 2006 to 2016 that reveal female students in the U.S. tend to outperform their male counterparts on ELA and

literacy exams. Looking at the confidence intervals for Algebra Regents scores with regards to sex (see Table 4), the overlapping numbers for male and female ELLs implies that both sexes score, on average, the same score on the Algebra Regents exam, which corresponds to Reardon et al.'s findings.

Free/reduced-priced lunch status. Free/reduced-priced lunch status was used to control for socioeconomic factors. However, across all three research findings, free/reduced-priced lunch status was not a statistically significant predictor. This was likely due to the fact that the majority of participants in the study received free or reduced-priced lunch. Free/reduced-priced lunch status is associated with low income. Over 70 percent of students in NYC DOE schools are low income. Low-income students are generally underrepresented in AP courses (Kolluri, 2018; The College Board, 2019).

SWD Status. Students with disabilities are important to look at because the NYC DOE does not have a capacity to identify gifted students after a certain grade, but they can identify SWDs. It can be argued that students in AP courses would be different from SWDs because SWDs need more support than their counterparts. However, based on the characteristics of AP Participants, slightly more than half are SWDs (see Table 1). Thus, we can compare both groups because they may be more similar to one another than expected. SWD status was not statistically significant based on the linear regression, which was likely because of the large amount of SWDs in AP courses.

SWD status is also important to look at because SWDs are an underrepresented group in the AP Program, although that was not the case in this study. The descriptive statistics showed that SWDs score almost 7 points lower on the ELA Regents exam compared to ELLs who were not SWDs. While neither group achieved mean passing

scores on the ELA Regents exam, ELLs who were also SWDs were the only group who did not achieve a passing mean score on the Algebra Regents exam. The low, failing scores of SWDs on both exams trend to what is seen in society with low performance and graduation rates from SWDs (DePaoli, Balfanz, Atwell, & Bridgeland, 2018; Schwartz, Hopkins, & Stiefel, 2021).

Conclusion

The conceptual framework of this study was partially supported by the results of the study. Participating in AP courses does assist students in passing the ELA Regents exam; however, AP participation was not associated with college readiness scores. So, what does this mean? Why aren't ELLs in AP courses demonstrating college and career readiness scores? What's missing? This could be attributed to a variety of factors that were not accounted for in the study, as suggested by the linear and logistic regression models. Further studies should be conducted to identify why ELLs are not achieving passing scores on the ELA Regents exam after participating in an AP course.

Recommended next steps are discussed in the Recommendations for Future Research and Recommendations for Future Practice sections.

Limitations of the Study

This study had several limitations, some of which were mentioned above. One of the limitations of the study was the sampling method used. Purposive sampling is a method used when the researcher identifies the sample population intentionally because they meet specific criteria (Terrell, 2016). In this case, purposive sampling was used because I was looking to identify the relationship between ELLs' ELA Regents scores and their participation in AP courses. Since the dependent variable was ELLs' ELA

Regents scores, the participants had to be ELLs who previously took the ELA Regents exam.

Due to the population used within the study, the results may not be generalizable to larger populations across the country. The study looked at 12th grade ELLs who previously took the ELA Regents exam. These students were also limited to public high schools in the NYC DOE. Although the NYC DOE has a fairly diverse population of students with over 100 languages spoken, the population of ELLs may differ from others across the country, which will lead to a lack of generalizability.

The sample size within groups varies greatly. For example, out of 5,128 ELLs, only 95 participated in AP courses—26 of the 95 students participated in two or more AP courses. This discrepancy between groups can cause uneven variances in scores and decrease reliability. However, the College Board (2019) has acknowledged the lack of ELL participation in their program. Thus, this study supports the findings of the College Board. Less than 2 percent of ELLs in the study participated in an AP course and less than 1 percent participated in multiple APs. While the small number of ELL participants in AP courses may seem like a limitation of the study, it is in fact a limitation of society.

Aside from sample size, school effect should be taken into account. Since there were 69 students who participated in one AP course, all of these ELLs may come from the same school. This would pose a threat to generalizability because this may suggest that the AP students were more similar to one another than the rest of the city's population.

How ELLs were placed in AP courses was also a limitation. The study was not able to identify this for the 95 ELLs enrolled in AP courses. Some schools may have

prerequisites and requirements that students must pass in order to participate in AP courses. Other schools may allow all of their students to enroll in AP courses available in their school. This makes it difficult to identify how similar or different students in AP courses may be to one another, and to their non-AP participating counterparts.

A sixth limitation comes from the design of the research study. Correlational research design looks to identify the relationship between two variables; however, this does not prove that the variables directly affect one another. For example, the study identified a relationship between ELLs' ELA Regents scores and their participation in AP courses; however, it does not mean that ELLs' Regents scores were due to the course they participated in; their scores may be a result of secondary factors that were not identified, assessed, or analyzed. As previously suggested, further studies would need to be conducted to identify what these factors might be.

Although an association between ELLs' ELA Regents scores and participation in AP courses has been identified, it is not clear when the students took the AP exam. For example, there is a possibility that a student passed the ELA Regents exam before participating in an AP course, and not vice versa. This would mean that this student may have already possessed the college readiness skills AP looks to foster. Due to possibilities such as this, it was unclear whether or not the student passed the ELA Regents exam and/or achieved college readiness due to participation in an AP course or another factor.

Collecting archival data was a limitation within itself as it was not data that I had complete access to. Documents were provided to decipher what each data sheet contained, but not all specifics were identified. A total of 95 students were identified as an ELL who participated in at least one AP course. Because the data collected was from

an organization that collects data from multiple smaller parties, the naming of categories with regards to the name of AP courses was uneven. In some cases, the AP course name was identified within the item variables while for other courses it was identified in the description variable. This means that there may have been some AP courses that were missed. NYC DOE should streamline the data so that it is easier to identify AP course participation for ELL students.

Recommendations for Future Research

The theoretical framework of this study was a transformative framework. Through the study alone, I cannot make changes to society. However, recommendations for next steps can be made.

Although we have acknowledged the need to support ELLs in their academic pursuits and have implemented laws and programs to remediate this, only 40 percent of ELLs graduated from NYC DOE schools at the end of the 2018–2019 academic school year—the same year and group of ELLs this study focused on (NYC DOE, 2020c). While there are strides being made in supporting ELLs with their academic careers, the low graduation rate is evidence that enough isn't being done.

This study suggests that participating in AP courses assist students in achieving passing scores on the ELA Regents exam. Being that the population sample was a limitation for this study, it is important to conduct the study with a sample size that is evenly distributed amongst participating groups. This will help to ensure the study's findings are more reliable and generalizable. The study can review archival data for a different group of randomly selected ELL students who have and have not participated in

AP courses. It can also be conducted with students in the NYC DOE provided more ELLs are participating in AP courses.

Despite demonstrating passing scores, the study does not suggest that participating in AP courses assist ELLs in achieving college readiness scores. The data does suggest, however, that students participating in these courses may be gaining some of the content knowledge and skills needed to approach graduation standards. The College Board has identified an increase in marginalized groups—such as ELLs and SWDs. However, they have not addressed the lack of ELL participation in the program. Therefore, what should be explored is how to assist ELLs in participating successfully in AP courses. Based on research conducted by Kolluri (2018), underrepresented groups are not prepared to engage in advanced coursework. Thus, research should be conducted to explore the strategies, skills, and supports ELLs need in order to effectively participate in advanced course work.

Further research can be conducted around the AP courses' curricula. While this study may have identified a relationship between AP course participation and ELA Regents scores, it cannot truly explain the cause of the increase or the variance among the other findings. To identify one of the causations behind the increase of ELLs' ELA Regents scores, it may be beneficial to conduct a research study where the qualities and characteristics of the AP courses' curricula are assessed. As ELLs who are continuing to learn a new language and develop their skills, specific academic support should be used within the curriculum. By analyzing the curriculum, researchers can identify if the curriculum plays a role in students' ELA Regents scores, and other areas such as students'

language acquisition. This can also lead to the identification of the key characteristics needed to ensure ELLs' success in AP courses and the ELA Regents exam.

Aside from reviewing curricula, it may be helpful to conduct research on what courses may affect ELA regents scores as it was not clear what courses students participated in based on the data in Chapter 4. Since the data does not indicate that AP courses assist ELLs in achieving college readiness, there is a possibility that some AP courses may assist students in achieving college readiness scores on the ELA Regents exam compared to others. Because the dependent variable was ELLs' ELA Regents score, it would make sense for AP English courses—such as AP Language and Composition and AP Literature and Composition—may be most helpful in achieving college readiness scores. Since these are both ELA related courses, it would make sense that their curriculums would most closely align to the ELA Regents exam when compared to other AP courses; Polleck and Jeffery's 2017 study supports this theory. Thus, other studies should be conducted to see if other AP courses also align to the ELA Regents exam.

One of the limitations of the study that is worthy of further exploration is how ELLs were placed into AP courses. Based on the archival data received from the NYC DOE, the study was not able to identify how the 95 students who engaged in AP courses elected to participate. The College Board (2019) recognizes that some schools identify prerequisites and specific rules—such as passing a placement test—that students must pass in order to participate in AP courses. The 26 ELLs in the present study that participated in multiple AP courses may be students in these schools. If this is true, these students may already be expected to perform better than other students because they have

to perform specific skills that align with AP courses in order to participate. These students may also be the higher achieving students that already tend to engage in advanced course work. On the other hand, some schools allow all of their students to enroll in AP courses available in their school (The College Board, 2019). Thus, the 69 students who only participated in one AP course may have done so because they were interested in a course, while others may have been encouraged to try out the course, and some may have been pushed in in an attempt to provide them with access to advanced course work, the way *AP for All* was intended. Studies should be conducted to identify the requirements schools have for students to participate in AP courses. This can help to identify what students must do in order to be able to participate in the AP program at the schools and get more ELLs participating in courses.

Being that some schools allow all students to participate in AP courses, it may be helpful to talk to ELLs about their participation in AP or lack thereof. For the 5,000 ELLs in the study who did not participate in APs, this can help to figure out if they were aware of the program and that it was available to them. If they are not aware, further studies should be conducted to identify why this may be the case. For students who are aware of the program, the study can further explore ELLs' belief on the impact of AP courses on themselves and their academics. This can help to gain further insight on ELLs' interest in the program and the factors that might encourage them to engage in the program. This can also help to identify what supports or resources they would need to successfully participate in AP courses.

Recommendations for Future Practice

In alignment with the transformative framework that guided this study, the next steps would be to conduct the research recommended above, and provide more opportunities for ELLs to engage in the AP program. While the small number of ELL participants in AP courses may seem like a limitation of the study, it is in fact a limitation of society. If we want ELLs to continue to improve their academic abilities and enter college, we need to ensure they are provided with the opportunities to engage in more advanced course work so they can hone in on their skills. The low number of ELLs participating in AP courses may be due to the fact that the initiative was launched only three to four years prior to when the focus group of the study was in 12th grade. This means that some students may not have had access to the program yet, and especially since the initiative aimed to have all schools participate in the initiative by 2021 (The College Board, 2019). While I recognize that this is a possibility, it can be argued that the College Board and New York City waited too long to provide ELLs with this opportunity and launch the initiative. We see a need to help these students, so we need to continuously push ELLs to participate in courses that will enhance their content knowledge, academic skills, and college readiness while providing them with the appropriate supports they need to excel.

The lack of students participating in the study as AP students references the lack of ELL students participating in AP courses across the city, state, and the country. The idea here is that participating in AP courses should be associated with students' ELA Regents scores. Thus, this study looked to show that it can be beneficial or helpful to engage ELLs in AP courses because it assists them in approaching and achieving passing

scores on an exam required for graduation. The results of the study support the theory that participating in AP courses assists students in achieving passing scores on the ELA Regents exam. Thus, we need to make an effort to continue to support ELLs in participating in advanced course work. With proper support, ELLs who participate in these courses may have the opportunity to improve their content knowledge and academic skills needed to pass exams needed for graduation. Further research would need to be conducted to confirm this finding. In order to do so, more schools need to offer AP courses to ELL students. Enrollment in advance coursework may be a policy approach that can improve ELL performance on exams that are required for high school graduation and that indicate student college readiness. Via access to courses such as AP courses, and the creation of programs such as *AP for All*, ELLs may have more opportunities to interact with rigorous courses and higher-performing peers, while improving their college readiness abilities. This, in turn, may increase the number of ELLs who are graduating from high school, as well as ELLs entering and graduating from post-secondary institutions.

Based on research conducted by Kolluri (2018), underrepresented groups are not prepared to engage in advanced coursework and are being ineffectively taught the AP curricula. This may be due to lack of teacher experience in working with ELLs. In the U.S. there is a shortage of teachers who are qualified to work with ELLs, and some educators who are qualified do not feel prepared to do so (NYU Staff, 2018). I recommend that schools provide all teachers with proper training to work with ELLs. This may be a policy approach to adopt as well. As the ELL population continues to grow, so should the number of educators who are ready to work with them. The U.S. is a

diverse country, so educators should be prepared to work with a diverse group of students. Providing educators with the skills and resources necessary to engage ELLs in their courses can assist ELLs in gaining the necessary academic skills and content knowledge they need to be successful in school and on standardized exams.

There are many factors that may have affected the results of the study. One of them could be the ELA Regents exam itself. The ELA Regents exam is a graduation requirement, which means all students in the NYC DOE must pass the exam in order to graduate high school. However, only 37 percent of ELLs passed the exam in 2019. The exam may be difficult for students because it becomes more of a language proficiency test since students are not familiar with the English language (Beltran, 2016). Depending on their language proficiency skills, ELLs may not have the skills or knowledge to understand the exams, let alone do well on them. Thus, the ELA Regents exams should be reviewed and revised to be a more inclusive exam. Supports, such as word-for-word translation dictionaries, are provided to students on the ELA Regents exam. However, NYS should also consider offering a translated version of the exam that students may reference as they complete the exam, which they have done for other Regents exams.

The ELA Regents exam is difficult to pass because only 62 percent of students passed the exam in 2019. If the exam is difficult for general education students, why would anyone expect for the exam to be easy for ELLs? With that said, the ELA Regents exam should be assessed to ensure it aligns with the CCSS and assesses college readiness. Polleck and Jeffery's (2017) study suggest that the ELA Regents exam seems to measure students' college-level equivalency instead of students' college readiness. This would mean that the ELA Regents exam may be more like AP exams that we may

expect, and would explain why the exam is difficult to pass. Thus, the exam should be redesigned to ensure that it truly assesses the standards and college readiness.

REFERENCES

- Artigliere, M. (2019). The proficiency, instructional and affective domains of long term english language learners: A review of the research. *TESL-EJ*, 23(1), 1–19.
Retrieved July 2021, from <http://tesl-ej.org>.
- Beltran, J. L. (2016). Ignoring disadvantaged students: Caveats of the ELA regents exam. *Working Papers in TESOL & Applied Linguistics*, 16(1), 38–45.
<https://doi.org/https://doi.org/10.7916/salt.v16i1.1264>
- Bhatia, M. (2018, September 5). *Your guide to qualitative and quantitative data analysis methods*. Humans of Data. <https://humansofdata.atlan.com/2018/09/qualitative-quantitative-data-analysis-methods/>
- Blackburn, B. R. (2018). *Rigor is not a four-letter word* (3rd ed.). Routledge.
- Brown, K. R., & Broido, E. M. (2019). Engaging students with disabilities. In S. J. Quaye, S. R. Harper, & S. L. Pendakur (Eds.), *Student engagement in higher education: Theoretical perspectives and practical approaches for diverse populations* (3rd ed., pp. 237-255). Routledge.
- Carlton, G. (2022, March 30). *Why was the AP program created? A history of AP exams and classes*. BestColleges. Retrieved May 4, 2022, from <https://www.bestcolleges.com/blog/history-ap-exams-classes/>
- Common Core State Standards Initiative. (2019). Common core state standards.
Retrieved June 2020, from <http://www.corestandards.org/>
- DePaoli, J. L., Balfanz, R., Atwell, M. N., & Bridgeland, J. (2018). *Building a graduation: Progress and challenge in raising high school graduation rates. Annual update 2018* (pp. 1–81). Washington, DC: Civic Enterprises.

- Dirkx, J. M., Mezirow, J., & Cranton, P. (2006). Musings and reflections on the meaning, context, and process of transformative learning. *Journal of Transformative Education, 4*(2), 123-139. doi:10.1177/1541344606287503
- Engage NY. (2014). APPR assessment guidance. Retrieved November 15, 2020 from <https://www.engageny.org/sites/default/files/downloadable-resources/2014/Jun/k-2-assessment-guidance.pdf>
- Follick, D. (2021). *Using the new york state algebra 1 regents results for introductory math course placement at a suburban new york state community college* (Publication No. 222) [Doctoral dissertation, St. John's University]. St. John's Scholar.
- Foorman, B. R., & Connor, C. M. (2010). Primary grade reading. In M. L. Kamil, P. D. Pearson, E. B. Moje, & P. P. Afflerbach (Eds.), *Handbook of reading research, volume IV* (pp. 136-156). New York: Routledge.
- Godley, A., Monroe, T., & Castma, J. (2015). Increasing access to and success in advanced placement English in pittsburgh public schools. *The English Journal, 105*(1), 28–34.
- Goldenberg, C. (2010). Reading instruction for English language learners. In M. L. Kamil, P. D. Pearson, E. B. Moje, & P. P. Afflerbach (Eds.), *Handbook of reading research, volume IV* (pp. 684-710). New York: Routledge.
- Gottschalk, B. (2019). Holding high, not hurried, expectations for ELLs. *ASCD, 61*(12). Retrieved August 2, 2022, from <https://www.ascd.org/el/articles/holding-high-not-hurried-expectations-for-ells>.
- Hesson, S. (2013). Rethinking assessment policies for emergent bilinguals in new york

- state. *Theory, Research, and Action in Urban Education*, 2(1).
<https://traue.commons.gc.cuny.edu/issue-2-fall-2013/hesson/>
- International Baccalaureate Organization. (2022, February 15). *The international baccalaureate (IB): Education for a better world*. <https://www.ibo.org/>
- Johnson, A. (2019). The effects of English learner classification on high school graduation and college attendance. *AERA Open*, 5(2), 1–23.
<https://doi.org/10.1177/2332858419850801>
- Kanno, Y., & Kangas, S. E. (2014). “I’m not going to be, like, for the AP”: English language learners’ limited access to advanced college-preparatory courses in high school. *American Educational Research Journal*, 51(5), 848-878.
- Kieffer, M. J. & Parker, C. E. (2016). *Patterns of English learner student reclassification in New York City public schools (REL 2017–200)*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northeast & Islands. <http://ies.ed.gov/ncee/edlabs>.
- Klopfenstein, K., & Thomas, M. (2009). The link between advanced placement experience and early college success. *Southern Economic Journal*, 75(3), 873-891. Retrieved November 21, 2020, from <http://www.jstor.org/stable/27751419>
- Kolluri, S. (2018). Advanced placement: The dual challenge of equal access and effectiveness. *Review of Educational Research*, 88(5), 671-711.
<https://www.jstor.org/stable/45277291>
- Kucan, L. & Sullivan Palincsar, A. (2011). Locating struggling readers in a reconfigured

- landscape: A conceptual review. In M. L. Kamil, P. D. Pearson, E. B. Moje, & P. P. Afflerbach (Eds.), *Handbook of reading research, volume IV* (pp. 341-358). New York: Routledge.
- Kusurkar, R., Kruitwagen, C., ten Cate, O., & Croiset, G. (2010). Effects of age, gender and educational background on strength of motivation for medical school. *Advances in Health Sciences Education: Theory and Practice*, 15(3), 303–313. <https://doi.org/10.1007/s10459-009-9198-7>
- Lewis-Moreno, B. (2007). Shared responsibility: Achieving success with English-language learners. *The Phi Delta Kappan*, 88(10), 772-775.
- Lhamon, C. E., & Gupta, V. (2015, January 7). *Dear colleague letter: English learner students and limited English proficient parents*. U.S. Department of Justice and U.S. Department of Education. <https://www2.ed.gov/about/offices/list/ocr/letters/colleague-el-201501.pdf>
- Mattern, K. D., Shaw, E. J., & Xiong, X. (2009). The relationship between AP exam performance and college outcomes. *College Board: Research Report*, 2009(4), 1-15.
- Menken, K. (2010). NCLB and English language learners: Challenges and consequences. *Theory Into Practice*, 49(2), 121-128. <https://doi.org/10.1080/00405841003626619>
- Moneta-Koehler, L., Brown, A. M., Petrie, K. A., Evans, B. J., & Chalkley, R. (2017). The limitations of the GRE in predicting success in biomedical graduate school. *PLOS ONE*, 12(1). <https://doi.org/10.1371/journal.pone.0166742>
- Meyer, J. L., Irwin, C. W., Strambler, M. J., & Coleman, G. A. (2020). Understanding the

context of multilingual learners and their families. *Partnership for Early Education Research (PEER)*. <https://osf.io/k4r5w/>

Mitchell, C. (2020, February 18). The nation's English-learner population has surged: 3 things to know. *Education Week*. https://blogs.edweek.org/edweek/learning-the-language/2020/02/english_learner_enrollment_increases.html

National Association for Gifted Children. (2012, January 4). *What is giftedness?* <https://www.nagc.org/resources-publications/resources/what-giftedness>

National Research Council. (2011). State procedures for identifying and classifying English language learners. In *Allocating federal funds for state programs for English language learners* (pp. 77-102). National Academies Press. <https://doi.org/10.17226/13090>

NYC DOE. (2019a). *Test results - NYCDE info hub*. <https://infohub.nyced.org/reports/academics/test-results>

NYC DOE. (2019b). *2018-2019 ELL demographic report*. <https://infohub.nyced.org/reports/academics/ELL-demographic-report>

NYC DOE. (2020a). *DOE Data at a glance*. Retrieved November 15, 2020, from <https://www.schools.nyc.gov/about-us/reports/doe-data-at-a-glance>

NYC DOE. (2020b). *English language learners*. Retrieved November 15, 2020, from <https://www.schools.nyc.gov/learning/multilingual-learners/english-Language-learners>

NYC DOE. (2020c, January 6). *New york city graduation rates class of 2019 (2015 cohort)*. NYC Department of Education. <https://infohub.nyced.org/docs/default-source/default-document-library/2019-graduation-rates---website---1-16-20.pdf>

- NYC DOE. (2022). *Gifted & talented (G&T)*. Retrieved February 8, 2022, from <https://www.schools.nyc.gov/enrollment/enroll-grade-by-grade/gifted-talented>
- NYSED. (2015, July 1). *Commissioner's regulation part 154: English language learners (ELLs) screening, identification, placement, review, and exit criteria guidance*. New York State Department of Education. Retrieved March 6, 2022, from <http://www.nysed.gov/common/nysed/files/programs/bilingual-ed/terms-154-2-effective-2015-16-and-after.pdf>
- NYSED. (2019). *New York state multilingual learner/English language learner (MLL/ELL) Data Report: NYS MLLs/ELLs demographics & performance 2018-19*. http://www.nysed.gov/common/nysed/files/programs/bilingual-ed/nysed_ell_mll_data-report_2018-2019-a.pdf
- NYSED. (2020). *IRS - enrollment data archive*. <http://www.p12.nysed.gov/irs/statistics/enroll-n-staff/ArchiveEnrollmentData>
- NYU Staff. (2018, May 1). *1 in 4 students is an English language learner: Are we leaving them behind?* NYU Steinhardt. <https://counseling.steinhardt.nyu.edu/blog/english-language-learners/#:~:text=English%20language%20learners%20%E2%80%94%20often%20called,school%20students%20will%20be%20ELLs.>
- O'Day, J. A., & Smith, M. S. (2016). Quality and equality in American education: Systemic problems, systemic solutions. In I. Kirsch, & H. Braun (Eds.), *The Dynamics of Opportunity in America*. Springer Cham. https://doi.org/10.1007/978-3-319-25991-8_9
- Office of English Language Acquisition. (2021). *English learners in advanced*

placement and international baccalaureate courses. National Clearinghouse for English Language Acquisition (NCELA).

https://www.ncela.ed.gov/files/fast_facts/20210803-Del4-4EL-AP-IB-FactSheet508.pdf

Ortlieb, E. (2019, October 28). *Concurrent transformative design in mixed methods research* [Video]. YouTube. https://www.youtube.com/watch?v=U_Xnh7vRG0o

Pearson. (2019a, March). *New york state regents examination in algebra 1 - 2018 technical report*. <http://www.nysed.gov/common/nysed/files/programs/state-assessment/algebra-1-common-core-technical-report-2018.pdf>

Pearson. (2019b, March). *New york state regents examination in english language arts - 2018 technical report*. <http://www.nysed.gov/common/nysed/files/programs/state-assessment/english-language-arts-technical-report-2018.pdf>

Polleck, J. N., & Jeffery, J. V. (2017). Common core standards and their impact on standardized test design: A new york case study. *The High School Journal* 101(1), 1-26. <https://doi.org/10.1353/hsj.2017.0013>.

Questar Assessment Inc. (2017). *New york state testing program 2017: English language arts and mathematics grades 3–8*.

<http://www.p12.nysed.gov/assessment/reports/ei/tr38-17w.pdf>

Reardon, S. F., Fahle, E. M., Kalogrides, D., Podolsky, A., & Zárate, R. C. (2019). Gender achievement gaps in U.S. school districts. *American Educational Research Journal*, 56(6), 2474–2508. <https://doi.org/10.3102/0002831219843824>

Reeves, J. (2004). "Like everybody else": Equalizing educational opportunity for English language learners. *TESOL Quarterly*, 38(1), 43-66.

- Rosa, M. (2011). A mixed-methods study to understand the perceptions of high school leaders about English language learners (ELLs): The case of mathematics. *International Journal for Studies in Mathematics Education*, 4(2), 71-116.
- Sanchez, C. (2017, February 23). *English language learners: How your state is doing*. NPR. <https://www.npr.org/sections/ed/2017/02/23/512451228/5-million-english-language-learners-a-vast-pool-of-talent-at-risk>
- Schwartz, A. E., Hopkins, B. G., & Stiefel, L. (2021). The effects of special education on the academic performance of students with learning disabilities. *Journal of Policy Analysis and Management*, 40(2), 480–520. <https://doi.org/10.1002/pam.22282>
- Soland, J., & Sandilos, L. E. (2021). English language learners, self-efficacy, and the achievement gap: Understanding the relationship between academic and social-emotional growth. *Journal of Education for Students Placed at Risk (JESPAR)*, 26(1), 20-44.
- Statistics Solutions. (2021a, August 10). *What is linear regression?* Statistics Solutions. <https://www.statisticssolutions.com/free-resources/directory-of-statistical-analyses/what-is-linear-regression/>
- Statistics Solutions. (2021b, August 11). *What is logistic regression?* Statistics Solutions. <https://www.statisticssolutions.com/free-resources/directory-of-statistical-analyses/what-is-logistic-regression/>
- Terrell, S. R. (2016). *Writing a proposal for your dissertation: Guidelines and examples*. The Guilford Press.
- The College Board. (2014, February 11). *The 10th AP annual report to the nation*.

<http://media.collegeboard.com/digitalServices/pdf/ap/rtn/10thannual/10th-annual-ap-report-to-the-nation-single-page.pdf>

The College Board, (2019). *College board*. <https://www.collegeboard.org/>

Thompson, K. D. (2015). English language learners' time to reclassification: An analysis. *Educational Policy*, 31(3), 330–363
<https://doi.org/10.1177/0895904815598394>

Urduan, T. C. (2017). *Statistics in plain english* (4th ed.). Routledge, Taylor & Francis Group.

U.S. Department of Education. (2019). *Academic performance and outcomes for English learners*. <https://www2.ed.gov/datastory/el-outcomes/index.html>

Verhoeven, L. (2011). Second language reading acquisition. In M. L. Kamil, P. D. Pearson, E. B. Moje, & P. P. Afflerbach (Eds.), *Handbook of reading research, volume IV* (pp. 661-683). New York: Routledge.

Voyles, J. M. (2011). *Student academic success as related to student age and gender*. (Publication No. 85) [Doctoral dissertation, University of Tennessee at Chattanooga]. UTC Scholar.

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