

EQUITY AND ACCESS: COLLEGE BOARD AND THE EFFECTIVENESS OF THE
ADVANCED PLACEMENT PROGRAM IN FIVE PRIVATE HIGH SCHOOLS

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ABSTRACT

EQUITY AND ACCESS: COLLEGE BOARD AND THE EFFECTIVENESS OF THE ADVANCED PLACEMENT PROGRAM IN FIVE PRIVATE HIGH SCHOOLS

Cole Malsky

In recent years, the College Board and the Advanced Placement program have pushed for further equity and access for all students (College Board, 2020a). College Board is taking strides to offer students open enrollment to Advanced Placement; however, many underrepresented and low-income students are still unable to access these courses. The College Board and school districts need to continue to study strategies to help close this opportunity gap. To what extent is the College Board working to expand the AP program in private schools to serve more underrepresented students? What impact does the growth of the Advanced Placement program have on teaching and learning according to educators? What have been the challenges in terms of efficacy and access of the Advanced Placement program and what strategies have been implemented to overcome them according to educators?

This mixed method study utilized both quantitative and qualitative data to understand the impact open access of the Advanced Placement program has had on teaching and learning. The researcher examined quantitative findings from a Google Form survey sent to AP teachers at five private high schools on Long Island, as well as College Board AP participation and performance data from New York State. The qualitative findings from this research were collected through one-on-one, semi-structured interviews through a

video conferencing platform. Additionally, College Board publications related to equity and access were examined.

Quantitative findings from the research study were significant and can be used to support the growth of the Advanced Placement program in schools. The study's findings have implications for policy-makers, administrators, and teachers. Initiatives for Advanced Placement equity and access should continue to reach underrepresented students.

Additionally, open-access of the AP program is beneficial for success for all students and should be encouraged. Teachers should continue to gain support through professional development and digital resources from the College Board. A recommendation for future research is to include classroom observations in the qualitative portion of the study.

Including classroom observations in the qualitative portion of the study could yield further results about classroom strategies that are successful for AP courses.

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS	ii
LIST OF TABLES	vi
LIST OF FIGURES	vii
CHAPTER 1	1
Introduction.....	1
Purpose of the Study	2
Theoretical/Conceptual Framework.....	2
Significance of the Study	4
Connection With Social Justice and/or Vincentian Mission in Education	6
Research Questions.....	6
Design and Methods	7
Research Design and Data Analysis	7
Sample or Participants	9
Sample.....	9
Population	10
Instruments.....	10
Procedures.....	11
Quantitative Data Collection.....	11
Qualitative Data Collection.....	12
Definition of Terms.....	13
CHAPTER 2	15
Introduction.....	15
Theoretical Framework.....	15
Review of Related Literature	18
Background of the Advanced Placement Program	18
Creation of the Advanced Placement Program.....	19
The Role and Purpose of the Advanced Placement Program	21
Equity and Access to the Advanced Placement Program Initiatives	22
Criticism of College Board and the Advanced Placement Programs	23
Barriers of the Advanced Placement Program.....	25
Patterns of Student Success Among Underrepresented Students in Advanced Placement.....	28
Policy Implementation	31

Conclusion	33
CHAPTER 3	34
Introduction.....	34
Methods and Procedures	34
Research Questions	34
Research Design and Data Analysis	35
The Sample and Population	36
Sample.....	36
Population	37
Instruments.....	38
Procedures for Collecting Data.....	39
Quantitative Data Collection.....	39
Qualitative Data Collection.....	41
Research Ethics.....	42
Researcher Role	42
Conclusion	42
CHAPTER 4	43
Introduction.....	43
Results/Findings.....	44
Qualitative Data Analysis	44
Quantitative Data Analysis	46
Two-Way ANOVA.....	49
Hypotheses	49
Research Question 1	57
Qualitative Findings.....	57
Quantitative Findings.....	66
Research Question 2	69
Qualitative Findings.....	69
Quantitative Findings.....	76
Research Question 3	79
Qualitative Findings.....	79
Conclusion	92
CHAPTER 5: DISCUSSION.....	94
Introduction.....	94

Implications of Findings	95
Relationship to Prior Research.....	98
Limitations of the Study.....	107
Recommendations for Future Practice	110
Recommendations for Future Research	112
Conclusion	114
EPILOGUE.....	116
APPENDIX A.....	118
APPENDIX B.....	119
APPENDIX C.....	125
REFERENCES	126

LIST OF TABLES

Table 1 Frequency Table of Interpreted Themes (Interviews)	45
Table 2 Frequency Table of Interpreted Themes (College Board Publications)	46
Table 3 Survey Item Descriptive Statistics	51
Table 4 Frequency Table of Survey Items	52
Table 5 Tests of Interaction Effects Between Teacher Gender and Years of Experience on Students' Desire for Better College Applications	55
Table 6 Tests of Interaction Effects Between Teacher Gender and Years of Experience on Students' Desire to Save Money or Graduate Faster via AP Credits	56
Table 7 Tests of Interaction Effects Between Teacher Gender and Years of Experience on AP Exam Knowledge as a Motivator and Facilitator of Focus for Students	56
Table 8 Tests of Interaction Effects Between Teacher Gender and Years of Experience on Perceptions of AP Exam Material Alignment With Curriculum and Objectives	57

LIST OF FIGURES

Figure 1 Conceptual Framework (Malsky, 2021).....	4
Figure 2 Distribution of Subject Area.....	47
Figure 3 Distribution of Years of Teaching Experience.....	48
Figure 4 Line Graph of Total Scores	48
Figure 5 Line Graph of Mean Scores.....	49

CHAPTER 1

Introduction

The advanced placement (AP) program provides an opportunity for students to develop college-ready skills and potentially earn college credit in high school. In recent years, College Board's AP program have pushed for further equity and access for all students (College Board, 2020a). Researchers and scholars have questioned whether AP can continue to grow and serve other populations while offering effective college preparation.

While the AP program seeks to offer courses to underrepresented and low-income students, an appropriate policy and implementation guidance for districts is needed to ensure coursework provides college level preparedness for all students. In *Stand and Deliver*, Jaime Escalante stated:

There will be no free rides, no excuses. You have two strikes against you: your name and your complexion. Because of these two strikes, there are some people in this world who will assume that you know less than you do. (Menéndez & Menéndez, 1988)

College Board is working towards offering students open enrollment to AP courses; however, many underrepresented and low-income students are still unable to access these courses. The AP opportunity program, which focuses on funding schools and offering AP courses to lower income students, stopped adding new schools as of 2018 (College Board, 2020b). Many students attending schools in poor districts do not have access to the courses because of limited funding and high demand. Poor access to the AP program automatically places lower income students at a disadvantage. The College

Board and schools must continue to develop strategies that may close this opportunity gap.

Purpose of the Study

The primary purpose of this study was to understand whether the AP program has achieved its dual goals of equal access and effectiveness. An additional goal of this study was to understand the impact of open-access on the AP curriculum and educators. Existing literature suggest significant barriers remain, despite dignified gains in access to AP. It has been challenging to ensure equal access for all students and effectively prepare them for college coursework. Further, despite access to AP, there are still barriers. Therefore, another goal of this mixed-methods study was to identify strategies for overcoming enrollment barriers. Additionally, this study aimed to identify and analyze equal access strategies that have been implemented in a school community. Finally, the study sought to uncover College Board's accomplishment in providing low-income students access to AP courses. Overall, this study should help uncover effective strategies for offering a wide range of AP courses to underrepresented students.

Theoretical/Conceptual Framework

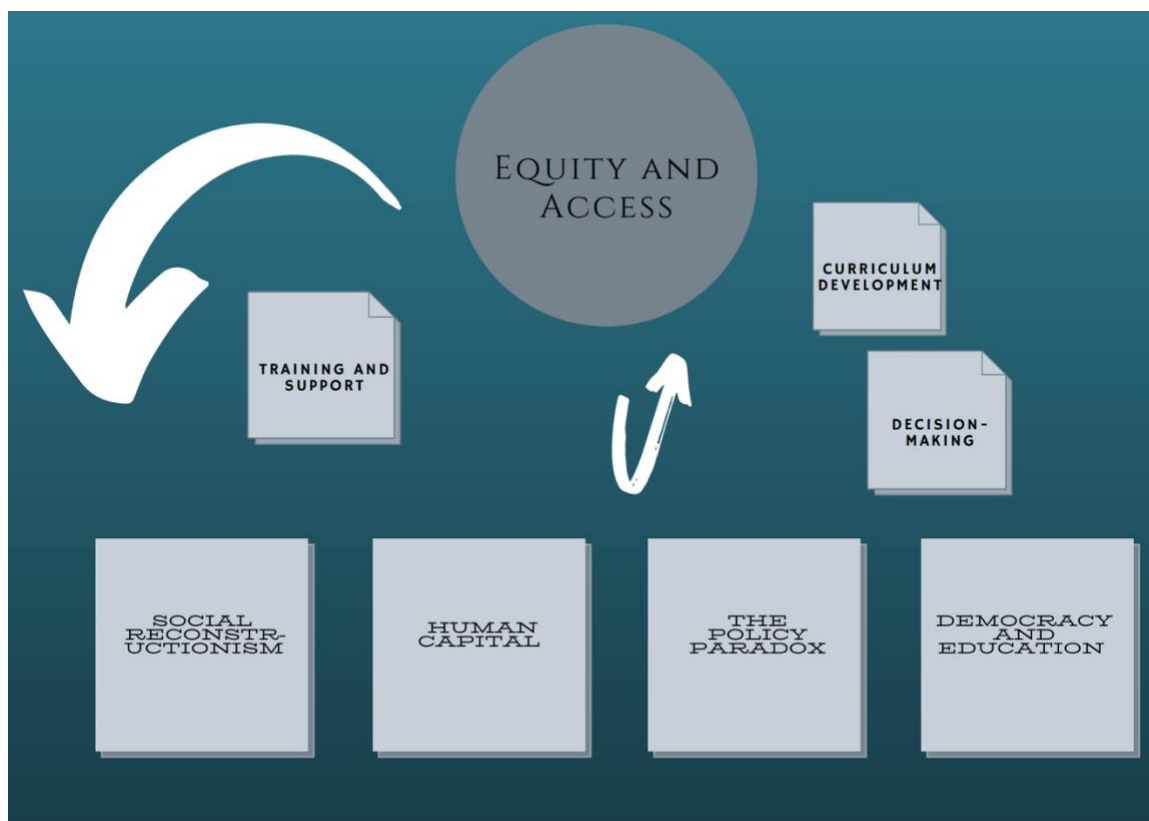
A conceptual framework is a structure that guides a study's analysis (Creswell, 2019). Four theorists heavily influenced the conceptual framework used for this study: Stone (2011), Brameld (1956), Dewey (1916), and Sweetland (1996). The first conceptual framework involves equity and access. There are four key components to ensuring equity and access to AP courses: social reconstructionism (Brameld, 1956), human capital theory (Sweetland, 1996), the policy paradox (Stone, 2011), and democracy and education (Dewey, 1916). These four components are the foundation of

equity and access to AP courses. Further, three key areas that ensure equity and access to the AP program are curriculum development, decision making, and training and support (see Figure 1). Curriculum development is important for offering underrepresented students further opportunities in AP courses. Educators are challenged with identifying students with high prior achievement while also developing new AP courses for interested students. The challenge of identifying a sufficient number of students with high prior achievement is a barrier that may prevent educators from creating or demanding new AP courses for interested students (Beach et al., 2019). In addition to curriculum development, decision making is also important for equitable access to the AP program. As Roegman and Hatch (2016) stated:

For data indicating racial disparities to be used to make changes, both school districts and College Board staff will need to address the idea of color-blind racism directly and make explicit decisions about the best ways to analyze and present data that does not easily allow for naturalization of racial patterns.

(p. 29)

Moreover, districts and the College Board need to unite to make clear decisions that benefit all students. Lastly, training and support contributes to equity, access, and the effectiveness of the AP program. Graefe and Ritchotte (2019) stated participants “attended a high school that invested significant time and effort into providing training for teachers on better structuring AP courses to meet their diverse learning needs” (p. 456). College Board’s recent push for open enrollment suggests school districts need to provide training for AP teachers to ensure access and efficacy for all students.

Figure 1*Conceptual Framework (Malsky, 2021)***Significance of the Study**

There is potential for local enrollment policy formation and district initiatives to enhance equitable access to the AP program. Additionally, national reforms surrounding equitable access to AP may have implications for teacher instruction. Furthermore, barriers still exist for underrepresented students despite the AP program's growth. Hanson's (2017) NCES study found "Spanish-speaking students attend schools that offer fewer advanced courses than other schools do, even after average student characteristics within schools are taken into account, including students' state standardized test scores in math and reading" (p. 8). Therefore, it is necessary to develop a clearer understanding of why barriers to AP courses exist for underrepresented students and the nature of the

growth of College Board and the AP program. Moreover, educators' perceptions need to be evaluated to provide AP opportunities for all students. The focus is on the classroom teacher and their readiness to meet the needs of the student population enrolled in an accelerated classroom. It is important to conduct further research on how to fully support teachers in the open enrollment process (Hopkins & Garrett, 2010).

Teachers and their experiences are critical to understanding the impact of policy on classroom instruction and student experiences. Despite the call for national, state, and local reform and administrative goal setting, there is a significant gap in the extant literature on open-enrollment classrooms: the teacher's experience. This mixed-methods research study identified reforms to support AP course access to underrepresented students. These strategies may trigger further research to examine ways of overcoming obstacles to AP access in low-income area school districts.

Structural barriers create gaps in academic opportunities that lead to disparities in student outcomes. Many districts fail to investigate structural barriers that affect how students are placed in academic courses, including tracking and admission to honors courses, which serve as catalysts to AP curriculum (Roegman & Hatch, 2016). Changing the selective enrollment and qualifying criteria for the accelerated classroom may create classrooms with mixed abilities. This coupled with accelerated, highly specialized curricular student demands with an increasingly diverse set of needs in the classroom and the most stringent and rigorous domain-specific teacher expectations (Hoyle & Kutka, 2008). While much of the research focuses on creating open enrollment classrooms, little research has focused on teachers' perception of open enrollment. Additionally, the tools teachers use to identify enrollment readiness can lead to further structural barriers in the

classroom. A greater understanding of teachers' daily practices in the classroom and how they meet students' needs to pursue rigorous instruction is critical (Rothschild, 1999).

Inequality in AP participation stems from fewer AP offerings at schools serving primarily low-income students of color attending predominantly White high schools with unequal access to AP. The extent to which AP classes successfully achieve their stated objective of developing college-level knowledge and skill determines their effectiveness (Kolluri, 2018). The most effective way to systemically group students to achieve academic growth remains unclear and has been met with mixed results (Kolluri, 2018). Furthermore, districts are faced with challenges in allowing students access to the courses. This study aimed to determine whether specific initiatives may provide greater access to AP classes for students.

Connection With Social Justice and/or Vincentian Mission in Education

The current research has a social justice component. Open access to AP courses improves learning opportunities for students when implemented correctly. Specifically, advanced learning via AP courses expose students to different cultures and perspectives. Through AP courses, students have the opportunity to complete college-level coursework in preparation for undergraduate education. Access to rigorous coursework benefits all students' futures. Successful implementation of open-access AP courses for underrepresented students is important to ensure equal opportunity for college level preparedness.

Research Questions

The following research questions directed the research study. A goal of the current study was to understand the impact of open enrollment in the AP program on all

students and the degree to which students are challenged with coursework that prepares them for college.

1. To what extent is the College Board working to expand the AP program in private schools to serve more underrepresented students?
2. What impact does the growth of the AP program have on teaching and learning according to educators?
3. What are the challenges related to efficacy and access to the AP program and what strategies have been implemented to overcome them according to educators?

Design and Methods

Research Design and Data Analysis

A mixed-methods and convergent design to produce triangulation was used for this study. A convergent design is “a mixed methods design in which the researcher collects and analyses two separate databases – quantitative and qualitative – and then merges the two databases for the purpose of comparing or combining the results” (Creswell & Plano Clark, 2011, p. 125). Therefore, to test the efficacy of and access to the AP program, it was critical to collect both quantitative and qualitative data to inform the research study.

1. To what extent is the College Board, specifically the AP program, work to expand the program in private schools to serve more underrepresented students?

The researcher conducted semistructured interviews to answer the first research question. Interview transcripts were exported to NVivo and coded for common themes. Content analysis of the College Board publications was also included to answer the first

research question. The researcher included College Board publications from their all access website and coded transcripts using NVivo for qualitative analysis. Additionally, the researcher used an adapted version of Duffett and Farkas's (2009) AP Teacher's Perceptions of Equity and Access survey. The survey was administered to teachers at the private high schools selected for the study. AP teachers were invited to complete the survey in Google forms. Once surveys were completed, results were exported to SPSS to analyze participant responses. Lastly, the researcher included College Board AP program participation and performance data from 2016–2020 in New York State. The AP program compiles a vast amount of data each year that is included to compare exam takers worldwide (College Board, 2020d). The College Board data were exported into SPSS for analysis.

2. What impact does the growth of the AP program have on teaching and learning according to educators?

To address the second research question, the researcher conducted semistructured interviews. Interview transcripts were exported into NVivo and coded for common themes. Additionally, the researcher used the adapted version of Duffett and Farkas's (2009) AP Teacher's Perceptions of Equity and Access survey. Completed surveys were exported to SPSS and data were analyzed. Lastly, the researcher included College Board AP program participation and performance data from 2016-2020 in New York State. The College Board data were exported into SPSS for analysis.

3. What are the challenges related to efficacy of and access to the AP program and what strategies have been implemented to overcome them according to educators?

To address the third research question, the researcher coded interview responses using NVivo for qualitative analysis. The educator examined common themes across participant data to identify meaning. Content analysis of the College Board publications was also included to answer the third research question. The researcher included College Board publications from their all access website and coded transcripts using NVivo to identify common themes.

Sample or Participants

Sample

This study's setting was five private high schools in Long Island, New York. Approximately five teachers from each high school (i.e., around 25 teachers) were asked to participate in a survey on equity and access to the AP program. To gain more insight into teachers' perceptions of AP equity and access, five teachers and a building administrator were asked to participate in individual interviews.

Criteria for purposefully sampling select teachers to participate in semistructured interviews were the following: (a) 3 years of teaching experience in the private high school, (b) a proportionate ratio of male to female teachers, and (c) a teacher from each core subject: English, math, social studies, science, and world language. Additionally, one building administrator was interviewed. These five private high schools were examined to gain further insight into teachers' perceptions of AP equity and access. Therefore, the sample was included as five high schools in one large district in diocese where they are located.

Population

The setting of this study was five private high schools in Long Island, New York. Permission was requested prior to conducting research. The sample represented the target population because of the demographics of the private high schools. According to College Board, 65.2% of students who graduated in 2014 and took an AP exam were White (College Board, 2020d). As College Board aims to include more underrepresented students in AP courses, private schools with low underrepresented student populations provided valid teacher perceptions about the steps taken in the classroom to offer open-access to AP courses.

Instruments

A survey was administered and semistructured interviews were conducted for the study. The interviews included teachers from the following core subjects: English, mathematics, science, social studies, and world language. A high school administrator was also interviewed to assess his perception of equitable access to the AP program. Interviews were recorded using Google Chrome's speech-to-text application. NVivo was used to code interviews upon completion of each interview recording. In the interviews, teachers were asked both demographic questions and questions about equitable access to the AP program curriculum. Additionally, teachers were asked about the impact of open-enrollment of AP courses on teaching and learning.

The researcher administered an adapted version of Duffett and Farkas's (2009) AP Teacher's Perceptions of Equity and Access survey to teachers. The survey was originally developed and tested in 2008 for the Thomas B. Fordham Institute. The

adapted survey was uploaded as an online version using Google forms. SPSS was used to analyze survey data.

Additionally, AP participation and performance data for New York State from 2016-2020 were examined. The total number of exams each year and mean scores were analyzed. Microsoft Excel was used to analyze the data. Furthermore, publications from College Board's all access website (i.e., news for College Board members) were used in the study. Publications on equitable access to the AP program were used for content analysis. The researcher used NVivo to code the publications.

Procedures

Quantitative Data Collection

The research study included multiple data sources to triangulate findings related to equitable access to the AP program. The researcher administered a survey via email for quantitative data collection. Approximately five teachers from each high school (i.e., about 25 teachers) were asked to participate in a survey on equitable access to the AP program. The survey was an adapted version of Duffett and Farkas's (2009) AP Educator Perceptions of Equity and Access survey. Originally, the survey assessed the growth of the AP program. Duffett and Farkas (2009) granted permission to use and modify the survey. The email inviting teachers to participate included the survey link and asked teachers to complete the survey to the best of their ability. The survey began with three demographic questions: AP class(es) taught, years of teaching experience, and gender. The 25-item survey gathered teachers' perceptions of equitable access to the AP program. Each survey item was measured on a 5-point Likert scale. (1 = *strongly disagree*, 3 = *somewhat agree* 5 = *strongly agree*). There was no neutral number in the Likert scale.

Additionally, the survey was sent using Google forms and completion on all survey items were required for participants to submit their responses. Further, participants' survey responses were uploaded to SPSS.

For the quantitative component of the study, the researcher included College Board AP participation and performance data (College Board, 2020d). The researcher examined data on underrepresented student participation and performance on AP exams in New York State between 2016 and 2020. Mean and total scores for each year were categorized by race: Hispanic/Latino, Asian, Black, and White. The College Board data were exported to Microsoft Excel for analysis.

Qualitative Data Collection

The qualitative component of the mixed-methods study included semistructured individual interviews with six educators. Of the six educators, five were AP teachers who taught English, math, social studies, science, and world language, and one was a building level administrator. These interviews were conducted to understand the impact of open access on AP program teaching and learning.

Further, semistructured interviews were conducted on a one-on-one basis with participants. The researcher asked each interviewee for consent to record the interview. Upon consent, the interview was recorded using the researcher's iPad for transcription. Prior to the interview, the researcher explained the interview will be used for doctoral research and participants will remain anonymous.

The first three questions in the semistructured interview were demographic (i.e., AP class taught, years of teaching experience, and gender). The next 10 questions were open-ended and assessed educators' perceptions on the impact of open-access on

teaching and learning of the AP program. The six recorded interviews were transcribed using NVivo. Once all interview data were transcribed, the researcher coded the data. The researcher used College Board publications on equitable access to the AP program and included College Board's all access website that provides news for College Board members. The researcher filtered the search for articles related to equity and access to AP courses and examined a total of 25 articles. Out of the 25 articles, only eight were related to equitable access to the AP program. College Board publications were uploaded to NVivo for coding. Interview transcriptions and College Board publications were coded for themes that emerged from the data.

Definition of Terms

Acceleration. Acceleration refers to taking additional classes to potentially graduate prior to the cohort date (NYSED, 2013).

Advanced Placement (AP). AP offers students the opportunity to complete college-level work during high school to earn college credit and placement (College Board, 2020c).

CLED. CLED stands for culturally, linguistically, and ethnically diverse students (Purcell & Eckert, 2006).

Detracking. Detracking removes students from academic tracks predetermined by test scores and previous academic achievement (Walker & Pearsall, 2012).

Equity. Equity refers to adopting policies that promote equal access and opportunities to participate in all school programs. The College Board promotes a specific initiative for open enrollment in AP classes (College Board, 2020b).

Multiple Measures. Multiple measures refers to implementing more inclusive measures to identify potential in high-ability learners including, but not limited to, psychometrics, neurobiological/cognitive indicators, creative-productive characteristics, psychosocial/environmental factors, and locally developed definitions of high-ability learners (Purcell & Eckert, 2006).

Open Enrollment. Open enrollment is the approach used to expand enrollment criteria for the AP course by opening access to anyone who wants to enroll (University of Southern California, 2013).

Opportunity Gap. The opportunity gap is a systemic divide between students who can access and gain entry into selective programs maintained by the school system and students who cannot. It also refers to schools' general failure to guarantee a policy of fairness in distributing equal opportunities for all students (Glossary of Education Reform, 2013).

Opportunity to Learn. Opportunity to learn refers to the notion that student enrollment in AP is largely determined by the amount and variety of available AP courses and ensures student have access to enrollment in those courses (Elliott & Bartlett, 2016).

Tracking. Tracking refers to using test scores and previous markers of achievement to identify academic paths that are often fixed and largely shape future opportunities (Walker & Pearsall, 2012).

Vertical Alignment. Vertical alignment is the deliberate planning of AP courses that sequences appropriate skill development beginning as early as middle school through pre-AP courses and continues through high school to support student development (Nugent & Karnes, 2002).

CHAPTER 2

Introduction

The following literature review focuses on College Board and the AP program and more specifically, the program's recent push for further access to AP courses and the barriers to access for underrepresented students. The review will begin by detailing the theoretical framework used to guide the study. Four theoretical frameworks are presented in this section: social reconstructionism (Brameld, 1956), human capital theory (Sweetland, 1996), the policy paradox (Stone, 2011), and democracy and education (Dewey, 1916). These four theories are the foundation for understanding equitable access to AP courses. The review will also focus on the history and background of the AP program, criticisms of the College Board and the AP program, and barriers to enrollment in AP courses for underrepresented students. Additionally, the literature review will facilitate understanding of the current study and the impact of AP open access on teaching and learning. Furthermore, the reviewed research includes articles on equitable access to the AP program, barriers to access, strategies used to overcome such barriers, and teachers' perceptions of open access. The current literature suggests both an achievement and opportunity gap related to AP.

Theoretical Framework

There are four theoretical viewpoints that impact this mixed-methods study. They are Brameld's (1956) social reconstructionist theory, Sweetland's (1996) human capital theory, Stone's (2011) policy paradox, and Dewey's (1916) theory of learning. These theoretical frameworks were used to guide the current study.

College Board and the AP program are growing to include opportunities for all students. According to Brameld (1956), there is opportunity for democratic education. Moreover, Brameld believed schools should be a driving force behind social and political change. Thus, social reconstructionism is an important theory for guiding the study on equitable access to AP programs. Brameld and reconstructionist educators believed in perfecting American democracy through education (Brameld, 1956). Further, social reconstructionism provides insight to the current study through examination of policy change that leads to student access to AP courses. According to Thomas (1999):

The unresolved challenge...is how the school curriculum can incorporate neo-reconstructionist or critical democratic practice and attempt to foster a more just community through the public schools without attempting to indoctrinate a preferred social perspective. Brameld believed that he evaded the charge of indoctrination by first establishing how democratic social planning can best achieve human needs. (p. #)

Therefore, curriculum development is important to provide further opportunities for underrepresented students in AP courses. The likelihood of student success may increase if policy makers and educators make decisions together.

Human capital theory is also critical for understanding the current study. According to Sweetland (1996), “the theory of human capital as applied to education has paralleled a powerful paradigm created by the general public: pursuit of education leads to individual and national economic growth” (Sweetland, 1996, p. 356). In the current study, teachers are faced with the impact of open-enrollment in AP courses on teaching and learning. Moreover, because the public perceives education as a strong determinant

of economic growth, human capital theory provides a strong rationale that favors increased support of education (Sweetland, 1996). Policy and curriculum changes may be related to economic growth, so the current study analyzed policy and curriculum changes that provide underrepresented students with access to AP courses.

Stone's (2011) policy paradox is also useful for understanding the current study. Stone rejected the overreliance on policy changes and demonstrated policymakers participate primarily in markets instead of communities. This is relevant to the current study on AP equity and access because it focuses on underrepresented students and their needs, which ultimately impacts teaching and learning in AP courses. Stone (2011) discussed how income inequality can undermine democracy. Stone (2011) stated "through shared stories and histories and the common experience of learning and playing together, children of different backgrounds come to respect each other and get along. Education builds the social harmony and civic skills necessary for democracy" (p. 60). However, the notion of democracy does not exist because of income inequality. Thus, this theory helped frame the study because of the recent push for open access to AP courses that target underrepresented students.

Lastly, Dewey's theory of learning (1916) is relevant to the current study. According to Dewey (1916), learning does not occur from being told something but rather through a constructive and active process. Therefore, this framework guides the study in understanding the impact of open access, curriculum changes, and professional development for AP teachers. Moreover, the most effective type of learning involves finding points of contact and mutual bearings (Dewey, 1916). Therefore, it is necessary to provide an AP program that does not teach the AP test but allows all students to develop

skill in the content area. Therefore, this framework facilitates understanding of the strategies educators use in their daily instruction to meet the needs of all learners.

Social reconstructionism (Brameld, 1956), human capital theory (Sweetland, 1996), the policy paradox (Stone, 2011), and democracy and education (Dewey, 1916) are four theories foundational to equitable access to AP courses. Further, three key areas that ensure equitable access to AP programs are curriculum development, decision making, and training and support. Curriculum development is important to provide underrepresented students with further opportunities in AP courses.

Review of Related Literature

Background of the Advanced Placement Program

According to Burns et al. (2019), the AP program was formed in the 1950s and required secondary schools and colleges to work together so that students could avoid course repetition. This exam-centered program was introduced to prepare students for the challenging curriculum and rigorous academic standards in college (Parker et al., 2013). According to Parker et al. (2013), “increasingly in public schools...AP has become the norm for what often are called “rigorous college-prep courses.” It has become the main brand and the largest program of advanced high school coursework in the United States” (p. 1,427). The College Board offers more than 30 AP courses. Of these courses, U.S. government and politics usually rank fourth, falling slightly behind AP English and U.S. history (Parker et al., 2013). Committees of teachers, scholars, and assessment specialists representing the College board have developed these courses, most of which are 1-year or 1 semester long that end with a high-stakes summative exam. Many students who score a 2 or higher out of a possible score of 5 are often eligible for college credit and are given

an advantage in the college application process. (Parker et al., 2013). Furthermore, not all students who participate in an AP course will sit for the AP exam and many colleges only accept a score of 4 to gain college credit. Therefore, if a student does not sit for an exam, that student is ineligible for college credit (Burns et al., 2019). However, there has been a recent increase in AP student test participation. According to Parker et al. (2013), “as the number of students taking AP courses increases, so does the ethnic and socioeconomic diversity of students in AP. There was a 13% jump in Latino and African American test takers between 2008 and 2009 alone” (p. 1,427). This jump occurred because the U.S. Department of Education (2000) and the College Entrance Examination Board mounted an initiative that encouraged U.S. high schools to offer at least 10 advanced learning courses by 2010. This initiative was later incentivized by subsidizing exam fees for low-income students and providing further professional development for teachers (Parker et al., 2013). Recently, the AP program has been criticized for creating courses primarily focused on exam content (Burns et al., 2019.)

Creation of the Advanced Placement Program

In the 1950s, the AP program was developed for high-achieving students at preparatory schools with elite status. The program later expanded to public high schools. Now, AP course enrollment has increased immensely throughout urban and suburban school districts. Between 1950 and 1980, AP participation almost doubled and then tripled between 1990 and 2000 (Gagnon & Mattingly, 2016). Since the growth of charter schools beginning in the 1990s and the movement of a standards-based curriculum, there has been a push for high schools to compete for student enrollment. With this movement, schools have advocated for a curriculum full of rigor and AP course options. This push

has resulted in an excess number of students taking AP courses and, in some cases, an increased achievement gap among underfunded districts unable to provide students with access to an AP curriculum (Judson & Hobson, 2015).

Policymakers must continue to evaluate the intended purpose of AP in schools. The research has indicated the AP program needs reevaluation because of disparities in college-level coursework and the need to prepare students for college (Judson & Hobson, 2015). Therefore, it is first important to understand the original intention of the AP program to make further adjustments for equity, access, and efficacy of current AP courses. This perpetual push and pull continues between policy makers seeking equity for all and others wishing to create a measure of distinction for selected students. Moreover, there were only 532 completed AP tests in 1954. In 2019, there were 2,825,710 students participating in the AP program (College Board, 2020d). By the 21st century, most students across a number of U.S. high schools were allowed to take AP courses, which gave them an advantage in the college admissions process (Schneider, 2009). Further, public school reformers have continued to encourage participation in AP classes. However, “Advanced Placement, like many other promising school reforms in the US designed to address inequities in education, has failed to level the playing field” (Schneider, 2009, p. 828). Schneider’s (2009) review is important to consider for the current study because it addresses how change can be slow for reformers in underserved areas. Consequently, slow reform often translates to continuous inequities between advantaged and disadvantaged students. However, Schneider added:

These inequities are not the fault of the AP. High status is accorded to a distinct few who manage to differentiate themselves from others, and schools with

the greatest resources are in a position to move quickly to align themselves with status-bearing standards. (p. 828)

Therefore, the current push for AP open enrollment does not allow for the type of AP participation needed in underfunded school districts. Further research is needed to discover strategies implemented by low-income districts to offer AP courses to underrepresented students.

The Role and Purpose of the Advanced Placement Program

The majority of high schools throughout America offer AP courses. High school instructors teach AP courses designed to introduce college-level coursework. Furthermore, students enrolled in these courses can opt to take a standardized test which measures their proficiency in the course. Some schools require sitting for the exam to take the course. In recent years, enrollment in AP courses has increased due to a heightened focus on science, technology, engineering, and mathematics (STEM). Warne et al. (2019) reported:

By providing a college-level experience to students while they are in their junior or senior year of high school, it is plausible that AP could cause a larger number of students to pursue higher education in STEM or a career in a STEM field (p. 102).

The findings of Warne et al. (2019) are important to the current study because they show differences between AP mathematics students and non-AP students can be most strongly attributed to preexisting differences between these two groups of students (Warne et al., 2019). These preexisting conditions lead to barriers in equitable access to the AP program goals.

Equity and Access to the Advanced Placement Program Initiatives

The research on access to AP courses for marginalized students in schools has focused on schoolwide incentives, teacher perceptions, and school structures (Fenty & Allio, 2017). Additionally, researchers have found school with a higher proportion of underrepresented students and low socioeconomic status impacted access to AP courses (Fenty & Allio, 2017). Schools with low SES students and a high proportion of underrepresented students had less participation in AP courses than predominately White high schools. Moreover, access to AP courses is complicated and systematic. There are numerous sociological, structural, and cultural aspects that surround the issue of efficacy and access to AP courses. Furthermore, the research on access has shown staff and students need training and support to encourage AP participation among underrepresented students (Fenty & Allio, 2017).

Research encouraging access to AP courses for all students, regardless of race and socioeconomic status, has found underrepresentation of marginalized students in AP is related to sociological and cultural aspects (Boss et al., 2011). In regard to this encouragement,

the motivation appears to be a combination of the new emphasis on college readiness for all plus increased attention to underserved urban schools with their greater number of students in or near poverty. The new thrust is that all students, in the name of equity, should have access to the gold standard. (Boss et al., 2011, p. 13)

Moreover, the challenge is with providing access. Many districts are unable to provide the necessary training to increase enrollment. Fenty and Allio (2017) discussed the

benefits and challenges of distance learning and compared the efficacy of distance learning to traditional learning models. These studies are important in determining strategies that have been effective in overcoming challenges related to efficacy and access to AP courses. Additionally, this research on distance learning is important in light of the COVID-19 pandemic in 2020 for highlighting some of the benefits of distance learning and assisting in overcoming some of the related challenges.

Criticism of College Board and the Advanced Placement Programs

Perceptions of underrepresented and low-income students' achievement affect opportunities available for middle and high school students. The research on AP courses and college readiness have explored these perceptions. Greer et al. (2018) explored the associations between investment in AP course participation and training and African American boys' views of themselves as learners and college preparedness. According to the researchers,

the boys' beamed when describing, one or more teachers whose classes they found engaging, challenging, and enjoyable. There were also relationships between teachers' use of instructional supports, such as rubrics and exemplars, being assessed with a wide variety of assessment types and achievement perceptions. (p. 178)

Thus, it is vital to examine teachers who provide these supports to determine the most effective professional development programs for AP teachers. The Greer et al. (2018) study is relevant and important to the current research because it highlights the importance of supportive supervision and effective professional development for providing further equitable access to AP courses.

Home and community involvement are overwhelmingly important for a student's likelihood of enrolling in AP courses (Gagnon & Mattingly, 2016). However, existing research has failed to highlight underrepresented students' unequal access to these courses. Gagnon and Mattingly (2016) argued "simply having access to an AP course at one's school is a better measure of equality of opportunity, for lacking AP options entirely could put gifted students at a significant disadvantage compared with their peers with access" (p. 269). This sentiment is relevant to the current research study because it highlights disparities in AP course access, particularly for underrepresented students in rural schools. Research has shown suburban districts exhibit the highest rates of AP success. The study also highlighted how rigorous AP teacher training in helping students enroll in AP courses to increase their preparedness for college could foster a culture of AP success. In turn, this culture would help better prepare underrepresented students in rural settings for post-secondary education and their careers.

Prior research has indicated student participation in rigorous high school curricula is related to a number of positive educational outcomes, including the increased likelihood of college enrollment (Rodriguez & McGuire, 2019). Additionally, college admissions counselors continue to value taking courses with rigorous curriculum and many colleges offer more evaluative points for students with AP courses on their transcripts. Recently, the number of students participating in AP courses from the College Board increased significantly due to the targeted federal and state policies that aimed to increase underrepresented student participation (Rodriguez & McGuire, 2019). Unfortunately, despite these policies, a Black-White AP course enrollment gap remains. Rodriguez and McGuire (2019) noted "racially diverse high schools may have

substantially fewer Black (relative to White) students participate in AP, irrespective of the number of AP courses offered” (p. 643). Most studies have neglected issues with AP course access and efficacy. This study is relevant to the current research study because it addresses the limitation in the literature on AP course taking and inequitable opportunities in racially diverse high schools. Additionally, this study further justified the importance of the current study because it demonstrated the effects of AP courses on college preparedness for underrepresented students.

Barriers of the Advanced Placement Program

AP course material tends to generate a culture of racial and SES inclusion. That is, underrepresented students are excluded from elevated academic courses as early as elementary school due to their perceived lower status (Jeffries & Silvernail, 2017). Specifically, Jeffries and Silvernail (2017) argued “the fear is magnified by other areas where cultural patterns rob Black students and their families of the social capital that is regularly traded among families who interact in non-school activities where valuable information about circumventing policy is shared” (p. 74). It is important to eschew a one-size-fits-all mentality for addressing student needs. Thus, ensuring there are plenty of educational opportunities for underrepresented students will substantially increase their potential and contribution to society. Jeffries and Silvernail’s (2017) research is important to the current research study because it evaluates the need to combat barriers that deny qualified students access to AP courses. Many of these barriers emerge at the local level; therefore, College Board efforts to offer access to these courses may be insufficient.

Research has shown the need for strategic implementation practices to facilitate access to honors-level and AP courses among underrepresented students (Walker & Pearsall, 2012). Walker and Pearsall (2012) found cultural, social, and economic factors resulted in Latino student underrepresentation in AP courses (Walker & Pearsall, 2012). Findings also suggested difficult-to-resolve social and cultural factors may be the strongest contributors to Latino student underrepresentation in AP coursework, making a multifaceted (e.g., communication, community-building, peer relations, and student achievement) change effort more promising” (Walker & Pearsall, 2012, p. 22). Therefore, it is necessary to promote interdisciplinary methods associated with early access to information on AP courses. Walker and Pearsall (2012) recognized access to information on AP courses could begin as early as elementary and continue through middle school via outreach programs. This study is important to the current research study in justifying the need to encourage advanced teacher training on implementing AP courses. Thus far, research has continued to overlook the social, cultural, and economic factors that the College Board and administrators tend to discount, thus underestimating the true potential of underrepresented students. The present mixed-methods study sought to identify effective ways to offer access to underrepresented students.

Crabtree et al. (2019) aimed to determine whether opportunities to participate in gifted education were equally distributed across elementary and middle schools in a large, urban school district in the Southeastern United States. The study explored how disproportionality in gifted education services at lower grade levels may affect advanced course participation in high school courses. The study revealed students in high poverty high schools had access to fewer AP courses than their peers at low poverty schools.

Racial disproportionality at low poverty schools was also evident (Crabtree et al., 2019). Findings from this study relates well to the current mixed-methods study because it demonstrated the need for low-income area schools to be granted greater opportunities in AP courses. These findings also reinforce how deeper issues related to AP equity and access should be identified so school districts can implement policies that increase enrollment for underrepresented students.

More research is needed to evaluate strategies that help students gain access to AP courses. According to one study:

We still know very little about what policies will effectively expand AP access in schools, especially if those schools predominantly serve students from socioeconomically disadvantaged backgrounds and/or students of color, if those schools are small, or if those schools reside outside suburbs. (Beach et al., 2019, p. 20)

School districts and the College Board have made numerous efforts to increase access to AP courses. However, little research has demonstrated the effects of these efforts. Additionally, Beach et al. (2019) stated, “this study asked whether the introduction of Pennsylvania’s AP accountability incentive significantly changed school-level AP access immediately and across time. Our results suggest the initial answer to that question is yes in the short-term but no in the long-term” (p. 19). Therefore, this study helps frame the current mixed-methods study because it demonstrates the need for further research in other states. AP accountability incentives may be a helpful solution to offering appropriate equity and access to underrepresented students, but further studies are needed to test both short-term and long-term effects. The current research study

aimed to draw conclusions that offer potential solutions for combating barriers to AP access and accountability.

Patterns of Student Success Among Underrepresented Students in Advanced Placement

Research has shown underrepresented students are less likely to begin high school on an AP track compared to White students (Witenko et al., 2017). Additionally, underrepresented students enrolled in classes on the college preparation track enroll in college more successfully and are more likely to graduate (Witenko et al., 2017). The goals of this study “were to determine whether on average Latina/o students and White students have different sources of support for receiving encouragement to enroll in honors/AP courses” (Witenko et al., 2017, p. 184). The researchers found a statistically significant differences between Latina/o and White students across 14 sources of support. Related to the current research study, this study examined “whether expanding traditionally measured social support networks to include more nuanced and diverse sources of support would lead to different social support networks for Latina/o and White students” (Witenko et al., 2017, p. 184). Thus, the study aimed to inform administrators on the importance of extended support network evaluation to create policies that advanced equitable access to AP courses. Further research on the benefits of support in combination with availability of AP courses is critical.

According to Crabtree et al. (2017), the opportunity to take AP courses in secondary school significantly aids in college admission and completion. Specifically, the authors argued:

at schools with a majority Black and Latinx population, limited numbers of AP

courses become a confounding issue. In a study of urban schools, researchers found that predominantly White high schools offered an average of 20.6 AP courses, whereas those with high percentages of Black students offered an average of only 11.75 AP courses. (Crabtree et al., 2019, p. 207)

Additionally, the study found Black students attending primarily White schools were less likely to be enrolled in AP courses. Therefore, this study is relevant to the current mixed-methods study because it emphasizes the importance of correctly implemented procedures for offering AP courses to underrepresented students.

School districts need to implement programs that allow teachers to develop equitable teaching practices. As Brown and Brown (2019) noted:

the theory underlying these goals is that teachers who engage students with equitable teaching practices coupled with a curriculum rich with resources and activities that support and encourage enactment of those practices will lead to (1) better student learning overall (2) more equitable student engagement and learning. (p. 2)

Furthermore, the number of completed AP tests and the number of qualifying AP scores increase when teachers participate in professional development programs that offer equitable teaching strategies. Therefore, districts and the College Board need to develop and implement AP teacher preparation programs to improve current equity and access policies. This article is important to the current research study because it provides evidence on how successful approaches can increase underrepresented student access to AP courses.

Warne et al. (2019) investigated the extent to which taking an AP mathematics course (i.e., AP calculus AB, AP calculus BC, or AP statistics) was related to students' likelihood of pursuing a STEM college major or career. Findings showed taking AP calculus or AP statistics on a wide scale did not significantly increase the number of STEM majors in college (Warne et al., 2019). The mixed-methods study focused on AP enrollment and different strategies for AP class enrollment recruitment. The study examined the relationship between AP mathematics courses and student interest in STEM careers and sought to understand why students enrolled in AP courses. Similar studies have sought to examine strategies for closing the opportunity gap. The Warne et al. (2019) study helped frame the current study's goals to identify strategies that may close the achievement and opportunity gap, as it was related to student motivation in selecting AP course enrollment.

Judson and Hobson (2015) examined and compared overall trends in growth and student achievement in the College Board's AP program. Findings revealed rapid growth in AP test taking and declines in pass rates. Moreover, the greatest declines in pass rates were found among those groups with the greatest increases in AP participation (i.e., Grades 9 and 10 and Hispanic students). The sharpest decline in passing rates emerged among Hispanic students administered AP exams. Societal ethos promotes rigorous curriculum and urges secondary schools to help students become college ready. This further raises concern that an increasing number of underprepared students are simply sitting for AP exams (Judson & Hobson, 2015). This study related to the current research study because of the findings related to student achievement on AP tests. Further, this study opened up further questions related to teacher perceptions of AP student

achievement. Additionally, the mixed-methods study aimed to explore AP efficacy in relation to equity and access. Judson and Hobson's (2015) findings guided the current research study because it demonstrated the need for further research on opportunities for underrepresented students to take AP courses successfully.

Policy Implementation

Research on the AP achievement gap also relates to cost. Unfortunately, established policies and incentives offered to marginalized students affect patterns of student success. McBride Davis et al. (2015) examined Black students' AP exam scores across 16 years in Texas, New York, and Florida. The authors tested the efficacy in which educational dollars were spent on AP exams and found:

The AP achievement gap for Black students in Texas, New York, and Florida widened as the AP participation gap narrowed slightly. In addition, with the increase in the number of Black student test-takers, an increase also occurred in the amount of financial support required for the AP exam (McBride Davis et al., 2015, p. 145).

Thus, inequality among exam takers continues. The researchers added "the College Board's equity and policy statement does not address equality in school resources distribution and equity in the experiences among Black students compared to other student groups" (McBride Davis et al., 2015, p. 150). Additionally, the College Board's statement does not consider the extent to which lack of resources play a role in Black students' abilities to excel once access to AP exams is offered. Findings of this study is important to the current mixed-methods study because of the issues related to access and available resources the College Board has potentially neglected to recognize.

Fenty and Allio (2017) evaluated the impact of a statewide virtual advanced placement (VAP) program on access to AP courses for underrepresented students. Findings revealed grantees for these programs were most inclined to focus on students from low-income households and traditionally underrepresented racial and ethnic groups. Data uncovered two primary themes related to AP course access: challenges students from economically disadvantaged backgrounds and academically disadvantaged students encounter. Fenty and Allio (2017) discussed the benefits and challenges of enrollment efforts of distance learning and compared the efficacy of distance learning with traditional learning models. Therefore, findings from this study relates to the meta-synthesis because these studies are important in determining effective strategies for overcoming challenges related to efficacy of and access to AP courses. The current mixed-methods research approach expands on Fenty and Allio's (2017) study by identifying achievement and opportunity gaps that can be used to inform future policy implementation.

Additionally, it is critical to create and evaluate policy solutions to provide underrepresented students with access to AP coursework. Gagnon and Mattingly (2016) aimed to analyze AP access, enrollment, and success across a rich data set of U.S. school districts. The study explored potential policy solutions and examined alternative advanced coursework options for rural schools not offering AP coursework. Findings revealed rural students were significantly less likely to take AP coursework than their urban and suburban peers, even when AP courses were available in their districts. The average success rate of school districts in the most affluent quartile of the United States more than doubled (52.1%) that of districts in the poorest quartile (24%; Gagnon &

Mattingly, 2016). The use of case studies to examine underfunded school districts and their approach to equitable AP access related to the goals of the current research study. That is, Gagnon and Mattingly (2016) examined AP access, equity, and efficacy in urban, low-income area school districts. This study represented trends in the literature on the College Board and AP program.

Conclusion

The literature on the College Board and AP program has demonstrated a need for further research on programs and incentives that provide greater access to AP courses for underrepresented student populations. The literature has suggested a need to further investigate the College Board's recent push to grant underrepresented students' access to AP courses and identify barriers that may prevent them from this access (Roegman & Hatch, 2016). The reviewed literature resulted from a search for articles related to equitable access to the AP program, barriers of access, and strategies used to overcome such barriers. The existing literature has demonstrated both an achievement gap and an opportunity gap (Roegman & Hatch, 2016). The College Board's current statement does not consider the role of lack of resources in underrepresented students' ability to excel once offered access to AP exams. As such, little acknowledgement of obstacles to access and resources available to underrepresented students has been made. This current mixed-methods study adds to the existing literature on AP efficacy and access to inform future policy.

CHAPTER 3

Introduction

AP and the College Board are committed to providing learning opportunities so all students can earn college credit and placement (College Board, 2020e). The recent push for open access to AP courses has increased opportunities to participate in AP courses for high school students throughout the United States. The purpose of this mixed-methods study was to understand the impact of open access on the AP curriculum and educators in five Long Island private high schools. This study also sought to discover whether the AP program has achieved its dual goals of equal access and effectiveness. Chapter 3 discusses the research design, sample and population, instruments, and procedures for collecting data.

Methods and Procedures

Research Questions

The research study sought to answer the following research questions concerning the impact of open enrollment on the AP program for all students and the degree to which those students are assigned coursework that prepares them for college.

1. To what extent is the College Board working to expand the AP program in private schools to serve more underrepresented students?
2. What impact does the growth of the AP program have on teaching and learning according to educators?
3. What are the challenges in terms of efficacy and access of the AP program and what strategies have been implemented to overcome them according to educators?

Research Design and Data Analysis

This study used a mixed-methods and convergent design to produce triangulated findings, as “the convergent design is a mixed methods design in which the researcher collects and analyses two separate databases – quantitative and qualitative – and then merges the two databases for the purpose of comparing or combining the results” (Creswell & Plano Clark, 2011, p. 125). Therefore, it was critical to collect both quantitative and qualitative data to properly analyze the efficacy of and access to the AP program.

To address the first research question, the researcher conducted one-on-one interviews, included content analysis of College Board publications, and collected data from surveys and the College Board AP program participation and performance. Interview transcripts were exported into NVivo and coded for common themes. Content analysis of the College Board publications was also included. The researcher included College Board publications from their all access website and coded for themes using NVivo for qualitative analysis. Additionally, the researcher administered an adapted version of Duffett and Farkas’s (2009) AP Teacher’s Perceptions of Equity and Access survey to teachers in the study’s private high schools. AP teachers were invited to complete the survey using a Google Form. Once surveys were completed, data were exported into SPSS to analyze participant responses. Lastly, the researcher included New York State College Board AP program participation and performance data from 2016-2020. The AP program compiles a vast amount of data each year to compare exam takers worldwide (College Board, 2020d). The College Board data were exported into SPSS for analysis.

To address the second research question, the researcher conducted semistructured interviews, collected survey data, and used College Board AP program participation and performance data. Interviews transcripts were exported into NVivo and coded for common themes. Additionally, the researcher administered the adapted version of Duffett and Farkas's (2009) AP Teacher's Perceptions of Equity and Access survey. The completed survey data were exported into SPSS and analyzed. Lastly, the researcher included New York State College Board AP program participation and performance data from 2016-2020. The College Board data were also exported into SPSS for analysis.

To address the final research question, the researcher conducted one-on-one interviews and completed content analysis of College Board publications. For data analysis, the researcher coded interview responses using NVivo for qualitative analysis. The educator examined common themes across participant responses to identify meaning. Content analysis of the College Board publications was also included. The researcher included College Board publications from their all access website and coded using NVivo to identify common themes.

The Sample and Population

Sample

This study took place at five private high schools in Long Island, New York. Approximately five teachers from each high school (i.e., about 25 teachers) were asked to participate in a survey on equitable access to the AP program. Five teachers and one building administrator participated in individual interviews to gain insight into teacher's perceptions of AP equity and access.

Moreover, criteria for selecting teachers to participate in semistructured interviews included the following: (a) 3 years of teaching experience in the private high school, (b) proportionate ratio of male to female teachers, and (c) a teacher from each core subject: English, math, social studies, science, and world language. Additionally, one building administrator was interviewed. These five private high schools were examined to gain further insight into teachers' perceptions of AP equity and access. Therefore, the sample was included as five high schools in one large district in diocese where they are located. Further, demographics from the individual teachers were not collected.

Population

The study was conducted at five private high schools in Long Island, New York. Permission was requested from school administration prior to conducting research. According to niche.com, School A serves nearly 800 students from Grades 9 through 12. The ethnic makeup School A is 51.2% White, 25.4% African American, 25.4% Hispanic or Latino, and 14.8% Asian or Native Hawaiian/Other Pacific Islander. According to greatschools.org, School B serves 2,348 students from Grades 9 through 12. The ethnic makeup of School B is 69% White, 5% African American, 9% Hispanic or Latino, and 14% Asian or Native Hawaiian/Other Pacific Islander. According to niche.com, School C serves 679 students from Grades 9 through 12 with unspecified demographics. Additionally, according to niche.com, School D serves 1,379 students from Grades 9 through 12. The ethnic makeup of School D is 69.3% White, 6% African American, 11.1% Hispanic or Latino, and 11.3% Asian or Native Hawaiian/Other Pacific Islander. School E serves nearly 1,700 students from Grades 9 through 12 according to niche.com.

The ethnic makeup of School E is 90% White, 3% African American, 1% Hispanic or Latino, and 1% Asian or Native Hawaiian/Other Pacific Islander. Data from the private schools were not accessible on the NYSED Website.

The study sample represents the target population because of the demographics in the private high schools. According to College Board, 65.2% of students that completed an AP exam and graduated in 2014 were White (College Board, 2020d). As College Board advocates to include greater underrepresented student participation in AP courses, teachers in private schools with low underrepresented populations shared their perceptions about the steps being taken in the classroom to offer open access to AP courses.

Instruments

For this study, a survey was administered to and semistructured interviews were conducted across a purposively selected sample. Interviews were conducted with teachers who taught the following core subjects: English, mathematics, science, social studies, and world language. A high school administrator was also interviewed to evaluate his perceptions of equitable access to the AP program. Interviews were recorded using Google Chrome's speech-to-text application. Interviews were coded with NVivo after each interview was recorded. Further, teachers interviews included demographic questions and questions on access to the AP program curriculum. Specifically, selected teachers were asked to share their perceptions on the impact of AP course open enrollment on teaching and learning.

The researcher administered an adapted version of Duffett and Farkas's (2009) AP Educator Perceptions of Equity and Access survey originally developed in 2008 for

the Thomas B. Fordham Institute. The margin of error for the overall sample was plus or minus 3 percentage points but was higher when comparing percentages across subgroups (Duffett & Farkas, 2009).

The researchers pretested the 60-question survey extensively with AP teachers before fielding it. The demographic and regional characteristics of the sample were matched to similar descriptive statistics in a 2005 College Board study of AP teachers. 14 The FDR Group statistically weighted the survey data to align the regional distribution of teachers in the sample to that of the College Board data (Duffet & Farkas, 2009).

The adapted survey was reformatted as an online survey in Google forms. Survey data were analyzed in SPSS.

Additionally, New York State AP participation and performance data from 2016-2020 were examined. The total number of exams for each year and mean scores were analyzed. Microsoft Excel was used to analyze the data. Furthermore, publications from College Board's all access website (i.e., news for College Board members) on equity, access, and the AP program was included in the study for content analysis. NVivo was used to code the publications.

Procedures for Collecting Data

Quantitative Data Collection

The current study incorporated multiple data sources to triangulate findings on equitable access to the AP program. A survey was administered to teachers via email for quantitative data collection as part of this mixed methods study. Approximately five teachers from each high school (i.e., about 25 teachers) were asked to participate in a

survey on equitable access to the AP program. The researcher administered an adapted version of Duffett and Farkas's (2009) AP Educator Perceptions of Equity and Access survey originally focused on growth of the AP program. The survey has since been adapted over time due to rapid growth of the College Board and the AP program since 2009. Additionally, technology and curriculum changes have impacted teaching and learning in the AP program. Duffett and Farkas granted permission to use and modify the survey.

The email survey invitation asked teachers to participate in the current study by completing the survey to the best of their ability. The survey first asked three demographic questions: AP class(es) taught, years of teaching experience, and teachers' gender. Demographic questions facilitated clearer understanding of teachers' perceptions of equitable access to the AP program across demographic subgroups.

The 25-item survey measured teachers' perceptions on equitable access to the AP program. Each item was measured on a 5-point Likert scale. The survey was sent using Google forms and all survey items required completion for participants to submit their responses. Then, participant responses were uploaded and analyzed in SPSS.

Additionally, the researcher included College Board AP participation and performance data as part of the quantitative component of the study (College Board, 2020d). The researcher examined New York State data on underrepresented student participation and performance on AP exams from 2016-2020. Total and mean scores reported for each year were categorized by race: Hispanic/Latino, Asian, Black, and White. The College Board data were then exported to Microsoft Excel for analysis.

Qualitative Data Collection

The qualitative component of the mixed-methods study consisted of individual semistructured interviews with six educators: five AP teachers (i.e., one teacher for English, math, social studies, science, and world language) and one building level administrator. These interviews were conducted to understand the impact of open access on teaching and learning in the AP program.

Further, semistructured interviews were conducted with participants on a one-on-one basis. Permission to record the interview was granted before the interview began. Upon consent, the interview was recorded using the researcher's iPad for transcription. Before the interview, the researcher explained to the participant that responses from the interview would be used for doctoral research and their identity would remain anonymous.

The first three questions in the semistructured interview assessed demographic information (i.e., AP class taught, years of teaching experience, and teachers' gender). The next 10 items were open ended questions on the impact of open access on teaching and learning in the AP program. The six recorded interviews were transcribed using NVivo and then coded. The researcher also examined College Board publications on their all access website about equitable access to the AP program and analyzed the content. The researcher filtered the search to include only articles related to equitable access and found 25 articles. Out of the 25 articles, only eight publications were related to equitable access to the AP program. The eight College Board publications were uploaded to NVivo for coding. Interview transcriptions and College Board publications were coded based on themes that emerged from the data.

Research Ethics

The researcher sent surveys through email to ensure voluntary participation among AP teachers in the five private high schools. Participation in semistructured interviews was also voluntary. To protect participant confidentiality, the web-based survey was designed to not collect personally identifying data. Data were collected and stored in Google Suite. Additionally, only the researcher had access to the raw data. No risks, discomfort, or consequences were anticipated for participants. Further, the consent form reviewed participants' rights to confidentiality and participants signed the form prior to participating in the study.

Researcher Role

The role of the researcher in this mixed-methods study may have impacted data collection and interpretation. The researcher is an AP English literature and composition teacher at one of the five private high schools. The researcher has been a teacher at the school for 3 years and an AP teacher for 5 years. Additionally, the researcher is a coach on the instructional design team at the high school for other teachers to assist them with general lesson design and technology applications. Therefore, given the researcher's involvement in AP, it was critical to only include findings that can be supported during the collection period of the mixed-methods study.

Conclusion

The current research study examined equitable access to the AP program. An additional goal of the research study was to understand the impact of open-enrollment in the AP program on teaching and learning. The next chapter will review results of the study.

CHAPTER 4

Introduction

Both qualitative and quantitative data were included in this mixed methods study to understand the impact of open access to the AP program on teaching and learning. Further, this chapter reviews quantitative findings from a Google form survey sent to AP teachers at five private high schools in Long Island and College Board AP participation and performance data from New York State. Additionally, qualitative findings were gathered through one-on-one interviews using the video conferencing platform, Zoom. To qualify for participation, the educator needed 3 years of teaching experience at the private high school teaching the following core subject areas: English, math, social studies, science, and world language. Additionally, College Board all access publications on equitable access to the AP program were included for content analysis. The surveys and one-on-one interviews were completed simultaneously.

The following research questions directed this study:

1. To what extent is the College Board working to expand the AP program in private schools to serve more underrepresented students?
2. What impact does the growth of the AP program have on teaching and learning according to educators?
3. What are the challenges in terms of efficacy and access of the AP program and what strategies have been implemented to overcome them according to educators?

Results/Findings

Qualitative Data Analysis

General findings from the one-on-one, semistructured interviews conducted via Zoom are presented in this section. Each participant gave consent for the researcher to record the interview. Each interview was transcribed using NVivo's transcription service and then imported into NVivo for analysis.

For the research study, six educators agreed to participate in one-on-one interviews. To participate in the interview, the educator needed 3 years of teaching experience in the private high school. Secondly, the researcher aimed to recruit an equal ratio of male to female teachers. Lastly, each educator was required to have taught one of the following core subject areas: English, math, social studies, science, and world language. Also, one building administrator (i.e., assistant principal) was interviewed for his perception of the AP program. These five private high schools were examined to gain further insight into teachers' perceptions of AP equity and access. Therefore, the sample was included as five high schools in one large district in diocese where they are located. Further, demographics were not collected from the individual teachers. Due to the sample size, variations between the individual schools were not examined. Additionally, race of the educators were not collected in the demographic information.

Interview coding resulted in twenty-one emerging themes from qualitative data analysis as seen in Table 1. Increased Student Enrollment was the most commonly occurring theme across interviews, with five participants referencing this theme 18 times. The next commonly mentioned theme was Underrepresented Students, such that six participants mentioned this theme 12 times. The third most common theme was Increased

Course Offerings, as five participants mentioned this a total of 11 times. The least common theme was Rapid Change, as it was mentioned only one participant mentioned it twice.

Table 1

Frequency Table of Interpreted Themes (Interviews)

Theme	Frequency (%)
Increased Student Enrollment	18 (11.84%)
Open Enrollment	12 (7.89%)
Underrepresented Students	12 (7.89%)
Increased Course Offerings	11 (7.24%)
Student Ability	11 (7.24%)
Minimal Professional Development	10 (6.58%)
Student AP Exam Performance	10 (6.58%)
Student Course Preparedness	8 (5.25%)
Teacher Instructional Methods	7 (4.61%)
Racial Equality	6 (3.95%)
Student Classroom Success	5 (3.29%)
Teacher Self-Improvement	5 (3.29%)
Tracking	5 (3.29%)
Quality of the AP Program	4 (2.63%)
Teacher Resources	4 (2.63%)
Technology Use	4 (2.63%)
Classroom Structure	3 (1.97%)
Student Choice	3 (1.97%)
Teacher AP Recommendations	3 (1.97%)
Teacher Support From Administration	3 (1.97%)
College Applications	2 (1.32%)
Parental Concern	2 (1.32%)
Rapid Change	2 (1.32%)
Student Resources	2 (1.32%)

Additionally, 14 codes emerged from qualitative data analysis of the College Board publications (see Table 2). Closing the Opportunity Gap was the most common code that emerged from the content, as seven of the eight publications referenced it 16 times. The second most common theme was Opportunity for Success, mentioned 14 times in six publications. The third most common theme was Growth of Advanced

Placement, referenced seven times in four publications. Lastly, Student Confidence was the least common theme, referenced two times in only two of the publications.

Table 2

Frequency Table of Interpreted Themes (College Board Publications)

Theme	Frequency (%)
Closing the Opportunity Gap	16 (20%)
Opportunity for Success	14 (17.5%)
Growth of Advanced Placement	7 (8.75%)
Benefits of Advanced Placement	5 (6.25%)
Learning Opportunities for Students	5 (6.25%)
Teacher Influence	5 (6.25%)
Instructional Strategies	4 (5%)
Personal Student Experience	4 (5%)
Professional Development for Equity	4 (5%)
Promoting Diversity	4 (5%)
Scholarly Preparation	4 (5%)
Socioeconomic Status	3 (3.75%)
Technology for Access	3 (3.75%)
Student Confidence	2 (2.50%)

Quantitative Data Analysis

For the quantitative portion of this mixed methods study, a survey was administered to study participants and New York College Board data from 2016-2020 on AP program performance and participation was analyzed. Out of a total of 25 possible participants, 23 completed the survey (92% response rate).

The first three questions of the survey focused on demographic characteristics of the study sample. The first question asked participants to report their gender. Findings showed 65.2% identified as male and 34.8% identified as female. The second demographic question asked participants to report the AP class they taught. Results suggested 13% of participants taught AP biology, 13% taught AP United States

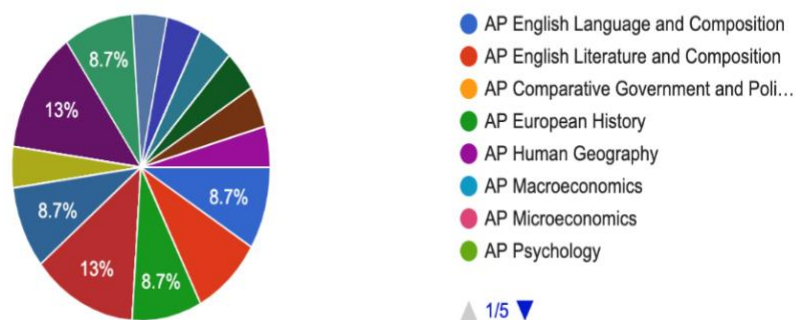
government and politics, 8.7% taught AP English language and composition, 4.3% taught AP Spanish language and culture, and 4.3% taught AP Calculus BC (see Figure 1).

Figure 2

Distribution of Subject Area

Name of AP Class Taught

23 responses



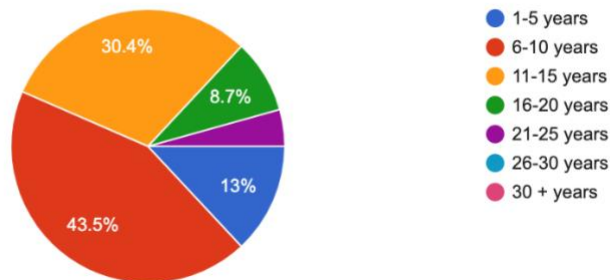
The third demographic question asked participants to report on the number of years of teaching experience. Results showed a wide range of years of experience. Specifically, 43.5% of teachers reported 6-10 years of experience, 30.4% of teachers reported 11-15 years of experience, 13% of teachers reported 1-5 years of experience, 8.7% of teachers reported 16-20 years of experience, and 4.3% reported 21-25 years of experience (see Figure 2).

These five private high schools were examined to gain further insight into teachers' perceptions of AP equity and access. Therefore, the sample was included as five high schools in one large district in diocese where they are located. Further, demographics were not collected from the individual teachers. Due to the sample size of the survey, variations between the individual schools were not examined. Additionally, the race of the educators were not collected in the demographic information.

Figure 3*Distribution of Years of Teaching Experience*

Years of Teaching Experience

23 responses



Additionally, College Board data from 2016-2020 on AP program performance and participation in New York was examined. The data indicated a steady increase in AP exam participation among underrepresented exam takers. Total reported scores were categorized by race (i.e., Hispanic/Latino, Asian, Black, and White) and demonstrated a primarily small percentage increase between 2016 and 2020 (see Figure 3). Additionally, New York scores demonstrated a steady mean score increase among underrepresented exam takers between 2016 and 2020 (see Figure 4).

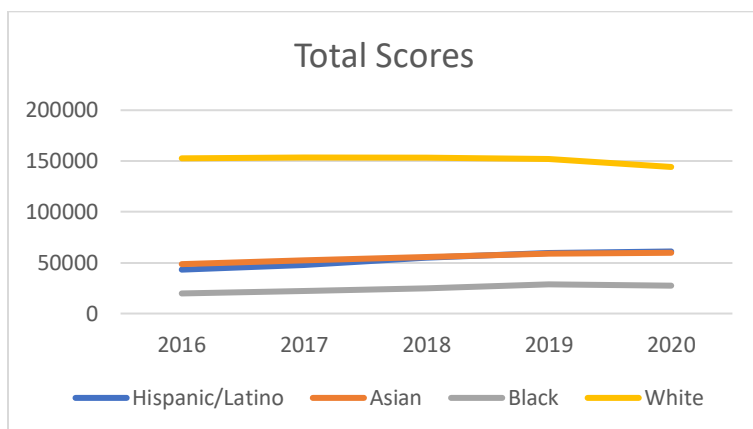
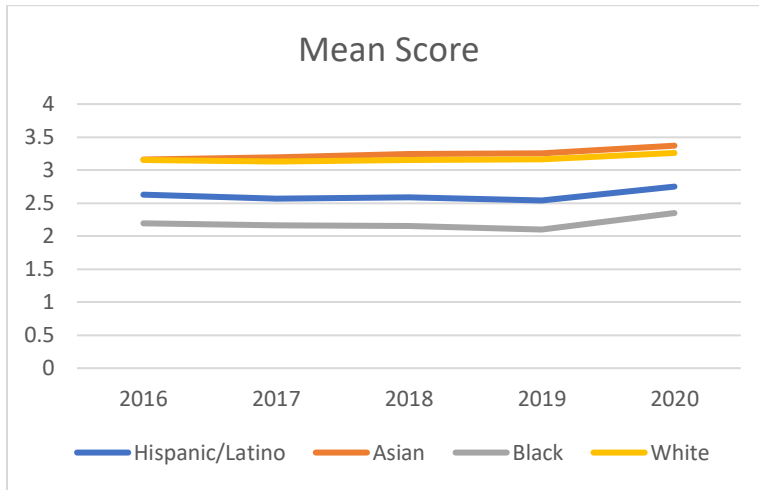
Figure 4*Line Graph of Total Scores*

Figure 5*Line Graph of Mean Scores***Two-Way ANOVA*****Hypotheses***

H₀1: There will be no statistically significant differences between genders in survey item responses.

H_a1: There will be a statistically significant difference between genders in survey item responses.

H₀2: There will be no statistically significant differences in survey item responses between teachers with different years of experience.

H_a2: There will be a statistically significant difference in survey item responses between teachers with different years of experience.

H₀3: There will be no interaction between teaching experience and gender on survey item responses.

H_a3: There will be an interaction between teaching experience and gender on survey item responses.

H₀4: Teachers with more experience will have negative perceptions about the growth of the Advanced Placement program.

H_a4: Teachers with more experience will not have negative perceptions about the growth of the Advanced Placement program.

A two-way analysis of variance (ANOVA) was the statistical technique used to determine significance. The two-way ANOVA was used to test for an interaction effect between two independent variables on the dependent variable. The two independent variables were gender (i.e., male and female) and years of teaching experience (i.e., least experience and most experience). Survey responses were the dependent variables.

Further, an alpha level of .05 was chosen for significance testing.

No missing values or coding errors were found during the data screening process. Additionally, no cases were deleted. The assumption tests for the analysis were conducted and met. The dependent variable (i.e., survey response items) was continuous and measured on a 5-point Likert scale (1 = *strongly disagree*, 3 = *somewhat agree* 5 = *strongly agree*). There was no neutral number in the Likert scale. The two independent variables (i.e., gender and teaching experience) consisted of two categorical, independent groups: gender (i.e., male and female) and teaching experience (i.e., least experience and most experience). Descriptive statistics for survey item responses are shown in Table 3 and response frequencies for each item are shown in Table 4.

Table 3*Survey Item Descriptive Statistics*

Item	Min	Max	<i>M</i>	<i>SD</i>
1. There are more students who want to be challenged at a higher academic level.	2	5	4	.80
2. There are more students who want their college applications to look better.	3	5	4.43	.73
3. High schools are expanding their AP program to improve their school's ranking and reputation in the community.	2	5	4.43	.79
4. There are more students who want to save money or graduate faster from college by getting AP credits.	2	5	3.78	1.17
5. The earlier grades are doing a better job of preparing students for the rigor of AP coursework.	1	5	2.83	1.03
6. Administrators are pushing more unqualified minority or low-income students into AP courses, just to make classes look more diverse.	1	5	3	1.28
7. High schools are doing a better job of encouraging qualified low-income or minority students to take AP courses.	1	5	3.13	1.10
8. Offering AP is the single most important way for high schools to serve and challenge advanced students in key subjects.	1	5	2.70	1.11
9. Many parents push their children into AP classes when they really don't belong there.	1	5	3.43	1.16
10. My school is too eager to expand AP participation just to improve its ranking and reputation.	1	5	2.87	1.18
11. Too many students overestimate their abilities and are in over their heads when they take AP classes.	2	5	3.09	.10
12. Many teachers avoid teaching AP classes because it's too demanding.	1	5	2.91	1.16
13. AP exams do an effective job of maintaining the quality of AP courses across the country.	1	4	3.26	.75
14. The knowledge that there's an AP exam waiting for students at the end of the course helps to focus and motivate students	2	5	3.52	1.08
15. My students' AP exam scores at least partly reflect how well I taught the class.	2	5	3.74	.86
16. The standards for grading AP exams have not been watered down—for example, a score of 3 means the same thing today as it did 5 years ago.	1	5	3.04	.98
17. The material covered on the AP exams aligns well with the curriculum and learning objectives of the courses.	3	5	4.04	.83
18. There may be some students who could thrive in AP but do not end up taking these classes.	2	5	3.70	1.11

19. My high school has a policy—whether formal or informal—of encouraging as many students as possible to take AP classes, or not?	2	5	3.70	1.06
20. Minority students are more likely to come from families with lower levels of income and education.	2	5	3.26	1.01
21. Minority students are often overlooked by high schools because of stereotypes or mistaken assumptions about their abilities.	1	5	3.17	1.27
22. Minority students are often inadequately prepared in lower grades.	2	5	3.17	.89
23. Minority students are less likely to be focused on the importance of college.	1	5	2.65	1.27
24. Minority students are more likely to lack the confidence that they can handle AP coursework.	1	5	3.17	.94
25. Minority students are flooded with messages from a culture that holds low expectations for them.	1	5	2.87	1.22

Table 4*Frequency Table of Survey Items*

Item	Response	Frequency	%	Valid %	Cumulative %
1	2	1	4.3	4.3	4.3
	3	4	17.4	17.4	21.7
	4	12	52.2	52.2	73.9
	5	6	26.1	26.1	100
2	3	3	13	13	13
	4	7	30.4	30.4	43.5
	5	13	56.5	56.5	100
3	2	1	4.3	4.3	4.3
	3	1	4.3	4.3	8.7
	4	8	34.8	34.8	43.5
	5	13	56.5	56.5	100
4	2	5	21.7	21.7	21.7
	3	3	13	13	34.8
	4	7	30.4	30.4	65.2
	5	8	34.8	34.8	100
5	1	3	13	13	13
	2	4	17.4	17.4	30.4
	3	11	47.8	47.8	78.3
	4	4	17.4	17.4	95.7
	5	1	4.3	4.3	100
6	1	3	13	13	13
	2	5	21.7	21.7	34.8
	3	8	34.8	34.8	69.6

	4	3	13	13	82.6
	5	4	17.4	17.4	100
7	1	3	13	13	13
	2	1	4.3	4.3	17.4
	3	11	47.8	47.8	65.2
	4	6	26.1	26.1	91.3
	5	2	8.7	8.7	100
8	1	3	13	13	13
	2	8	34.8	34.8	47.8
	3	6	26.1	26.1	73.9
	4	5	21.7	21.7	95.7
	5	1	4.3	4.3	100
9	1	1	4.3	4.3	4.3
	2	4	17.4	17.4	21.7
	3	7	30.4	30.4	52.2
	4	6	26.1	26.1	78.3
	5	5	21.7	21.7	100
10	1	3	13	13	13
	2	6	26.1	26.1	39.1
	3	7	30.4	30.4	69.6
	4	5	21.7	21.7	91.3
	5	2	8.7	8.7	100
11	2	8	34.8	34.8	34.8
	3	7	30.4	30.4	65.2
	4	6	26.1	26.1	91.3
	5	2	8.7	8.7	100
12	1	2	8.7	8.7	8.7
	2	8	34.8	34.8	43.5
	3	5	21.7	21.7	65.2
	4	6	26.1	26.1	91.3
	5	2	8.7	8.7	100
13	1	1	4.3	4.3	4.3
	2	1	4.3	4.3	8.7
	3	12	52.2	52.2	60.9
	4	9	39.1	39.1	100
14	2	5	21.7	21.7	21.7
	3	6	26.1	26.1	47.8
	4	7	30.4	30.4	78.3
	5	5	21.7	21.7	100
15	2	1	4.3	4.3	4.3
	3	9	39.1	39.1	43.5
	4	8	34.8	34.8	78.3
	5	5	21.7	21.7	100
16	1	1	4.3	4.3	4.3
	2	5	21.7	21.7	26.1
	3	11	47.8	47.8	73.9

	4	4	17.4	17.4	91.3
	5	2	8.7	8.7	100
17	3	7	30.4	30.4	30.4
	4	8	34.8	34.8	65.2
	5	8	34.8	34.8	100
18	2	4	17.4	17.4	17.4
	3	6	26.1	26.1	43.5
	4	6	26.1	26.1	69.6
	5	7	30.4	30.4	100
19	2	4	17.4	17.4	17.4
	3	5	21.7	21.7	39.1
	4	8	34.8	34.8	73.9
	5	6	26.1	26.1	100
20	2	6	26.1	26.1	26.1
	3	8	34.8	34.8	60.9
	4	6	26.1	26.1	87
	5	3	13	13	100
21	1	3	13	13	13
	2	4	17.4	17.4	30.4
	3	5	21.7	21.7	52.2
	4	8	34.8	34.8	87
	5	3	13	13	100
22	2	5	21.7	21.7	21.7
	3	11	47.8	47.8	69.6
	4	5	21.7	21.7	91.3
	5	2	8.7	8.7	100
23	1	4	17.4	17.4	17.4
	2	9	39.1	39.1	56.5
	3	3	13	13	69.6
	4	5	21.7	21.7	91.3
	5	2	8.7	8.7	100
24	1	1	4.3	4.3	4.3
	2	4	17.4	17.4	21.7
	3	9	39.1	39.1	60.9
	4	8	34.8	34.8	95.7
	5	1	4.3	4.3	100
25	1	4	17.4	17.4	17.4
	2	4	17.4	17.4	34.8
	3	8	34.8	34.8	69.6
	4	5	21.7	21.7	91.3
	5	2	8.7	8.7	100

A normality test was conducted for each level of each independent variable to assess normality of distribution of data. Standardized skewness was examined using the

Shapiro-Wilks test, which indicated data were normally distributed. Additionally, homogeneity of variances for each level of the independent variables was tested using Levene's test for homogeneity of variances. This was included to test the equality of variances in the study. This was statistically significant for survey item two, four, fourteen, and seventeen of the response items.

Furthermore, results showed a significant interaction between years of teaching experience and gender on students' desire to improve their college applications (i.e., item 2), $F(1, 19) = 10.87, p = .004$ (see Table 5). Thus, the null hypothesis was rejected.

Table 5

Tests of Interaction Effects Between Teacher Gender and Years of Experience on Students' Desire for Better College Applications

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Corrected Model	3	1.91	6.13	.004
Intercept	1	296.18	950.16	<.001
Gender	1	4.15	13.33	.002
Years of Teaching Experience	1	.84	2.70	.12
Gender x Years of Teaching Experience	1	3.39	10.87	.004
Error	19	.31		
Total	23			
Corrected Total	22			

Moreover, results showed a significant main effect of number of years of teaching experience on students' desires to save money or graduate faster from college by getting AP credits (i.e., survey item 4), $F(1,19) = 4.84, p = .040$ (see Table 6), but no significant interaction between number of years of teaching experience and gender on students' desire to save money or graduate faster from college via AP credits. As such, the null hypothesis was rejected.

Table 6

Tests of Interaction Effects Between Teacher Gender and Years of Experience on Students' Desire to Save Money or Graduate Faster via AP Credits

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Corrected Model	3	3.28	3.11	.05
Intercept	1	259.26	245.49	<.001
Gender	1	1.30	1.23	.28
Years of Teaching Experience	1	5.11	4.84	.04
Gender x Years of Teaching Experience	1	.78	.73	.40
Error	19	1.06		
Total	23			
Corrected Total	22			

Furthermore, there was a significant main effect of gender on students' knowledge of an end-of-course AP exam serving as a motivator and aid for focus (i.e., survey item 14), $F(1,19) = 7.21, p = .015$ (see Table 7), but no interaction between gender and years of teaching experience on exam knowledge as a motivator and focus facilitator. Therefore, the null hypothesis was rejected.

Table 7

Tests of Interaction Effects Between Teacher Gender and Years of Experience on AP Exam Knowledge as a Motivator and Facilitator of Focus for Students

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Corrected Model	3	2.51	2.62	.08
Intercept	1	186.68	194.80	<.001
Gender	1	6.91	7.21	.02
Years of Teaching Experience	1	.23	.24	.63
Gender x Years of Teaching Experience	1	.05	.05	.83
Error	19	.96		
Total	23			
Corrected Total	22			

Additionally, there was a significant main effect of gender on educators' beliefs that AP exam material aligns well with the course curriculum and learning objectives (i.e., survey

item 17), $F(1, 19) = 11.90, p = .003$ (see Table 8). Thus, the null hypothesis was rejected.

Table 8

Tests of Interaction Effects Between Teacher Gender and Years of Experience on Perceptions of AP Exam Material Alignment With Curriculum and Objectives

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Corrected Model	3	2.01	4.28	.02
Intercept	1	250.02	532.05	<.001
Gender	1	5.59	11.90	.003
Years of Teaching Experience	1	.09	.19	.67
Gender x Years of Teaching Experience	1	.55	1.16	.30
Error	19	.47		

Research Question 1

The first research question asked: to what extent is the College Board working to expand the AP program in private schools to serve more underrepresented students? This research question was answered through both quantitative and qualitative testing.

Qualitative Findings

The interview protocol included multiple questions that assessed educators' beliefs about the expansion of the AP program to serve more underrepresented students. The interview protocol was designed to remain standardized across all participants, such that each participant answered the same questions about open access to the AP program and the College Board's goal of serving more underrepresented students. The interview protocol questions related to this research question were the following:

- How do you feel about the growth of the AP program in recent years?

- Do you feel that your school has expanded the AP program and allowed more students access to the courses?
- At your school, do you believe that African American and Hispanic students are underrepresented in AP classes? Is there anything your school is doing to provide minority students with further access to AP courses? Is there anything you believe could be done to change your answers?

A variety of themes emerged from participant responses about the expansion of the AP program. Five out of the six participants reported increased student enrollment. Additionally, all six participants referenced underrepresented students as a result of private education. Participant 2 mentioned the following when asked about underrepresented students in AP classes:

When that expansion includes diversity, I think it helps the class when it's not just admitting students who are a wider range of, I don't know, I was going to say a wider range of the same kind of student. Because, actually, I taught in different schools and I'm teaching in this school and it's less racially diverse than schools that I have been in the past. In the past, I found increased racial diversity to add to the class generally because it looks like a lot of the content is there, these are social issues that we're probing that involve a wide range of experiences. When you're dealing with a narrow student body, you're really limiting the class as a whole to engage in some of the questions that are being debated in these texts.

The same participant added, "there's a couple of institutional barriers to wider diversity that I think are tied to the region. Okay. And I don't know what the school could do there." Participant 3 had a slightly different view of underrepresented students in AP

classes. This participant didn't feel that there was a lack of opportunity for underrepresented students, but focused on the make-up of a private school, stating:

I don't think we, the school, kind of just treats, I suppose, every student kind of incoming and as they move through the school kind of on the same scale. There isn't much consideration given to race and opportunity. I think maybe that might be because of the private school and maybe an assumption that you can afford to come here. So there is one economic hurdle and sort of background hurdle is kind of cleared. So it's less of a concern, perhaps. I'm not sure.

Another participant noted race and opportunity was not a concern in a private school setting:

I actually think they're represented well, now, the reason for that in my mind is that the students, the African American students at our school, they are disproportionately underrepresented relative to the local population. And so the students who do wind up enrolling at our school are more likely to have the familial and personal framework to pursue the most rigorous course of studies available to them.

Patterns that emerged surrounding the expansion of the AP program related to an increase in course offerings and enrollment. Participant 4 noted the following about the benefits of AP expansion:

The kids take a more collegiate, intellectual mature approach, not just with their schoolwork, but beyond that, once they start taking the course. It's not like whether or not it's over their head in their opinion originally, but once they take it and the numbers have been backed up by College Board, from what I heard that

basically kids that take AP courses are challenging themselves, but also, kind of, you know, become more collegiate in a lot of ways in high school. So, I think, I very much appreciate it and you know, I think it's good. I think it's really good how they're expanding. And, and I think it's doing well for the students.

Participant 5 also noted the benefits of the expansion of the AP program, “I feel like they've constantly been adapting to change and we're constantly looking to reinforce standards for students that are looking to be placed in the advancement program. So I feel the growth of it has been pretty good.”

Additionally, in regard to the change in student enrollment and course offerings, participants noted the College Board’s positive growth in what is offered to students and teachers. Participant 2 noted:

I think the program has developed incredibly online in terms of the tools that the college board provides and so forth. If that's what you're referring to the, the way, the resources that are provided and the extensive extra tutorials and such online, I think has been a pretty incredible.

Participant reports on the AP program suggested a pattern of increased course offerings. Participant 1 mentioned, “class of 2019, we had three calc AB sections and we kept building from there. Class of 2020, we had two calc AB and one calc BC, and then this year we have two calc BC, two calc AB, and three stats, a new offering.”

Additionally, Participant 4 discussed the need to offer more courses because of an increase in AP student enrollment. Participant 4 mentioned, “the ones I teach with 32 kids in each class probably you know, it's funny how certain it probably happens in all

schools, but how certain AP classes are pushed a little more than others. Yeah, I mean, if it were up to me, I would want to expand it for it further.”

A discrepancy in responses was noted for Question 9 in the interview protocol, “At your school, do you believe that African American and Hispanic students are underrepresented in AP classes? Is there anything your school is doing to provide minority students with further access to AP courses? Is there anything you believe could be done in order to change your answers?” Participants’ responses to this question did not align with the specific steps the school is taking to increase access for underrepresented students. For example, Participant 5 stated, “Not that I know specifically now.” Participant 4 stated, “there is no specific program here to generate more interest and participation in AP courses for minority students.” Participant 3 said, “there isn’t really a concern.” Furthermore, Participant 2 mentioned, “there’s a couple of institutional barriers to wider diversity that I think are tied to the region. Okay. And I don’t know what the school could do there.” Other participants noted specific procedures to providing greater access for underrepresented students. Participant 1 stated, “there’s also a positive possibility that teachers can look and see, like from there, you know, something that’s beyond the numbers, see that like this student could do really well in the AP exam.” Additionally, Participant 6 suggested enrollment in private education is a reasoning for the ability of underrepresented students:

I think it’s more, it’s just a product of, you know, the students of color who comes through our school. They’re just of a higher caliber than any other student, because to even think about to, just to enroll at our school given how underrepresented minorities are in our school, generally, shows moxie and

determination and like an absolute commitment to kind of pure academic pursuits to kind of get past all of that other, all of those other hurdles. So when it comes to APs, it's just, you know, that's why they're there. I think generally.

Therefore, response were inconsistent across participants. However, a pattern emerged that suggested underrepresented students are not discounted in AP courses because of the school demographics. Additionally, according to interview participants, course offerings and access to AP courses continue to grow.

Content analysis of publications on College Board's all access website aimed to answer questions about College Board's expansion of the AP program and its ability to serve more underrepresented students. Eight publications were included in the content analysis. Codes that emerged during content analysis were AP Program Growth, Closing the Opportunity Gap, and Promoting Diversity. These codes inspired recommendations for successful initiatives that may help expand the AP program to include more underrepresented students. One article detailed the goal of expanding access to include greater underrepresented student participation:

With the goal of ensuring that AP enrollment participation mirror the demographics of the overall school population, Middletown High School partnered with Equal Opportunity Schools (EOS) to expand AP participation by 45% in the 2018-19 school year, including a 107% increase among Black/African American students, a 47% increase among Hispanic/Latino students, and an 81% increase among low-income students.

Another study discussed increased access to AP courses and reported, "more than 47% of the graduating class took at least one AP Exam during high school and close to

33% scored a 3 or higher, which is not only higher than in 2017 but about 10 points higher than the national average.” Publication seven detailed the expansion of one AP course to promote diversity:

In 2019, the number of rural students who took an AP® Computer Science Principles (AP CSP) exam grew by 117% since the course launched in the 2016-2017 school year. The number of young women in rural communities participating in AP CSP far outstripped overall growth with an increase of 141%. At the same time, the number of rural students earning a 3 or higher on the AP CSP exam is also up triple digits, rising 109% over the past 3 years.

Additionally, one study reported, “Christopher Emdin, tenured professor at Columbia University’s Teachers College and creator of #HipHopEd, followed with a powerful talk on promoting diversity and equity in the classroom.” Thus, a pattern of themes pushing for increased availability of AP classes to students and initiatives to attract students at an early age emerged. For example, one study remarked:

In the last year, the College Board has been working with Ms. Rodda and other educators who are part of the National Science Foundation AccessCSforAll project as a research practitioner partner. The goal of AccessCSforAll is to increase the participation of K-12 students by attracting more women, underrepresented minorities, and students with disabilities, especially to the AP CSP course, while at the same time being a rigorous computer science course.

Additionally, publication six recommended another initiative to close the opportunity gap: “To begin closing those gaps, we embarked on several initiatives to better clear a path for students in small towns and rural areas—students that represent

30% of all enrolled public-school students across the country today.” The author also reviewed a specific initiative relating to underrepresented students: “since 2016, the College Board has partnered with code.org (n.d.), the Chan Zuckerberg Initiative, and state departments of education spread to AP Computer Science Principles statewide with a focus on access for girls, students of color, and rural students.” Similar to publication six, publication five argued initiatives are necessary for increasing access to AP courses for underrepresented students:

We were keenly interested in how AP grew to target traditionally underserved children and how it has tried to close gaps, not just in access, but also in outcomes, particularly as it has expanded over the past few decades. The challenges inherent in trying to achieve such lofty goals are huge and it’s important to understand how educators, philanthropists, organizations and governments have gone about it and what they’ve encountered.

Therefore, the publication detailed the features of successful initiatives and how they are successful.

Publication one discussed the importance of creating pathways of success in AP before students reach high school:

First and foremost, when we talk about ‘advanced placement,’ some folks have an ‘advanced placement’ before they walk into your classroom. An ‘advanced placement’ in the classroom often times comes from an ‘advanced placement’ socioeconomically and access-wise. So the reality is that it’s not about the young folks and their potential per se, it’s about who has had ‘advanced placement’ in a

world beyond the classroom and that we, as educators, just replicate those processes in the classroom.

Publication six provided an example of an initiative that paves a path toward success:

The College Board and three leading organizations focused on students educated in small towns and rural areas will collaborate to further this work: the Rural School and Community Trust, the National Rural Education Association, and Partners for Education at Berea College. Each of these organizations plays a critical role in bringing attention and support to the nation's more than 15 million students in small town and rural areas.

Additionally, organizations that assist in providing access to students are critical to the College Board's goal of increased access and equity. For example, publication two discussed:

While she only has four students in her class, for Ms. Rodda, that is a huge step in the right direction. Ms. Rodda, along with two other teachers, received a grant from the National Science Foundation and worked with the University of Nevada to develop the Code.org AP CSP curriculum for visually impaired students.

Without the grant, Ms. Rodda would have been unable to implement successful instruction like that detailed below:

Amanda Rodda (<https://www.columbian.com/news/2018/dec/23/vancouver-teacher-adaptscomputer-science-math-lessons-for-visually-impaired/>) started teaching AP Computer Science Principles

(<https://apcentral.collegeboard.org/courses/ap-computer-science-principles>) (AP

CSP) to her visually impaired students in the Washington State School for the Blind this year.

Thus, it is important to continue advocating for initiatives that enable educators the ability to implement successful instruction. As publication two stated, “more students with disabilities have access to computer science education around the country thanks to the hard work of these educators.” The same publication also reported:

The new course is fully accessible by using web accessibility standards, converting inaccessible online tools to accessible tools that include the use of the Quorum programming language as the basis of the tools. In addition, many of the “unplugged” activities are provided more accessible versions in the new curriculum.

Therefore, coded themes that emerges in analysis suggested there are ongoing initiatives for providing school districts and educators with the necessary tools to engage students and continue to grow their AP program.

Quantitative Findings

The two-way ANOVA revealed gender and teaching experience were significant predictors of several of survey items. However, many responses revealed gender and teaching experience contradict the hypothesis that teachers with more experience would have more negative perceptions about the growth of the AP program. The survey was comprised of questions addressing AP program expansion and its ability to serve more underrepresented students. The way the survey questions were conducted, the content in the questions, and the researchers experience with AP determined how certain survey items were related to answer the research question. A score of 1 indicated the participant

strongly disagreed, 3 indicated the participant slightly agreed, and a score of 5 indicated the participant strongly agreed with the statement. Therefore, since there was no neutral number, a three was considered more positive in the Likert scale.

The survey items relating to AP program expansion and its ability to serve more underrepresented students were the following:

- 3. High schools are expanding their AP program to improve their school's ranking and reputation in the community.
- 4. There are more students who want to save money or graduate faster from college by getting AP credits.
- 7. High schools are doing a better job of encouraging qualified low-income or minority students to take AP courses.
- 18. There may be some students who could thrive in AP but do not end up taking these classes.
- 19. My high school has a policy – whether formal or informal – of encouraging as many students as possible to take AP classes, or not.
- 23. Minority students are less likely to be focused on the importance of college.

All 23 participants answered survey items 3, 4, 7, 18, 19, and 23. The mean score was 4.43 ($SD = .79$) for survey item 3, “*high schools are expanding their AP program to improve their school's ranking and reputation in the community.*” Moreover, 21 participants responded to item 3 with a score of 4 or greater, indicating 91% of survey participants agreed or strongly agreed with the statement (see Table 4).

All 23 participants answered survey item 4. The mean for survey item 4 was 3.78 ($SD = 1.17$), “*there are more students who want to save money or graduate faster from*

college by getting AP credits.” Of the 23 participants, 15 responded with a score of 4 or greater, indicating 65% of participants agreed or strongly agreed with the statement (see Table 4).

All 23 participants responded to survey item 7. The mean score for survey item 7 was 3.13 ($SD = 1.10$), “high schools are doing a better job of encouraging qualified low-income or minority students to take AP courses.” Moreover, 19 participants responded to this item with a score of 3 or greater, indicating at least 83% of participants agreed with the statement (see Table 4).

All 23 participants completed survey item 18. The mean score for survey item 18 of 3.7 ($SD = 1.11$), “there may be some students who could thrive in AP but do not end up taking these classes.” Of the 23 participants, 19 responded with a score of 3 or greater, indicating 83% of participants agreed some students who could do well in AP do not end up taking the classes (see Table 4).

Additionally, all 23 participants answered survey item 19. The mean score for this item was 3.7 ($SD = 1.06$), “my high school has a policy – whether formal or informal – of encouraging as many students as possible to take AP classes, or not.” Of the participants, 19 responded with a score of 3 or greater. Thus, at least 83% of participants agreed with the statement (see Table 4).

Lastly, all 23 participants responded to survey item 23. The mean score for this item was 2.65 ($SD = 1.27$), “minority students are less likely to be focused on the importance of college.” Of the participants, 13 disagreed with the statement. Therefore, 57% of participants did not feel minority students were less likely to be focused on the importance of college (see Table 4).

New York College Board participation and performance data demonstrated an increase in total exam takers between 2016 and 2020 among underrepresented groups. There were 43,179 Hispanic/Latino exam takers in 2016, 47,969 in 2017, 55,226 in 2018, 59,801 in 2019, and 61,051 in 2020. This represents a 21% total increase of Hispanic/Latino exam takers between 2016 and 2020. Further, there were 48,590 Asian exam takers in 2016, 52,353 in 2017, 55,919 in 2018, 58,939 in 2019, and 59,759 in 2020. These values represent a 19% increase in Asian exam takers between 2016 and 2020. Moreover, there were 19,754 Black exam takers in 2016, 22,327 in 2017, 25,051 in 2018, 28,687 in 2019, and 27,325 in 2020. This represents a 28% increase in Black exam takers between 2016 and 2020. There was a small decrease in White exam takers. There were 152,672 White exam takers in 2016, 153,487 in 2017, 153,069 in 2018, 151,823 in 2019, and 144,171 in 2020. These values represent a 6% decrease in White exam takers between 2016 and 2020 (see Figure 3). There was a total of 278,524 exams administered in 2016, 292,527 in 2017, 309,055 in 2018, 319,337 in 2019, and 320,574 in 2020. Since AP participation and performance increases were examined only total numbers in specific groups were evaluated in the data.

Research Question 2

What impact does AP program growth have on teaching and learning according to educators? This second research question was tested through both quantitative and qualitative methods.

Qualitative Findings

Additional questions were included in the interview protocol to determine educators' perceptions about AP program growth and its impact on teaching and learning.

As previously mentioned, the interview protocol was constant across all participants. The following interview protocol questions were related to the second research question:

- What have you seen in regard to student performance on AP exams in the past 5 years?
- In the past 5 years, has the quality of your AP students in terms of their aptitude and capacity to do the work changed? How so? What factors do you believe contribute to your answer?
- Have you had to change the way you teach your AP course in recent years? How so?

Participants detailed their own experiences as educators over the years. The code that emerged from educators' responses, Student Ability and Technology Use, suggested AP performance often depends on the student's willingness to work hard. Thus, student determination contributes to performance more than intelligence. Participant 2 stated:

I don't want to say soft skills, but students who maybe don't do well on the part one exam or whose essay writing isn't fantastic, bring a lot to the live class experience, the class discussions, the collaborative work. They have a lot to ask in terms of questions. They're often less afraid to. They're not as timid. I mean, some of the students who are more refined are perfectly engaging, then some of those students, they're good at school. Let's just say, but they're not that good. They're not well-rounded. And so I think they don't stand out as well as some of the students with more complex backgrounds stand out. Students with a wider range of experience standing out in the class. And so in terms of the first part of the

thing, I'd say, what I've seen over the last couple of years are that again, we continue to add more students to the classes.

Additionally, Participant 4 stated a student's ability in an AP course is related to their mindset and determination. The participant stated the following:

You know, it just changes. You have the kids come in with the mindset that look, I'm going to get a good grade. If I do, that's not just great, but like, I'm going to have this collegiate type experience, you know, starting my sophomore year in high school, I can have all these credits before going to college. Not just that, you know, every school is a community and people talk and they, and, parents, students, everyone talks and you, and you get a feel of what to expect before you get to the classroom, which helps out. And then it's just, the more you do it, I believe, the better it ends up. Obviously, there's, factors involved with that.

Furthermore, Participant 1 stated the following about improvements in students' abilities in the course:

I do believe that students today are more prepared to do well than students even five years ago. And it's not anything necessarily with their intellect or anything like that. I think that some of the factors included is our teaching, like our teacher quality I think has increased over the past 5 years.

Participant 3 did not notice a decrease in student preparedness, but mentioned the following about student ability:

If I saw any kind of a change, I think it's the willingness to do basic reading which is kind of a prerequisite for real success in a course, or any sort of an AP course. And, I see, and not even like on homework assignments and things of that nature,

but on actual, like a DBQ essay exam, a take-home. They just turned one in a couple of weeks ago and it was evident that a number of the kids didn't actually read some of the documents, which is kind of astounding.

These perceptions uncovered the theme that AP performance often depends more heavily on student willingness to work hard.

Theme patterns of Support and Self-Improvement emerged in participants' responses on whether they had to change the way they taught their AP class in recent years. Participant 1 stated the following:

I'm constantly looking to improve. I think it also helps having taught the course a few times, I think the first time, there's a focus on just sometimes keeping up with the material, making sure to cover everything. And after going through it even one time, I think a lot of that goes away. A lot of materials are ready and can really focus on improving. So just doing it multiple times and then having good you know, administration and instructional leaders, I think has helped a lot too.

Participant 2 agreed that efforts had been made to change the way class was taught to improve the learning environment:

This school has been on a push to promote technology and collaboration. And so there's a lot of lessons or particularly over the last two years, I've been switching over to more collaborative group work exercises, finding ways to have the students interacting, reading a text together or commenting on a text or judging each other's work together. I've always done workshops with essays and discussion groups, but I've done more of that more recently.

Furthermore, Participant 4 stated the following about changing and adapting to new teaching methods:

You got to always keep up with what's going on. The test itself has changed a few times in recent years as well. And the relevance to the course has changed completely a few times. I think it's both that the course and the AP curriculum has changed, but also I think as I've taught it more years in a row now. I kind of see what is going to work and what the kids need. AP bio is very unique in the sense that it really is about how students can analyze an experimental result, which is very different from what they're used to. So, I think, really just learning that you have to have that kind of a question sequence the entire year. And, as often as you can really help them you know, reach that sort of thought process framework that they need to do for the AP exam.

Additionally, Participant 3 reported the following about adapting students to changes in the way class is taught:

I find myself having to sort of double back to basic things that some students should have had. I'll use a decent handle on coming into the class. But it has limited me in my ability to, to kind of push the top kids who come in with that basic understanding. And not because they have a higher intellect or anything, it's because they spent the time doing the prep work coming into the class. So, I have felt it's kind of like I have to serve two different masters which can be difficult and sometimes means I'm not serving either master fully, effectively.

These responses hint at the importance of student preparedness and finding ways to support students in class.

Educators generally reported their students fared well when asked about student performance on AP exams. Participant 5 stated, “we have a high standard here, so the students generally do consistently well when they venture off to the AP exams.”

Additionally, the emerging Student Performance theme suggested educators believed students who were more familiar with and had earlier access to AP courses were better prepared for AP exams. Participant 6 mentioned:

I guess the biggest lesson is the students who get involved earlier, do better later on. So if you're a student who takes AP Euro, chances are, you're going to do a better job of you know, tackling the AP US course. Now, I don't know how you could possibly strip out experience, ability, motivation, right. Because the student who takes AP Euro and then takes AP US, he just by virtue of the fact that he enrolled in AP Euro, he's going to get more experience in that style of course. But at the same time, he's also demonstrating that he possesses a certain level of motivation relative to the students who enrolled in global studies one. And so to disaggregate those things, those variables seem very difficult to me, but when you kind of just piece them all together, it is clear that the students who take more AP classes do better in subsequent AP classes or exams. I should say, I don't have that data handling in terms of like their GPA, but I do know that, and it's something we've looked at in terms of, you know how they fare on the tests themselves.

Additionally, Participant 1 mentioned increasing access as a way to facilitate better students exams performance for students:

It's good pushing the bounds in terms of access. If we open it up so that some students who, were not sure if they'll pass or not, but if we give them the

opportunity and try our best to give them extra attention, whatever they need to succeed. I think sometimes it'll result in a good passing grade and then sometimes they won't, but probably part of the struggle. It's part of the process.

Participant 2 stated the following about access and AP exam performance:

I would say the attempt to admit more students to the class usually doesn't turn over into a student getting a perfect score on the exam. That's not always going to happen. I do believe that what I've seen in terms of exam performance, I see a lot of engagement with the students in the material, in these classes. I think students respond well to the material itself. And I think they find it interesting and I think they enjoy the intellectual stimulation that comes with it.

Coded themes including Student Exam Performance, Student Ability, and Student Preparedness suggested trends of student motivation and readiness to participate in class. In turn, educators agreed further access to AP courses may lead to improved student performance on AP exams.

A discrepancy in responses was noted on the quality of AP students in recent years in terms of their aptitude and capacity to complete the work. A pattern of Technology Use and its place in the classroom emerged in coding participant responses. For example, Participant 5 stated technology has assisted students in their advancement in courses:

Yeah. I mean, the quality of work has been pretty consistent. I think the major thing that our school has adopted has been the implementation of technology. So when you're implementing technology in the form of iPads and access to the internet, for us, it's a little bit of a crutch for the students to go. Students go to

things like Google translate and all that to kind of use them as a resource. And, so over the past five years, I think that has been the biggest determinant and maybe allowed a little bit weaker students in, in the form of I guess their advancement over the courses, 4 or 5 years and learn the specific language.

However, Participant 6 cited technology as a reason the quality of student aptitude and capacity to complete work has changed:

The biggest thing that I've seen over the last 5 years is, I'm going to sound like an old curmudgeonly teacher now, but I think there are two things. Their attention spans have shortened. They're much more visually based, then text-based. We're sort of moving out of the Gutenberg parenthesis. And so I'm teaching a class that is text dominant, obviously presents even more of a challenge. And so I felt it necessary and rewarding to encourage much more reading in person at least as a hook where it seems maybe a silly piece of time, but to me, if they don't read the text, then whatever kind of engagement you get beyond that is, is borderline meaningless.

Thus, according to participants, technology has changed classroom instructional strategies. Most educators reported technology as an effecting method for improving their approach to instruction.

Quantitative Findings

A survey was administered to AP teachers in five private schools in Long Island to answer the second research question. Out of 25 participants, 23 responded to the survey. Each survey item asked participants to respond on a 5-point Likert scale. A score of 1 indicated the participant strongly disagreed, a score of 3 indicated the participant

slightly agreed, and a score of 5 indicated the participant strongly agreed with the statement. Therefore, since there was no neutral number, a three was considered more positive in the Likert scale. The way the survey questions were conducted, the content in the questions, and the researchers experience with AP determined how certain survey items were related to answer the research question.

The survey items that examined the impact of AP program growth on teaching and learning were the following:

- 1. There are more students who want to be challenged at a higher academic level.
- 2. There are more students who want their college applications to look better.
- 5. The earlier grades are doing a better job of preparing students for the rigor of AP coursework.
- 13. AP exams do an effective job of maintaining the quality of AP courses across the country.
- 14. The knowledge that there's an AP exam waiting for students at the end of the course helps focus and motivate students.
- 17. The material covered on the AP exams aligns well with the curriculum and learning objectives of the courses.

Once survey responses were collected, the data was exported to SPSS. The two way ANOVA revealed gender and years of teaching experience were significant predictors of several survey response items. A significant interaction emerged between years of teaching experience and gender on educators' perceptions that more students want their college applications to look better (i.e., survey item 2), $F(1, 19) = 10.87, p = .004$ (see Table 5). Thus, the null hypothesis was rejected. Furthermore, a significant

main effect of gender on educators' perceptions that knowledge of an end-of-year AP exam helps students with focus and motivation (i.e., survey item 14), $F(1,19) = 7.21, p = .02$ (see Table 7). As such, the null hypothesis was rejected. Additionally, a significant main effect of gender on educators' perceptions that AP exam material aligns well with course curriculum and learning objectives (i.e., survey item 17) emerged, $F(1, 19) = 11.90, p = .003$ (see Table 8). Therefore, the null hypothesis was rejected.

All 23 participants answered survey item 1. The mean score for item 1 was 4 ($SD = .80$), "*there are more students who want to be challenged at a higher academic level.*" Further, 18 participants responded to this item with a score of 4 or greater, indicating 78% of participants agreed or strongly agreed with the statement (see Table 4).

Additionally, 100% of participants answered survey item 5. The mean score for survey item 5 was 2.83 ($SD = 1.03$), "*the earlier grades are doing a better job of preparing students for the rigor of AP coursework.*" Of the 23 participants, 18 responded to this item with a score of 3 or less. That is, 78% of participants somewhat agreed or strongly disagreed with the statement (see Table 4).

Lastly, all 23 participants answered survey item 13. The mean score was 3.26 ($SD = .75$), "*AP exams do an effective job of maintaining the quality of AP courses across the country.*" Of the 23 participants, 21 responded to this item with a score of 3 or 4, suggesting 91% of participants somewhat agreed or strongly agreed with the statement (see Table 4).

College Board participation and performance data for New York State between 2016 and 2020 were examined. The data demonstrated the mean score on overall AP exam scores did not drop for underrepresented students. The mean score for

Hispanic/Latino exam takers in 2016 was 2.63, 2.57 in 2017, 2.59 in 2018, 2.54 in 2019, and 2.75 in 2020. Therefore, there was a 5% mean increase in exam scores for Hispanic/Latino students between 2016 and 2020. The mean score for Asian exam takers in 2016 was 3.16, 3.19 in 2017, 3.24 in 2018, 3.25 in 2019, and 3.37 in 2020. Thus, there was a 7% mean increase in exam scores for Asian students between 2016 and 2020. The mean score for Black exam takers was 2.19 in 2016, 2.16 in 2017, 2.15 in 2018, 2.1 in 2019, and 2.35 in 2020. Thus, there was a 7% mean increase in exam scores for Black students between 2016 and 2020. Additionally, the mean score for White exam takers was 3.25 in 2016, 3.13 in 2017, 3.15 in 2018, 3.16 in 2019, and 3.26 in 2020. Therefore, there was a 3% mean increase in exam scores for White exam takers between 2016 and 2020 (see Figure 4).

Research Question 3

The third research question asked: what are the challenges in terms of efficacy and access of the AP program and what strategies have been implemented to overcome them according to educators? This question was answered through qualitative methods.

Qualitative Findings

The interview protocol included additional questions to determine educators' beliefs about the challenges associated with AP program expansion and effective strategies for increasing enrollment and student participation. The interview protocol remained constant across all participants in assessing equitable access to College Board's AP program. The interview protocol items related to the third research question included:

- Other than expecting students to fulfill prerequisites, are your high school's AP classes open to any students who want to take them? What can your school do to refine its AP program policy?
- What kind of professional development does your school offer you for AP courses? Do you participate in any professional development from the College Board?
- Is there anything the College Board could do more of to offer you quality professional development surrounding the AP program?
- What do you think plays a major role in determining the size of the AP program at your school?

Access to courses and professional development were themes that emerged from educator responses to the above questions. Increased Course Offerings and Minimal Professional Development were codes suggesting that although educators do not attend much formal professional development sessions, they find the College Board's resources extremely useful for both teachers and students.

In response to the question about the professional development their school offers, Participant 4 remarked: "so the first year, I definitely went to, I believe two or three. So our school I think paid for a college course over the summer before we started the AP class to get our labs kind of ready to go. They paid for like 80% of it." Participant 6 also mentioned their school offers professional development: "I don't participate in anything from the College Board. We do have internal networking workshops that we go through that are departmental." Similar to Participant 4, Participant 3 mentioned: "something I've had access to, or sort of been directed to from the school is the AP summer workshop,

which is a week-long. I'm not sure the phrasing actually, and like the mini workshop, which is like 1 day in the fall." Additionally, Participant 2 stated:

I have not participated in the professional development offered by the College Board and I believe, well, I think teachers and some subjects or different departments at some time have taken those courses through like cooperation with the school.

Thus, Participant 2 clarified while he or she had never taken the College Board courses, he or she was aware the school offered the opportunity.

Participants reported similar responses about College Board and what they could do more of to offer professional development. Codes signified patterns that AP educators valued AP classroom resources and online professional development resources. For example, Participant 2 mentioned:

Something that would induce me to participate. I mean, I like when they provide videos that I can access at my leisure. I know that one-on-one contact and dialogue is great. I just find it. I mean, with children and schoolwork and everything else, it can be hard and some of these programs are in the summer or they're far away and they're not really conducive to participation. For me you're so busy. So making the material available, I found like, you know, reading the sort of post-op Q and A's and stuff that they offer for an exam. I find all of that material very, very helpful. More and more student seeing what students' actual work, that gets actually graded looks like, is really helpful. I like reading those essays.

Additionally, patterns emerged concerning the benefit of the AP classroom for teachers and students. Participant 4 stated:

Yeah, I mean, I think they've done a lot of good work on the AP Classroom. I think they're figuring it out as they've gone along here, but yeah. I mean, any resource, maybe, I guess, any resource they can do to assist teachers in getting the students used to the types of questions that are going to be on the exam is great for biology. Right? It really is how to think like a scientist, but the questions are very, very unique and only now when they start to put more than one AP classroom or any workshops shows how to use those questions to the best ability in your timeframes in a school.

Therefore, educators believed teacher resources are highly beneficial to students.

Participant 1 provided a similar response about what College Board could offer for quality professional development:

One thing would be that they have the offerings for math and, from what I see for the other subjects as well, for, you know, just other resources available for teachers like, YouTube videos, every day for the kids to watch and things like that, which is definitely helpful having those resources. And I particularly like the question bank and the whole dashboard and the whole platform that they have now with all of the official questions from the past. I find that super helpful. Especially, for the multiple choice because in the past they were guarded with multiple choice questions that they would share, like for calculus, at least it was once every five years, they would have the multiple choice, the least, and everything else was kind of guesswork on what a multiple choice problem would be like. But now, there are thousands of multiple choice problems there, to get a sense of. Then some of them are just really good questions that I want to ask my

kids anyway, even regardless of an AP exam. Just good thinking questions. So I find that really helpful as well.

Participant 5 made a similar recommendation for what they would like to see from the College Board: “it's difficult to attend and it was always difficult to attend in-person things. So maybe things where you can hear other teachers experiences within teaching AP courses.” Participant 6 also reported the importance of learning from other AP educators: “my experience has been, the most valuable portions of those experiences are when you have the opportunity to speak to other educators who teach the course.” Altogether, participants discussed the importance of sharing experiences with other AP teachers to learn from each other.

Administration support of Teachers and Quality of the AP Program were coded themes that emerged from educator responses on factors that play a major role in determining the size of the AP program at their school. These codes uncovered trends related to support from administration and successful approaches for offering increased access to AP courses. Participant 4 stated, “so I think, the more administrative involvement is going to make a better outcome. And then I think, secondly, I think teaching, you have to find the right teachers.” Participant 3 stated:

I think there is a belief that sort of with the right recipe and with some trial and error and some practice, we can get a lot of our middle and lower group students to a fairly successful, relatively successful point with some of these AP courses.

Participant 1 responded similarly about the size of the AP program at their school:

So I think that there's a goal of getting more students involved in it. I think that there's also a goal of trying to have the students do well and, and you know, that

tempers it a bit and makes sure that we don't just enroll an entire grade in a particular AP course. Maybe eventually we could and they would do well, but maybe we're not quite there yet, but maybe our lower level courses can continue to make strides as well.

Participant 1 also mentioned the following about increased enrollment and growing the program at the school:

It's opening up more and more, but it's also, it's good having some balance with it. It's nice having like the teachers and administration able to strongly guide students who may benefit from the class to help encourage them to take the AP class or who may not be quite there yet who could maybe benefit, you know, especially like an underclass, a student maybe benefit from one more year, not in an AP class, and then work their way up just so that they feel that same level of success in the classroom.

Therefore, educators responses suggested AP program and expansion and increased access to AP courses for students depend on administration and teacher support.

There was a discrepancy in participant responses to the following questions: other than expecting students to fulfill prerequisites, are your high school's AP classes open to any students who want to take them? What can your school do to refine its AP program policy? Participants provided a variety of responses when asked about open access at their school and refining the AP program. Participant 4 stated:

I would think it would be appropriate to open it up to anyone who is interested as long as they had a conversation with the guidance counselor, AP, whoever they decide in the school. Just so that the student is aware of what it entails and

something that they can have. Look, I mean, communication is good almost, at all times, right? Do we want to have more communication? So if the kids are more informed themselves about what's in store in an AP course, and the parents are more aware with what's in store for an AP course, it's a better outcome for everybody.

Further, participants suggested an increase in student enrollment and offered insight into the process of open access at their institutions in regard to prerequisites and open enrollment. Participant 2 stated the following about expansion:

I think the program's excellent. I think non-AP curriculum would like to be more like the AP curriculum in terms of what it offers. So I think in terms of what the school is doing to expand access, the best thing you could do to expand access, I think would be to provide more scaffolding or preparation for students in early years to have the skill sets that would give them the confidence to feel that they could sign up for the class. In other words, they weren't just being shoved into the courses. I think a personal interest is important. But I think that could be generated mostly through earlier education in the subject, maybe not prerequisites per se, but like bearing in mind as a goal when you're setting up the curriculum for freshmen or sophomore year to have the AP classes in junior or senior year as a goal.

Additionally, Participant 3 mentioned, "we've had like benchmarks of students that need to meet certain criteria to qualify for the programs. But I think we're kind of in a transition where that's becoming more open. And I'm not sure if it is full open, but it's certainly closer to that than it initially started at." Furthermore, educators believed student

choice and willingness to enter the course revolved around their school's policy of student access to AP courses. Participant 4 noted:

These kids come up, have a mature levelheaded conversation about what the pros and cons of taking AP chemistry next year would be, and they're ready for the risk. They're ready for the challenge. They're ready for the process, and that really is that same comparison for college. It's not just learning XYZ. It's really getting yourself emotionally and intellectually mature to handle yourself and your future.

Moreover, Participant 5 noted students are tracked in their school: "they're open to students who have been tracked and identified to be placed in that program."

Additionally, Participant 6 noted they are opened to most students in Grades 11 and 12:

I think it's open to most students. So rising juniors, rising seniors, we basically open up to any of them if they've satisfied prerequisites in terms of like math sequence or something like that, or, we have a requirement that they take a bio-chem and physics course. One of each through the 4 years. So as long as they've satisfied certain requirements, there are no restrictions on what they can take in the junior year. We're a little more guarded with certain courses like AP chem. We just want to make sure that our students are kind of stepping into something that they're capable of handling and also in the junior year, it becomes students that are generally very high achieving students.

Therefore, some participants were unaware of specific requirements for their school and some schools restricted enrollment based on the AP course. However, educators acknowledged the need for open access to AP courses, but added students must first become better informed about the course before selection begins.

Content analysis of research from College Board's all access website aimed to answer questions surrounding the challenges of efficacy and open access and successful strategies for overcoming these challenges. Codes that emerged were Opportunities for Success, Instructional Strategies, and Teacher Influence. These codes suggested the importance of exposing students to AP curriculum and the benefits of open access.

Publication five detailed the challenges of AP courses for students who have not been exposed to high quality curriculum: "we show that it's not always easy for AP to prove a booster rocket to kids who have lacked access to high quality coursework (and in many cases to decent middle schooling) but that's a challenge worth facing up to."

Publication one reported a similar assessment: "equity isn't about treating everyone the same. But I do believe that equity is about treating everyone with the respectful expectation that they can be successful and then to give them the opportunity to try that." Therefore, the College Board recognized the need to provide all students with tools for access to opportunities for success. For example, publication six reported:

College Board has also partnered, beginning in 2017, with the National Rural Education Association, 15 California high schools, and 15 Maine high schools to launch Official SAT Practice Rural Challenges — a way to spread awareness of the tool and encourage productive practice by rewarding districts that have the most students linking their College Board and Khan Academy accounts and completing the most practice problems and practice hours.

Thus, partnerships and initiatives facilitate student familiarity with advanced coursework and increases the likelihood of greater future success. Publication six also indicated "the partnerships also allow more students to improve their score, practice skills they'll need

in college and career, and see themselves as college ready.” Further, the writer mentioned the following about providing further opportunities to students:

For far too long, students and educators in small towns and rural America haven’t been sure that AP and its promise of rigorous, college-level coursework was applicable to them. We’re working to change that, both through outreach to rural communities and by a concerted effort to align AP coursework with the workforce needs of tomorrow. For example, College Board and Advance CTE (Advance CTE, n.d.a.) partnered to show how AP courses can be integrated into CTE programs of study (Advance CTE, n.d.b.)—with AP Computer Science courses being one of the strongest examples. AP and CTE courses can and do work in tandem to support career readiness by encouraging the development of academic knowledge and technical skills that are increasingly important to students’ overall employability.

For example, publication eight further described the benefit of exposing students to quality coursework:

The reality is only about 50% of our students go on to a post-secondary or a trade school. However, by allowing them to choose AP CSP as a math elective, we are sending a new generation of young adults into the world with knowledge of how the internet works, how data is secured and transmitted.

Furthermore, teachers and students need to advocate for equitable access to AP for students to enjoy the benefits of AP. Publication four stated:

The visiting students and teachers came from various school districts in Albany, New York City, Rochester, and Saratoga Springs to urge lawmakers to maintain

funding to cover AP exam fees for hardworking low-income students and to expand access in schools with few or no AP courses.

Thus, initiatives and funding advocacy are important for using AP as a way to create opportunity. Publication eight outlined:

Probably most common is the now-obsolete view that AP is yet another education benefit for those who already have plenty of them, (i.e., something that mainly helps the already fortunate). In the early days, that was more or less correct but beginning in the 1980s and continuing in a very big way today AP has also become a key lever into college and college success for disadvantaged kids. That doesn't mean they yet have equal access or that their performance is yet equivalent—those are among the big challenges today—but nowadays it's most definitely an opportunity creator, not just a privilege consolidator.

Moreover, a theme that emerged from content analysis was increased opportunities for students creates greater opportunities for success in college and beyond.

In addition to advocating for funding and initiatives for equal access, publication eight detailed the need for instructional strategies for considering open access:

Sharing photos from class on social media is another tool Mr. Correll uses to capture the attention of students and parents. He says once they experience the hands-on nature of the course, young women in particular, “see how creative they can be, and it makes them want to do more.”

Additionally, it is critical to provide rigorous instruction relevant to students. Publication one described culturally relevant curriculum for students:

Rigorous instruction and culturally relevant lessons are not mutually exclusive. “If I want to teach a young person to decode complex text, I could have him decode a Jay-Z lyric,” said Emdin. But first, educators must suspend their biases against the use of hip-hop in an educational context to activate the genius within young people, he said. He cites the rap cypher—a circular gathering of people, who take turns freestyle rapping about elements of their surrounding environment—as an example of intellectual expression among urban youth.

Furthermore, publication two outlines the importance of learning experiences for educators to help them engage students: “both groups help each other understand their areas of expertise, education teachers helped the teachers of blind and visually impaired student learn about computers science, and in turn, teachers learned about how to teach blind and visually impaired students.” Similar to publication two, publication six explained the following:

In North Carolina, Public Impact (Public Impact, n.d.) and the North Carolina School of Science and Math (North Carolina School of Science and Mathematics, n.d.) have partnered with the College Board to pilot a remote delivery model for advanced coursework for students and professional development for teachers.

Additionally, Publication six added quality professional development helps create a strong path to open access: “our work thus far to expand access and educational opportunity in rural areas and with these three organizations has connected the College Board to rural students and educators in new ways and has strengthened our organization’s commitment to those we serve.” Further, publication one added quality

professional development leads to positive teacher experiences that provide students with greater opportunities for success:

The one space that can overcome the obstacles society has constructed for youth is the classroom, he said. He argues that a teacher who can ignite the passion of the learner can clear a student's path to success. Instead of practicing ineffective methods, he urges teachers to adopt a reality-based pedagogy, which is grounded in the experiences of the learner. It's not about teaching intellect, it's about activating the genius that students already possess, he said.

Therefore, it may be challenging to provide positive experiences for students but is necessary to successfully provide open access to the AP program. For example, publication five stated the following:

Read the portion of our New York City chapter that describes the Urban Assembly School for Law and Justice. It shows how a terrific public high school—great leaders, great counselors, great teachers, ample resources, a remarkably “put together” program—can do remarkable things with AP for poor and minority youngsters, many of them entering 9th grade there from miserable middle schools.

Further, publication one added, “sometimes, it takes a special educator to successfully tap into a student's potential and boost learning.” Overall, initiatives and professional development were themes that emerged from College Board content analysis as important for expanding access, and educators were found to be integral in providing underrepresented students with quality AP coursework.

Conclusion

Chapter 5 will highlight the significance of the study's findings. Several themes were discovered in the one-on-one interviews with AP teachers. Additionally, survey results offered critical insight on the impact of open access on teaching and learning. Additionally, several themes emerged from the College Board's content analysis of publications from their all access website. Further, patterns emerged from College Board participation and performance data. One pattern that emerged from the interviews showed underrepresented students are not underrepresented in AP courses at the schools based on teacher perceptions. Another pattern that emerged from interviews and content analysis was course offerings and access to AP courses continue to grow. A theme that emerged from interviews was AP performance often depends more heavily on students' willingness to work hard than intelligence. Further, findings from interviews revealed support from administration and teachers is vital to successful expansion of the AP program. Additionally, interview findings suggested some participants were unfamiliar with specific requirements for their school and some schools restricted enrollment based on the AP course. As a result, educators reported the need to first inform students about course offerings before selection begins upon open access to AP courses. Survey findings revealed educators perceive open access and AP program growth positively. They felt the program has managed to grow while maintaining quality, rigorous curriculum for students. Additionally, findings from New York State College Board participation and performance data revealed the AP program has expanded to provide underrepresented students with further access and this expansion has not negatively impacted AP scores. Lastly, findings from content analysis of College Board publications revealed initiatives

and professional development are important to expanding access, and educators play an integral role in providing underrepresented students with quality AP coursework.

CHAPTER 5: DISCUSSION

Introduction

The College Board has attempted open access to the AP program to provide equal access to advanced courses. According to College Board, “all students who are ready for the rigor of the Advanced Placement Program® (AP) — regardless of their location, background, or socioeconomic status — have a right to fulfill that potential” (College Board, 2020b). Moreover, students with equal opportunities to college preparatory coursework may be more likely to succeed in postsecondary educational settings. The work invested in adjusting structures and building curriculum would be meaningless if students are not granted access to rigorous coursework with a reasonable likelihood of success (Royster et al., 2015). Early access to rigorous and engaging curriculum can have lasting future benefits for students.

The purpose of the current study was to explore teachers’ views on open access to the AP program and examine how the College Board has effectively provided equitable access to the AP program. A further goal of this mixed-methods study was to identify strategies for overcoming enrollment barriers. Additionally, the study aimed to uncover College Board’s accomplishments in providing low-income students with access to AP courses.

Five private high schools in Long Island, New York were used for the study’s setting. Five teachers from each high school (i.e., around 25 teachers) were invited to participate in a survey on equitable access to the AP program. Of the 25 invited teachers, 23 completed the Google form survey. In addition to the digital survey, six educators were interviewed—five teachers and one building administrator. Participant criteria

included: 3 years of teaching experience in the private high school, proportionate ratio of male to female teachers, and a teacher from the following core subjects: English, math, social studies, science, and world language. Furthermore, 2016-2020 AP participation and performance data from New York State's College Board were analyzed.

Additionally, publications from College Board's all access website were analyzed for themes related to equitable access to the AP program. The College Board publications and participant interview transcriptions were analyzed in NVivo. Both the survey data and the participation and performance data were collected and analyzed in SPSS.

Implications of Findings

Four theoretical frameworks guided the research study: Brameld's (1956) social reconstructionist theory, Sweetland's (1996) human capital theory, Stone's (2011) policy paradox, and Dewey's (1916) theory of learning. Each framework played an important role in understanding the study's findings.

The first findings in the study was College Board and the AP program continue to grow in offering opportunities for underrepresented students. Additionally, findings revealed initiatives and professional development were important to expanding that access. The College Board continues to offer initiatives to increase open access and provide opportunities for underrepresented students. Brameld's (1956) social reconstructionist theory most effectively explains this findings. Brameld (1956) and reconstructionist educators believed using education would perfect American democracy. For example, due to College Board's push to expand access to the AP program, traditionally underserved populations have had increased opportunities for rigorous coursework. Brameld (1956) believed schools should be a driving force behind social and

political change. Consistent with this notion, initiatives to increase AP access to underserved populations has provided benefits for students in higher education. As detailed in publication six, “AP and CTE courses can and do work in tandem to support career readiness by encouraging the development of academic knowledge and technical skills that are increasingly important to students’ overall employability.” Moreover, the College Board’s continued push to increase access for underrepresented students is an example of a driving force for social and political change. Underrepresented students now have the opportunity to achieve further success beyond high school.

Findings revealed a steady increase in underrepresented student AP exam participation and performance between 2016 and 2020 (see Figure 4). Additionally, administration and teacher support was shown to be vital to successful expansion of the AP program. This finding most closely aligns with Sweetland’s (1996) theory of human capital. The theory of human capital extends to the pursuit of education leading to individual and national economic growth (Sweetland, 1996). Moreover, the College Board and school districts continue to push for open access, resulting in greater underrepresented student participation. In turn, this has led to greater likelihood of success beyond high school and subsequent financial success. Therefore, underrepresented students’ exposure to advanced curriculum would not be possible without teacher and administrative support. Initiatives that help increase access for school districts need continuous evaluation to garner this support. Moreover, because the public perceives education as a strong determinant of economic growth, human capital theory provides a strong rationale that favors increased support of education when there is economic growth (Sweetland, 1996). Thus, findings showed administrative and teacher

support increased access to AP courses. In addition, these initiatives help develop the necessary tools and curriculum to support students.

Findings also showed underrepresented students were not underrepresented in AP courses throughout the study's five private high schools. This finding most closely relates to Stone's (2011) policy paradox. Stone (2011) rejected the overreliance on policy changes by demonstrating that policymakers engage primarily in markets instead of communities. In this study, interview participants discussed how underrepresented student populations were not discounted in AP classes due to the schools' demographics. That is, there was no policy to increase underrepresented student representation in AP classes because it was not a concern. As participant six noted, "I actually think they're represented well, now, the reason for that in my mind is that the students, the African American students at our school, they are disproportionately underrepresented relative to the local population." Stone (2011) discussed how income inequality can undermine democracy. One primary hurdle to private education for underrepresented students is tuition. Therefore, policy and initiatives should focus on helping more low-income students gain access to AP coursework. For example, 56.5% of survey participants strongly agreed high schools were expanding their AP program to improve their school's ranking and reputation in the community (see Table 4). According to Stone (2011), education builds necessary social harmony and civic skills for democracy. In contrast to the College Board's initiatives for increasing participation and providing all students with the opportunity for success, findings highlighted a focus on school reputation instead of equitable access.

Lastly, interview findings suggested some participants were unaware of specific requirements for their school and some schools restricted enrollment based on the AP course. Further, educators believed students need to be more thoroughly informed about the course before selection begins upon increased open access to AP courses. According to Dewey (1916), education is more of a constructive and active process rather than completing a task based on instruction. Therefore, open access to AP courses is in constant need of revisiting, particularly for private high schools. Moreover, based on findings, many educators desire open access to AP. Fortunately, participants and College Board data suggested open access seems to be working. For example, 52.2 % of survey participants agreed there are more students wanting a challenge at a higher academic level. Students are benefiting from open access and have the desire for challenge. According to Dewey (1916), the best form of learning involves the learner in finding points of contact and mutual bearings. This relates to the finding that teacher influence is a critical for engaging learners and providing rigorous curriculum that is interesting and relatable to the student. Exposure to rigorous coursework and increased access to courses may allow more students to find success in high school and college. Furthermore, AP participation and performance data showed increased exam takers did not result in lower AP scores (see Table 4.4).

Relationship to Prior Research

The research question about the extent to which the College Board working to expand the AP program in private schools to serve more underrepresented students was designed to understand how AP program growth has increased access for more underrepresented students.

In the study, educators believed their school encouraged open access to the AP program. In fact, 61% of educators agreed or strongly agreed their school has a policy – whether formal or informal – of encouraging as many students as possible to take AP classes, or not (see Table 4). Additionally, 83% of educators somewhat agreed, agreed, or strongly agreed that high schools are doing a better job of encouraging qualified low-income or underrepresented students to take AP courses (see Table 4). Therefore, educators shared the belief that AP program growth is granting more underrepresented students access to advanced quality coursework.

Jeffries and Silvernail (2017) discussed the importance of eschewing a one-size-fits-all mentality for addressing student needs. In the current research study, Participant 3 noted:

I found increased racial diversity to add to the class generally cause it looks like a lot of the content is there, these are social issues that we're probing that involve a wide range of experiences. When you're dealing with a narrow student body, you're really limiting the class as a whole to engage in some of the questions that are being debated in these texts.

Many educators believed increased diversity adds value to the classroom and the AP program in general. Jeffries and Silvernail (2017) noted, “the deficit thinking that has excluded the participants from high level courses essentially cultivates the hegemonic behaviors that feed the perpetuation of opportunities lost” (p. 74). Moreover, educators did not believe classroom was an issue at their schools. Participant 2 stated, “the school, kind of just treats, I suppose, every student kind of incoming and as they move through the school kind of on the same scale.” Educators believed open access to advanced

courses was one way for more voices to contribute to discussions happening in the classroom.

Gagnon and Mattingly (2016) analyzed AP access, enrollment, and success across a rich data set of U.S. school districts. Findings were consistent with the current study's findings. Gagnon and Mattingly (2016) stated there are "a number of policy initiatives that may promote AP access. Dedicated funding for poor and remote rural schools could help to overcome some of the...barriers by covering the costs of books, distance technology, and AP-specific teacher professional development" (p. 278). Publication eight stated:

For far too long, students and educators in small towns and rural America haven't been sure that Advanced Placement and its promise of rigorous, college-level coursework was applicable to them. We're working to change that, both through outreach to rural communities and by a concerted effort to align AP coursework with the workforce needs of tomorrow.

Home and community involvement play an overwhelmingly important role in a student's likelihood of enrolling in AP courses (Gagnon & Mattingly, 2016). Exam cost relief was not discussed by Gagnon and Mattingly. Patterns that emerged from content analysis of research from College Board's all access website suggested there are initiatives assisting school districts in providing easier access to AP courses and opportunities for underrepresented students. This is exemplified in percentage increases of underrepresented students taking AP exams. For example, New York State showed a 21% increase in Hispanic/Latino exam takers between 2016 and 2020 (see Figure 4).

The research question that asked what impact AP program growth has on teaching and learning according to educators aimed to understand the impact of AP program expansion on education based on teacher beliefs and College Board data.

According to educators in this study, AP performance often depends more on students' willingness to work hard than intelligence. Walker and Pearsall (2012) recognized the need for early access to information, starting in elementary school and extending through middle school via outreach programs. For example, Participant 6 stated, "when you kind of just piece them all together, it is clear that the students who take more AP classes do better in subsequent AP classes or exams." Walker and Pearsall's (2012) findings are consistent with findings from this research study. Walker and Pearsall (2012) noted, "this student described goal achievement and a self-driven desire to succeed as more important at the high-school level than it was in middle school, which may account for the reduced sense of peer pressure she experienced at the high school level" (p. 20). Educators shared similar views on student motivation and readiness to participate in class. In turn, educators perceived further access to AP courses can lead to higher student performance on AP exams. Indeed, 78% of educators agreed or strongly agreed there are more students who want to be challenged at a higher academic level (see Table 4). Thus, early exposure to AP curriculum may offer a more challenging experience to many students throughout high school with the potential to carry over to college. Furthermore, increased AP course enrollment does not always mean lower scores. For example, between 2016 and 2020, enrollment increased and there was a corresponding 7% increase in mean scores for Black exam takers (see Figure 4).

In the research study, 70% of educators agreed or strongly agreed the AP exam material aligned well with the course curriculum and learning objectives (see Table 4). Additionally, 87% of educators agreed there are more students who want their college applications to look better (see Table 4). Moreover, educators reported more students are eager to perform well and succeed in the future, indicating a need for educators to continue offering opportunities to students. Early exposure to advanced curriculum, quality teachers, and effective supports can facilitate access to student potential. Therefore, by improving access to AP courses for students, more students are exposed to curriculum that helps inform their decisions for the future.

Roegman and Hatch (2016) examined the increase of students taking AP examinations across a variety of demographic backgrounds in four New Jersey districts. According to educators, further access to AP courses may lead to higher student performance on AP exams. Roegman and Hatch's (2016) findings are consistent with findings from the current research study. Roegman and Hatch (2016) stated, "with the support of the network and their central office staffs, superintendents in these districts have shown that increasing access to AP classes has not decreased the average AP score" (p. 24). Study findings showed opportunity, support, and student determination positively affect students. Participant 1 mentioned:

If we open it up so that some students who, were not sure if they'll pass or not, but if we give them the opportunity and try our best to give them extra attention, whatever they need to succeed. I think sometimes it'll result in a good passing grade and then sometimes they won't, but probably part of the struggle. It's part of the process.

Therefore, findings suggested opening access to AP classes provides opportunity for positive change for both teachers and students. As Roegman and Hatch (2016) mentioned, “the superintendent said changes in AP access have created ‘a positive story’ that makes teachers more open to other reforms” (p. 24). Moreover, increasing access to AP courses facilitates the opportunity for positive change in equity-related issues (Roegman & Hatch, 2016).

According to educators, technology has become a driving force for change in classroom instructional strategies. Most educators perceived technology as a method that improved their approach to instruction. Consistent with these findings, Fenty and Allio (2017) found potential in using distance learning to increase access to AP programs for underrepresented groups. Fenty and Allio (2017) also noted:

When researchers examined school environments and structures that were beneficial and supported success among underrepresented groups, they found that success could be attributed to consistent mentoring supports, a willingness to provide differentiated support, and encouragement. (p. 52)

Providing students with learning opportunities, differentiating support, and multiple ways to access material may further success in advanced courses. Moreover, Participant 5 noted, “I think the major thing that our school has adopted has been the implementation of technology. So when you're implementing technology in the form of iPads and access to the internet, for us, it's a little bit of a crutch for the students to go.” Access to internet is sometimes viewed negatively. For example, a foreign language teacher may feel technology opens doors for student cheating. However, most educators reported

technology increased student instructional support and access to AP curriculum. Fenty and Allio (2017) added:

More research is needed to determine the best ways to support students who are academically at risk and working in distance learning environments. Often these students will need some additional help to be successful in the distance learning environment. AP teachers may expect a certain kind of student to take their AP courses and may not be prepared to provide these supports. (p. 54)

Though teachers may report mixed feelings about improving open access to AP courses, findings showed most educators supported increased enrollment and course offerings. Since this study was conducted during a global pandemic where technology has drastically changed how students learn, Fenty and Allio (2017) provide much needed insight into the need for teachers to be prepared for distance learning. The pandemic has made this challenge of technology and distance learning a top priority. Early on in the pandemic, this was even more critical because of the urgent switch to remote learning. The prior research helps inform current decisions and allows educators to reflect on the positives of distance learning in order to increase access to AP courses.

The research question concerning the challenges of efficacy and access to the AP program according to educators and the strategies that have been implemented to overcome them aimed to identify challenges of open access to the AP program and examine successful strategies for providing increased access.

Brown and Brown (2019) studied the effect of a specific professional learning program on AP computers science principles test scores in a student cohort across 167 schools. Findings were consistent with the present research study. Brown and Brown

(2019) stated, “this study provides evidence that the code.org teacher preparation program increases the number of AP tests taken and the number of AP qualifying scores earned by the students of the participating teachers” (p. 14). Similarly, content analysis of College Board’s publications demonstrated the value of initiatives in offering support for students and teachers. As publication six indicated, “AP and CTE courses can and do work in tandem to support career readiness by encouraging the development of academic knowledge and technical skills that are increasingly important to students’ overall employability.” Therefore, professional development is important for maximizing effectiveness of the AP program to produce long-lasting effects for students. Brown and Brown (2019) mentioned, “this study provides evidence that code.org’s professional development program for computer science principles is having significant and important impacts on preparing more students to succeed in computer science careers and improving the future of computer science education in this country” (p. 14). Moreover, initiatives and professional development are important to expanding access, and educators play an integral role in providing underrepresented students with quality AP coursework.

Educators found the College Board resources to be extremely useful for both teachers and students. Greer et al. (2018) explored achievement perceptions in high school African American males related to California’s local control funding formula (LCFF). Findings were consistent with the present research study. Greer et al. (2018) reported:

Almost all of them described, and beamed when describing, one or more teachers whose classes they found engaging, challenging, and enjoyable. There were also

relationships between teachers' use of instructional supports, such as rubrics and exemplars, being assessed with a wide variety of assessment types and achievement perceptions. (p. 178)

In a similar vein, the resources the College Board has provided for educators has improved their ability to engage students in daily lessons. Access to an AP classroom where teachers can educate students on information that clearly aligns with the end-of-the-year AP test allows for clear class expectations. Participant 4 mentioned:

I think they've done a lot of good work on the AP classroom. I think they're figuring it out as they've gone along here, but yeah. I mean, any resource, maybe, I guess, any resource they can do to assist teachers in getting the students used to the types of questions that are going to be on the exam is great for biology.

Educators shared similar views about the AP classroom and College Board's online resources as beneficial for AP expansion. Therefore, teachers facing instructional challenge and students encountering difficulties with content have numerous resources available to help them. Greer et al. (2018) mentioned, "teacher candidates must take varied approaches to learn about their students' cultural backgrounds, use that information to better engage and build relationships with them, and, generally, teach in a manner that is culturally relevant" (p. 179). This perspective is important to consider for offering increased access to AP courses for underrepresented students.

Educators and College Board data demonstrated the need for quality support and effective teaching when continuing to increase access to the AP program. Proper supports may facilitate increased AP access and potentially college enrollment for underrepresented students. Rodriguez and McGuire (2019) investigated AP program

expansion and gaps in AP course taking. Findings supported the current research study. Rodriguez and McGuire (2019) discussed, “equitable access to rigorous coursework such as AP in high school can address the stratification issues found in college admission and advanced standing” (p. 666). Moreover, College Board data suggested initiatives are critical for providing students with AP style curriculum early in high school to give them the tools and determination necessary for college coursework. Publication one mentioned, “instead of practicing ineffective methods, he urges teachers to adopt a reality-based pedagogy, which is grounded in the experiences of the learner. It’s not about teaching intellect, it’s about activating the genius that students already possess.” Therefore, findings across interviews and College Board data shared similar conclusions—teachers are critical in encouraging students to participate in AP classes. Rodriguez and McGuire (2019) mentioned, “an examination of the selection processes that determine AP eligibility, the information shared with students about AP, and the resources students receive once they are enrolled are critical to reducing disparities in the AP participation pipeline” (p. 672). Rodriguez and McGuire’s (2019) findings are consistent with the research study because educators shared the perception that students need more information about AP course expectations. Confidence in advanced course selection starts with increased awareness of potential.

Limitations of the Study

This mixed-method research study is subject to a number of limitations. The study included five private schools in Long Island, New York. Though educator perceptions were important for the study, the researcher was limited in understanding the role of limited financial opportunity (i.e., tuition obstacles). Threats to internal validity included

selection bias as the surveys were given to specific individuals and were not randomly selected. Additionally, another threat to internal validity was violated assumptions for homogeneity of variances and there were significant Levene's tests. Threats to statistical conclusions for the quantitative portion of the study includes educators' limited view of underrepresented students. Biased views may result in skewed reports. Additionally, educators had limited access to underrepresented students. Since students in the private schools were predominantly White and few details about educator experience was known, full understanding of survey questions may have been limited, potentially resulting in erroneous conclusions. Further, race of the educators were not collected. Underrepresented teachers may have different perceptions as to the opportunities provided for unrepresented groups of students. An additional limitation was a threat to the survey's external validity. That is, because school demographics were predominantly White, participants may have been less aware of initiatives offered to increased access to AP courses for underrepresented students. Including data from public schools may be more application to New York and U.S. education and thus offer further insight into initiatives for increasing equitable access to the AP program. Further, since the sample size was not large enough in this study, variations were not looked at between the schools. Only including private schools from one small area in New York provides a small glimpse into what is happening regarding AP equity and access. Further, examining data from public schools nationally would allow access to further strategies that are working to combat barriers that still exist. In turn, this would allow the researcher to look at variations between the schools. Combining private and public school data would also increase sample size and thus power to detect effects. The small

sample size of the current study ($N = 23$) is a limitation. Findings may be more robust with a larger sample size.

Another potential study limitation is threats to statistical conclusions for the College Board's AP participation and performance data. The College Board changed the way race data were reported in 2016; for this reason, the researcher intentionally removed 2015 data from the study. Including 2015 data would have muddied participation data for underrepresented students. Additionally, the present study was limited because it only examined equitable access to AP courses in one state.

Further, threats to internal validity for electronic surveys may be a limitation of the present study. Additionally, the administered surveys were anonymous. If participants signed into their Google accounts to complete the survey, participant confidentiality would have been breached. Therefore, the research study used consent and release forms to determine whether participants completed the survey. Furthermore, the survey was sent multiple times to maximize participation. Thus, paper and pencil surveys with a numeric code and consent and release form may have been more effective and efficient.

Threats to trustworthiness may have emerged to the extent participants did not provide fully honest responses to interview questions. The researcher is a member of the instructional design team at one of the schools and works closely with administration. Therefore, interviewees who were members at that school may have provided less honest responses to interview questions due to fear of administration interception. Additionally, at this school, AP course offerings are relatively new. In recent years, administration has responded to pressure to offer these courses in response to decreased student enrollment in private schools (i.e., pre-COVID-19). As public schools have expanded access to AP

courses, it was important for this particular school to begin offering them. One way to facilitate trustworthiness during interviews was to include participants with experience teaching AP classes in previous schools.

Another threat to trustworthiness in the qualitative portion of this study was the few publications from College Board's all access website. The researcher filtered the website search for articles related to equity and access and yielded a total of 25 articles. Then, the researcher examined those 25 articles and retained only those related to the AP program. Out of the 25 articles, only eight publications were related to equitable access to the AP program. Additionally, the most recent publication was from December, 2019. There have been no studies published on equitable access since 2019. However, the reader can derive a fair amount of confidence from the studies analyzed for content analysis because these studies thoroughly highlighted initiatives and strategies used in the continued pursuit of AP program expansion. Therefore, regardless of publication date, the research provided significant insight into programs and initiatives outside of participants' schools.

Recommendations for Future Practice

Findings from the three research questions indicated AP initiatives toward professional development for teachers and increased access for underrepresented students were important for the effectiveness and growth of College Board's AP program. Additionally, AP educators and administrators were in favor of increased participation and welcomed a diverse AP classroom setting. One recommendation for practitioners and policy makers in the education field drawn from the data is to encourage open access with professional development centered around the teacher-student experience. Teachers

may feel accustomed to traditional forms of teaching and focus on fostering a teacher-centered classroom for AP instruction. Therefore, professional development is needed for a student-centered learning environment where students have access to technology and use the supports College Board offers. Allowing access to AP classroom (i.e., online AP and pre-AP resources and tools) and providing teachers with adequate support via College Board's classroom resources will result in a valuable AP experience for the student. Educators perceived AP classroom is a valuable tool for teaching AP and engaging students. Therefore, policy makers and practitioners should consider these online resources for pursuing access and AP course participation expansion.

Additionally, findings showed the College Board is continuing to advocate for initiatives that offer access to the AP program for underrepresented students. Therefore, practitioners and policy makers should fully understand the benefits of advanced curriculum when attempting to narrow the achievement gap. It is critical to continue offering methods for increased access to reduce the achievement gap. Educators believed early access to AP curriculum only increases the likelihood of success in future AP courses and in college. Thus, school policies surrounding "AP potential" must be examined for effectiveness. Practitioners and policy makers should consider open access policies if their schools do not offer access for any student seeking enrollment in an AP course. Additionally, administrators should evaluate how to best take advantage of the high school environment to engage students with rigorous curriculum. This level of engagement may not necessarily mirror a university but should at least offer opportunities for students to engage in the material (Judson & Hobson, 2015). Moreover, educators agreed providing students with adequate knowledge about their expectations in an AP

course is important to their success. Therefore, practitioners and policy makers should ensure students understand the varied system of supports the College Board has made available to them to maximize preparation for classroom instruction and enhance understanding of how to take advantage of the proper supports for their exams.

Moreover, AP teachers must possess a thorough understanding of how to best support students to deliver adequate encouragement. Providing professional development on the availability of supports for teachers should be considered by Policy makers and practitioners should consider offering professional development training on support availability for teachers to facilitate open access to the AP program.

Recommendations for Future Research

Future research should consider including data from public schools to add further credibility. This research may also include a larger sample size to give more educators an opportunity to express their views on the AP program growth. Including more educators in future research would also allow researchers to identify additional strategies for increasing access to the program and offering more courses to underrepresented students. Since Public schools may harbor a stronger focus on equitable access initiative because they tend to have more underrepresented students than private schools. It is necessary for future studies to examine the extent to which schools and teachers who receive incentives are successfully increasing underrepresented students' achievement on AP exams (McBride Davis et al., 2015). Moreover, future researchers could learn new trends that are successful in providing quality AP instruction to contribute to student success.

Additionally, including more schools with a variety of characteristics would increase sample size and thus improve credibility of findings. Including more teachers

with varied teaching experiences could provide more nuanced perceptions of the AP program growth. Teachers who have significant experience working with underrepresented students in an AP classroom setting may provide meaningful insight into the effectiveness of the AP program. Additionally, increasing the sample size of teachers would add clarity on their role in the AP program growth and how their school handles increased access. In turn this would allow the researcher to look further into variations between the schools. Therefore, including public schools in the study could provide a wider breadth of educator perceptions on underrepresented students and the support systems that are or are not in place for students taking AP courses. Additionally, student perception could provide further insight about barriers that still exist. Future research about how students feel during the process of AP course selection, as well as their role as a student in an AP class, could yield further results about successful strategies.

Another recommendation for future research is to incorporate classroom observation. Including classroom observation could provide rich data on successful classroom strategies and thus inform future policy. Observational data would be particularly valuable for understanding professional development that is effective for enhancing student participation and performance. Observational methods may clarify the extent to which existing professional development training for teachers is effective, how it informs their instruction, and how students respond to ultimately shape their outcomes. Additionally, including student perceptions could help inform future policy. Having students included in the study could help provide insight about their perceptions of their own access to AP courses. Researchers could examine and compare underrepresented

groups of student responses to non-underrepresented students. As such, another logical recommendation for future research would be to assess student outcomes at the schools included in the present study. Specifically, future research may consider including AP scores to help inform future policy surrounding professional development and classroom instructional practices. In turn, these recommendations could significantly facilitate successful student participation in AP classes.

Conclusion

This mixed-methods research aimed to understand the impact of open access on the AP program and educators. An interesting finding was underrepresented students were not underrepresented in AP courses. Educators felt underrepresentation of underrepresented students was not an issue because of the school demographics. Further, participant interview responses and content analysis of the College Board publications demonstrated the AP program growth has continued. Moreover, interview findings revealed administrative and teacher support is critical to successful AP program expansion. Educators expressed the importance of open access to AP courses. Additionally, findings suggested initiatives and professional development are also important to expanding access, and educators play an integral role in providing underrepresented students with quality AP coursework. Findings from the current study led to a number of recommendations for future research and practice.

Future research should test ways to improve initiatives and instruction to support continued AP program growth. This research could contribute to improvements in the future success of underrepresented students. Successful underrepresented students in AP could potentially earn college credit and eliminate prerequisite courses in college. Even if

students are not successful on the AP exam, the AP program would have instilled valuable skills for college. Professional development, accessible supports for students, and effective instructional approaches are integral to the continued growth of the AP program and student success. Overall, school districts are encouraged to offer open access to AP courses.

EPILOGUE

As a private school educator, I find it critical to expose students to different perspectives in the classroom. Teaching AP English classes always provided me with further opportunities to connect students to different worlds through literature. Therefore, I was always interested in why AP was reserved only for a certain caliber of student. Why are rigorous instruction and classes that offer quality social discourse so hard to participate in as a high school student? When I was a student, I had to advocate for myself in order to take classes in high school where I could earn college credit. If I did not speak up, I would have never had the opportunity to participate in advanced English courses. These courses ultimately gave me the inspiration to do what I do in the classroom each day.

Through my early research and familiarity with the College Board, I was intrigued as to how districts would actually ensure equity and access to the AP program. How does each student have an opportunity? Where does the funding come from? What courses can these schools offer to marginalized members of society? How do we know each student is aware of their potential to take these classes? How do teachers feel about this? These are the questions I wanted answers to.

I attended the AP Annual Conference in the summer of 2017 in Washington, D.C. It was there that Sal Khan was introduced. This is when I knew I wanted to continue to research on AP equity and access. Khan Academy is a valuable free tool that makes test preparation accessible to students. Similar to having advanced courses in my former high school reserved for the “top students,” I was never able to obtain valuable test prep options. Khan Academy is something that is extremely beneficial for all students and the

direction the AP program was going in inspired me to keep studying equal access for students.

As a private school educator, studying open access makes it a little difficult. Something I learned from this study was many educators have not had the same experience I did. I am a product of both public and private education, so I can see the challenges of both perspectives when it comes to offering open access. For me, it was never about a test at the end of the course, but what students are able to obtain from everyday classroom discussions. I feel many educators still hold the AP test as an ultimate end goal for their students. Therefore, it is important for schools to look at open access to the AP program as a lasting experience for students and not just a number on an AP exam. Moreover, as a researcher, I feel it is important to continue examining public and private institutions when it comes to equity and access to the AP program.

I learned from my research that there is much more to examine when it comes to initiatives that are increasing AP participation in schools around the United States. It is also important to consider the effects of increased participation and the benefits for students. Since I feel teachers serve a high level of importance in offering quality instruction, I would like to research further districts and schools that focus on teacher development when offering open access to advanced courses. The teachers' experience is critical to offering quality AP coursework and I want to continue this research on a larger scale. Open access helps provide more opportunities for all students and there needs to be further research on the benefits of advanced curriculum.

APPENDIX A

IRB-FY2021-120 - Initial: Initial Submission - Expedited - St. John's

irbstjohns@stjohns.edu <irbstjohns@stjohns.edu>

Thu 1/28/2021 11:17 AM

To: annunzia@stjohns.edu <annunzia@stjohns.edu>; Cole Malsky <cole.malsky16@my.stjohns.edu>



**ST. JOHN'S
UNIVERSITY**

Federal Wide Assurance: FWA00009066

Jan 28, 2021 11:17:50 AM EST

PI: Cole Malsky
CO-PI: Anthony Annunziato
Ed Admin & Instruc Leadership

Re: Expedited Review - Initial - **IRB-FY2021-120 EQUITY AND ACCESS: COLLEGE BOARD AND THE EFFECTIVENESS OF THE ADVANCED PLACEMENT PROGRAM**

Dear Cole Malsky:

The St John's University Institutional Review Board has rendered the decision below for *EQUITY AND ACCESS: COLLEGE BOARD AND THE EFFECTIVENESS OF THE ADVANCED PLACEMENT PROGRAM*. The approval is effective from January 28, 2021 through January 27, 2022

Decision: Approved

PLEASE NOTE: If you have collected any data prior to this approval date, the data must be discarded.

Selected Category: 7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Sincerely,

Raymond DiGiuseppe, PhD, ABPP
Chair, Institutional Review Board
Professor of Psychology

Marie Nitopi, Ed.D.
IRB Coordinator

APPENDIX B



ST. JOHN'S
UNIVERSITY

AP Educator Perceptions of Equity and Access

Select one number for each item to indicate how you feel about the statement

* Required

Gender *

Female

Male

Name of AP Class Taught *

Choose

Years of Teaching Experience *

Choose

1. There are more students who want to be challenged at a higher academic level. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

2. There are more students who want their college applications to look better. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

3. High schools are expanding their AP Program to improve their school's ranking and reputation in the community. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

4. There are more students who want to save money or graduate faster from college by getting AP credits. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

5. The earlier grades are doing a better job of preparing students for the rigor of AP coursework. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

6. Administrators are pushing more unqualified minority or low-income students into AP courses, just to make the classes look more diverse. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

7. High schools are doing a better job of encouraging qualified low-income or minority students to take AP courses. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

8. Offering AP is the single most important way for high schools to serve and challenge advanced students in key subjects. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

9. Many parents push their children into AP classes when they really don't belong there *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

10. My school is too eager to expand AP participation just to improve its ranking and reputation. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

11. Too many students overestimate their abilities and are in over their heads when they take AP classes. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

12. Many teachers avoid teaching AP classes because it's too demanding. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

13. AP exams do an effective job of maintaining the quality of AP courses across the country *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

14. The knowledge that there's an AP exam waiting for students at the end of the course helps to focus and motivate students. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

15. My students' AP exam scores at least partly reflect how well I taught the class. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

16. The standards for grading AP exams have not been watered down—for example, a score of 3 means the same thing today as it did five years ago. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

17. The material covered on the AP exams aligns well with the curriculum and learning objectives of the courses. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

18. There may be some students who could thrive in AP but do not end up taking these classes. *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

19. My high school has a policy—whether formal or informal—of encouraging as many students as possible to take AP classes, or not? *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

20. Minority students are more likely to come from families with lower levels of income and education *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

21. Minority students are often overlooked by high schools because of stereotypes or mistaken assumptions about their abilities *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

22. Minority students are often inadequately prepared in the lower grades *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

23. Minority students are less likely to be focused on the importance of college *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

24. Minority students are more likely to lack the confidence that they can handle AP coursework *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

25. Minority students are flooded by messages from a culture that holds low expectations for them *

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

APPENDIX C

Re: Doctoral Candidate - St. John's University

Ann Duffett <aduffett@thefdrgroup.com>

Mon 12/7/2020 8:01 AM

To: Cole Malsky <cole.malsky16@my.stjohns.edu>

Cc: sfarkas@thefdrgroup.com <sfarkas@thefdrgroup.com>

* External Email *

Hi Cole--

We are always happy to help out a graduate student!

Please feel free to use the survey instrument.

The research was sponsored and spearheaded by the Thomas B. Fordham Institute -- please be sure to include the institute in the citation.

Here is a link to the report on the website

<https://fordhaminstitute.org/national/research/growing-pains-advanced-placement-program-do-tough-trade-offs-lie-ahead>

If you remember to send us a copy of your completed study, that would be great. But I know you probably have 100 things to do, so don't sweat that one.

Have a happy holiday, and best of luck.

Ann

On Sat, Dec 5, 2020 at 3:46 PM Cole Malsky <cole.malsky16@my.stjohns.edu> wrote:

Good Afternoon,

I am a doctoral candidate at St. John's University in the School of Education. I am interested in studying Advanced Placement Equity and Access. Additionally, my study focuses on patterns of access and enrollment in AP in high schools. I am writing in hopes of gaining permission to adapt the survey you created in "Growing Pains in the Advanced Placement Program: Do Tough Trade-Offs Lie Ahead" for use in my study. Your survey is perfect for the focus of my study and I would appreciate your support.

If granted, I will be sure to include the full citation. At your request, I will send a copy of my completed research study to you upon completion of the study and/or provide a hyperlink to the final manuscript.

If you do not control the copyright for these materials, I would appreciate any information you can provide concerning the proper person or organization I should contact.

If these are acceptable terms and conditions, please indicate so by replying to me through e-mail at cole.malsky16@my.stjohns.edu.

Thank you for your time,

Cole Malsky

This email may contain proprietary, confidential and/or privileged material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by others is strictly prohibited. If you are not the intended recipient (or authorized to receive for the recipient), please contact the sender by reply email and delete all copies of this message.

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