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Culturally Responsive Pedagogy in the AP Capstone Program

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Education

by

Mark Spencer Wolf

2021

ABSTRACT OF THE DISSERTATION

Culturally Responsive Pedagogy in the AP Capstone Program

by

Mark Spencer Wolf

Doctor of Education

University of California, Los Angeles, 2021

Professor Mark Hansen, Chair

This study explored the pedagogical practices of teachers in the AP Capstone program to explore the extent to which teachers use culturally responsive approaches in order to address the AP equity gap for Black, Latinx, Native American, and other groups traditionally underrepresented in AP Classes. Using a mixed methods approach, I surveyed a nationally representative sample of teachers and followed up with qualitative interviews. This study found AP Capstone teachers generally claim to consider students' personal experiences in planning their curriculum, as well as to consider multiculturalism and cultural diversity. However, teachers choose topics dealing issues such as race and sexism to a much lesser degree, and relatively few select topics specifically situated in their students' unique cultural contexts. This study also found very few teacher demographics associated with use of CRP. However, teacher perceptions and student demographics do show some associations. Additionally, this study

identified several AP Capstone teachers who display many characteristics of a culturally responsive teacher. This study identifies some of the practices those teachers enact. These results suggest implications in practice for AP Capstone teachers, AP Capstone teacher trainers, and school leaders of AP Capstone programs.

The dissertation of Mark Spencer Wolf is approved.

Kimberley Gomez

Jody Priselac

Tyrone Howard

Mark Hansen, Committee Chair

University of California, Los Angeles

2021

DEDICATION PAGE

For my wife, Tori, who supported and encouraged me through this entire process, and whom I owe many vacations and date nights, now that we have nights and weekends together again.

And for my daughter and writing partner, Charlize Autumn Wolf, who kept me company as I finished this project at all sorts of hours during the first few days of her life.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGEMENTS

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I. INTRODUCTION AND STATEMENT OF THE PROBLEM

This study explores how Advanced Placement (AP) Capstone teachers across the country choose topics, curricula and instructional practices to support to support student groups that are consistently underrepresented in the AP Program and in higher education, including Black, Latinx and Native American students, in their coursework. AP Capstone offers students the opportunity to supplement and complement their existing AP coursework; it may also offer students a more culturally responsive, skills-based approach to instruction than traditional AP courses. Due to the newness of the program, however, we do not know the extent to which teachers are using culturally responsive practices, such as selecting curricula rooted in students' cultural experiences, or working to build a critical consciousness. This study investigated the extent to which Capstone teachers engage in these practices to increase students' access and success, and the manners in which teachers implement these practices. Findings from this study will help AP Capstone instructors plan curricula and experiences to address existing equity gaps in AP class participation and success.

The Problem

Black, Latinx and Native American students participate in Advanced Placement (AP) classes at much lower rates than White and Asian students (College Board, 2018). Inequalities in school funding and access to resources partly explain this gap; schools in predominantly low socio-economic and minority communities are less likely to offer a wide range of AP courses (Bittman et al., 2017). However, even within schools that offer a range of AP courses, racial gaps remain. White and Asian American students tend to be overrepresented in AP courses at individual school sites, while Black and Latinx students tend to be underrepresented (Kettler & Hurst, 2017).

1

The problem is not just one of access; Native American, Latinx and Black students in particular tend to earn scores significantly lower than their White and Asian American peers. AP tests are assigned a score of 1 to 5, with 3 commonly understood to be "passing." However, universities have their own policies for course credit; some award course credit for a 3, while others may require a 4 or a 5, depending on the course. Nationally, in 2018 the average score across all exams was 2.22 for American Indian students, 2.44 for Latinx students, and 2.07 for Black students, while the averages for White and Asian American students were 3.04 and 3.31, respectively (College Board, 2018).

Moreover, while 65% of White students and 72% of Asian American students earn a 3 or higher, these percentages are much lower for Black (32%), American Indian (35%), and Latinx (45%) students (College Board, 2018).

This inequality in exam participation and performance may reflect AP teachers' pedagogy: teachers often do not modify their approaches to instruction to accommodate the needs of first-time AP and underrepresented minority students (Graefe & Ritchotte, 2019; Kolluri, 2018). Many students of color do not see AP classes as welcoming environments; further, many teachers do not use student-centered curricular approaches (Matewos et al., 2019). AP teachers in particular often feel constrained by the breadth of standards they feel the need to cover, precluding them from adopting student-centered approaches (Kolluri, 2018).

This disparity in AP class participation affects Black, Latinx, and Native American students' college acceptance rates. One significant factor in college applications is a student's strength of schedule, or the percentage of "advanced" classes a student takes; students who take AP classes when offered hold a competitive advantage over those who choose not to (Evans, 2019). Thus, those students from these traditionally underrepresented groups who do not take AP

courses available to them may suffer in the college application process (Solorzano & Ornelas, 2002).

This problem may also impact Black, Latinx and Native American students' college persistence. Students who participate in AP classes in high school are more likely to persist in college (Klepfer & Hull, 2012). Students who earn a qualifying score of 3 or better on exams often complete their college degrees in shorter time, move on to advanced coursework earlier, earn higher grades in subjects for which they have earned a qualifying score, and enjoy the opportunity to work or intern (Evans, 2019; Wyatt et al., 2018; Kyburg et al., 2007). When students take AP exams but do not earn qualifying scores, they lose advantages that might help them persist and succeed in college.

In order to address these equity gaps, the major challenge is to eliminate barriers to AP access for students in traditionally underrepresented groups. Several factors have historically kept Black, Latinx and Native American students out of AP courses: teachers' perceptions of students, students' perceptions of themselves, and students' perceptions of AP courses (Kolluri, 2018; Jeffries & Silvernail, 2017; Hertberg-Davis & Callahan, 2008). Specifically, teachers recommend Black and Latinx students for advanced coursework at significantly lower rates than they do White and Asian students (McBee, 2006). When students from underrepresented minority groups meet criteria for advanced coursework, such as achieving a predetermined PSAT score, many still choose not to take AP coursework. Some explain feeling uncomfortable in a predominantly White space, and experiencing instructional strategies misaligned with their personal and cultural interests (Kolluri, 2018; Hertberg-Davis & Callahan, 2008; Jeffries & Silvernail, 2017). However, research on culturally responsive teaching indicates that when

teachers connect classroom curricula with students' cultural knowledge and beliefs, they may improve students' academic performance (Howard & Terry, 2011).

Students from underrepresented groups often perceive a lack of cultural responsiveness in AP courses. This disincentivizes them from attempting these courses and exams. This lack of cultural responsiveness may also contribute to their lower levels of success (Kolluri, 2018; Jeffries & Silvernail, 2017; Hertberg-Davis & Callahan, 2007; Kyburg et al., 2007). While some teachers, schools and districts try to incorporate cultural relevance in *some* AP courses, such as English (Baker-Bell, 2013), AP teachers need support adopting culturally responsive practices. As Kolluri (2019) suggests, skill-based rather than content-driven classes provide an excellent opportunity for AP teachers to tailor their curriculum, topic selection and instructional approaches for cultural responsiveness, which may address student discomfort in taking AP classes. More specifically, such courses provide teachers opportunities to honor students' cultural backgrounds as personally important, as well as worthy of academic study (Gay as cited in Griner & Stewart, 2012).

In 2014 College Board launched two new skill-based AP courses that benefit college access, readiness and persistence, providing the opportunity for such culturally responsive approaches. The AP Capstone program serves as an "advanced" diploma, comparable to the International Baccalaureate diploma. If students earn qualifying scores on the exams for Seminar and Research, the two core classes, as well as on any other four AP exams, they earn the Capstone Diploma. Students eligible for the Capstone Diploma may indicate this on University of California applications, as well as the Common Application, thus creating the opportunity to enhance their college acceptance prospects (Sheth, 2017). These two courses offer many of the

same benefits of existing AP courses and may either complement students' existing AP coursework or serve as an entry point into AP (College Board).

The courses instruct students in inquiry, research and argumentation skills (Sheth, 2017). Significantly, the exams for these courses are performance task- and skill-based, not content-driven, meaning there is no required breadth of content to cover (College Board, 2019). The courses also afford teachers much freedom in topic, curriculum and text selection. As of 2019, approximately 1,900 schools in the United States offered AP Capstone, and 75,000 students are enrolled in AP Capstone classes, with this number projected to rise significantly in coming years (Peart, 2019). Research has yet to uncover data about how Capstone teachers are navigating this new class paradigm, however, and if they are doing so with culturally responsive approaches.

The Gap

While there is a need for teachers of traditional AP courses to do more to support students from underrepresented groups, evidence suggests that their approaches are likely entrenched (Kolluri, 2018). However, the AP Capstone classes are relatively new. As such, AP Capstone teachers' potential to adopt culturally responsive approaches, specifically curricula and topics of study, and to support Black, Latinx and Native American students is unexplored. Additionally, data about student experiences in the AP Capstone courses to this point is anecdotal. No formal study has explored the extent to which underrepresented minority students in these courses believe that AP coursework can also be culturally relevant. Most salient to this study though, no research has identified the extent to which teachers of these classes, nationally, are using culturally responsive approaches, nor how their specific topics and curricula reflect students' backgrounds.

Research Questions

This study addressed the following research questions:

1. To what extent do AP Capstone teachers use culturally responsive pedagogies?

2. What are the practices of AP Capstone teachers who report using culturally responsive pedagogies?

3. What teacher and school characteristics are associated with teacher use of culturally responsive approaches?

4. Is teacher use of culturally responsive practices associated with increased percentages of minority students enrolled in AP Capstone courses?

Research Design

This study used an explanatory mixed methods approach, in which "quantitative results … inform the types of participants to be purposefully selected for the qualitative phase and the types of questions that will be asked of the participants" (Creswell & Creswell, 2018, p. 222). This approach integrated the strengths of both qualitative and quantitative methods. A purely quantitative approach would yield descriptive data which currently do not exist about the types of curricula and texts AP Capstone teachers are choosing, and the extent to which these teachers are choosing culturally responsive approaches to support student success. However, such data alone would not provide rich understanding of the ways in which teachers intentionally use these practices with the intent to support students.

As an explanatory mixed methods study (Creswell & Creswell, 2018), this study used the survey results to identify six sites for follow-up qualitative investigation. This provided an opportunity to more thoroughly examine the perspectives and practices of those teachers who indicated cultural responsiveness as a primary consideration in topic and theme selection

(Merriam & Tisdell, 2016). The qualitative data consisted of interviews with selected teachers, and some triangulation with syllabi and course documents.

Research Sites

Approximately 770 individual teachers were chosen and surveyed electronically, via Qualtrics. These included teachers of both AP Seminar and AP Research, the two Capstone courses. 250 participants responded, and of these respondents 216 were included in the final analyses.

Participants for qualitative data collection were chosen based on survey results that indicate a significant attempt to provide cultural responsiveness to traditionally underrepresented minority students in the AP Capstone program. These included teachers of majority Black and Latinx students, teachers in diverse schools that serve a plurality of racial groups with no one majority group, and teachers whose Black and Latinx students number fewer than White and Asian students.

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Significance

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This study provides insights that may help increase the success of underrepresented minority students in AP classes. There is currently debate about the possibility of expanding access to AP courses while maintaining rigor and student success (Kolluri, 2018). This study seeks to resolve some of these tensions by examining, within the context of AP Capstone, how—and whether—teachers believe AP coursework can work towards two goals: fulfilling students' need for rigorous advance coursework, and fulfilling students' need for cultural responsiveness in their classes while pursuing advanced placement credit.

Results of this research will be valuable for sharing with AP Capstone teachers, as well as the consultants who train those teachers. This project may facilitate reflection on AP teaching

strategies and curricula. Results may also be presented at an AP Annual Conference to reach a broader audience of AP teachers in many subjects. This study found AP Capstone teachers generally claim to consider students' personal experiences in planning their curriculum, as well as to consider multiculturalism and cultural diversity. However, teachers choose topics dealing issues such as race and sexism to a much lesser degree, and relatively few select topics specifically situated in their students' unique cultural contexts. This study also found very few teacher demographics associated with use of CRP. However, teacher perceptions and student demographics do show some associations. Additionally, this study identified several AP Capstone teachers who display many of the characteristics of a culturally responsive teacher.

Chapter Two of this study proceeds to give a literature review of the research related to Advanced Placement and student achievement, as well as a conceptual framework for the research. Chapter Three provides a description and rationale for the research design. Chapter Four presents analyses of the survey and interview data, and findings in response to the research questions. Finally, Chapter Five presents a discussion of these findings, as well as the limitations of the present study, implications for practice, and directions for future research.

II. LITERATURE REVIEW

Black, Latinx and Native American students participate in Advanced Placement (AP) classes and exams at much lower rates than White and Asian students. AP classes' lack of cultural responsiveness partially explains this underrepresentation. However, newly created AP Capstone courses may serve as a possible way for teachers to adopt culturally responsive approaches to mitigate this equity gap. This project investigates, at the national level, whether and how AP Capstone teachers use culturally responsive approaches to support students from these underrepresented groups. This literature review explores the achievement equity gap and its causes. It then focuses on the Advanced Placement program and the equity gap. Finally, it examines the possibility of culturally responsive practices to address the gap in AP equity gap and culminates in a conceptual framework that guides the data analyses.

Achievement Equity Gap and Its Causes

Students in America have long been denied access to equal education on the basis of racial, ethnic and socioeconomic factors. The resulting disparities in student achievement—often termed "the equity gap"—still harm students even into the 21st century (Howard, 2010).

Evidence of unequal opportunities shows in nearly every measure of student performance. The 2019 National Assessment of Educational Progress (NAEP) identifies persistent gaps between White and Black students, and White and Latinx students, on measures of achievement. In critical areas such as reading and writing, these gaps have increased since previous measurements (NCES, 2019). State accountability measures such as California's State Dashboard indicate that a majority of White students, Asian Students and students with two or more races perform "at" or "above" expectations. Meanwhile the majority of students who are Indian, Pacific Islander, Black, Latinx and socioeconomically disadvantaged perform "below" or

"near" expectations (California School Dashboard, 2020). These same trends apply to AP exam participation and performance. White and Asian students take and earn qualifying scores on AP exams at far higher rates than other ethnic groups (College Board, 2018). However, as Howard (2010) notes, even the category "Asian" masks disparities in achievement within this group of students. Students from Japanese, Korean and Chinese backgrounds tend to perform at higher levels than students from many Southeast Asian cultures.

While evidence of unequal academic performance between racial and ethnic groups is clear, the causes of these disparities are multifaceted. Possible causes include unequal school systems, inequalities in the access students are given to advanced courses, and teacher beliefs about underrepresented minority students.

Unequal Schools

However, unequal schools and school experiences, as well as systemic factors such as funding and allocation of resources clearly contribute to the problem. Black, Latinx and other traditionally disadvantaged students often attend schools with fewer resources and less qualified teachers than White and Asian students (Darling-Hammond, 2004). This intractable inequality in education is partly a remnant of segregation, and an explicit lack of commitment to educating minority students (Howard, 2010; Darling-Hammond, 2004). However, even after *Brown vs. Board of Education* many Black and Latinx students attend schools that are de facto segregated by race, and these schools remain underfunded and underserved in many ways (Darling-Hammond, 2000a; Darling-Hammond, 2004). Evidence clearly points to students performing lower on most measures of academic achievement when they attend predominantly minority schools (Page et al., 2008). Thus, on a macro-level, the equity gap may be partly explained by unequal access to high-performing, well-resourced schools.

Gaps in Access to Rigorous Courses

Not all disparities stem from differences between schools. A preponderance of evidence shows that *within* schools, Black, Latinx, American Indian, and socioeconomically disadvantaged students tend to perform at lower levels on measures of academic achievement than their peers who are White, Asian, or from more affluent backgrounds (Fryer & Levitt, 2004; Page et al., 2008). While various studies locate possible sources of this achievement disparity, one fact remains clear: Black, Latinx and Native American students take different classes than White and Asian students. Specifically, White and Asian students are significantly overrepresented in advanced classes (Kettler & Hurst 2017). Moreover, in general education classes, traditionally underrepresented students tend to be assigned novice teachers, and teacher experience has a significant impact on student achievement (Clotfelter et al., 2005; Atteberry et al., 2017).

Teacher Beliefs

Besides teacher experience, other affective factors may impact the achievement of Black, Latinx and Native American students in the classroom. Feeling a sense of connectedness to the school and having a school that explicitly respects diversity correlate with increased academic performance (Voight et al., 2015). Other research clearly ties teachers' beliefs in student success with measurable gains in student achievement. Significantly, teacher beliefs impact students of color to a greater degree than they do White students (Cherng, 2017).

One of the largest influences on student achievement is the teacher (Clotfelter et al., 2005; Darling-Hammond, 2000b). However, many teachers hold lower expectations for Black, Latinx and Native American students than they do for White and Asian Students (Cherng, 2017). Teachers also play a significant role in which courses students take. When teachers give students

specific, personalized acknowledgment of their ability, students have a higher likelihood of increasing their own self-assessments and enrolling in Advanced Placement classes (Gonzalez, 2017). At the same time, many advanced classes require recommendations from teachers in order for students to enroll. Teachers recommend White and Asian students at far higher rates than other groups who are traditionally underrepresented in AP (McBee, 2006). Thus, when teachers do not actively encourage traditionally underrepresented to purse more rigorous courses, those students have a higher likelihood of being assigned a teacher who is novice or less effective in improving student achievement (Atteberry et al., 2017; Clotfelter, Ladd & Vigdor, 2005; Kettler & Hurst, 2017).

One explanation for this gap in rates of recommendation for advanced classes is that teachers do not often accurately recognize student ability (Solorzano & Ornelas, 2004). Scholars of Critical Race Theory such as Yosso (2005) argue that students' cultural capital impacts these recommendations more than any other measure. McBee (2006) finds that teachers "effectively" recommended students from majority-culture middle-class backgrounds for advanced classes. However, these same teachers proved less adept at identifying potentially successful students from other backgrounds.

Summary

In summation, several key factors contribute to unequal educational opportunities and outcomes for students within schools. Many underrepresented students may not feel a sense of connection to their school, which negatively impacts their achievement (Voight et al., 2015). Their teachers may hold low expectations for them, especially when they come from a non-majority culture background (Cherng, 2017). Teachers may also miss opportunities to acknowledge student ability, depriving students of the chance to improve their own self-

assessment (Gonzalez, 2017). This missed opportunity in turn leads to fewer recommendations for gifted and advanced classes (McBee, 2006; Solorzano & Ornelas, 2004). Teachers are a critical influence on students' educational outcomes (Darling-Hammond, 200b). Thus, changing how teachers interact with Black, Latinx and Native American students would reduce educational equity gaps. The current scholarship around culturally responsive pedagogy provides a promising path to achieving this change in approach. The AP Capstone program provides a unique opportunity for AP teachers to embrace culturally responsive teaching.

Systemic Racism, Advanced Placement and the Equity Gap

This review next considers impact of various forms of systemic racism in the equity gap, as well as how Advanced Placement (AP) courses may perpetuate systemic racism, before proposing how culturally responsive pedagogy would benefit students in AP courses. The Advanced Placement program may contribute to this gap (Finn & Scanlan, 2019; College Board, 2018). Thus, understanding AP teachers' role in this gap may help address disparities in students' success.

Teachers' low expectations of students of color, barriers that prevent students from accessing AP classes, and teacher practices that alienate students of color in AP classes can best be understood as manifestations of systemic racism. As Solorzano and Ornelas (2002) find in their Critical Race analysis of a Southern California school district, many campuses effectively operate "schools within schools," where AP classes are implicitly treated as the property of White and Asian American students. This often happens due to "colorblind racism" where schools and teachers perpetuate racist outcomes without ever directly addressing race, by adopting policies that view students as atomized individuals devoid of historical, social, and cultural context (Chapman, 2013).

13

AP impacts the equity gap in several ways. First, AP courses and student success rates increasingly inform how schools and districts are held accountable (ECS, 2020). Secondly, advanced coursework generally, and AP coursework specifically, factors into the college application process. Completion of AP coursework is associated with higher college acceptance rates, higher college performance in terms of both GPA and graduation rates, and reduced time to graduation. It is also associated with less tangible, benefits, such as increased self-concept and self-efficacy (Foust et al., 2009; Park et al., 2014). For these reasons, many districts and policymakers have worked to expand access to AP courses.

However, such attempts at expansion have produced mixed results. Researchers have questioned whether AP programs can expand while maintaining their effectiveness (Kolluri, 2018; Judson & Hobson, 2015; Duffett & Farkas, 2009; Lichten, 2007). In such cases where schools increase access, disparities in student success continue. In many cases, providing further supports and resources for first time AP students can work to resolve these disparities (Griffon & Dixon, 2017). However, AP teachers contribute to the continuing equity gap. Many teachers hold fixed views of who is an "AP student" (Campbell, 2018; De Wet & Gubins, 2011). These teachers also, for a variety of reasons, do not modify their pedagogical approaches to reach non-traditional AP students (Kyburg et al., 2007). Thus, disparities continue.

Causes of Disparities in Participation

Black, Latinx and Native American students participate in AP classes at lower rates than their White and Asian peers for several possible reasons. While unequal access has historically been the most pressing reason, both students' and teachers' perceptions of the nature of AP classes also exacerbate the problem. As Chapman (2013) and Solorzano and Ornelas (2002) find,

many teachers may perpetuate that AP classes are not designed for students of color, and that

students of color are not good candidates for AP classes. As a result, gifted students of color

internalize these racist assumptions and avoid advanced coursework (Landsman, 2004).

Unequal Access

AP courses were originally designed to create further opportunities for the most elite,

privileged students. For example, in 1956 only 1,226 students from 104 high schools nationwide

took AP exams. The majority of these were elite, private preparatory schools (Finn & Scanlan,

2019). The program has grown rapidly in the decades since. In 2019, over two million students

in the U.S. took nearly five million exams (College Board, 2019). Table 1 shows the percentage

of students taking the exam by ethnic group.

Table 1. AP exams taken in 2019, by student ethnicity (N=4,930,147 tests)

Ethnicity	% of Exams Taken
White or Asian	64
Latinx	22
Black	6
American Indian	2
Two or more races	4
Unknown (No Response)	2

Source: College Board (2019)

The gaps in participation rates have also narrowed in recent years, as the Table 2 demonstrates. Most notably, the percentage of all students taking AP exams increased substantially from 1997 to 2007. However, the increases in participation were not equal across all ethnic groups. Specifically, while Latinx students took exams at comparable rates to White students, the participation rate for Black students is far lower.

Table 2. Percentages of students within racial groups taking AP exams in 1997 and 2017.

Student Racial Group	Nationwide % of this group taking AP	
	1997	2017
White	5.2	26.9
Black	1.3	11.1
Latinx	3.0	25.6
Asian	16.4	79.6
All students	4.7	27.7

Note. Group numbers refer to students in that year's graduating high school class who took at least one AP exam. Numbers calculated using US Census Bureau and College Board Data. Numbers for American Indian students not provided in original source (Finn & Scanlan, 2019)

More students take AP exams in general, and Latinx students and White students now take exams at similar rates. However, while a larger percentage of Black students took exams in 2017 than in 1997, the gap between these students and other groups grew significantly in these years, and the percentage of Asian American students taking AP exams far outpaced all other groups.

While this narrowing of participation gaps is encouraging, inequities remain. In 2017, Black students took AP exams at less than half the rate of White students and one-seventh the rate of Asian American students. White and Asian American students still make up the majority of test-takers.

Moreover, as shown in Table 3, the majority of Black, Latinx and American Indian students do not earn qualifying scores, while the majority of White and Asian American Students do (College Board, 2019).

Table 3. Total number and percentage of students within racial groups taking exams and earning qualifying scores in 2019.

Student racial group	Number of exams taken	Exams with a qualifying score (≥3)	
		Number	%
Black	310,031	98,633	31.8
Latinx	1,114,651	495,876	44.5
American Indian	12,694	4,418	34.8
White	2,408,497	1,567,246	65
Asian	767,947	556,027	72.4

Source. College Board (2019).

Several factors explain what keeps minority students out of AP classes. Underrepresented minority students' access to AP courses and exams is largely dependent on school context. Many Black, Latinx and Native American students attend schools that offer fewer AP classes (Bittman et al., 2017). These schools lack of funding and resources to offer a range of AP Classes (Gagnon & Mattingly, 2017). Underrepresented minority students often attend schools in lower socioeconomic neighborhoods, and such schools are often plagued with funding deficits. AP classes are resource intensive (Gagnon & Mattingly, 2017). However, school leaders may not even consider resources when they decide not to offer AP courses. School leaders decide to offer AP courses if there is perceived student demand. Having a "critical mass" of students identified as "high-achieving" creates a demand for advanced coursework (Iatarola et al., 2011). Thus, when leaders of predominantly minority school believe that students are not "AP students," they offer a minimal range of AP classes. Whether lack of resources or school leaders' perceptions are the cause, many students are denied access to advanced coursework.

Several federal and state programs, as well as the College Board, have worked to expand access to AP classes in lower socio-economic schools (Kolluri, 2018; Schneider, 2011). In terms of increasing the number of AP course offerings, these initiatives have largely succeeded. As of 2012, nearly 90% of all U.S. students attended a high school that offered at least one AP course

(Malkus, 2016). While many Black, Latinx and Native American students do in fact attend schools that offer fewer AP course offerings, the majority of these students still attend a school offering AP courses in at least three different disciplines (Bittman et al., 2017; Theokas & Saaris, 2013). Thus, the number of AP courses offered at any school does not fully explain the participation gap. In fact, in some regions, such as Florida, predominantly Black and Latinx schools offer a greater number of AP courses than other schools (Iatarola et al., 2011). However, schools that offer this range of coursework may do so in an attempt to retain White and Asian American students, rather than to serve the majority of students. Schools with high poverty rates have lower minority participation in AP classes, and racial gaps in AP participation are much more clearly pronounced within schools than between them (Bittman et al., 2017; Theokas & Saaris, 2013).

School contexts may contribute to the participation gap in other ways. Schools with a higher academic achievement index tend to have more pronounced Black-White AP participation gaps than lower achieving schools, and schools with predominantly White teachers tend to have pronounced Latinx-White participation gaps (Kettler & Hurst, 2017). These findings suggest that schools can do more to understand the experiences of minority students, and the reasons why they do not pursue AP coursework.

Student Perceptions of AP as Unwelcoming

Access alone does not explain unequal participation. Many students of color perceive AP classes as unwelcoming environments; at the same time, many teachers do not know how to change their curriculum or instruction to more student-centered approaches (Matewos et al., 2019). AP teachers in particular often feel constrained by the breadth of standards they feel the need to cover (Kolluri, 2018). Thus, broad efforts that seek only to enroll traditionally

underrepresented students in AP courses are likely to produce only marginal positive effects. Kettler and Hurst (2017) support this in their analysis of 117 Texas schools. Despite increases in AP participation for every student demographic, the gaps in participation rates between White and Black students and between White and Latinx students did not narrow at all between 2001 and 2011.

More significantly, expansion efforts do nothing to address the discomfort and lack of willingness to enroll in AP courses that many students from traditionally underrepresented groups express. Specifically, many students of color who show potential for success in AP classes elect not to take these classes because they view them as predominantly White spaces, taught by White teachers (Kolluri, 2018; Graefe & Ritchotte, 2019; Jeffries & Silvernail, 2017).

In support of this theory, a College Board national survey of 32,109 AP teachers shows that AP teachers are nearly universally White (Millewski & Gillie, 2002). Black AP teachers tend to have AP classes with greater than 40% Black students, while White teachers tend to have fewer than 10% Black students. Many students from traditionally underrepresented groups claim that a teacher's encouragement is the main factor that led them to take an AP course; at the same time, most teachers do not actively recruit students for their AP courses (Burton et al., 2002). Thus, when AP teachers approach their jobs in a purely colorblind manner, minority students may internalize this as teachers reinforcing Whiteness in AP classes, even if they do not intend to do so (Yosso, 2005).

Causes of Disparities in Student Success

Even when Black, Latinx and Native American students access AP coursework, they earn lower average scores on AP exams than White and Asian American students. Several causes may explain this, most notably teacher practices and beliefs.

Bias in Standardized Tests

One possible explanation for students of color underperforming in AP exams is test bias, in which tests assess different groups of test takers differently (Warne et al., 2014). This phenomenon, known as differential item functioning (DIF), paradoxically can lead marginalized groups to underperform on test items designated as easy, and to outperform White students on some difficult items. The problem arises when "standardized tests are narrowly normed along White, middle-class, monolingual measures of achievement" (Ladson-Billings, 2017). Traditional AP exams are sone such example of these standardized exams. AP tests often ask students to demonstrate skill in a very narrow range of ways. However, researchers and theorists of culturally responsive pedagogy hold that when Black, Latinx and Native American students are given the ability to demonstrate learning through authentic performance tasks, they perform at a higher level than AP exams might suggest.

The Impact of Teacher Practices

The cultural mismatch between White teachers and students of color may in part explain the AP achievement gap. This problem manifests in AP teachers' instructional approaches. College Board data and other research show that even when schools and districts expand access to AP courses, disparities in exam performance continue to be a problem (College Board, 2018; Griffon & Dixon, 2017; Kolluri, 2018). This inequality in exam performance is likely attributable to many AP teachers not modifying their approaches to instruction or curriculum to accommodate the needs or interests of first-time AP students, and students from underrepresented groups (Graefe & Ritchotte, 2019; Kolluri, 2018).

A 2002 College Board study investigated which teacher practices impact success for Black, Latinx and Native American students. However, such research is exploratory and

inconclusive. Namely, the researchers cited difficulty in quantitatively measuring practices we now understand to be culturally responsive. The researchers suggested that future studies could investigate AP teachers' use of these practices (Burton et al., 2002). Such culturally responsive practices include but are not limited to identifying ways in which students' home cultures differ from the teacher's or schools; using students' own cultural backgrounds to make learning personally relevant; and using a variety of authentic assessments while allowing students to evaluate their own work and learning (Siwatu, 2007; Powell et al., 2017). Since the publication of the report authored by Burton et al., other scholars have developed instruments to assess culturally responsive practices. These include the *Culturally Responsive Teaching Survey* (Rhodes, 2017), the *Culturally Responsive Teacher Preparedness Scale* (Hsiao, 2015), the *Culturally Responsive Teaching Self-Efficacy Scale* and the *Culturally Responsive Outcome Expectancy Scale* (Siwatu, 2007). This new scholarship creates a valuable opportunity to research the ways in which AP teachers use culturally responsive practices.

Other research into AP teacher practices reveals the potentially adverse impact teachers have on students' AP success, when these teachers are not culturally responsive. In a nationally representative study of 1,171 AP Biology and 1,219 AP U.S. History teachers, Paek et al. (2005) found that AP teachers predominantly lecture as their main instructional practice. Teachers mainly focus on content coverage. They use multiple choice tests as their most common form of assessment, and they use multiple choice test scores and simple letter grades as their most common form of feedback to students. AP teachers either do not know how to adapt instruction for student needs, or they feel that "content coverage" matters, rather than student skill development (Graefe & Ritchotte, 2019; Kolluri, 2018). However, in AP classes in which teachers focus on foundational academic skills such as close reading and analysis, traditionally

underrepresented minority students score better on AP exams (Burton at al., 2002). AP Capstone offers two such courses designed primarily to reinforce these key academic skills (AP Seminar Course and Exam Description, 2016). These courses offer a unique opportunity to study teachers' approaches to skill development and cultural responsiveness.

The Impact of Teacher Beliefs

Beyond instructional strategies, teacher perceptions of student ability impact minority students' AP success. "Effective" teachers, whose Black and Latinx students consistently outperform predicted exam scores, also rated these students' academic ability highly on a separate questionnaire (Burton et al., 2002). These teacher ratings were higher than principal evaluations of student academic ability or other "objective" measures such as PSAT scores. This disparity in ratings implies that the teachers held a high subjective perception of their minority students. As Cherng (2017) demonstrates, teacher perception of student ability impacts minority students. Specifically, White teachers' underestimation of the ability of their students of color is associated with these students' lowering their own self-assessments, as well as attaining lower levels of academic achievement than students who were not underestimated.

Increased Access While Losing Rigor

In line with teacher beliefs and practices, teachers may lessen the rigor of some AP courses and exacerbate the achievement gap (Kolluri, 2018). Some students enrolled in AP classes are assigned teachers outside their subject areas, teachers who did not wish to be assigned an AP class, or whose instruction does not align with the AP exam (Hallett & Venegas, 2011). Thus, minority students suffer the same unequal access to quality education that has historically been the case. However, school leaders disguise the inequity by labelling courses as "AP." As access to AP classes expands, teachers' perceptions non-White and non-Asian students' ability

decreases (Finn & Scanlan, 2019; Kolluri, 2018). As a result, teachers may hold minority students in AP classes to a lower standard (Hallett & Venegas, 2011; Goldhaber et al., 2015). For either reason, minority students miss out on the "true" AP classes that other students take.

In contrast, minority students in predominantly non-minority classes have access to a level of rigor not seen in minority-majority classes (Paek et al., 2005). In these cases, researchers theorize that teachers hold high expectations of all students and view minority students as having earned their placement in the AP class. A necessary condition for student success is a belief that all children can learn (Cherng, 2017; Lang & Moore, 2018). A key tenet of culturally responsive teaching is to hold all students to a high standard (Ladson-Billings, 1995). Thus, an investigation into AP teachers' use of culturally responsive practices should consider how school context may impact these practices.

Successful Attempts to Address Unequal AP Exam Participation and Success

Despite racial achievement gaps nationally in AP exams, some schools and districts have improved AP exam participation and scores for underrepresented minorities. Such schools provided additional support structures for students and professional development for teachers. They also worked to change teachers' perceptions of and expectation for students (Griffon & Dixon, 2017). Kolluri (2019), provides an in-depth analysis of two California schools that serve predominantly Latinx populations and have increased the number of students taking AP exams while also improving student performance on these exams. These schools intentionally use culturally responsive practices to support student success, honoring students' Latinx backgrounds and attempting to connect local issues and community problems to the course content. Of the four AP courses included in the study—AP Government, AP Environmental

Science, AP Biology, and AP English—teachers of AP Biology and AP English were most likely to include student-centered inquiry of issues relevant to students and their communities (2019).

Other educational reformers have used the AP program as the method by which to enact schoolwide curricular change. These most famously include Jaime Escalante of *Stand and Deliver* fame, but also others such as Reid Saaris and his Equal Opportunity Schools (Finn & Scanlan, 2019; Schneider, 2011). Escalante drew on several of the tenets of what now might be termed culturally responsive teaching. He believed that students needed to be held to a rigorous standard rather than have expectations lowered. He created a collaborative team atmosphere rather than passive learning, engaged in call and response style activities, and used students' cultural referents to explain concepts (Escalante, 1990). Many of these approaches have been shown to engage culturally and linguistically diverse students and help them grow from dependent to independent learners (Hammond, 2015). As a result of this approach, Escalante and his principal, Henry Gradillas, drastically increased the number of AP class offerings at Garfield High School, while at the same time increasing the number and percentage of qualifying scores (Finn & Scanlan, 2019). More notably, Gradillas pointed to Escalante's program as improving the entire school, beyond AP classes. This supports other research that shows how AP expansion can gradually change teachers' perceptions of students (Griffon & Dixon, 2017).

Culturally Responsive Pedagogy to Reduce the AP Equity Gap

As the previous examples show, a culturally responsive approach to teaching AP courses may reduce the equity gap. Many AP teachers rely on lecture-heavy and passive classroom learning experiences (Paek et al., 2005). However, other approaches better support student success. An analysis of culturally responsive teaching suggests why AP Seminar and AP

Research, the two new AP Capstone courses, may offer opportunities to bolster the success of traditionally underrepresented students.

The Positive Impact of Culturally Responsive Approaches

Culturally responsive approaches to teaching may effectively reduce the AP equity gap (Kolluri, 2019). Neurobiological and psychological evidence shows that socio-culturally focused teaching improves student performance (Gay, 2018). Early work on culturally responsive pedagogy focuses on qualitative analysis of "effective" teachers of Black, Latinx, American Indian and other traditionally underrepresented minority students (Ladson-Billings, 1992; Ladson-Billings, 1995). However, a growing body of empirical research shows that culturally responsive approaches increase student achievement for every group in nearly every subject (Howard & Terry, 2011; Aronson & Laugher, 2016). More recent scholarship allows researchers to quantify teachers' cultural responsiveness via surveys, observation protocols and self-reflection inventories (Howard, 2003; Siwatu, 2007; Powell et al., 2017).

In order to observe culturally responsive teaching, it is necessary to first recognize its main dimensions. Culturally responsiveness encompasses teachers' relationships with students, their instructional practices, their assessment practices, their focus on rigor and skill development, their efforts at connecting learning within students' cultural referents, and their attempts to help students develop a critical consciousness (Powell et al., 2017; Howard, 2003; Gay, 2018). While there are observable culturally responsive practices, the approach requires that teachers overcome deficit-based attitudes towards non-White students and instead recognize students' funds of knowledge (Gay, 2018; Howard & Terry, 2011; Ladson-Billings, 1995; Rios-Aguilar et al., 2011). This approach also requires teachers to believe that students from all backgrounds can achieve at a high level, and that they can hold students to rigorous standards

while making learning culturally relevant (Siwatu, 2007; Siwatu, 2011). In order to be truly culturally responsive, teachers need to believe that they are capable of engaging students in discussion of issues of race and culture (Howard, 2003). This aspect of cultural responsiveness is one in which teachers are often the least comfortable and the least prepared for, especially early on in their career (Gay, 2010; Siwatu, 2011).

Effective teachers focus on whole child instruction and skill development, rather than content coverage (Gay, 2018; Ladson-Billings, 1992). One of the best markers of culturally responsive education is that teachers effectively use culturally engaging content and experiences in order to help students develop universally valued academic skills (Gay, 1988). This leads to increased student motivation, student interest in content, ability to engage in discourse around content, perception of self as capable, and increased confidence in standardized testing (Aronson & Laughter, 2016). As has been seen in the case of some AP English Language classrooms, some teachers have helped students reach AP exam success by using culturally relevant approaches to develop student skills (Kolluri, 2019; Baker-Bell, 2013).

Barriers to Implementing Culturally Responsive Teaching

While research has established the positive impacts of culturally responsive teaching on student learning, some teachers still avoid this approach. Many AP teachers in particular avoid adopting culturally responsive approaches. However, the AP Capstone courses may allow teachers to adopt the effective approaches identified by Kolluri and Baker-Bell (2013).

One barrier to cultural responsiveness in AP classes is that teachers do not learn culturally responsive approaches in teacher preparation programs (Gay, 2010). This partly explains why they often do not feel a sense of self-efficacy in adopting culturally responsive pedagogy (Siwatu et al., 2016). In-service teachers exposed to professional development for

culturally responsive teaching also often do not internalize all of its dimensions, and often instead ask for a list of techniques to use with various student ethnic groups (Fasching-Varner & Seriki, 2012). As Howard (2003) argues, such an approach prevents educators from developing a true, critical understanding of what it means to be culturally responsive.

Besides a lack of self-efficacy in cultural responsiveness, AP teachers' beliefs about their curriculum and teaching may be more intractable. This poses a more challenging barrier to overcome. Many teachers feel discomfort discussing issues of race or culture, which results in a colorblind approach to teaching (Gay, 2010). This may in part compound the problem of AP teachers focusing on content coverage rather than engaging students. Many teachers see creating a diverse curriculum that acknowledges students' cultures as a separate goal from academic excellence (Gay, 1988; Howard & Terry, 2011). For these teachers, cultural relevance is a form of coddling that does not hold students to high standards, and so they opt to pursue instead a colorblind notion of "excellence" (Gay, 1988; Ladson-Billings, 1992). However, this reveals a crucial misunderstanding. One of the key tenets of culturally responsive education is holding students to rigorous standards in order to boost achievement (Ladson-Billings, 1995). In fact, the AP Capstone courses may allow teachers to deliberately maintain rigor and pursue academic excellence through cultural responsiveness in a way that other AP courses have not done.

These barriers suggest the value of further research. A detailed study which provides evidence of how AP Capstone teachers use culturally responsive practices to guide students towards exam success may address this first barrier. Qualitative investigation of how these teachers approach these classes may help to address the second of these barriers.

Measuring Cultural Responsiveness

In order to carry out an investigation of AP teachers' cultural responsiveness, researchers need to be able to observe the approach. Many of the most significant underpinnings of culturally responsive teaching deal with beliefs, attitudes and teacher self-efficacy. Earlier College Board research articulated the difficulties of researching these constructs in AP teacher practices (Burton et al., 2002). However, since these earlier studies, researchers have created several tools to observe culturally responsive practices. Powell et al. (2017) itemize five categories of culturally responsive practices on their *Culturally Responsive Instruction Observation Protocol,* each with several clear indicators*:* classroom relationships, family collaboration, instructional practices, assessment practices, and critical consciousness. Siwatu (2007) provides 40 items on his *Culturally Responsive Teaching Self-Efficacy Scale* and 26 items on his *Culturally Responsive Teaching Outcome Expectancy Scale*. Measures such as these provide a framework to build on past College Board surveys, to investigate the extent to which AP teachers may be using culturally responsive approaches. This study uses these validated measures of cultural responsiveness to investigate AP teacher practices in a more targeted manner than previous studies have done.

Previous Investigations into Cultural Responsiveness in AP classes

Previous research has attempted to investigate effective strategies for teaching minority students in AP classes (Burton et al., 2002). However, this research was unable to specifically determine whether teacher strategies impacted minority student success, apart from other contextual factors and possible confounding variables. Despite this, it suggests avenues for further research. Research on culturally responsive instruction has demonstrated the success of this approach on teaching culturally and linguistically diverse students generally (Ladson-Billings, 2009; Gay, 2018; Howard, 2010; Hammond, 2015). Such research has not focused on

28

AP classes and exams, specifically, however. Many qualitative studies focus on factors that impact minority students' success at individual school sites or districts (Griffon & Dixon, 2017). Some studies focus on culturally responsive practices in individual AP classrooms (e.g., Maguire, 2017). However, these lack generalizability. One recent dissertation investigates the use of culturally responsive practices in AP classrooms in two California districts (Simmons, 2017). However, this study is also limited in sample size, and may suffer from biased reporting by study participants, who may have provided socially desirable responses (Paek et al., 2005). Despite this limitation, Simmons' study suggests that veteran teachers of 11 years or more are significantly less likely to implement culturally responsive practices. Thus, the current study includes years of teaching as a variable, in order to understand how teacher experience impacts the likelihood of adopting culturally responsive practices.

Building off the prior research, there is a need to investigate more rigorously the extent to which teachers of various AP classes use culturally responsive pedagogy on a national level. Existing research on AP teacher practices suggests that AP teachers do so at a low level (Paek et al., 2005). However, AP classes focused on student skill development rather than content coverage are more likely to both adopt culturally responsive approaches and prepare minority students for success on the AP exam (Kolluri, 2019; Burton et al., 2002). Since the last full-scale national study on AP teacher practices (Paek et al., 2005), College Board created AP Capstone. This program became available for schools to offer students in 2015 and consists of two classes focused solely on student college-readiness skill development. As this program is in its infancy and expanding rapidly, there is a need to study the instructional practices and beliefs of AP Capstone teachers, to gauge the extent to which they are using the opportunity to increase minority success on AP exams through culturally responsive approaches.

The Potential for Cultural Responsiveness in AP Capstone

Overview of the AP Capstone Program

The two Capstone courses—AP Seminar and AP Research—are designed specifically to help students all high school students develop the inquiry, research and argumentation skills that many colleges viewed as necessary for success (Sheth, 2017). The open-ended nature of these courses allows teachers a great degree of flexibility in topic, curriculum and text selection. Significantly, the exams for these courses are performance task and skill-based, not content-driven, meaning there is no required breadth of content coverage for teachers to contend with (College Board, 2019; Jagesic et al., 2020). Wiggins and McTighe's (2012) *Understanding by Design* framework serves as the framework for both courses (AP Seminar Course and Exam Description, 2016). However, certain elements of Project-Based Learning may be useful to researching AP Capstone (Thomas, 2000). These courses are structured so that teachers choose any suitable interdisciplinary theme, set of themes, topics or problems, in order to introduce students to college level interdisciplinary argument, research, and presentation skills. Per the AP Seminar Course and Exam Description:

> Students explore the complexities of one or more themes by making connections within, between, and/or among multiple cross-curricular areas and by exploring multiple perspectives and lenses (e.g., cultural and social, artistic and philosophical, political and historical, environmental, economic, scientific, futuristic, ethical) related to those themes. (2016, p. 18)

As an example, College Board suggests the following themes as possible starting points for first-time teachers of the course: justice, environment, democracy, education, among others.

More concretely, the Deerfield Academy—a prestigious private boarding school in Massachusetts that was one of the first schools to pilot the AP Capstone program—lists the following course description of AP Seminar on its website:

> In this AP Seminar course students explore the complexity of global food and water access/delivery systems while developing their skills as critical thinkers and strong communicators. The course focuses on current local and global issues related to freshwater availability and infrastructure, agriculture and food production, and water and food insecurity. (Deerfield Academy Course Catalog, n.d.)

Since Deerfield and a select few schools first piloted the AP Capstone program in 2014, the number and types of AP Capstone schools has grown significantly. For the 2019-2020 school year, College Board projected approximately 1,900 schools to offer the courses, and approximately 75,000 students to submit performance tasks and take end of course exams (Peart, 2019). Among these 1,900 schools offering the program are a wide range of public schools, private schools, charter networks, and in some regions, entire school districts. The majority of these schools and districts, however, do not publish course descriptions. Thus, the actual topics and curricula being taught in Capstone schools remains largely unstudied.

Benefits of the AP Capstone Program.

Preliminary research into the AP Capstone Program suggests that it holds benefits even beyond those offered by existing AP Classes. AP classes in general may correlate with higher college acceptance rates, higher college GPA and graduation rates, and reduced time to graduation. They may also foster academic confidence in students (Foust et al., 2009; Park et al., 2014). However, in a study commissioned by the College Board, Jagesic et al. (2020) find that

31

students who earn a 3 or higher in AP Seminar and AP Research are more likely to earn honors program participation, internships, and research assistant positions than students who earn comparable scores in content-specific courses.

While Capstone offers the potential for underrepresented minority students to engage in Advanced Placement work while engaging with culturally responsive curricula, at this point no one has a complete picture of the extent to which this is happening, if at all. As has been shown earlier, school characteristics may impact minority student access and experience in these courses. Thus, this project will gather data on school characteristics as well as curricula and pedagogy.

Curriculum flexibility and teacher autonomy may provide teachers the opportunity to choose topics which acknowledge the "cultural heritages of different ethnic groups … as worthy content to be taught in the formal curriculum" (Gay, as cited in Griner & Stewart, 2012, p. 589). As an example, in 2018, in the state of California, only two Black students earned the highest possible score of 5 on the AP Research performance task (College Board, 2018), out of 69 total scores of 5 in the state. However, the actual topics and curricula being taught in most Capstone classes remain largely unstudied. While Capstone offers the potential for underrepresented minority students to engage in Advanced Placement work while engaging with culturally responsive curricula, at this point researchers do not have a complete picture of the extent to which this is happening, if at all. Thus, this study addressed the current gap in knowledge about how AP Capstone teachers design their courses.

Conceptual Framework: Key Components of Culturally Responsive Pedagogy

Culturally Responsive Pedagogy exists on a continuum of asset-based pedagogies that educational reformers have theorized and researched beginning in the 1990s (Paris & Alim,

32

2017). These include Ladson-Billings' original formulation of *Culturally Relevant Pedagogy* (1995), Gay's (2000) reconceptualization of *Culturally Responsive Pedagogy,* and Paris and Alim's (2014) "loving critique" of these approaches, which envisions a *Culturally Sustaining* approach. Paris and Alim maintain that asset-based pedagogies must do more than be relevant to students' communities; they must work to sustain students' linguistic and cultural ways of being and do so in a way that recognizes students identities as complex and evolving (2017). While the present study draws on several tenets of Culturally Sustaining Pedagogy, particularly in the areas of developing students' critical consciousness, I use the term Culturally Responsive Pedagogy. As Paris and Alim explain "CSP explicitly calls for schooling to be a site for sustaining the cultural ways of being of communities of color" (2017), and to "focus on sustaining pluralism through education to challenges of social justice and change in ways that previous iterations of asset pedagogies did not" (2014). However, given the existing research on AP teachers' practices, few AP teachers fully embrace this mandate. However, the present study shows that at least some portion of AP Capstone teachers use approaches that might faithfully be termed Culturally Responsive.

Research shows that culturally responsive pedagogy improves student learning. However, there has been limited research on the ways in which AP teachers draw on the tenets of culturally responsive teaching. In order to observe culturally responsive teaching, it is necessary to first recognize its main dimensions. Culturally responsiveness encompasses teachers' relationships with students, their instructional practices, their assessment practices, their focus on rigor and skill development, their efforts at connecting learning within students' cultural referents, and their attempts to help students develop a critical consciousness (Powell et al., 2017; Howard, 2003; Gay, 2018). While there are observable culturally responsive practices, the approach

requires that teachers overcome deficit-based attitudes towards non-White students and instead recognize students' funds of knowledge (Gay, 2018; Howard & Terry, 2011; Ladson-Billings, 1995; Rios-Aguilar et al., 2011). This approach also requires teachers to believe that students from all backgrounds can achieve at a high level, and that they can hold students to rigorous standards while making learning culturally relevant (Siwatu, 2007; Siwatu, 2011). In order to be truly culturally responsive, teachers need to believe that they are capable of engaging students in discussion of issues of race and culture (Howard, 2003). This aspect of cultural responsiveness is one in which teachers are often the least comfortable and the least prepared for, especially early on in their career (Gay, 2010; Siwatu, 2011).

Culturally responsive teachers focus on whole child instruction and skill development, rather than content coverage (Gay, 2018; Ladson-Billings, 1992). One of the best markers of culturally responsive education is that teachers effectively use culturally engaging content and experiences in order to help students develop universally valued academic skills (Gay, 1988). This leads to increased student motivation, student interest in content, ability to engage in discourse around content, perception of self as capable, and increased confidence in standardized testing (Aronson & Laughter, 2016). As has been seen in the case of some AP English Language classrooms, some teachers have helped students reach AP exam success by using culturally responsive approaches to develop student skills (Kolluri, 2019; Baker-Bell, 2013).

Teacher Reflection and Awareness

According to Howard (2003), culturally responsive teachers need to engage in critical self-reflection, acknowledge how deficit mindsets shape attitudes towards students of color, recognize the link between student culture and learning, and recognize the link between dominant European American values and typical teaching practices. Based on this, teachers

should monitor and critique their own practices. In addition, culturally responsive teachers should be aware of the various ways in which culture manifests. These include not only the surface level markers such as food and holidays, but also the shallow and deep layers of culture, including belief systems. Additionally, teachers must recognize the sociopolitical context of teaching (Hammond, 2015). For example, Kinloch (2017) describes being confronted by several students in her classroom who presented behaviors that would often be described as defiant. Instead, she realizes that these students were "performing a narrative of resistance to feelings of alienation and miscommunication that resulted from . . . daily interactions with teachers, administrators, and peers at the school" (p. 25). As Kinloch uses this awareness to engage her students in narratives of resistance, so do other culturally responsive teachers need to recognize how students' behavior reflects their ingrained cultural worldviews and be aware of how their own personal perspectives shape their attitudes towards students.

Relationships with Students: Building Classroom Culture and Community

The foundational premise of culturally responsive pedagogy is that culture matters. Culture strongly influences a person's ability to learn; a person's mind filters all experiences through the complex system of beliefs, values, standards and codes that comprise their culture (Hammond, 2015; Gay, 2018). Proponents of the pedagogy claim that all education is culturally responsive, it just predominantly responds to the culture of White, middle class students (Ladson-Billings, 1995; Gay, 2018). This happens primarily when teachers assume their own culture—usually White, middle-class and mainstream—is the universal norm; they then either implicitly or explicitly assume students from non-dominant cultures are deficient in some way (Yosso, 2005; Howard, 2010). While these teachers do not have malicious intent, the result is that non-White students often perceive that these classes are not intended for them, and they are

not intended to be able to succeed in class (Ladson-Billings, 1995; Baker-Bell, 2013). Non-responsive teachers often do not find ways to fit education into the cultural contexts of students who are not part of the White middle-class "mainstream" (Ladson-Billings, 1995).

However, when teachers show students that aspects of their cultures belong in the classroom and that the classroom can also serve to further their knowledge of their own cultures, students' attitudes towards class often change (Griner & Stewart, 2012; Baker-Bell, 2013). Students have better likelihood of academic success when teachers minimize the cultural disconnect between students' personal lives and their classroom experiences (Howard, 2010; Ladson-Billings, 1995). Additionally, culturally responsive teachers reduce threats to student's emotional states that might arise due to microaggressions, and work to build sense of connectedness in the classroom. To do this, they focus on positive relationship by building a feeling of safety, leveraging students' existing funds of knowledge (Hammond, 2015). More specifically, these teachers engage students in a "learning partnership" by offering affirmation, validation, and a stated belief that students can and will develop their academic skills (Gay, 2018).

Instructional Practices

Culturally responsive pedagogy draws on two foundational approaches (Aronson & Laugher, 2016). One approach conceptualizes culturally responsive teaching as a set of instructional practices rooted in "using the cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more relevant to and effective for them" (Gay, as quoted in Aronson & Laughter, 2016).

There is no one set of instructional practices that might be called culturally responsive. Rather, the mark of a culturally responsive teacher is her ability to differentiate instructional

strategies based on the unique needs of students (Gay, 2018). However, one common

consideration in culturally responsive instructional practices is that many students, and especially

students of color, learn well via collaborative and cooperative structures. Kinloch writes that in

order for culturally sustaining pedagogies to be effective "collaborative, collective, critical and

loving environments must be fostered (Kinloch, 2017). In fact, Gay (2008) finds that

cooperation, collaboration and community are the "key pillars" to any culturally responsive

instructional approach. This works best by situating learning withing student's process of "sense-

making," and engaging them in experiential learning (Irizarry, 2017).

Teachers can adopt a culturally responsive approach when they choose to "anchor a unit

with a place-based learning activity connected to a real-life community issue" as well as to

engage students in "instructional conversation" and to give students voice in their learning

(Hammond, 2015).

Assessment and Feedback Practices

One of the most important aspects of a culturally responsive teachers' assessment

approach lies in her formative assessment and feedback. Formative assessment needs to be

instructive rather than evaluative, specific and manageable, timely, and delivered in a low stress,

supportive manner (Hammond, 2015). Additionally, innovative and multiple forms of

performance assessment allow teachers more opportunity to assess student's skill development

than narrow, standardized measures (Gay, 2018). Project-Based Learning and performance tasks

rather than tests may enable these conditions (Thomas, 2000). Bucholtz, Casillas and Lee (2017

give examples of this approach in practice. In their study, teachers evaluate learning taking place

through discussion, written reflections, student research and action projects centered in students'

communities, rather than tests, drills and worksheets. Ultimately, culturally responsive teachers

focus more broadly on student's intellectual growth through their experiences in school, the community, and classroom (Ladson-Billings, 2017).

Building Students' Critical Consciousness

Perhaps most importantly to the goals of culturally responsive education is developing students' critical consciousness. In doing this, culturally responsive educators focus on developing students' own cultural competence as well as the socio-political consciousness to critique and challenge structural inequalities (Ladson-Billings, 1995; Aronson & Laughter, 2016). Cultural competence in this sense refers to the ability of students to recognize and value their own culture, while also becoming fluent in at least one other culture (Ladson-Billings, 2017). Most important, teachers must also realize that students' cultures are complex and dynamic (Paris & Alim, 2014), and that what often is most relevant to students is "their own, organic, self-generated culture" (Ladson-Billings, 2017). Some teachers who work to develop students' critical consciousness have students explore issues regarding "language, culture, race and racialization, power and identity that are directly relevant to their lives" (Bucholtz et al., 2017, p. 47).

So, if as part of their curriculum, AP Capstone teachers intentionally include opportunities for students to pose and answer significant questions about social, political and cultural issues, they may enhance student learning. Thus, the opportunity exists for AP teachers to engage students in their own learning by truly enacting a culturally responsive approach. The question remains whether AP Capstone teachers are taking advantage of this unique opportunity or conducting business as usual.

III. RESEARCH DESIGN

AP Capstone offers students the opportunity to supplement their existing AP coursework; it may also offer students a more culturally responsive, skills-based approach to instruction than traditional AP courses. Due to the newness of the program, we do not know how teachers plan their courses, nor the extent to which they use culturally responsive practices. This will reveal key factors in how teachers work towards student success. This study investigates the extent to which AP Capstone teachers use culturally responsive practices to increase access and success of underrepresented minority students. These findings will inform our understanding of how these teachers promote minority student success.

Research Questions

This study seeks to answer the following questions, in order to understand how teachers are using the novel structure of the AP Capstone courses.

1. To what extent do AP Capstone teachers use culturally responsive pedagogies?

2. What are the practices of AP Capstone teachers who report using culturally responsive pedagogies?

3. What teacher and school characteristics are associated with teacher use of culturally responsive approaches?

4. Is teacher use of culturally responsive practices associated with the percentage of minority students enrolled in AP Capstone courses?

Research Design and Rationale

This study uses an explanatory mixed methods approach, in which "the quantitative results … inform the types of participants to be purposefully selected for the qualitative phase and the types of questions that will be asked of the participants" (Creswell & Creswell, 2018, p.

222). As an explanatory mixed-methods study (Creswell & Creswell, 2018), this study first used survey results to estimate the degree of culturally responsive teaching in AP Capstone classes. Survey data also established possible associations between use of culturally responsive teaching and factors related to teacher demographics, teacher perceptions, and school factors. Finally, I identified teachers for follow-up qualitative investigation based on survey results that suggested a notable attempt to enact culturally responsive pedagogies.

Data Collection

Method 1: Survey

The first part of this study measures the extent to which AP Capstone teachers employ culturally responsive teaching practices. In order to measure this, I needed a valid and reliable survey instrument (Fowler, 2014). To create this instrument, I turned to existing scholarship which operationalizes key elements of culturally responsive pedagogy, such as the *Culturally Responsive Instruction Observation Protocol* (CRIOP) (Powell et al., 2017). This instrument draws on existing scholarship to assess six prominent domains of culturally responsive pedagogy: classroom relationships, family collaboration, assessment practices, instructional practices, discourse, and critical consciousness. The CRIOP was normed over several iterations using a concurrent triangulation and mixed methods design, with researchers achieving an inter-rater reliability score of 80% (Powell et al., 2016).

Additionally, the survey instrument I constructed draws on measures of teaching practices from two previous College Board research reports, *A Portrait of Advanced Placement Teachers' Practices* (Paek et al., 2005) and *Minority Student Success: The Role of Teachers in Advanced Placement Program (AP) Courses* (Burton et al., 2002).

The survey instrument also gathers data about the demographic makeup of schools, demographic makeup of students in the AP Capstone classes, and teacher demographics to see which contextual factors may correlate with teacher usage of culturally responsive practices. Questions were adapted from previous versions of College Board school questionnaires (Paek et al., 2005; Burton et al., 2002). Data collected includes teacher age, gender, ethnicity, total years of teaching experience, years of teaching AP classes, years of Teaching AP Capstone, primary content area, education level, highest degree content area, in order to test for possible factors that may correlate with use of culturally responsive practices. School demographic data include school size, school type, school location, school SES (in the form of the percent of students on Free and Reduced Lunch), and student racial/ethnic make-up. Such data addresses research question 1, to see if school context impacts rates of culturally responsive approaches. The survey also provides a basis for examining whether teachers' self-reported culturally responsive approaches are associated with higher minority student participation in AP Capstone.

I shared a draft of the survey instrument with a member of College Board's research team, to provide feedback and functionality tests through several drafts. I also field tested the survey with members of my own work site who teach the two AP Capstone courses, and several members of the AP Capstone community. In order to ensure validity of the inferences based on data collected through the survey instrument, I turned to past scholarship on culturally responsive teaching to operationalize and define my constructs. College Board provided access to a survey methodologist from their internal research team to provide feedback and testing on the survey instrument. I also conducted cognitive interviews on the survey with a group of AP Capstone consultants, to ensure clarity of understanding. Lastly, I field tested the survey with a small group of seven AP Capstone consultants and teachers of both AP Seminar and AP Research.

After several revisions to the instrument, the final draft of the survey consisted of the following

blocks of items (see Appendix A):

1. Screening Questions
2. Goals, Emphasis, and Perceptions of the Capstone Courses
3. Curriculum Planning specific in AP Research
4. Curriculum Planning in AP Seminar
5. Instructional Strategies in AP Seminar
6. Instructional Strategies in AP Research
7. Assessment Approaches
8. Classroom Community
9. Teacher Goals for Students
10. AP Capstone Implementation Questions
11. School Characteristics Questions
12. Teacher Background Questions

The *Curriculum Planning* block focuses on factors that teachers consider important when

planning curriculum. This block includes 9 items total, including some that suggest cultural

responsiveness, as well as non-responsive considerations that AP teachers might nonetheless

base their curriculum planning on. *Topics and Themes* focuses on the actual content of teachers'

courses, rather than the factors that they consider important in planning curriculum. Again, this

block contains 9 items total, some of which likely suggest cultural responsiveness, as well as

other items that AP teachers might incorporate into their classes. *Instructional Strategies*

includes 8 items total. These include items related to collaboration and differentiation, as well as

more typical AP teacher instructional strategies. The *Assessment* block includes 6 items related

to typical AP class instructional strategies, strategies that may be particular to AP Capstone, and

items that may suggest cultural responsiveness. The *Feedback* block comprises 6 items, based on

similar considerations. Lastly, the *Classroom Community* block consists of 3 items related

directly to teachers' beliefs about classroom community and culture, all of which might suggest a

culturally responsive approach to creating community in the classroom.

As this survey was meant to be exploratory, the length of the final instrument may have contributed to some attrition in respondents not completing all items. 250 participants began the survey. However, only 216 completed the substantive blocks of questions, numbers 1-9, related to use of culturally responsive practices. Only 173 of these 216 went on to complete the final three blocks of questions related to school and teacher demographics. This also reveals another limitation to the data collected via this method. Future research can build on the analyses I describe in Appendix D, to reduce the number of items and reduce variables, and thus potentially reduce attrition on any future projects that use this instrument.

Method 2: Interviews

Next, I conducted six separate semi-structured interviews of approximately one hour each. In the interviews I investigated how and why teachers perceive cultural responsiveness as a primary concern for topic and curriculum, as well as how teachers teach these curricula. I also probed teacher responses to more deeply understand how teachers attempt to gather relevant information about their students and plan relevant and meaningful instruction that addresses these students' cultural backgrounds. I selected a sample from those teachers whose answers indicate that they consider cultural responsiveness to be an important factor in teaching these courses. The qualitative research provides a more thorough explanation of the meaning of the survey responses from those teachers who indicate cultural responsiveness as a primary consideration in course planning (Merriam & Tisdell, 2016). Specifically, the interviews shed light on how teachers attempt to understand their students, and design learning experiences that affirm their cultural needs. Such an investigation into processes required a more qualitative approach (Creswell & Creswell, 2018). However, this qualitative data alone would not provide a description of the extent to which these practices are happening. Nor would a qualitative project

allow for correlational analysis between other factors that may impact teachers' self-reported use

of culturally responsive practices.

The following questions formed the basis of my semi-structured interviews:

- What are some specific approaches you take to getting to know your students' and their backgrounds?
- What topics and themes did you choose to frame your course? Why these ones?
- Describe some of the strategies you use to guide students to success on the performance tasks?
- Do you have favorite strategies that you use to help students engage?
- Do you have specific strategies that you've found to be effective?
- Describe how you create your classroom culture/environment.
- Describe some of the ways you allow students to make their own cultural backgrounds an explicit focus of the course content.
- How do you guide students into their topic selection for the performance tasks? How do you set them up to be successful?
- What kinds of topics do students in your class gravitate towards for the performance tasks? Tell me more about that.
- Do you have any theories as to why students favor these types of topics?
- Describe some of the activities or other in class experiences you plan for your students. How do you try to engage with your kids?
- How do you recruit students for Capstone?

I then asked follow-up questions based on interviewee responses (see Appendix B for complete

interview protocol).

Site selection and access

I sampled AP Capstone teachers using several methods. As a primary method, I drew

from publicly available databases. College Board maintains a member directory of every teacher

who has been trained in AP Seminar, as well as AP Research. This list allowed for random

sampling (Fowler, 2014). I selected the first and last member on every directory page, provided

they were located within the United States. For those teachers whose email addresses were not

publicly available, I selected the next available teacher on each page (e.g., the second or second-

to-last per page). Of the 4,451 members of the AP Seminar community, I selected 446 teachers.

Of the 3,224 on the AP Research Community, I selected 324, for a total of 770 teachers.

However, many AP Capstone teachers teach both AP Seminar and AP Research. If I sampled a teacher from one community, and using the same method sampled that same teacher on the other directory, I instead selected the next available teacher. In fact, 65 of the 216 valid survey respondents taught both AP Seminar and AP Research.

Additionally, the Executive Director of the AP Capstone program distributed the survey directly to the approximately 40 current AP Capstone consultants responsible for training teachers and requested that these consultants distribute the survey to past teacher trainees for whom the consultants have maintained contact information. Since every current AP Capstone teacher was trained by one of these consultants, this approach theoretically allowed every current AP Capstone teacher to be represented in the study. Chapter Four of this study discusses the representativeness of the final sample, showing that this approach yielded a sample broadly representative of all AP Capstone schools in terms of regional distribution.

I chose six teachers for interviews, based on survey results that indicated a significant attempt to use culturally responsive approaches. Purposefully selecting these teachers helped explain the meaning of significant responses within the survey data (Creswell & Creswell, 2018). Since minority student success on AP exams may be impacted by factors such as overall student demographics (Burton et al., 2002), I looked for results across three categories of school demographics. These categories consisted of teachers with majority Black and Latinx students, diverse schools that serve a plurality of racial groups with no one majority group, and schools in which Black and Latinx students numbered fewer than White and Asian students. I had also intended to compare responses of White and Asian teachers in each of these contexts with Black and Latinx teachers. However, in line with existing research (Burton et al., 2002), fewer than 10% of the teachers sampled identified as teachers of color. While these teachers would likely

provide valuable insight in their interviews, every teacher identifying as a teacher of color either declined to provide contact information for further research or taught in a majority White school with survey responses indicating low attempts at cultural responsiveness or did not respond to requests for an interview.

To select interviewees, I first sorted teacher responses that indicate cultural responsiveness as a primary curricular concern (See Chapter 4 for culturally responsive pedagogy survey score calculations). I sorted teachers scoring in the highest quintile for self-reported use of culturally responsive practices. From there, I identified teachers who had responded to open-ended survey items asking them to briefly describe a thematic unit or topic of study. I coded the open-ended survey responses using an inductive approach (see Chapter Four). Among the themes that emerged, I selected teachers who described curriculum coded as dealing with Race or Racism, Culture or Identity.

Thirteen teachers in the sample fit the above criteria. I contacted each of the thirteen to request an interview. After my first request, four agreed to be interviewed via Zoom. After another round of requests, an additional two teachers agreed, for a total of six interviewees.

Role/Positionality

To manage my role and positionality in conducting this study, I presented all relevant information concerning my relationship to the study to participants. I disclosed that I was a UCLA doctoral student, a fellow AP Capstone teacher, and consultant for the College Board responsible for training AP Capstone teachers. In order to build rapport with interviewees', I emphasized my role as a fellow AP Capstone teacher. In order to address any potential ethical concerns, I disclosed my role with the College Board. However, I presented myself as investigating how my peers structure the course, as the program expands.

Data Analysis

I first generated descriptive statistics of survey responses to describe the sample data set in terms of teacher characteristics and school demographics. I then summarized teacher responses to the substantive items on curricular planning, perceptions of the course, instructional activities, assessment and feedback practices, and attempts to build classroom community. These statistics include measures of central tendency, frequency of certain responses, range and distribution of responses to questions. Providing these statistics allowed for clear observation of trends and patterns within responses. I distributed the survey through Qualtrics, via email, and stored responses in a csv data file. All analyses were conducted in JASP, an open-source research statistics software program.

After providing descriptive statistics, I performed a series of exploratory factor analyses and reliability analyses to determine how the survey instrument measures the various constructs and sub-constructs of culturally responsive pedagogy I attempted to operationalize (Huck, 2012). I provide a full discussion of these analyses in Chapter Four.

To examine possible associations between respondents' use of culturally responsive pedagogies and variables related to teacher demographics, teacher perceptions, and school characteristics, I first performed one-way analyses of variance (ANOVA). I then performed multiple regression analyses with the overall cultural responsiveness and its sub-scores score as the outcome variables (Huck, 2012).

I then analyzed interview responses using the following dimensions of culturally responsive pedagogy: teachers' relationships with students, their instructional practices, their assessment practices, their focus on rigor and skill development, their efforts at connecting

learning within students' cultural referents, and their attempts to help students develop a critical

consciousness (Powell et al., 2017; Howard, 2003; Gay, 2018).

I conducted all interviews via the Zoom video-conferencing application. After conducting

the interviews, I used the transcription service REV to generate text files. In Chapter 4 I refer to

participants by their initials in order to protect confidentiality (Merriam & Tisdell, 2016). I coded

interview responses deductively and inductively, using close-text paper and pen annotations to

generate inductive themes, and Microsoft Excel to categorize and sort deductive themes. I

analyzed the interview responses through three rounds of coding. First, I used previous

scholarship attempting to operationalize the main dimensions of culturally responsive pedagogy

to generate a list of deductive codes (Saldaña, 2013; Powell et al., 2017; Aronson & Laughter,

2016; Gay, 2013; Paris & Alim, 2014; Howard & Rodriquez-Minkoff, 2017). Next, I coded each

interview transcript inductively to generate a list of emergent codes. At this point I generated 77

codes within the following 14 categories: Teacher Reflection, Teachers Using Capstone to Raise

Students' Awareness of "The Real World," Students Critically Analyzing Social Issues as Part of

Their Exam Work, Developing Students' Critical Consciousness in Class, Classroom

Community, Curriculum Rooted in Students' Local Communities, Expectations of Students,

Representation of Minority Students in AP Capstone Classes, Curriculum Planning

Considerations, Value of AP Capstone, Assessment and Feedback, Instructional Activities,

Impact of Covid-19 on Learning, and Local Implementation of Capstone (See Appendix C for a

complete codebook). Finally, I returned to the literature to generate a set of analytic memos,

leading to my findings (Birks et al., 2008).

These interviews provide illustrative qualitative data about what teachers who self-report

the highest levels of cultural responsiveness on the initial survey actually do in their classroom.

Per the definition of explanatory mixed methods, these data help explain the significance and meaning of the survey results (Creswell & Creswell, 2018). These results shed light on some practices that other teachers who self-report high levels of cultural responsiveness may be using in their classrooms, as well as practices that other teaches who report low levels of cultural responsiveness may not be using.

Ethical Considerations

In addition to obtaining informed, voluntary consent, I sought to avoid any sort of harm to participants. The main potential for harm was if participants' identities were not properly protected (Creswell & Creswell, 2018). Thus, I took several precautions to protect the privacy of participants. I removed all identifying information from individual responses. Interview responses were stored on external hard drives with identifying information removed and kept in secure locations.

Threat Mitigation

In order to combat my own subjectivity in interpreting the interview responses, I took several steps. Prior to coding and analyzing interview data, I established my preliminary coding dictionary and expected themes, in order to make my analytical process as transparent as possible (Merriam & Tisdell, 2016). I also code a selected sample of my interview responses twice in order to check for intra-rater reliability. Additionally, I conducted member checks with participants to ensure faithful interpretation and reporting of participant responses (Maxwell, 2013; Merriam & Tisdell, 2016).

In order to assess reactivity, I triangulated qualitative data several ways. I analyzed responses from six interviewees in order to see which responses were consistent across teachers. Where provided, I also checked teacher responses with documents provided by these teachers—

syllabi, lesson plans and examples of instructional activities. Additionally, establishing an appropriate relationship with my participants helped to combat this reactivity. As mentioned before, I positioned myself in terms of a colleague-to-colleague relationship, with the stated goal of knowing what success, challenges and recommendations other teachers have for those teaching the course. To further combat reactivity, I assured participants that all results are kept confidential, and that no individually identifying information will be shared out (Maxwell, 2013). I plan on establishing as much of a peer-to-peer relationship as I can with participants, that of one teacher who wants to know other teachers challenges and successes in order to grow the program and serve more students. By doing this, I hoped to encourage candor and honesty. As I hope my results show, teachers were open and forthright in discussing their responses.

Summary

This explanatory mixed methods study investigated the extent to which AP Capstone teachers use culturally responsive teaching practices. It also investigated how teachers describe their use and the impact of these practices in their classrooms. This study drew on a sample of teachers from across the nation. The survey operationalized several dimensions of culturally responsive teaching to investigate teachers' topic and text selection, classroom atmosphere, assessment, and instructional practices, and curricular planning considerations. Based on these survey results, I conducted six follow up interviews to provide understanding of survey responses. Though this project did not measure the *effect* of these practices on student success, the results of this study are nonetheless useful to share with other AP Capstone teachers in professional development, especially as the program continues to expand.

IV. RESULTS

In this chapter I first present the sample of survey respondents. Next, I describe the steps I took to assess the validity of the survey, as well as to compute scores for culturally responsive pedagogy and its sub-constructs on which I focus my analyses. After that, I describe the interviewees I selected based on significant scores on CRP and its sub-constructs. Finally, I present my findings by research question.

Sample

Survey Participants

I selected and sent a study invitation to 768 teachers. As shown in Table 4, 250 teachers responded, and 216 answered all questions related asking about culturally responsive practices. Among those 216 respondents, 146 taught AP Seminar in 2019-20, and 135 taught AP Research (65 teachers taught both AP Seminar and Research). Table 4 describes the survey respondents.

Table 4. Survey Respondents

Surveys Distributed Directly	Total Respondents	Valid Responses	Seminar	Research	Both Classes
768	250	216	146	135	65

Characteristics of the study participants are summarized in Table 5. While College Board does not maintain records of the ethnicity, gender, or primary content area of AP Capstone teachers, other research suggests that the sample in this study is broadly representative of the larger population of AP Capstone teachers. The executive director of the AP Capstone program estimates based on teacher provided data that in 2018, the primary content areas of new AP Capstone teachers registering for training were "50% ELA; 20% history and social science; 20% STEM and 10% Other (Library, Arts, etc.)" (Sheth, 2021). ELA teachers comprised 40% of participants in this study, History/Social Sciences teachers 19%, Science teachers 9% (no math

teachers are represented in the sample), World languages 2%, and teachers designated as "other" 7%.

In regard to gender and ethnicity, the sample represented in the current study may be slightly more diverse than the larger population of AP teachers nationwide. One hundred forty-one of the 216 teachers in the current study identify as White, two as Native American or American Indian, six as Asian or Asian American, five as Latinx, two as Black or African American, and four as "other." However, 63 respondents declined to respond to this question. This makes estimating actual percentages of various groups infeasible. White teachers, for example, may comprise between 61% and 92% of the overall respondents. For comparisons' sake, Milewski and Gillie's (2002) study into AP teacher characteristics finds that in a sample of 32,109 AP teachers in the US, 53% were female, and 46% male. In that same study, 2% teachers identified as American Indian or Alaskan Native, 1% African American or Black, 3% Asian, Asian-American or Pacific Islander, 3% Latinx, 95% White and 2% other (Milewski & Gillie, 2002). However, no researchers have studied the demographic makeup of AP teachers nationwide since Milewski and Gillie's (2002) study. Thus, it is not possible to fully evaluate the representativeness of the sample in this study. See Table 5 for all participant demographic results.

Table 5. Demographic Background Characteristics of Participants (N=216)

Discipline	Total N	%	(n) Seminar	(n) Research
Race/Ethnicity (participants could select multiple)				
Native American/American Indian	2	.93	2	2
White/Caucasian	141	61	96	60
Asian/Asian American	6	2.80	3	5
Latinx	5	2.30	3	3
Black/African American	2	.93	1	2
Prefer not to say/no response	63	29	28	4
Other*	4	1.80	2	2
Gender				
Female	105	48.6	68	52
Male	47	21.8	33	17
Non-binary	2	.93	2	0
Prefer not to say/no response	62	28.7	33	9
Primary Content Area				
English/Language Arts	86	39.80	61	34
History/Social Sciences	27	12.50	19	10
Science	20	9.26	12	12
World Languages	4	1.85	4	1
Visual and Performing Arts	1	.46	1	0
Mathematics	2	.93	0	2
Prefer not to say/no response	62	28.70	-	-
Other	14	6.48	6	9

*Text responses for the 4 other response include: *1/4 Mexican American; I do not recognize racial labeling as legitimate; I never know exactly how to classify this. My grandparents are from Spain; and New Zealand*

Teachers in this sample tended to be veteran teachers, with a mean average of 21 years of teaching experience. The mean class size was 32 students for AP Seminar teachers and 21 students for AP Research. In terms of representativeness, the teachers in this sample taught 3,226 AP Seminar students who submitted exam performance tasks in 2020, and 1,857 AP Research students who submitted their exam tasks. Nationwide, 49,802 students participated in the AP Seminar Exam in 2020, and 19,100 participated in AP Research (College Board, 2020). Thus,

the teachers in this study account for approximately 6.5% AP Seminar and 9.7% of AP Research

students who tested, in 2020. Table 6 shows responses for teaching experience and student

performance.

Table 6. Teaching experience and student performance data

All Respondents	Mean	Median	Mode	SD	Min.	Max.	Range	Total
Total years teaching	21.16	20	14	7.55	8	40	32	
AP Seminar Teachers								
Years teaching AP Seminar	3.62	4	5	1.32	1	5	4	
Students	32.01	25	18	25.00	2	135	133	3,169
Students passing course	31.28	26	19	22.85	1	132	131	3,284
Students submitting all exam tasks	30.72	26	31	22.13	1	134	133	3,226
Students passing exam	27.33	22	20	21.24	1	132	131	2,780
AP Research Teachers								
Years teaching AP Research	3.38	3	5	1.29	1	5	4	
Students	20.90	14	4	24.04	2	135	133	1,839
Students passing course	20.90	14	6	23.75	1	132	131	1,860
Students submitting all exam tasks	20.87	14	8	23.61	1	127	126	1,857
Students passing exam	17.64	11	4	20.32	1	120	119	1,570

In terms of regional representativness, the sample in this study closely matches the

proportion of AP Capstone schools nationwide, as Table 7 shows.

Table 7. Regional Distribution of Survey Responses

Region	AP Capstone Schools Nationally		AP Capstone Schools in Sample	
	n	%	n	%
Middle States	325	16.94	25	15.24
Midwestern	329	17.14	25	15.24
New England	100	5.20	11	6.71
Southern	600	31.27	59	35.98
Southwestern	271	14.12	17	10.37
Western	334	17.40	27	16.46
Missing			52	
Total	1,919		216	

*Per College Board's Regional Office Classifications, Each Region Comprises the following states:
Middle States: Washington, D.C., Delaware, Maryland, New Jersey, New York, Pennsylvania
Midwestern: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, West Virginia, Wisconsin
New England: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
Southern: Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, Puerto Rico
Southwestern: Arkansas, New Mexico, Oklahoma, Texas
Western: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming
Source: Collegeboard. https://collegeboard.com

Finally, Table 8 shows the race and ethnicity of those students whose teachers are represented in this study. Percentages of students' are presentend in bins of 10 percent.

Table 8. School and Capstone class percentage of students' in racial/ethnic groups

	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99
School										
Native American	94	-	-	-	-	-	-	-	-	-
Asian American	75	19	13	1	1	-	1	2	-	2
Black	56	21	19	9	4	5	3	1	-	-
Latinx	41	27	14	12	6	5	3		3	19
White	8	4	11	13	17	6	13	12	25	14
Other	17									
Capstone Class										
Native American	88	-	1	-	-	-	-	-	-	-
Asian American	72	20	7	8	6	4	3	3	2	2
Black	83	20	8	4	4	1	2	2	-	-
Latinx	68	23	5	7	6	1	2	2	4	4
White	7	5	9	10	12	10	12	12	18	18
Other	-									

Interview Participants

From the sample of survey respondents, I selected six teachers for follow up interviews, to gain deeper understanding of trends within the survey data. Of the 216 survey respondents, 127 indicated willingness to be interviewed. To select interviewees, I first sorted teacher responses that indicate cultural responsiveness as a primary curricular concern. I sorted teachers scoring in the highest quintile for self-reported use of culturally responsive practices. From there, I identified teachers who had responded to open-ended survey items asking them to briefly describe a thematic unit or topic of study. I coded the open-ended survey responses using an inductive approach. Among the themes that emerged, I selected teachers who described curriculum coded as dealing with Race or Racism, Culture or Identity. Thirteen teachers in the sample fit the above criteria. I contacted each of the thirteen to request an interview. After my first request, four agreed to be interviewed via Zoom. After another round of requests, an

additional two teachers agreed, for a total of six interviewees. These six teachers are described below.

Mrs. H. Florida.

Mrs. H. is a White, female teacher with 40 years' experience, teaching in Southwest Florida, in an urban, public school. She teaches English as her primary content area and teaches both AP Seminar and AP Research in the Capstone program. She was an early adopter of the AP Capstone program, and holds a doctorate of English, with an emphasis in multicultural instruction. In her open-ended survey responses, she indicated that she had taught White privilege as a thematic focus for her course, but had shifted to other aspects of identity, power and privilege.

Ms. R. South Carolina.

Ms. R. is a White, female, Spanish teacher in South Carolina, in a non-religious private school. She has been teaching for 14 years total, and teaching AP Seminar for four years. She states the main goal of her AP Seminar course is to help students towards "developing an empathetic and non-prejudiced view after considering the position of those not in their own," and that "cultural identity and justice (social, cultural, linguistic, environmental) are my two main themes." She teaches one small section of AP Seminar, with approximately 12 students, depending on the year.

Mrs. J. Georgia.

Mrs. J. is a White, female teacher with 23 years teaching experience. She has taught AP Research for three years, and AP Seminar for two years. Her primary content area is history and social sciences, and she also teachers AP Modern World history. Additionally, she holds a doctorate in education, and focused her dissertation work on culturally responsive teaching. She

56

teaches in a public school in Gwinett County, Georgia, in a school that is predominantly non-White. She states that "no other courses (AP or otherwise) provide the value of Capstone. The ownership, collegiality, critical thinking skills, challenge are unsurpassed." Her goals for the two classes are to train students "to think critically without ever being manipulated by words, videos, images again. To go from a teenager with an opinion to a teenager with an argument. Examine multiple perspectives, communicate and ultimately take action." Her major thematic focus of 2020 was "Democracy. For the relevance of the democratic processes in play right now—power and how the nature of our democracy impacts everyone and everything as Covid demonstrated. It was an excellent opportunity to address immigration (most of my students are first gen or have just arrived in the U.S.)

Mr. M. Missouri.

Mr. M. is a White, male who teaches in Kansas City, MO. He has taught AP Seminar in the past and teaches AP Research only this year. He is currently teaching at his second high school that has offered the AP Capstone program. He is a social studies teacher with 19 years' experience, and also teaches AP Psychology. He states that it's important that curriculum in the class "be relevant to the current climate of culture today" and hold student interest. His thematic focuses for his AP Seminar course include "race in America" as well as "cancel culture" and student-generated topics.

Ms. K. California.

Ms. K. is a White, female teacher in Riverside County, in California. She holds two teaching credentials, in social sciences and English. She has taught AP Seminar for the past four years and has been teaching 13 years total. Students in her school are predominantly Latinx, and over 70% are on the Free and Reduced Lunch Program. In her initial responses, she stated that

"the course requires true critical thinking and is based on cross curricular skill. It is inquiry based and it creates a rewarding experience of exploration." She has framed her course around "The Californian Dream" in which students "looked at the Salton Sea, changing populations, Chavez and the UFW, immigration and college." However, in 2020-2021 she shifted her curricular focus to "the danger of a single narrative," "investigating single narratives that affect daily life."

Mr. D. Virginia.

Mr. D. is a White male Social Studies teacher in Virginia, with 20 years of teaching experience. He also teaches AP and general education US History. He teachers the AP Seminar class only. He describes his school as incredibly diverse in terms of socioeconomics and ethnicity. In his initial survey responses, he mentioned that he sees the value of the course as "meeting [students'] college academic needs, but developing a sense of inquiry," and that "It is a pure course that allows students for the first time to generate and research their own questions, which is invaluable." He described the focus of his course as "the historical, socio-economic and racial history of [his school's town in Virginia], through the lens of identity," but that he has modified that to now also focus on African Diaspora. He also stated in his survey responses that he "can mold [AP Seminar] to meet the needs of both the course and interests of my students.

Construction and Evaluation of Culturally Responsive Pedagogy Composite Scores

In this section I describe analyses of the survey items that led to the combining of items into the composite score that were used in subsequent analyses. Survey items were created based on Powell et al.'s (2017) *Culturally Responsive Instruction Observation Protocol*, as well as Paek at al.'s (2005) investigation into AP teacher instructional practices, as well as Burton et al.'s 2002 study into teacher practices that may benefit minority student success. To construct composite scores measuring aspects of *Culturally Responsive Pedagogy*, I performed exploratory

factor analyses on the following six blocks of questions: *Curriculum Planning* (9 items), *Topics and Themes* (8 items), *Instructional Strategies, Assessment* (6 items), *Feedback* (6 items), and *Classroom Community* (3 items). I also performed exploratory factor analysis on the combined blocks (41 items). Results of the factor analyses are presented in Appendix D.

For each composite score, I included items whose factor loadings and item content suggested that they were in fact measuring a common construct. To compute scores for culturally responsive pedagogy, the following items were summed together: *Culturally Responsive Curriculum Planning* (3 items, maximum possible score of 9), *Critical Consciousness* (6 items, maximum possible score of 18), *Relevant Topics* (2 items, maximum possible score of 6), *Student-Centered Approaches* (3 items, maximum possible score of 12), *Differentiated Instruction* (2 items, maximum possible score of 8), *Formative Feedback* (3 items, maximum possible score of 12), and *Centering Students' Cultures* (2 items, maximum possible score of 8). While affirmative responses to any single one of these items is no guarantee that teachers are using a culturally responsive approach, all six items taken together should work as an indicator of CRP. I combined and reduced these scores to create the *Overall CRP Score* (21 items, maximum possible score of 73). I examined the reliability of each composite score using McDonald's omega coefficient (ω). A summary of the final composite scores for AP Seminar is presented in Table 9.

Table 9. Composite CRP scores for AP Seminar

Composite Variable	# of Items	ω	95% C.I. LB	95% C.I. UB	Max Score	M	SD
Culturally Responsive Curriculum Planning	3	.780	.719	.830	9	5.734	1.825
Critical Consciousness	6	.944	.92	.959	18	12.688	3.762
Relevant Topics	2	-	-	-	6	3.752	1.342
Student-Centered strategies	3	.549	.386	.703	12	9.143	1.920
Differentiated Strategies	2	-	-	-	8	4.731	2.037
Formative Feedback	3	.718	.578	.822	12	7.053	2.333
Centering Student Culture	2	-	-	-	8	6.450	1.102
Combined and Reduced Scores							
Cultural Relevance	7	.823	.756	.866	23	15.780	3.540
Critical Consciousness	6	.944	.92	.959	18	12.688	3.762
Effective Strategies	8	.707	.586	.788	29	20.960	4.440
Overall CRP Score	21	.825	.648	.876	73	49.464	7.966

I performed the same analyses for teachers in the AP Research sample (See Appendix D). Despite some minor difference in the factor loadings, the responses for AP Research teachers clustered in generally the same way as for AP Seminar teachers. To ensure consistency of analyses, and to enable me to conduct a parallel set of analyses, I computed CRP scores sub-scores for AP Research teachers in the same way I did for AP Seminar teachers.

Findings

Findings Related to Research Question 1: To What Extent do AP Capstone Teachers Use Culturally Responsive Pedagogies?

To answer this question, I present results from five indicators of CRP: curriculum planning considerations, curriculum and thematic focus, instruction, assessment and feedback, classroom community.

These results show that AP Capstone teachers generally claim to consider students' personal experiences in planning their curriculum, as well as to consider multiculturalism and cultural diversity. However, teachers choose topics dealing issues such as race and sexism to a much lesser degree, and relatively few select topics specifically situated in their students' unique cultural contexts.

Teachers of both courses report high levels of collaborative instructional activities, as well as activities that build on students' prior knowledge, and differentiated instructional activities.

AP Capstone teachers' assessment and feedback are largely informal, with conversations with students, peer to peer feedback, portfolios and reflections being the most common strategies.

Interestingly, while AP Capstone teachers nearly unanimously agree that students learn best when they see their cultures represented in the classroom, fewer than 20% agree that they actually represent students' cultures in the classroom.

Finding 1.1: With respect to curriculum planning, the majority of AP Seminar teachers focus on the goal of preparing students for traditional conceptions of academic success. Teachers also show some awareness of engaging students' cultures and backgrounds, though the majority of Seminar teachers do not consider students' linguistic diversity in planning their courses. Many teachers report considering multiculturalism or diversity broadly, without necessarily situating their curriculum within students' cultural contexts. AP Research teachers consider student culture to a lesser degree, instead emphasizing the broader category of "students' personal experiences." However, both Seminar and Research teachers give student voice a significant role in their courses, with a majority of both sets of teachers giving student-generated topics at least some emphasis in their courses.

AP Seminar teachers reported multiculturalism as being one of the main primary concerns in their curricular planning, with 37% of respondents saying this is a major focus of their course, and another 39% saying that this is at least some concern. This item earned a mean score of 2.29 out of 3. The next most frequent response was "representing the cultural diversity

of students in my class," with 29% of respondents describing this as a major emphasis of their

curricular planning, and 47% of respondents saying that this receives at least some emphasis.

This item earned a means score of 2.17 out of 3. Incorporating student personal experiences

earned a mean score of 2.09 out of 3, but only 19% of respondents described this as a major

focus. While participants described multiculturalism and represent student cultural diversity as

major focuses of curricular planning, nearly 60% of respondents indicated that including

students' home languages received little or no emphasis in their curricular planning. Including

texts and topics that students are likely to see on the AP Seminar end of course exam, or that

students are likely to see in college, were also major emphases of teachers' curricular planning.

Table 10 shows scores and distribution for each item in this block.

Table 10. AP Seminar Curriculum Planning Emphasis

Item	None (0)		Little (1)		Some (2)		(Major) (3)		M	SD
	n	%	n	%	n	%	n	%		
Student personal experiences	-	-	17	13.28	83	64.84	28	19.18	2.09	.59
Student home languages	26	20.47	50	39.37	44	34.65	7	5.51	1.25	.86
Cultural diversity of students in class	2	1.37	16	10.96	68	46.56	42	28.77	2.17	.70
Multiculturalism	1	.69	15	10.27	57	39.04	54	36.99	2.29	.70
Topics on which I have expert knowledge	10	7.53	36	28.13	66	51.56	16	12.50	1.68	.79
Texts that students are likely to see in college	7	5.51	17	13.39	67	52.76	36	28.37	2.04	.80
Lessons and texts from published anthologies	28	21.86	55	42.97	38	29.69	7	5.47	1.18	.84
Lessons and texts from published textbooks	41	32.28	53	41.73	27	21.26	6	4.72	.984	.85
Texts and topics students are likely to see on the end of course exam	7	5.47	22	17.19	57	44.53	42	32.81	2.04	.85

AP Research teachers, on the other hand, consider students' personal experiences in

curricular planning to a much greater degree. Many Research teachers (49%) describe this as a

major focus of their curricular planning, while another 49% say that this receives some emphasis

in their curricular planning. Only 2% of AP Research teachers say that student personal

experiences receive little emphasis in their curricular planning. This is unsurprising, given the

Research course's emphasis on having students complete one year-long inquiry project on a

topic of their choosing, compared to how teachers introduce research, writing, argument and

presentation skills through topical and thematic texts in AP Seminar. AP Research teachers,

conversely, report considering multiculturalism and material that reflects the cultural diversity of

students in their classes to a much lesser degree than AP Seminar teachers. Only 15% of AP

Research teachers report multiculturalism as a major emphasis in their curriculum planning, and

15% say that reflecting the cultural diversity of students in their classes is a major focus of their

curricular planning. Given that AP Seminar is a prerequisite for AP Research, these findings

suggest possible ways that AP Seminar and AP Research teachers might differ in their

responding to students' cultural needs. This also suggests ways for teachers of these two classes

to collaborate at school sites, to increase overall cultural responsiveness of the AP Capstone

program as a whole. Table 11 shows AP Research teachers' responses for this block of

questions.

Table 11. AP Research Emphasis on Curriculum Planning

Strategy	None (0)		Little (1)		Some (2)		Major (3)		M	SD
	n	%	n	%	n	%	n	%		
Personal experiences of my students	-	-	2	2.33	42	48.84	42	48.84	2.47	.58
Home languages of my students	23	26.44	29	33.33	28	32.18	7	8.05	1.22	.93
Material that reflects cultural diversity of my students	10	11.50	21	24.14	43	49.43	13	14.94	1.68	.87
Material that promotes multiculturalism	5	5.81	17	19.77	51	59.30	13	15.11	1.84	.75
Topics on which I have expert knowledge	9	10.35	22	25.29	46	52.87	10	11.50	1.66	.82
Texts that students are likely to see in college	1	1.15	25	23.74	33	37.93	28	32.18	2.01	.81
Lessons and texts from published textbooks	9	10.35	20	22.99	35	49.23	23	26.44	1.83	.94

Finding 1.2: With respect to the reasons for curricular planning emphasis and topic and text selection, many AP Seminar teachers aim to create curriculum that is relevant to students, and that encourages them consider diverse perspectives. A smaller percentage believe that their curriculum should expand students' worldviews. A small number cite the narrow goal of exam success as their main consideration, and a minority of teachers would prefer to have some sort of prescribed content.

Eighty-three Seminar teachers responded to an optional open-ended question asking theme to describe what they feel is most important in planning curriculum for the course. The following themes emerged from these responses.

Curriculum needs to appeal to student interest (n = 19). Nineteen of the 83 open-ended reponses mentioned student interest, with reasons such as "Something the can grab the students attention ... a subject they care about and would want to research more" or "That it matches with students' interests or at least be something that I can sell as interesting, I prefer things that are more current."

Students needs to be exposed to a variety of genres (n = 13). Thirteen respondents mentioned this, mentioning things like, "I think variation is the key. It's easy to stick to one type of text, but the students need to be fluent consumers and producers of multiple types in order to be the most successful in this course. It aids with synthesis and broadens their experience with not only ideas but communication analysis.

Students need to be exposed to a variety of perspective (n = 22). Twenty-two respondents mentioned this. Most significantly, reasons included needint to include "sources that represent multiple perspectives and appeal to a large range of students with different backgrounds and experiences."

Curriculm needs to be accessible to student skill level, but scaffolded to promote growth and rigor (n = 22). Twenty-two respondents mentioned this idea, for reaons such as a need for "ranging difficulty. In the beginning, I choose texts whose LOR and argument are more easy to determine and map. As we go through, things get more complex."

Curriculm needs to be relevant to students' experiences (n = 19). Nineteen of the respondents mentioned things such as "Text need to be relevant to the world the students are living in (or historically relevant)and should provide opportunity for us to discourse perspective, bias, voice, credibility" or "I choose themes, and texts, that students will personally connect with on some level."

Students should have the largest say in choosing curriculum (n = 9). Nine respondents mentioned this direcly, citing as their reasons that "The brilliance of AP Seminar is that I don't choose material, the students do, so earlier when I said it's not an emphasis for me, it's not, but I can guide the students into choosing what's important to them."

Curriculm should expand students' worldviews (n = 5). Only five respondents mentioned this, but those who did offered slightly more in-depth explanations, claiming that "As a teacher librarian, I focus on current topics that I determine are important for students to consider. Particular emphasis is placed on texts that provide a wider world view than our homogeneous student body and geographic area," and "I want my students to feel challenged. I want them to stretch their reading skills by tackling complex texts, but I also want to expand their views of the world. I teach in a small, predominantly White school in Northwest Georgia. The vast majority of my students are privileged due to their race, and they don't even realize this fact. I want them to recognize that their experience with the world is very different from the experience of others."

Some teachers don't plan, or don't want to (n = 2). Two significant outliers mentioned this. One claimed "Seminar is still the toughest class I've ever had to teach. I think it would be consistently much more effective if College Board could put together a real curriculum for it rather than leaving so much up to individual teachers. While the freedom is nice sometimes, it's also a lot of information to cover and a lot of pressure in a high-stakes situation to be working without a solid curriculum." Another mentioned State-mandated curriculum standards.

Curriculum geared towards exam prep (n = 3). Three teachers mentioned this, with one citing reading lexile, word count, and page length that students are likely to see on the exam as the primary consideration in choosing curriculum.

Finding 1.3: With respect to topics and themes, both AP Seminar and AP Research teachers indicate that to a significant degree, the topics and themes they choose to frame their courses are generated by students. AP Seminar teachers often introduce a thematic topic of their own, often something dealing with general social issues, before giving students' more say in the curriculum. However, Seminar teachers are much less likely to choose topics that help students develop a critical consciousness about race and gender. AP Research teachers primariy let students choose the issues they study in class. Additionally, despite the open-ended nature of the course, Research teachers tend to emphasize a narrow range of research methodologies for students to explore.

In response to an open-ended item asking respondents to describe the themes they use to frame their Seminar classes, 108 teachers responded. I conducted two rounds of inductive coding to interpret these responses. After re-coding, the following categories of thematic topics emerged: *culture, identity, diaspora, happiness, gender, race, class, equality, mental health, technology, justice, society, education, privilege, power,* and *social media.* (See Appendix F.)

In addition to the factor teachers consider when planning their curriculum, this study asks about specific themes and topics AP Capstone teachers use to frame their courses. The most prominent response for AP Seminar teachers was "student generated topics" with 52% of respondents indicating this as a major focus of their course. Next most prominent was "general social problems," with 32% of respondents describing this as a major focus. "Topics addressing cultural prejudices," "topics addressing racism," and "topics addressing privilege and power" each had a mean score above 2, indicating that these topics on average receive at least some focus in teachers' courses. However, less frequent were "topics addressing sexism," "topics addressing gender issues," both earning a mean score less than two. "Topics in students' unique cultural contexts" was the least common response with a mean score of 1.86, and approximately 27% of respondents indicating that this subject receives no or little focus in their course. See Table 12 for all Seminar teacher responses.

Table 12. AP Seminar class topics.

	None (0)		Little (1)		Some (2)		(Major) (3)		M	SD
	n	%	n	%	n	%	n	%		
student generated topics	3	2.40	8	6.4	49	39.20	65	52.00	2.41	.71
addressing cultural prejudices	3	2.4	17	13.60	65	52	40	32.00	2.14	.73
addressing sexism	5	4.03	23	18.59	71	57.26	25	20.16	1.94	.74
addressing racism	5	4.00	20	16.00	69	55.20	31	24.80	2.01	.76
addressing gender issues	4	3.23	23	18.59	72	58.07	25	20.16	1.95	.72
topics in students' unique cultural contexts	5	4.03	29	23.38	69	55.65	21	16.94	1.86	.74
topics addressing privilege and power	4	3.20	16	12.80	64	51.20	41	32.80	2.14	.76
general social problems	2	2.4	17	13.60	65	52.00	40	32.00	2.52	.61
local social problems	4	3.23	27	21.77	71	57.26	22	17.74	1.86	.72

Unsurprisingly, given the nature of the course, 86% of AP Research teachers described student-generated topics as a major focus of their course. Additionally, 30% of teachers indicated general soial problems as a major focs of their courses, 28% for local social problems, and 25% for topics in students cultural contexts. Table 13 presents AP Teachers' responses to this block of

items.

Table 13. AP Research class topics

	None (0)		Little (1)		Some (2)		Major (3)		M	SD
	n	%	n	%	n	%	n	%		
Student generated topics	2	2.47	2	2.47	7	8.64	70	86.42	2.79	.61
general social problems	7	8.64	9	11.11	41	38.31	24	29.63	2.01	.87
addressing cultural prejudices	9	11.25	23	28.75	36	45.00	12	15.00	1.64	.88
addressing sexism	11	13.75	31	38.75	28	35.00	10	12.50	1.46	.89
addressing racism	11	13.92	27	34.18	31	39.24	10	12.56	1.51	.89
addressing gender issues	11	13.75	31	38.75	28	35.00	10	12.50	1.46	.89
topics addressing privilege and power	11	13.75	25	31.25	34	42.50	10	12.50	1.54	.89
local social problems	10	12.50	25	31.25	23	28.75	22	27.50	1.71	1.01
topics in students' cultural contexts	11	13.75	26	32.50	23	28.75	20	25.00	1.65	1.01

One major distinction between the AP Seminar and AP Research courses is that AP Research focuses on having students conduct primary research, where Seminar focuses on accessing credible sources, crafting arguments, inquiry, and other skills. Thus, the survey asks a supplementary set of questions of AP Research teachers, to identify which types of research they emphasize in their course. "Survey research" is the most common response, with a mean score of 2.20 out of 3, and 31% of respondents indicating that this is a major focus of their course. 24% of respondents indicated emphasizing interview research as a major focus, 20% indicated content analysis as a major focus, 24% did so for correlational research, and 13% described experimental research as a major focus. Other types of research received significantly less emphasis, with lower mean scores and lower percentages of respondents indicating that they placed some or major emphasis on this type of research. While these results do not bear directly on cultural responsiveness, they do suggest some possible ways in which teacher planning may be placing some limits on student inquiry. Table 14 presents all AP Research teacher responses to this item.

Table 14. AP Research Emphasis on Research Types

Strategy	None (0)		Little (1)		Some (2)		Major (3)		M	SD
	n	%	n	%	n	%	n	%		
Participatory Action Research	17	19.10	32	35.96	33	37.08	7	7.87	1.34	.88
Surveys	2	2.24	6	6.74	53	59.55	28	31.46	2.20	.66
Ethnography	18	20.23	32	35.96	36	40.45	3	3.37	1.27	.82
Interviews	2	2.25	17	19.10	49	55.06	21	23.60	2.00	.72
Arts-based research	18	20.69	35	40.23	32	36.78	2	2.30	1.21	.79
Experiments	9	10.11	25	28.09	43	48.32	12	13.48	1.65	.84
Focus Groups	9	10.11	33	37.08	45	50.56	2	2.25	1.45	.71
Content Analysis	4	4.50	15	16.85	52	58.43	18	20.23	1.94	.74
Correlational Research	5	5.68	11	12.50	51	57.96	21	23.86	2.00	.77

Finding 1.4: With respect to instructional strategies, both AP Seminar and AP Research teachers report frequently using collaborative strategies in class, as well as building on students' prior knowledge. Capstone teachers tend to not to focus on lectures and test preparation.

The most common response AP Seminar teachers gave to their instructional strategies was "collaborative activities," with 57% of teachers reporting using these nearly every day. No respondents reported that they never used collaborative strategies. Additionally, 44% of teachers reported using strategies that build on students' prior knowledge nearly every class. On the other end of the spectrum, lectures and end of course test prep were the least common responses, earning a means of 1.90 and 1.88, respectively. Twenty-five percent of AP Seminar teachers reported never using lecture as an instructional strategy. While fewer teachers reported using differentiated instruction strategies, such as individual or small group instruction, nearly every class, over a third of teachers reported using these strategies several times per month. Table 15 presents complete responses for AP Seminar teacher instructional strategies.

Table 15. Seminar Instructional Strategies

Strategy	Never (0)		Several times a year (1)		Several times a term (2)		Several times a month (3)		Almost every class (4)		M	SD
	n	%	n	%	n	%	n	%	n	%		
Building on prior knowledge	1	.86	7	6.03	22	18.97	42	36.21	44	30.14	3.04	.95
Collaborative activities	-	-	1	.86	8	6.84	41	35.03	67	57.27	3.49	.67
Student-directed discussion	2	1.70	9	7.63	34	28.81	54	45.76	19	16.10	2.67	.90
Targeted small group instruction	8	6.78	14	11.86	31	26.27	43	36.44	22	18.64	2.48	1.13
Targeted individual instruction	9	7.63	19	16.10	34	28.81	44	37.29	12	10.17	2.26	1.09
Lecture	25	21.37	24	20.51	24	20.51	40	34.19	4	3.42	1.90	1.08
Teacher-led discussion	2	1.74	13	8.90	17	14.78	57	49.57	26	22.61	1.78	1.23
End of Course test prep	3	2.59	37	31.90	49	42.24	25	21.55	2	1.72	1.88	.84

AP Research teachers reported similar results, though interestingly, no teachers in this sample reported using any one set of instructional strategies almost every class. However, 76% of Research teachers reported using collaborative activities several times a month, and 75% reported using activities that build on students' prior knowledge several times a month. Research teachers lecture much less frequently, with 14% saying they never lecture directly, and another 20% saying they only do so several times per year. Small group instruction, individual instruction, and discussion—both student and teacher led—were also frequently used instructional activities among both Seminar and Research teachers. See Table 16 for complete responses to AP Research Instructional Strategies.

Table 16. Research Instructional Strategies

Strategy	Never (0)		Several times a year (1)		Several times a term (2)		Several times a month (3)		Almost every class (4)		M	SD
	n	%	n	%	n	%	n	%	n	%		
Building on prior knowledge	1	1.26	4	5.06	15	18.99	59	74.68	-	-	2.67	
Collaborative activities	-	-	6	7.96	13	16.46	60	75.95	-	-	2.68	
Student-directed discussion	9	11.39	9	11.39	15	18.99	46	58.29	-	-	2.24	1
Targeted small group instruction	8	10.13	10	12.66	17	21.52	44	55.70	-	-	2.23	1
Targeted individual instruction	3	3.80	8	10.13	17	21.52	51	64.56	-	-	2.47	
Lecture	11	14.47	15	19.74	21	27.63	29	38.16	-	-	1.90	1
Teacher-led discussion	2	2.56	5	6.41	13	16.67	58	74.36			2.63	

Finding 1.5: With respect to assessment and feedback, both AP Seminar and AP Research teachers assess informally, with less emphasis on traditional forms of gradings. Capstone teachers also frequently use peer feedback and teacher conversations as forms of feedback.

By far the most common assessment approach teachers reported using was informal conversation with students. Sixty-eight percent of AP Seminar teachers reported using this approach nearly every class session. Six percent of teachers reported never using portfolios or reflections, while 42% reported using this approach several times a month. Forthy-three percent of teachers reported having students present formative presentations several times a term, with another 37% using this approach several times per month. All AP Seminar Assessment Approaches responses are included below, in Table 17.

Table 17. AP Seminar Assessment Approaches

Strategy	Never (0)		Several times a year (1)		Several times a term (2)		Several times a month (3)		Almost every class (4)		M	SD
	n	%	n	%	n	%	n	%	n	%		
Formative Presentations	1	.88	15	13.16	50	43.86	43	37.72	5	4.37	2.32	.79
Portfolios and Reflections	7	6.14	20	17.54	33	28.95	48	42.10	6	5.26	2.23	1.01
Informal Conversation	-	-	2	1.75	5	4.39	39	34.21	68	59.65	3.52	.67

Seminar Teachers reported using short written evaluations, numerical or letter grades, and peer to peer feedback as their most common feedback strategies. Thirteen percent of teachers indicated that they have students provide each other peer to peer feedback almost every class period, and none reported that they never use this practice. AP Seminar Feedback responses are presented in Table 18.

Table 18. AP Seminar Feedback

Strategy	Never (0)		Several times a year (1)		Several times a term (2)		Several times a month (3)		Almost every class (4)		M	SD
	n	%	n	%	n	%	n	%	n	%		
Teacher led conversations	6	9.65	15	13.28	37	32.74	42	37.19	13	11.50	2.36	1.03
Student-led conversations	11	9.65	25	21.93	34	29.83	36	31.58	8	7.02	2.04	1.10
Peer to Peer feedback	-	-	10	8.85	36	31.86	52	46.02	15	13.27	2.64	.82
Numerical or letter grades	4	3.51	7	6.14	19	16.67	79	69.30	5	4.39	2.65	.81
Short written evaluations	4	3.54	3	2.66	28	24.78	64	56.64	14	12.39	2.72	.85
Long written evaluations	6	5.31	15	13.27	37	32.74	42	37.17	13	11.59	.75	.98

AP Research teachers reported similar results, with much more frequent use of portfolios and reflections as an assessment strategy, with 72% of AP Research teachers reporting informal conversations as an almost daily assessment strategy. Additionally 64% of Research teachers reported using portfolios and reflections as an assessment strategy several times a month. Table 19 presents AP Research Assessment Approaches.

Table 19. Research Assessment Approaches

Strategy	Never (0)		Several times a year (1)		Several times a term (2)		Several times a month (3)		Almost every class (4)		M	SD
	n	%	n	%	n	%	n	%	n	%		
Formative Presentations	-	-	12	15.39	30	38.46	33	42.31	3	3.85	2.346	.787
Portfolios and Reflections	-	-	1	1.28	9	11.54	50	64.10	18	23.08	3.09	.628
Informal Conversation	-	-	-	-	4	5.13	18	23.08	56	71.80	3.667	.574

For AP Research teachers, peer to peer feedback serves as the most common feedback strategy, with 21% of teachers reporting using this approach almost every class, and 48% reporting doing so several times a month. Next most popular is teacher-led conversations, with 22% of teachers doing so almost every class, and another 32% doing so several times per month. Table 20 presents AP Research Feedback scores.

Table 20. AP Research Feedback

Strategy	Never (0)		Several times a year (1)		Several times a term (2)		Several times a month (3)		Almost every class (4)		M	SD
	n	%	n	%	n	%	n	%	n	%		
Teacher led conversations	0	6.58	6	7.90	23	30.26	25	32.90	17	22.37	2.566	1.13
Student-led conversations	7	9.21	11	14.47	13	17.11	34	44.74	11	14.47	2.408	1.18
Peer to Peer feedback	1	1.32	3	3.95	19	25.00	37	48.68	16	21.05	2.842	.849
Numerical or letter grades	8	10.67	6	7.90	13	17.11	3341	53.95	8	10.53	2.461	1.13
Short written evaluations	8	10.67	5	6.67	20	26.67	33	44.00	9	12.00	2.400	1.13
Long written evaluations	53	69.74	9	11.84	7	9.21	5	6.58	2	2.63	.605	1.07

Finding 1.6: Community

AP Capstone teachers believe that building a sense of community is important in order for students to learn. To a slightly lesser degree, they report that representing student culture in the classroom is equally important. However, fewer teachers report actually highlighting or representing students' cultures in their classroom.

Both Seminar and Research teachers' responses to questions about classroom environment and community reveal an interesting disparity. AP Seminar teachers nearly unanimously reported that they agree that students learn best when their cultures are represented in class, with 48% agreeing and 54% strongly agreeing. However, nearly 25% of teachers agree that they highlight the cultural backgrounds of students in their class, and only 20% strongly agree that they do this. Seminar teachers unanimously agree that students learn best when they build a strong sense of community. Scores for AP Seminar Community and Classroom Environment are presented in Table 21.

Table 21. AP Seminar Community and Classroom Environment

Statement	Strongly Disagree (1)		Disagree (2)		Agree (3)		Strongly Agree (4)		M	SD
	n	%	n	%	n	%	n	%		
Students learn best when their cultures are represented in class	-	-	3	2.70	48	48.24	60	54.05	3.51	.55
I highlight the cultural backgrounds of students in my class	4	3.64	22	20.00	61	55.46	23	20.91	2.94	.75
Students learn best when I build a strong sense of community	-	-	-	-	4	3.57	108	96.43	3.96	.19

AP Research teachers resported similar results. Of AP Research teachers responding, 54% strongly agreed that students learn best when their cultures are represented in class. Another 45% agreed. However, unlike AP Seminar teachers, one respondent stronlgy disagreed with this statement. One respondent also disagreed with the statement "students learn best when I create a strong sense of community." It is unclear whether these responses represent an outlier, or some different aspect of how teachers perceve the class. Even fewer AP Research teachers than AP Seminar teachers agree that they highlight the cultural backgrounds of students in their class, with 16% strongly agreeing, 49% agreeing, 30% disagreeing, and 5% strongly disagreeing. Table 22 presents all Community and Classroom Environment scores for AP Research teachers.

Table 22. AP Research Community and Classroom Environment

Statement	Strongly Disagree (1)		Disagree (2)		Agree (3)		Strongly Agree (4)		M	SD
	n	%	n	%	N	%	N	%		
Students learn best when their cultures are represented in class	1	1.316	1	1.316	34	44.74	40	52.63	3.487	.600
I highlight the cultural backgrounds of students in my class	4	5.26	23	30.263	37	48.68	12	15.79	2.750	.785
Students learn best when I build a strong sense of community	1	1.316	-	-	7	9.21	68	89.47	3.868	.4432

Findings Related to Research Question 2: What are the Practices of AP Capstone Teachers Who Report Using Culturally Responsive Pedagogies?

Finding 2.1: When creating curriculum, AP Capstone teachers who work towards cultural responsiveness reflect on their own perspectives and positionality in the classroom. They choose topics that engage students' lived experiences, and center student voice and choice in the curriculum. However, multiculturalism and discussions of race do not by themselves amount to cultural responsiveness.

Both Mrs. K. and Mr. D. described choosing to center their AP Seminar curriculum in their local communities, to engage students' lived experiences. Mrs. K. said that:

> The group that I was in in 2017 at that Summer Institute, there was a Black teacher from, I want to say she was from Michigan. I don't remember off the top of my had, though. She was talking about how she was really excited to create this curriculum because she teaches at a primarily Black student populated school dominated by White teachers. She really felt like her students weren't receiving their history. I was really inspired by her passion to create that, and I thought, what can I do? As a White teacher, I didn't feel like it's appropriate to teach a class on Hispanic culture because I'm going to be out of my depth there, and I didn't think that was contextually accurate

Based on that, she chose to focus on "Salton Sea, changing populations, Chavez and the UFW, immigration." To create her curriculum, she emailed "every local theater/university that had a

California history or a native history class" in order to help her plan an accurate and representative curriculum, that allowed students to understand their area critically.

Mr. D. offered a similar comment, saying his decision to teach "the historical, socio-economic and racial history of Alexandra, Virginia, through the lens of identity" was rooted partly in "attempt to bring a more diverse group of kids into class," because "I'm teaching topics that interest each person on an individual level." The effects of doing so, he says, are that:

> the discussions have been richer. It's because it used to be, I'm the one leading discussion on minority groups. Well, I'm the least minority person you can find. I'm a White male and I can only speak to what I see through my perspective. It's been nice to have someone of color going 'This is my perspective because this is who I am.

Mrs. J. offered an insightful comment that may explain these responses:

> There's no doubt that there's pedagogy. There's using a variety of materials from a variety of perspectives. And having a democratic classroom where everybody participates and everybody's safe and blah, blah. All of those things are indeed part of culturally responsive, culturally relevant, multicultural education that James A. Banks started, right. But what doesn't happen is that inner reflection, the reflection of a teacher on his or her own worldviews. Because if that's not done, you ain't ever going to have a culturally responsive classroom. You're going to have one that looks like it, but it's not really. . . . after a deep, reflective, ongoing reflective practice of your own worldviews, a teacher's own worldviews, it's only at that point that you can say, "Dang, I can see how that has impacted my classroom. My views on this are impacting the way I'm teaching or the way I'm working with these particular students." So that's been like the mission of my entire career.

Mr. M. and Mrs. H. also both discussed their decisions to focus on issues of race and culture. Mrs. H. explains that she "did a unit for a couple years on White privilege, which that brings everything in, all cultures, what anyone who is not, especially a White male, how does this affect you?" Though in discussing how students engaged with the curriculum, she primarily focused on how "most of the students, the other White males in the class, they had this look on their face like skepticism. But no one else was ever brave enough or sure enough to talk to me about it." She notes that when she asked students for feedback on curriculum, "The Black kids all said, 'oh

no. You should keep the White privilege,' because nobody teaches that. I mean, nobody does. So the fact that some White woman was going to talk about it was, to them, a good thing." Ultimately, though, Mrs. H decided to abandon this topic, despite the interest from her students of color. When asked about student demographics of her Capstone classes, Mrs. H. noted that "there is a much smaller number of Black students in my classes." When asked for possible reasons why this might be, she noted "I asked a bunch of my AICE seniors why they didn't take Capstone . . . because . . . I have a large number of Black students in the AICE Lit," and said students responded with "'Well, I don't know, it just sounded like too much work'" and stuff like that." Thus, it she seems Mrs. H designed this class with a focus on race and culture, but unfortunately missed an opportunity to consider student voice and choice, or to elevate the experiences of her students of color. This stands in contrast with the approach that Ms. K. and Mr. D. described.

Mr. M. describes a similar experience to Mrs. H.'s with his unit on "Race in America." He explains that "I wish I could've done more, truly, with the racial work. But we didn't have the students really for it." When asked to possible reasons why, he explained:

> I also think part of it is, some of the students that we had focused on in terms of recruitment honestly were just sort of afraid of the course . . . I think a lot of the students, especially of our diverse backgrounds, took [earlier AP courses] and didn't have maybe the greatest experience, and as a result of that very much shied away from Seminar and Research.

While Mr. M. and Mrs. H. do attempt to engage students with discussions of race and culture, unlike Mrs. J., Ms. K., and Mr. D., these attempts were less centered on finding issues relevant to students' lived experiences and giving students of color a chance to engage with aspects of their lived experiences.

Ms. R., on the other hand, described how her curricular planning choices frequently focus on getting to know students' cultural identities, and using this information to shape the

curriculum. She described how, "One year I had a couple of native or I would call them heritage Spanish speakers . . . We did a couple of projects where we compared representations of national identity in murals, and we talked about visual rhetoric . . . I used a lot of Diego Rivera murals, and then we looked at murals here in our home state that people would be familiar with." Additionally, she starts her class with a "cultural identity self-assessment," because "putting this at the beginning helps me really get into the nitty gritty of who my kids are . . . and I can still make adjustments to my syllabus."

In regard to giving students voice in the curriculum, she said, "Honestly the more I've let go of my own syllabus and just said, "Here's what we're going to do, but I want to make this about you guys," I think the more of a rewarding experience it's been for me and the kids."

Finding 2.2: When creating curriculum, AP Seminar and Research, who incorporate culturally responsive approaches feel students perform at a high level when they research topics they feel personally connected to. This often involves having students examine their own educational experiences.

As Mrs. J. describes it, "the really astounding ones are really things that they are deeply connected to." As an example of this, she describes some of the work her students have completed in both Seminar and Research:

> They are very interested in the nature of public schooling. I had students that really wanted to look at gifted education. Others that wanted to look... I had one student in Research last year and she got a five on her paper too. She did an examination of culturally responsive teaching. So they're interested in that. They're interested in . . . research looking at culture in the classroom. Getting back Seminar, the nature of public education. The gifted program has been something that they're interested in. . . .

> So, it's kind of a beautiful journey to see them start out in Seminar wanting to do something that they already know all about, and then get to Research where they really do pick something that is their interest. I have a student that in fact got a Posse scholarship and he's up at Boston University right now. He just wanted to study what's

his name, Kendrick Lamar's, To Pimp a Butterfly. And he did an analysis of the language in there and the connotation of the words.

Ms. K. echoed this same sentiment, stating that:

I think that that's where I think Seminar gets to be valued from students . . . is that they finally get the freedom to explore the topics that they want to and really dig into them deeply, and either find things that they want to pursue later in life, or realize that certain things are not what they had wanted them to be, and then change course. I think that that's such a beautiful chance to offer them in high school.

Mr. M. mentioned also that his students tend to gravitate towards topics in education, for similar reasons: "because they all have ideas on how it should be better and how it should be run. It's kind of actually fun to let them try to get into that and realize it's not quite the way they think it is." Again, the reasons he gives for this are that "AP Seminar would broaden, gives students an opportunity to really dive into content that they can either create on their own."

In this sense, those AP Capstone teachers who work towards cultural responsiveness do seem to activate students' prior knowledge, as well as experiences they are both familiar with and invested in, in order to build their academic skills.

Finding 2.3: When creating curriculum, many AP Capstone teachers report that they want to develop students' critical consciousness. However, they differ in how they do so. Some 'talk about' race, whereas some are more adept at developing students' critical consciousness and fostering understanding and tolerance between students. Some, but fewer, teachers showed the same level of working towards critical consciousness about gender and sexism.

I chose all six interviewees because they mentioned specifically in their open-ended survey responses that they focus on race and or culture in their courses. However, four of the interviewees mentioned that they did so explicitly in order to give students the chance to analyze some aspect of their own lived experience, or to get students to more fully understand the

perspectives and experiences of students from different backgrounds. Two of the interviewees

mentioned that they focus on issues of race and or culture, but that doing so did not necessarily

help students learn to navigate issues of race and racism, nor were they successful in getting

many of their students to question and challenge their own racial attitudes.

As an example of focusing on race in order to work towards critical consciousness, Mr.

D. stated that:

> Race right now is just something that they're all ... That's just something that's been ...
> Every year that I've taught it, race is some element, whether that be police brutality or
> something with racial justice. Race seems to be ... I don't know that's because I'm getting
> it or because it is a topic that they are deeply passionate about because of their friends or
> whatever.

In having class discussions about race, Mr. D. says:

> They've known each other since whatever point, but there's another group that doesn't.
> The White kids know each other, Black kids know each other, but the Black and White
> kids may not know each other and getting them to. I mean, the Hispanic kids, all of them
> just getting them to do it. It starts in a safe place and then building from there and getting
> into more controversial topics and reminding them that bias is not wrong and that
> opinions are not wrong as long as you're able to support them and why you believe them .
> . .

> I also think this course is important because it opens up the idea of perspectives. It just
> has a conversation about what a perspective is and how your perspective changes based
> on how you look at it. If this topic, if we're looking at it on the different ways in which
> you can look at one topic to come to your overall opinion on it, I think it helps kids
> formulate their opinion, formulate why they believe what they believe on whatever topic
> it is.

However, he also added that:

> What I find is my White kids are using their White privilege and not hearing me . . .
> That's where I'm struggling because I'm like, "I'm trying to talk to that White kid because
> they're not seeing the Black kid as having a legit problem." They see, oh, it's as they're
> not working hard enough. No. It's because they have a variety of different things but I
> can't say the variety of different things. I don't want the Black kid to have to go, "Yeah.
> My life looks like this." That's where I'm struggling, is, how do I get that kid to express
> his experience without outing themselves?

In Mr. D.'s instance, it seems clear that he uses discussions of race to work towards equity and

understanding, and to get students to understand how race and racism can impact a person's life.

Mrs. J. also mentioned students' awareness of race and related issues.: "They are

definitely interested in social justice issues. Last year my Seminar kids, I had one on police

violence." Partially, she says this is because "we're in Georgia. So, while Gwinnett County is the

largest and most diverse county in the State of Georgia. Hasn't always been that way. So yeah,

our staff doesn't look like our students. And the kids know that. And they know that and they

pick up on it." Mrs. J. describes how at least one of her students wanted to use this awareness as

part of her performance tasks: "And so, she wanted to see how that impacted student

achievement. So should looked specifically at specific classes to see what kind of culturally

responsive issues or identifiers she saw in classrooms and then compared academic achievement

on some standard district tests here."

Part of what informs Mrs. J.'s approach is that:

We also have students looking into... The challenges and . . . into the difficulties of undocumented immigrants here in Georgia, in the United States. Mostly that's going to be an advocacy paper, advocacy project that's going to look to advocate for a path to citizenship . . . I've two that are looking at immigration, although one is looking at path to citizenship and the other one is examining corporate interests in immigration, documented or undocumented.

Her rationale was similar to Mr. D.'s:

And ultimately though, they are going towards things that they are themselves interested in. I work at a Title I school. I think we've got about 67 something different languages spoken here. So, immigration is a huge interest. Many of my students are either undocumented themselves or first gen. So that's where the immigration comes in. And then I have students that are just way interested on politics.

As an example of how her class allows students to examine these issues as part of their exam performance tasks, Mrs. J. mentioned a few students:

I have a student whose father moonlights as an Uber driver, an Uber Eats driver. And they are from Bangladesh. And he is just convinced that there are some real cultural biases and prejudices that are revealed in the service industry delivering food for Uber. So he's going to be interviewing some friends of his father's with a convenient sample that work with him about their experience with people of different cultures or different ethnicities when they're delivering food . . .

I had a student that did an entire literature perspective of passing. How does an author be somebody else, she was a huge writer, reader, oh my gosh . . .What an author does to write in another voice, in another person and even in another gender. And she is herself nonbinary. So, that was something that was really interesting to her.

Both Ms. K. and Ms. R. describe working with students to develop their critical consciousness in a similar fashion, either in class discussions, or in students' performance tasks. Ms. K. stated that:

I find with female students that a lot of them like to focus on issues that they believe plague their gender. This year I have a couple of groups who are focusing on female-specific issues, i.e. diet culture and body representation on Instagram or dress code and rape culture . . . Every time I have had a group of stronger-willed girls, they tend to have a topic about that to some capacity.

However, she also noted that "I find that male students don't typically craft projects or research questions based on their gender." Similar to Mr. D., she notes that not all students necessarily consider their own privilege or positionality.

Ms. R. described how she developed some curriculum specifically to address these same issues:

Last year in a class of seven, I had a Disney obsessed class, which was really funny, but they were all very enamored with Disney. When Disney+ was about to come out, they were all just intrigued with that. One thing that I realized might be helpful with that class was maybe doing a little bit of intro to gender studies because when they first heard about the class, I often do an intro what is Seminar because one of the first couple of days, they're often just there because somebody told them to be there. They don't actually know what the class is all about.

So for that year, one of the things that I did was, it sounds a little advanced now that I think about it, but I just introduced them to some Judith Butler. I just threw that into my syllabus out of the blue. We talked a little bit about gender theory and performance, and

then we looked at some performance art together because I really wanted to open their worldview a little bit beyond the ... Why would Disney not feel good to somebody? That was a sort of mind-blowing idea in that class . . .

However, as Mr. M. and Mrs. H. reported, while they attempted to address issues of race, they were less successful in both getting students to understand how race impacts their own worldview or impacts the lives of others.

Finding 2.4: When structuring their instructional activities, many AP Capstone teachers build collaboration into the class. Peer review is the most common way this occurs. However, some teachers greatly emphasize a shared sense of inquiry and co-construction of knowledge and inquiry.

Common types of collaborative instructional activities among AP Capstone teachers include having former students who demonstrated success mentor current students, extensive peer review and peer to peer instruction, and collaborative construction of performance tasks, in a problem-based learning format.

For example, Ms. K. describes how "I am a great fan, again, since I'm not really adept at technology, of Expo markers and writing on desks. My students would walk across the desks and claim them and view their arguments from the sky, as we would call it, to see if it all made sense. I would take videos of them and post them on Twitter. They loved the little brief moment of recognition that they would get from their community."

Mrs. J. mentions her "putting them together as they talk with each other so that they can each ask the questions that I would be asking. Why is this significant? What do you want to know? What do you think you're going to find new? What's out there that we don't know?" Her approach mirrors Mr. M.'s constructivist approach of "pitches, and a lot of times it's not so much of a formal pitch as it is, I call it a round table. Now obviously it's a little bit different in the

COVID world, but the idea of just kind of sitting around and okay, let's throw out the topic, have

the person kind of explain what they're doing, and then a lot of it just turns into almost an

informal Socratic seminar."

These approaches all reveal an approach of learning as a shared sense of inquiry, that

depends on collaboration, rather than individual demonstration of skill.

Another prominent theme that interviewees mentioned was the idea of encouraging

students to build trust and rapport with each other, to create a shared responsibility for each

other's success. For example, Mr. D. described how "I have them in groups of four all year. One

of my goals is to get them to interact with each other. It's not so much me. It's more about, I want

you interacting with every single person in this class and building that sense of trust with each

other more than me, because they need each other for when the AP exam starts." Here' Mrs. H.

takes a similar approach "I give them skills and help them hone their skills. And then, even in my

other classes, they're always sharing with each other. But yeah. I have them present the rubrics

when we're together. I have that large sticky note paper, and I give them . . . I put them in groups

and give them each a row of the rubric."

Building off this sense of trust, interviewees also described empowering student to ask

each other for actionable feedback, and to give feedback. Mrs. H. uses the expertise of former

students to help coach current students when "the Research seniors come in and give feedback to

the juniors when they do their practice [team presentations] and . . . [individual presentations], I

have the Researchers come in, and they watch. And then, they take notes. And they give them

feedback. So, they're getting feedback from experienced kids."

Mr. M. takes a similar approach with:

almost a Facebook post commenting session. I would just take a piece of paper and they'd
write their question and some of their ideas in this box, no name on it, and then we would

pass it around and people would just put comments on it. And say, "What do you think about this?" Or, "Why are you thinking that?" Just kind of questioning it without putting names to it, getting them comfortable with just, what do you think of this? Whether you like it or not, what kinds of questions are spurred by this? Or, where would you go with it?

AP Research teachers mentioned the same sorts of peer review, peer mentor and peer shared inquiry activities. However, they also unanimously described conducting frequent one-on-one check-ins with students.

Finding 2.5: With respect to assessment and feedback, many AP Capstone teachers de-emphasize grades and points in favor of deeper learning, feedback to help students succeed on authentic performance tasks, and student ownership over skill development.

One common theme that interviewees discussed was that they felt very little pressure to use traditional grading practices designed to rank and sort students. Instead, they described their role as helping students understand the rubrics that College Board uses to assess performance tasks, and to give targeted, actionable feedback to help students score well on those rubrics. In terms of maintaining a gradebook, many teachers described giving students points for completion, and focusing on making sure students understand how to demonstrate the skills that the performance tasks assess.

For example, in describing her approach to grading, Mrs. J. said:

one of the great things is I'm allowed to do that. Nobody is on my back saying you've got to have this many grades in. You've got to do this, you've got to do that. They completely let me do my thing. So it's much more like a college class where we're kind of working together and screw the grade book until it gets to that final product. Do you know what I mean? And then second semester it's all a matter of just did you meet a deadline. But if they met the deadline, or if they didn't meet the deadline, and they end up turning in their full beautiful package then those grades are going to go away.

Mr. M. echoed this approach in saying "The hard part is they don't ever necessarily know what their grade is, because I don't grade anything. But they also know that for the most part the grade is not what they're working on at that point. They're working on a product, and so it's really

more about that development." He later said, "quite literally we do one on ones every single class period. I meet one on one with every single student, and we just talk about where they're at, what's their next step. In my point of view, it's almost all case management."

Mr. D. elaborated on this idea, stating:

Latter part of the year, it's still pass/fail because it's now ... But I do give them assessment. They get a full grade for the final paper they turn in for mock one, final presentation for mock one, same thing for mock two. They do get an overall grade. I think a lot think the course is easy because they turn it in right now, they're getting a hundred percent.

But it's more or less the pay attention to the feedback because I'm not going to accept it if I don't think this is very good. Because the goal is at the end of the day, you want to pass. You're taking this course to get some credit, so let's get the credit . . .

Towards the later part, I do break down the rubric and I'm asking the questions. Do you have a research question? Where is it? Is your evidence credible? Prove it? Where is it proven? Those types of things. As they get further along, we get more specific. I assume that's what most people do, but I have no idea.

This approach seems to be rooted in the idea that students are capable of succeeding on the performance tasks, provided they are given the appropriate feedback. Five of the six interviewees spoke directly to the idea that they are most interested in the actual work that students produce. Thus, teacher feedback is meant to help students create the best work possible, without having worry about grades and percentages. As Mrs. J. says:

Gosh, really a big bunch of it is informal. And when I say informal, I mean informal personal . . . Not only through peer review, and then I'll look at some and give them personal direct feedback either electronically or through a conversation. . . So, it's not as I guess quantitative as maybe it would be in other classes. I think it is much more personal and much more individual with the feedback. And that can be in the form of when they're deciding their question for a semester and then we're really having some deep conversations individually with groups and with students.

Ms. R. centers her approach around having the students "put the rubric into your own words. What do they mean in row one when they say your solution has to be logical and coherent and whatever?" She does this "so they're reflecting not necessarily on their own work but on a

86

peer's, and then they're receiving that peer written self-reflection as well. The idea is that as their filling this out for their peer, naturally your brain is thinking, 'Okay, well how does mine work with that?'"

Mr. M.'s comments on this approach seem to best represent a common theme among respondents: "I think we teach our students to be more mindful and aware of utilizing feedback and less at the point chasing aspects of grades."

Finding 2.6: With respect to building community and learning students' cultures, Culturally Responsive AP Capstone teachers create safe, welcoming environments; they use a variety of methods to learn students' lives and cultural identities and encourage students to understand appreciate others from different backgrounds. Capstone teachers describe trying to create a more humanizing atmosphere than students may get in some other classes. However, teachers vary in how they try to create welcoming spaces. Some, but not all, Capstone teachers describe taking extra steps to get to know students' personal lives and identities. These same teachers are also more likely to try to get students to understand each other' perspectives and identities.

Ms. K. described a common trend among interviewee responses: that AP Capstone is much more dependent on building a strong community and deliberate classroom culture than many other classes, especially other AP classes. She says, "I think that the success of the course really is built upon your class community, ourselves included, and because it's such a driving course, if you don't build that community, this class can drain students, understandably."

Four of the six interviewees described creating opportunities for students to share meals together or leave the classroom and visit other parts of the campus together. Ms. K has "waffle bars on Wednesdays. I smuggled in some toasters and some Costco boxes of waffles and brought toppings in, and it was just kind of ... my classes were conveniently all scheduled on

Wednesdays, which was a block period, and so it was just nice to make breakfast and sit and just ... even if they're doing really intellectually rigorous things," because "The mood changes when you're eating. That was something to do, and then where my classroom is set up, is my classroom actually faces the quad. So quite frequently on those block days, we would go outside. Whatever we were doing, we'd just lounge in the grass. There's something that changes the whole tenor of your community when you get to do those humanizing aspects, when you're also being forced to do really rigorous intellectual things."

Similarly, Ms. R. has her students "actually go out to lunch together" and:

> things like that, lighthearted stuff. We have done walk around the school stuff . . . we have a forest preserve that's adjacent to our campus, We have several lagoons nearby, and actually you can walk to the beach in 15 minutes . . . it's amazing how very rarely kids actually step outside the classroom. That's huge for bonding because a lot of stuff, as you know, bonding happens outside of school walls, and just having a shared experience, even if I make them do something that at first they hate and they don't want to do, they end up talking about it all year long. I would say that's the social bonding pieces.

However, beyond creating a merely fun classroom culture, most of the interviewees described tending to students' social and emotional well-being and creating a classroom culture that reflects this concern. More importantly, they allow students a say in creating their classroom culture.

Ms. K., for example, describes how in her class "For the most part, we start class. We always do what we call a vibe check. I have a student per class period who makes the rankings. They are often nonsensical to me and I don't understand, but I always participate so that way we understand the vibe. We start with that. Then we review any struggles and successes. Then from there we go into what are we accomplishing today? I try and keep it on the focus of accomplishment."

Mrs. J. describes doing something similar, in a very deliberate way:

Okay, so I spend my very first day of class when I meet them in 10th grade, all but one of my students in Seminar right now I had had before. I spend the first week of school examining a culture, creating a culture. So this is what we do, we decide what we want our class to look like. We want to decide what we don't want it to look like. We want to come up with strategies, well what happens when we're veering off track. And so, they take a lot of ownership in the classroom in the first place. And I actually write up a contract, a student contract that say, "Okay, this is the class you guys designed. This is what you decided you wanted it to look like. This is what you expected of me, this is what I expected of you." So we spend a good deal of time doing that.

In describing what this looks like in practice, Mrs. J. reports that:

Okay. They don't like being called out. They don't want me to call them out. And they want everybody to participate in discussion, in group projects. And they don't want anybody to talk over somebody else . . . So really, a lot of basic grace and courtesy that they are really crying for in a classroom. And they also want to hold each other accountable. So it's kind of funny when they do that, when they notice you're breaking a contract dude. Those are the things They want compassion and respect from their peers and from me.

As another way of building a strong sense of community, four of the six interviewees described some sort of deliberate attempt to get to know students' lives, experiences and backgrounds in order to create trust and buy-in. Mr. D. describes how "Every year I build on identity. One of their first assignments is actually telling me who they are. I have them come up with who they think they are and I let them create a slideshow on them, who they are and what their family looks like, where they're from, what activities they do. It's a good way for me just to get to know them, who they are in a general sense."

Ms. R. does something similar in her opening weeks of class, with "what I call the cultural identity self-assessment, and that ranged in questions from tell me about your grandparents to what's your earliest memory, what's the first international event you remember, what about the first time you remember feeling attacked for your beliefs or for something you couldn't help about yourself, and that helped me this year figure out where I was." As does Mrs. J:

I think the most important thing that I've done is the simplest thing there is. It that, at the end of that three or four days that I've seen them in class, when we're in person... I've had to do this electronically before and it just doesn't work as well. I'll ask them, "What is one thing that I need to know about you? It's completely between you and I, what do I need to know about you that is going to help me help you?"

And I also ask them what is their greatest fear. And so, this is when I get students that then feel comfortable telling me that they prefer a different pronoun. Their greatest fear is being deported. Or that you need to know my mom is really sick. And these kinds of things. So they know, and then when things come up during class, then I'm able to recognize some of those challenges and I think the students appreciate that.

And Ms. K.:

This year I actually implemented, separate from my school, a socio-emotional journal assignment that we did monthly, where I curated a list of podcasts or YouTube channels that I thought would be interesting to them, and then gave them the option to choose something else. Then just told them once a month, sit down and write me a journal article. What are some single narratives you've been facing in your daily life? How are you pushing through them, or how are they holding you back, and how's your life going?

In addition to building trust with students, Mr. D. reports part of his classroom culture

and community building is getting students to learn to understand and appreciate others from

different backgrounds:

It's more about building that class culture of accepting each other and learning too that not everyone shares your opinion and that's okay. This is a safe place to be. That's more or less how I approach it . . .what I find is my White kids are using their White privilege and not hearing me. That really just irritates the crap out of me. I find out that I'm going at my White kids and my colored kids are going, "What is this man doing?" But I'm trying to teach that White kid that they're exercising privilege and it-That's where I'm struggling because I'm like, "I'm trying to talk to that White kid because they're not seeing the Black kid as having a legit problem." They see, oh, it's as they're not working hard enough.
   No. It's because they have a variety of different things but I can't say the variety of different things. I don't want the Black kid to have to go, "Yeah. My life looks like this." That's where I'm struggling, is, how do I get that kid to express his experience without outing themselves?

 . . . Because that's teenagers as a whole. They don't want to share that they live with or where they live or that this is the nicest pair of jeans I have and I wash them every single night. Because our district is 54% of our kids are on free and reduced lunch, but there's another group of kids who have so much economic privilege that I mean going to Europe is something they might do over spring break just because they can. This kid has never

left Alexandria. Just having to honor both at the same time is hard. That's my hill to die on for the rest of my career, is trying to figure out that balance.

Findings Related to Research Question 3: What Teacher Factors are Associated with Teacher Use of CRP?

Overview

Very few teacher and school characteristics are direcly associated with teachers' use of Culturally Responsive Pedoagogies. To a limited extent, teacher experience may be associated with use of CRP. Male teachers, however, are less likely to address issues of gender and sexism with students. One of the few schoolwide predictors of a teacher's use of CRP is the percentage of students of color; a higher percentage of students of color is associated with use of CRP. Interestingly, teacher expectations and perceptions show some associations with some of the sub-constructs. Specifically, teacher expectations of students shows an association with use of effective practices. Those teachers who expect fewer than half of their students to pass either the exam or the course are also less likely to use effective practices. These findings further reinforce the idea that use of culturally responsive pedagogies is tied deeply to teacher reflectivenes and awareness.

In the following set of analyses I consider first how teacher demographics may be associated with overall use of Culturally Responsive Pedagogy, as well as the sub-constructs of Critical Consciousness, Cultural Relevance, and effective instructional practices. After demographics, I consider teacher perceptions and expectations, and then school contexts. I follow my analyses of AP Seminar teachers with a parallel set of analyses for AP Research teachers. As my results show, with a few notable exceptions, teacher use of Culturally

91

Responsive Pedagogies is associated predominantly with teachers' own reflective practice and awareness of their own positionality.

Finding 3.1: *With respect to teacher demographic factors, AP Seminar teachers showed no associations with use of culturally responsive pedagogy. However, male teachers were associated with lower critical consciousness scores. AP Research teachers showed no demographic factors associated with culturally responsive pedagogy.*

      AP Seminar Teachers. AP Seminar teachers showed no statistically significant differences in overall use of culturally responsive pedagagies, when comparing mean scores by race, gender, level of experience, or primary content area. Nor do these factor show any associations with overal CRP use when analyzed together in a linear regression equation. All group scores show a p value greather than .05, suggesting that any difference is statistically insignificant. Table 23 shows one-way ANOVAcomparisons between groups of Seminar teachers on scores for Culturally Responsive Pedagogy. (See Appendix E for linear regression equation models and coefficients).

Table 23. One-way ANOVA: Culturally Responsive Pedagogy score by group, AP Seminar

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Ethnicity							
White	91	89.2	49.77	8.54	0.007	0.655	.420
Teacher of color	11	10.7	47.64	4.98			
Gender							
Male	32	30.8	47.86	8.90	0.017	1.809	.182
Female, Non-binary, No Pref	72	69.2	50.19	6.08			
Experience							
New Teacher	6	5.8	44.67	5.354	0.021	2.223	.139
Veteran Teacher	98	94.2	49.765	8.248			
Primary Content							
ELA	61	59.22	49.98	9.661	0.011	1.085	.300
Social Sciences	19	18.45	48.32	10.149			
STEM	11	10.68	50.09	8.348			
World Languages	4	3.88	45.25	16.441			

However, when looking more closely at the Critical Consciousness sub-construct, male AP Seminar teachers score slightly lower than teachers identifying as female or non-binary. To unpack this, revisited the the items composing this construct and split the descriptive statistics by gender. Male teachers scored on average 1.848 on the item "topics addressing cultural stereotypes and prejudices," indicating that they give these topics somewhere between "little" and "some" emphasis. This is in comparison to female teachers, who scored 2.294 on this item, and two non-binary teachers who scored 3.00. On "topics addressing sexism," male teachers scored 1.688, compared to female teachers' 2.029, and non-binary teachers 3.00. On "topics addressing gender," male teachers scored 1.719 compated to 2.015 for female teachers, and 3.00 again, for non-binary teachers. Lastly, on "topics addressing racism," male teachers reported 1.697, compared to 2.103 for female teachers, and again 3.00 for the two non-binary teachers. All other items in this block were similar in mean scores. While the small number of non-binary teachers makes it difficult to generalize about this group, male teachers' lower scores on these

aspects of critical consciousness raise some interesting questions for future researchers. Table 24 schows all Critical Consciousness scores for AP Seminar teachers by demographics.

Table 24. One-way ANOVA: Critical Consciousness score by group, AP Seminar

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Race							
White	91	89.2	12.70	3.820	0.000*	0.062	.804
Teacher of color	11	10.7	13.00	2.966			
Sex							
Male	32	30.8	11.34	3.607	0.064	7.000	.009
Female, Non-binary, No Pref	72	69.2	13.36	3.581			
Experience							
New Teacher	6	5.8	12.33	5.820	0.0008	0.077	.782
Veteran Teacher	98	94.2	12.765	3.566			
Primary Content							
ELA	61	59.22	12.90	3.477	0.005	0.547	.461
Social Sciences	19	18.45	11.42	4.273			
STEM	11	10.68	13.00	3.464			
World Languages	4	3.88	12.00	5.354			

The only significant difference in cultural relevance scores among demographic groups was between new and veteran teachers of the course. New teachers of the course showed a mean cultural relevance score of 12.50, compared with veteran teachers' score of 15.94. However, it should be noted that the sample of new teachers, those who had only taught the course for one year, was small—only 6 respondents. Thus, there is possible chance of high variation in the score due to the small sample size of this group. Table 25 shows all AP Seminar Cultural Relevance scores by groups.

Table 25. One-way ANOVA: Cultural Relevance score by group, AP Seminar

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Race							
White	91	89.2	15.89	3.764	0.017	1.809	.182
Teacher of color	11	10.7	14.73	2.149			
Sex							
Male	32	30.8	15.25	2.794	0.008	.854	.357
Female, Non-binary, No Pref	72	69.2	13.36	3.581			
Experience							
New Teacher	6	5.8	12.50	3.987	0.050	5.365	.023
Veteran Teacher	98	94.2	15.94	3.505			
Primary Content							
ELA	61	59.22	15.85	3.361	0.002	0.207	.650
Social Sciences	19	18.45	16.00	3.651			
STEM	11	10.68	15.73	4.125			
World Languages	4	3.88	15.000	6.055			

None of the demographic groups in this analysis showed any significant difference in their use of effective teaching practices. This is both unsurprising and reassuring. However, as I will show in the next set of analysis, we do see some variability in teachers' use of this practice once we consider teacer perceptions and teacher expectations of students. Thus, the previous analyses are at least useful in isolating factors that might influence teachers' use of various pedagogies and strategies. Table 26 shows all Effective Practices scores for AP Seminar teachers by group.

95

Table 26. One-way ANOVA: Effective Practices score by group, AP Seminar

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Race							
White	91	89.2	19.91	3.597	0.008	0.787	.377
Teacher of color	11	10.7	21.176	4.560			
Sex							
Male	32	30.8	21.27	4.827	0.002	.174	.677
Female, Non-binary, No Pref	72	69.2	20.868	3.574			
Experience							
New Teacher	6	5.8	19.83	5.076	0.004	0.425	.516
Veteran Teacher	98	94.2	21.06	4.45			
Primary Content							
ELA	61	59.22	21.23	3.828	0.002	0.837	.362
Social Sciences	19	18.45	20.90	5.646			
STEM	11	10.68	21.36	3.931			
World Languages	4	3.88	18.25	7.974			

AP Research Teachers. Analysis of AP Research demographic factors and backgrounds shows no significant differences on overall CRP Score, critical consciousness, cultural relevance, and effective practices between groups. While I put all demographic factors into one multiple regression equation, teachers' being male does suggest some association with overall CRP use. However, this is possibly attributable to the relatively small sample size of 17 male AP Research teachers in this study. Additionally, because AP Seminar is a prerequisite course, I do not include the item "AP Research is a good first AP course" in the following analyses as I do for AP Seminar, as students are by design not able to take AP Research as their first AP class. Table 27 shows Culturally Responsive Pedagogy scores for AP Research teachers, by group. (As with AP Seminar teachers, see Appendix E for all linear regression equations and coefficients.)

Table 27. One-way ANOVA: Overall AP Research Culturally Responsive Pedagogy score by group

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Race							
White	56	81.16	48.66	10.628	0.012	0.790	.377
Teacher of color	13	18.84	45.69	11.891			
Sex							
Male	17	24.29	52.00	8.90	0.046	3.275	.075
Female, Non-binary, No Pref	53	75.71	46.59	6.08			
Experience							
New Teacher	4	5.8	54.25	8.139	0.020	1.370	.246
Veteran Teacher	65	94.2	47.727	10.929			
Primary Content							
ELA	34	50.75	47.85	10.509	0.000*	0.00*	.993
Social Sciences	10	6.70	48.83	11.044			
STEM	14	20.90	47.93	10.247			
Other	9	13.43	47.33	14.160			

Unlike in the sample of AP Seminar teachers, AP Research teachers showed no significant differences in Critical Consciousness scores by gender. This may be possible due to the structure of the course, as AP Research is designed to be driven much more by student selection of topics and problems than AP Seminar, where teachers have some hand in desiging topics, themes and texts to frame the course. See Table 28 for AP Research Critical Consciousness scores by group.

Table 28. One-way ANOVA: AP Research Critical Consciousness score by group

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Race							
White	56	81.16	9.89	5.101	0.003	.215	.645
Teacher of color	13	18.84	9.19	4.291			
Sex							
Male	17	24.29	10.71	5.610	0.013	.903	.345
Female, Non-binary, No Pref	53	75.71	9.404	4.682			
Experience							
New Teacher	4	5.8	11.25	4.573	0.006	.384	.538
Veteran Teacher	65	94.2	9.67	4.977			
Primary Content							
ELA	34	50.75	9.66	5.035	.000*	0.010	.920
Social Sciences	10	6.70	10.80	4.917			
STEM	14	20.90	9.57	4.484			
Other	9	13.43	9.56	5.388			

On Cultural Relevance scores, we again see no significant difference between groups for AP Research teachers. New AP Research teachers do score a mean of 18.25 on this item, compared with 13.89 for veteran teachers. While the p value approaches significance at .052, we also see a group size of only 4 for new teachers in this analyses, raising the likelihood that these differences do not hold true for the larger populaion of AP Research teachers.

Table 29. One-way ANOVA: AP Research Cultural Relevance score by group

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Race							
White	56	81.16	14.18	4.493	0.000*	.018	.894
Teacher of color	13	18.84	14.00	3.937			
Sex							
Male	17	24.29	14.41	4.99	0.001	.094	.760
Female, Non-binary, No Pref	53	75.71	14.03	4.15			
Experience							
New Teacher	4	5.8	18.25	3.862	0.056	3.919	.052
Veteran Teacher	65	94.2	13.89	4.291			
Primary Content							
ELA	34	50.75	13.61	3.716	.014	0.924	.340
Social Sciences	10	6.70	16.00	5.617			
STEM	14	20.90	14.79	4.669			
Other	9	13.43	13.11	4.485			

We similarly see no differences in use of Effective Practices by group. All group means are close to each other, with the only notable difference between new and veteran teachers. Again, the new teacher group comprises only four teachers, reducing the likelihood of any this difference actually being true in the larger population of AP Research teachers. Table 30 shows results for Effective Practices by group.

Table 30. One-way ANOVA: AP Research Effective Practices score by group

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Race							
White	56	81.16	21.25	4.227	0.003	.230	.633
Teacher of color	13	18.84	21.92	5.838			
Sex							
Male	17	24.29	21.53	4.611	0.000*	.044	.835
Female, Non-binary, No Pref	53	75.71	21.26	4.528			
Experience							
New Teacher	4	5.8	25.00	4.082	0.040	2.786	.100
Veteran Teacher	65	94.2	21.15	4.49			
Primary Content							
ELA	34	50.75	21.029	4.019	.004	.287	.594
Social Sciences	10	6.70	23.20	4.466			
STEM	14	20.90	21.79	5.026			
Other	9	13.43	21.56	4.246			

Finding 3.2: With regard to teacher expectations and perceptions, teacher expectations of students show a strong assoctaion with use of effective practices. Those teachers who expect more than half of their students to pass the course and exam are more likley to use effective practices.

AP Seminar Teachers. AP Seminar teachers do not differ significantly in their overall use of CRP when comparing those who enjoy teaching the course with those who do not. Teachers who expect most of their students to pass the course or exam also do not differ from those who do not. Nor do those who believe AP Seminar is a good first course compared to those who do not, nor those who believe it is a good course for all college bound students with those who do not. Tabler 31 shows AP Seminar teachers' results for Culturally Responsive Pedagogy by teacher attitude.

Table 31. One-way ANOVA: Culturally Responsive Pedagogy Score by Teacher Attitude, AP Seminar

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Enjoy Teaching Course							
Strongly agree, agree	107	95.53	46.80	5.933	0.005	.583	.447
Strongly disagree, disagree	5	4.46	49.59	8.049			
Expectations of Students							
More than 50% pass course and exam	103	91.96	45.33	11.927	0.024	2.672	.105
Fewer than 50% pass course and exam	9	8.04	49.83	7.501			
Believe Seminar is a Good First AP Course							
Strongly agree, agree	70	62.50	49.571	8.173	0.000*	0.033	.855
Strongly disagree, disagree	42	37.50	49.286	7.703			
Believe Seminar is a Good Course for All College-Bound Students							
Strongly Agree, Agree	109	97.32	49.43	8.015	0.001	0.114	.737
Strongly Disagree, disagree	3	2.68	51.00	7.000			

Seminar teachers similarly do not report statistically significant differences in their attempts to develop a critical consciousness in students. See Table 32 for results on this item.

Table 32. One-way ANOVA: Critical Consciousness Score by Teacher Attitude, AP Seminar

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Enjoy Teaching Course							
Strongly agree, agree	118	94.4	12.75	3.760	0.005	.651	.421
Strongly disagree, disagree	7	5.60	11.57	3.910			
Expectations of Students							
More than 50% pass course and exam	113	90.4	12.69	3.763	0.000*	0.000*	.984
Fewer than 50% pass course and exam	12	9.60	12.68	3.916			
Believe Seminar is a Good First AP Course							
Strongly agree, agree	76	60.80	12.87	3.332	0.004	0.444	.506
Strongly disagree, disagree	49	39.20	12.41	4.368			
Believe Seminar is a Good Course for All College-Bound Students							
Strongly Agree, Agree	122	97.60	13.67	4.041	0.002	0.207	.650
Strongly Disagree, disagree	3	2.40	12.66	3.769			

These same results hold true for attempts at cultural relevance more generally. Interestingly, those who expect fewer than 50% of their students to pass the course or exam show a slightly higher mean score than those who expect more than 50% of students to pass. However, this analysis yields a p value of .558, meaning that these results are well above the threshold of significance. This is most likely due to the relatively small number of teachers who report expecting fewer than 50% of students to succeed. Tabler 33 shows AP Seminar teachers' Cultural Relevance score by attitude.

Table 33. One-way ANOVA: Cultural Relevance Score by Teacher Attitude, AP Seminar

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Enjoy Teaching Course							
Strongly agree, agree	107	95.53	15.79	3.587	0.000*	.059	.809
Strongly disagree, disagree	5	4.46	15.40	2.608			
Expectations of Students							
More than 50% pass course and exam	103	91.96	15.72	3.505	0.003	0.346	.558
Fewer than 50% pass course and exam	9	8.04	16.44	4.096			
Believe Seminar is a Good First AP Course							
Strongly agree, agree	70	62.50	15.99	3.657	0.006	0.648	.423
Strongly disagree, disagree	42	37.50	15.43	3.351			
Believe Seminar is a Good Course for All College-Bound Students							
Strongly Agree, Agree	109	97.32	15.76	3.564	0.008	0.877	.351
Strongly Disagree, disagree	3	2.68	17.67	2.082			

When considering effective practices, those teachers who expect fewer than 50% of their students to succeed scored much lower than those we expect more than 50% to succeed, with a mean score of 16.78 and 21.33, respectively. More specifically, those teachers with lower expectations for student success scored 2.700 on activities that build on students' prior knowledge, compared with 3.075 for teachers with higher expectations. They show similar differences in use of student directed discussion such as socratic seminars. Most strikingly, the score lowest on the two differentiated instruction items, targeted small group instrucion and individual instruction. Table 34 shows differences in Effective Practices scores by attitude for AP Seminar teachers.

Table 34. One-way ANOVA: Effective Practices by Teacher Attitude, AP Seminar

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Enjoy Teaching Course							
Strongly agree, agree	107	95.53	21.07	4.47	0.011	1.249	.266
Strongly disagree, disagree	5	4.46	15.40	2.608			
Expectations of Students							
More than 50% pass course and exam	103	91.96	21.33	4.065	0.079	9.374	.003
Fewer than 50% pass course and exam	9	8.04	16.78	6.399			
Believe Seminar is a Good First AP Course							
Strongly agree, agree	70	62.50	21.48	3.844	0.008	0.894	.346
Strongly disagree, disagree	42	37.50	20.66	4.761			
Believe Seminar is a Good Course for All College-Bound Students							
Strongly Agree, Agree	109	97.32	21.00	4.429	0.002	0.262	.610
Strongly Disagree, disagree	3	2.68	19.67	5.508			

AP Research Teachers. As with the AP Seminar teachers in this study, we see a larger variability in scores on overall use of CRP as well is its sub-components when we analyze teachers' perceptions and expectations of students. Teacher expectations of students show a large association with use of CRP, with those teachers who expect more than 50% of their students to pass the course and exam scoring 49.28, compared with those expecting fewer than 50% of students to pass scoring 38.00. The p value of this analyses is .004, showing the results to be statistically significant. More surprisingly, those who disagree that AP Research is a good course for all college-bound students score higher than those who agree with this idea, with a mean score of 64.86 compared to 46.23. Here, we see a p value of less than .001, showing the results to be significant. However, only 9 teachers reported that they expect fewer than 50% of students to pass the course and exam, and only 7 teachers reported disagreeing that AP Research is a good course for all college bound students. These teachers may potentially be outliers whose responses

do not fully represent the larger population of teachers who hold these beliefs. See Table 35 for

results of Culturally Responsive Pedagogy scores by attitude for AP Research teachers.

Table 35. Culturally Responsive Pedagogy Score by Teacher Attitude, AP Research

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Enjoy Teaching Course							
Strongly agree, agree	67	90.54	47.94	10.582	0.000*	.032	.858
Strongly disagree, disagree	7	9.46	47.14	16.046			
Expectations of Students							
More than 50% pass course and exam	64	87.67	49.28	10.579	0.113	9.072	.004
Fewer than 50% pass course and exam	9	12.33	38.00	10.025			
Believe Research is a Good Course for All College-Bound Students							
Strongly Agree, Agree	68	90.67	46.23	10.070	0.244	23.624	<.001
Strongly Disagree, disagree	7	9.33	64.86	1.215			

In analyses of Critical Consciousness, AP Resarch teachers show no differences on

scores based on expectations or perceptions. See Table 36 for results on this item.

Table 36. Overall Critical Consciousness Score by Teacher Attitude, AP Research

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Enjoy Teaching Course							
Strongly agree, agree	67	89.33	9.96	4.941	0.027	1.992	.162
Strongly disagree, disagree	8	10.67	7.38	4.470			
Expectations of Students							
More than 50% pass course and exam	64	86.49	9.99	4.807	0.035	2.588	.112
Fewer than 50% pass course and exam	10	13.51	7.30	5.638			
Believe Research is a Good Course for All College-Bound Students							
Strongly Agree, Agree	69	90.79	9.76	4.659	0.005	.359	.551
Strongly Disagree, disagree	7	9.21	8.57	7.39			

Similar to AP Seminar teachers, we also see no significant differences in cultural

relevance scores by teacher perception or expectations, neither by enjoyment of the course, nor

expectations of students. These findings hold true when we consider each group comparison separately or considered together in a multiple regression. See Table 37 for scores.

Table 37. One-way ANOVA: Cultural Relevance Research Score by Teacher Attitude, AP Research

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Enjoy Teaching Course							
Strongly agree, agree	66	90.41	14.52	4.445	0.060	4.536	.037
Strongly disagree, disagree	7	9.59	10.86	2.795			
Expectations of Students							
More than 50% pass course and exam	63	87.50	14.50	4.464	0.029	2.089	.153
Fewer than 50% pass course and exam	19	12.50	12.22	4.086			
Believe Research is a Good Course for All College-Bound Students							
Strongly Agree, Agree	67	90.54	14.20	4.276	0.000	.038	.846
Strongly Disagree, disagree	7	9.46	13.86	5.90			

However, as in the case of the analyses of AP Seminar teachers in this study, the major source of variability in AP Research teachers' CRP scores lies in teacher expectations of students. Those teachers who report expecting greater than 50% of their students to pass the course and the exam also report a mean score of 21.84 on the "effective practice" sub score, while those teachers who expect fewer than 50% of students to pass the course and exam. An independent samples t-test shows a p value of .001 on this comparison, making this result statistically significant. When considered as part of a multiple regression, this item again is the only statistically significant predictor of AP Research teachers' use of effective practies. See Table 38 for results of this item.

Table 38. One-way ANOVA: Effective Practices Research Score by Teacher Attitude, AP Research

Characteristic Subgroup	N	%	M	SD	η^2	F	p
Enjoy Teaching Course							
Strongly agree, agree	67	90.54	21.43	4.236	0.041	3.071	.084
Strongly disagree, disagree	7	9.46	18.29	6.921			
Expectations of Students							
More than 50% pass course and exam	64	87.67	21.84	4.354	0.140	11.548	.001
Fewer than 50% pass course and exam	9	12.33	16.56	4.503			
Believe Research is a Good Course for All College-Bound Students							
Strongly Agree, Agree	68	90.67	21.176	4.591	0.001	.085	.772
Strongly Disagree, disagree	7	9.33	21.714	5.282			

In conclusion, to an even greater degree than in AP Seminar teachers, individual AP Research teacher demographic factors show no association with use of Culturally Responsive Pedagogy, nor with any of the indicators of CRP measured in this study. Where AP Research teachers do vary in their use of CRP, teacher expectations are the strongest predictor considered in this analysis. Of all the indicators measured in this study, teacher use of effective practices contributes most significantly to differences in CRP scores.

Next, I consider school factors in my analyses of AP Research teachers CRP scores.

Finding 3.4: With repsect to school factors, Class demographics showed some association with overall use of CRP. Specifically, teachers whose classes were majority students of color were more likely to score highly on CRP. Of the sub-components of CRP this study measures, differences in cultural relevance scores most explain the overall differences in CRP scores between teachers with majority White students and majority students of color.

AP Seminar. School demographics, Capstone class demographics, school organization type and location showed no significant association with overall use of CRP in AP Seminar classes, when considered individually. However, when considered together in a multiple regression equation, those AP Seminar teachers whose classes were majority White showed a statistically signficant negative association with overall use of CRP, with a p value of . 024. See Table 39 for complete analyses of Culturally Responsive Pedagogy by school context for AP Seminar teachers.

Table 39. One-way ANOVA: Culturally Responsive Pedagogy Score by School Context, AP Seminar

Characteristic Subgroup	N	%	M	SD	η^2	F	p
School Demographics							
Majority white	48	55.81	48.86	8.651	0.000	.003	.958
Majority students of color	38	44.19	48.99	8.867			
Capstone Class Demographics							
Majority white	61	65.59	48.17	8.662	0.038	3.599	.061
Majority students of color	32	34.42	51.64	7.794			
School Organization							
Public District	87	86.14	59.08	8.080	0.028	2.954	.089
Charter	2	1.98	47.00	5.657			
Private	12	11.88	46.21	9.699			
School Location							
Suburban	66	64.71	49.14	8.793	0.003	0.287	.593
Urban	17	16.67	50.82	8.793			
Small Town/Rural	19	18.63	49.55	7.002			

With regard to teachers's reported attempts to focus on elements of students' critical consciousness, school demographics, Capstone class demographics, school organization and location showed no significant associations. These findings hold true when all factors are

considered together as part of a multiple regression equation. See Table 40 for scores.

Table 40. Critical Consciousness Score by School Context, AP Seminar

Characteristic Subgroup	N	%	M	SD	η^2	F	p
School Demographics							
Majority white	48	55.81	12.18	3.057	0.007	.558	.457
Majority students of color	38	44.19	12.79	4.207			
Capstone Class Demographics							
Majority white	61	65.59	12.56	3.969	0.005	.463	.498
Majority students of color	32	34.42	13.09	2.787			
School Organization							
Public District	87	86.14	12.99	3.607	0.023	2.437	.122
Charter	2	1.98	-	-			
Private	12	11.88	11.25	4.39			
School Location							
Suburban	66	64.71	12.50	3.570	0.007	0.764	.384
Urban	17	16.67	13.53	3.642			
Small Town/Rural	19	18.63	13.21	4.158			

However, teachers whose AP Seminar classes were maority White earned a mean score of 14.82 on cultural relevance, compared with the mean score of 17.44 for those teachers whose classes were majority students of color. An independent samples t-test showed yielded a p value of <.001, showing that these differences are statistically significant. Table 41 shows AP Seminar Cultural Relevance scores by school context.

Table 41. Cultural Relevance Score by School Context, AP Seminar

Characteristic Subgroup	N	%	M	SD	η^2	F	p
School Demographics							
Majority white	48	55.81	14.94	3.634	0.064	5.789	.018
Majority students of color	38	44.19	16.76	3.308			
Capstone Class Demographics							
Majority white	61	65.59	14.82	3.739	0.115	11.868	<.001
Majority students of color	32	34.42	17.44	2.918			
School Organization							
Public District	87	86.14	15.93	3.621	0.014	1.496	.224
Charter	2	1.98	15.50	0.707			
Private	12	11.88	14.58	4.078			
School Location							
Suburban	66	64.71	15.86	3.189	0.000	0.075	.785
Urban	17	16.67	16.53	3.223			
Small Town/Rural	19	18.63	15.32	3.267			

Neither school demographics, Capstone class demographics, school organization or school location showed any association with teachers' use of effective practices. See Table 42 for results of AP Seminar Effective Practices scores by school context.

Table 42. Effective Practices Score by School Context, AP Seminar

Characteristic Subgroup	N	%	M	SD	η^2	F	p
School Demographics							
Majority white	48	55.81	21.16	3.963	0.014	1.228	.271
Majority students of color	38	44.19	20.04	5.381			
Capstone Class Demographics							
Majority white	61	65.59	20.80	4.677	0.001	.100	.753
Majority students of color	32	34.42	21.11	4.318			
School Organization							
Public District	87	86.14	21.16	4.565	.007	.723	.397
Charter	2	1.98	19.50	6.364			
Private	12	11.88	20.38	4.129			
School Location							
Suburban	66	64.71	20.98	4.710	0.000	0.002	.969
Urban	17	16.67	20.77	3.223			
Small Town/Rural	19	18.63	21.026	3.267			

In summary, AP Seminar class demographics showed some association with overall use of CRP. Specifically, teachers whose classes were majority students of color were more likely to score highly on CRP. Of the sub-components of CRP this study measures, differences in cultural relevance scores most explain the overall differences in CRP scores between teachers with majority White students and majority students of color.

AP Research. As with the analyses of AP Seminar teachers, for AP Research teachers school demographics, Capstone class demographics, school organization type and location showed no significant association with overall use of CRP in AP Seminar classes, when considered individually. Nor did these factors show any association with overall CRP use when considered together in a multiple regression equation. Table 43 shows scores for this set of analyes.

Table 43. One-way ANOVA: AP Research Culturally Responsive Pedagogy Score by School Context

Characteristic Subgroup	N	%	M	SD	η^2	F	p
School Demographics							
Majority white	27	52.94	48.38	10.449	0.00	.070	.793
Majority students of color	24	47.16	49.21	11.953			
Capstone Class Demographics							
Majority white	38	65.52	46.90	10.048	.032	1.829	.182
Majority students of color	20	34.48	50.75	10.828			
School Organization							
Public District	62	88.57	47.63	11.070	0.01	.331	.567
Charter	2	2.86	36.50	9.192			
Private	6	8.57	54.50	4.764			
School Location							
Suburban	43	64.71	47.77	11.445	0.00	0.017	.896
Urban	17	16.67	46.77	9.981			
Small Town/Rural	10	18.63	49.30	10.853			

These results hold true for critical consciousness scores. Neither school demographics, nor demographics of Capstone classes show any associations with teachers' critical consciousness scores. See Table 44 for Critical Consciousness scores by school context.

Table 44. One-way ANOVA: Research Critical Consciousness Score by School Context

Characteristic Subgroup	N	%	M	SD	η^2	F	p
School Demographics							
Majority white	27	52.94	9.76	4.624	.000	.000	.997
Majority students of color	24	47.16	9.75	5.877			
Capstone Class Demographics							
Majority white	38	65.52	10.19	4.604	.003	.195	.661
Majority students of color	20	34.48	9.60	5.374			
School Organization							
Public District	62	88.57	9.62	5.127	.003	.225	.637
Charter	2	2.86	9.50	3.536			
Private	6	8.57	10.83	2.858			
School Location							
Suburban	43	62.32	9.27	4.610	.014	0.955	.332
Urban	16	23.19	9.19	5.307			
Small Town/Rural	10	14.49	12.50	5.359			

In the analyses of Cultural Relevance items, unlike AP Seminar teachers, AP Research teachers showed no significant difference compared across any groups. See Table 45 for results of AP Research Cultural Relevance Scores by school context.

Table 45. One-way ANOVA: Research Cultural Relevance Score by School Context

Characteristic Subgroup	N	%	M	SD	η^2	F	p
School Demographics							
Majority white	27	52.94	14.30	4.322	0.001	.056	.814
Majority students of color	24	47.16	14.00	4.644			
Capstone Class Demographics							
Majority white	38	65.52	14.50	3.840	.006	0.313	.578
Majority students of color	20	34.48	13.85	4.837			
School Organization							
Public District	61	88.40	14.30	4.413	0.011	.756	.388
Charter	2	2.90	12.50	6.364			
Private	6	8.70	13.00	3.286			
School Location							
Suburban	43	62.32	13.42	4.316	.045	3.175	.079
Urban	16	23.19	14.20	4.039			
Small Town/ Rural	10	14.49	17.10	4.175			

Finally, as I expected, based on the results of analyses run on AP Seminar teachers, AP Research teachers did not show any significant differences in scores of effective practices based on any of the factors considered in this analysis. These results are presented in Table 46.

Table 46. One-way ANOVA: Research Effective Practices Score by School Context

Characteristic Subgroup	N	%	M	SD	η^2	F	p
School Demographics							
Majority white	27	52.94	20.63	4.559	0.007	.356	.554
Majority students of color	24	47.16	21.42	4.863			
Capstone Class Demographics							
Majority white	38	65.52	21.34	4.834	.000	.007	.935
Majority students of color	20	34.48	21.45	4.536			
School Organization							
Public District	62	88.57	21.40	4.452	.002	.146	.703
Charter	2	2.86	15.00	2.828			
Private	6	8.57	22.67	4.457			
School Location							
Suburban	43	62.32	20.72	4.574	.029	2.049	.157
Urban	16	23.19	22.44	4.320			
Small Town/Rural	10	14.49	22.70	4.296			

In summary, the largest source of variability in AP Research teachers' use of culturally responsive approaches to teaching seems to lie entirely in their expectations of students, rather than any external factors. The results of this study show that use of effective practices accounts for the largest difference in scores. Finally, I turn to my final research question.

Findings Related to Research Question 4: Is Teacher Use of Culturally Responsive Practices Associated with Higher Percentages of Minority Students Enrolled in AP Capstone Courses?

Finding 4.1: Teacher use of culturally responsive practices does not show a significant association with an increased percentage of minority students in AP Capstone. The strongest predictor of students of color being enrolled in AP Capstone is a school being majority students of color. However, compared with the overall demographics of their school sites, students of color are still underrepresented in both AP Seminar and AP Research.

As with the previous analyses, I answer this question by conducting a parallel set of analyses: first for AP Seminar classes, and then for AP Research.

AP Seminar Classes. In the sample of Seminar teachers, students of color are still underrepresented when compared with the larger school population, though there is naturally some correlation between the percentage of students of color at a school and the percentage in AP Capstone classes.

To measure this, I first conducted a paired samples t-test, comparing the percentage of students of color in a respondent's overall school population with the percentage of students of color in that respondent's AP Seminar classes.

As Table 47 shows, the mean percentage of students of color overall in respondents' schools was 46.40%, compared with 41.51% in these same respondents AP Seminar classes. Based on this analyses, students of color are underrepresented by 4.815% in this sample.

Table 47. Descriptives for Seminar School and Capstone Percentage Students of Color

	N	Mean	SD	SE
School SOC	86	46.395	26.960	2.907
Capstone SOC	93	41.505	27.895	2.893

The paired samples t-test yields a p value of .003, making this result statistically significant. Additionally, the 95% confidence interval for this mean difference does not cross zero, also showing the signficance of this result. Table 48 shows the results of the results of this analysis.

Table 48. Paired Samples T-Test Results.

Measure 1	Measure 2	t	df	p	Mean Difference	SE Difference	95% CI for Mean Difference		Cohen's d
							Lower	Upper	
School SOC	- Capstone SOC	3.121	80	0.003	4.815	1.543	1.745	7.885	0.347

Note. Student's t-test.

Figure 1 illustrates this difference.

Figure 1. Descriptive Plot for School and Seminar students of color
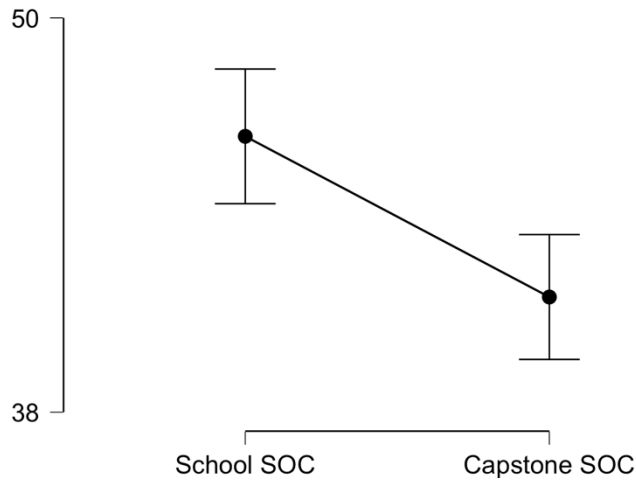
Next I conducted a multiple regression analysis with the percentage of Capstone students of color as the dependent variable, and teachers' overall CRP scores as well as school percentage of students of color as the independent variable. As the table below shows, there is no statistically signification relationship between teacher use of culturally responsive pedagogy and overall percentage of students of color enrolled in AP seminar classes. However, there is as expected a positive relationship between a school's overall percentage of students of color and the percentage of students of color enrolled in AP Seminar. The p value for CRP score contributing to percentage of Capstone students of color is .228, far above the threshold for signficance, whereas the p value for for percentage of students of color is less than .001, showing a high degree of significance. Table 49 presents the ANOVA model for this analysis, and Table 50 presents the coefficients in this analysis.

Table 49. ANOVA Comparison Seminar Percentage Students of Color

Model		Sum of Squares	df	Mean Square	F	p
H_1	Regression	50619.392	2	25309.696	131.586	< .001
	Residual	15002.830	78	192.344		
	Total	65622.222	80			

Note. The intercept model is omitted, as no meaningful information can be shown.

Table 50. Coefficients for Seminar Percentage Students of Color

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	41.481	3.182		13.035	< .001
H_1	(Intercept)	-12.838	9.036		-1.421	0.159
	School Percentage Students of Color	0.949	0.059	0.874	16.140	< .001
	Overall CRP Score	0.212	0.174	0.066	1.215	0.228

Lastly, I conduct a logistic regression, comparing those respondents whose Seminar classes were majority of students of color with those whose classes were majority White students. The results of this analysis show that in those classes where the majority of students are students of color there is some signficant assocation with teachers' overall CRP score. Table 51 presents the logistic regression model summary for this analysis. Table 52 presents the coefficients for this analysis.

Table 51. Logistic Regression Model Summary - Seminar Majority Students of Color

Model	Deviance	AIC	BIC	df	X^2	p	McFadden R^2	Nagelkerke R^2	Tjur R^2	Cox & Snell R^2
H_0	104.446	106.446	108.841	80						
H_1	60.907	66.907	74.090	78	43.540	< .001	0.417	0.574	0.480	0.416

Table 52. Logistic Regression Coefficients for Seminar Majority Students of Color

				Wald Test		
	Estimate	Standard Error	z	Wald Statistic	df	p
(Intercept)	-5.344	2.144	-2.493	6.214	1	0.013
Overall CRP Score	0.089	0.042	2.132	4.546	1	0.033
School Majority Students of Color? (1)	-1.893	0.387	-4.889	23.904	1	< .001

Note. Seminar Majority SOC level '1' coded as class 1.

AP Research Teachers. I conduct the same sets of analyses on AP Researchers, and find largely the same results. A paired samples t-test shows that there is a mean difference of 6.383% between percentage of students of color in a respondents' school, and the percentage of students of color in those same respondents' AP Research courses.

In this study's sample, 49.412% of respondents' overall school populations were students of color, compared with 42.931% of respondents' AP Research classes. The paired samples t-test gives a p value of .026, which shows this to be a significant result. As with the previoius analysis, the 95% confidence interval does not cross zero, which again shows this difference in mean percentages to be statistically signficant. Table 53 presents the descriptive results. Table 54 presents the results of the paired samples t-test.

Table 53. Descriptives for Research School and Capstone Percentage Students of Color

	N	Mean	SD	SE
School Percent SOC	51	49.412	26.564	3.720

118

Table 53. Descriptives for Research School and Capstone Percentage Students of Color

	N	Mean	SD	SE
Capstone % SOC	58	42.931	28.223	3.706

Table 54. Paired Samples T-Test School Percentage Students of Color and AP Research Percentage Students of Color

							95% CI for Mean Difference		
Measure 1	Measure 2	t	df	p	Mean Difference	SE Difference	Lower	Upper	Cohen's d
School % SOC - Research % SOC		2.298	46	0.026	6.383	2.778	0.791	11.975	0.335

Note. Student's t-test.

Figure 2 displays the descriptive plots for this analysis.

Figure 2. Descriptive Plot for School and Research Students of Color
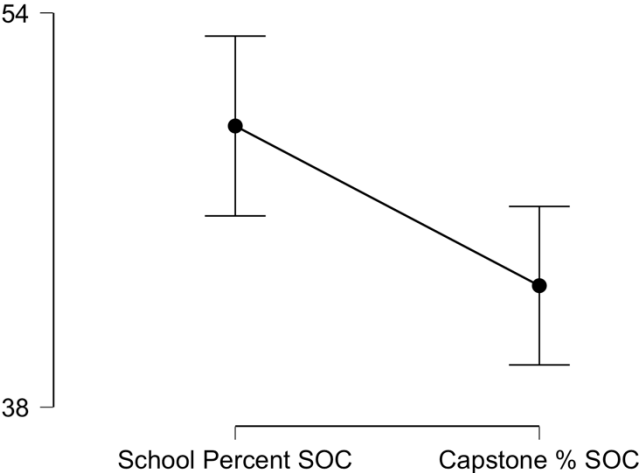
Next, I again conduct a logistic regression, this time comparing AP Research teachers whose classes are majority students of color with those whose classes are not. With "majority research students of color" coded as the dependent variable. I consider overall CRP score as a covariate, and school percentage of students of color as a factor. In this logistic regression, overall CRP score shows no significant association with the percentage of Research students being students of color, with a p value of .453. However, as with the analyses conducted on the

119

sample of AP Seminar teachers, school percentage of students of color shows a significant assocation with Research classes being majority students of color, with a p value of less than .001. Table 55 presents the summary of this logistic regression model.

Table 55. Logistic Regression Model Summary - Research Majority Students of Color

Model	Deviance	AIC	BIC	df	X^2	p	McFadden R^2	Nagelkerke R^2	Tjur R^2	Cox & Snell R^2
H_0	61.513	63.513	65.363	46						
H_1	33.605	39.605	45.156	44	27.907	< .001	0.454	0.613	0.517	0.448

As Table 56 shows, the only coefficient that significantly predicts AP Research classes being students of color is if the overall school demographics are majority students of color. Culturally Responsive Pedagogy score does not significantly predict a Research course being majority students of color.

Table 56. Logistic Regression Coefficients for Research Majority Students of Color

	Estimate	Standard Error	z	Wald Test		
				Wald Statistic	df	p
(Intercept)	-2.573	2.057	-1.251	1.564	1	0.211
Overall CRP Score	0.030	0.040	0.750	0.562	1	0.453
School Majority Students of Color? (1)	-2.078	0.567	-3.663	13.421	1	< .001

Note. Research Majority SOC level '1' coded as class 1.

All of the interviewees in this study showed an awareness of the disparity between percentage of students of color in school, and percentage of students of color in Capstone classes. Additionally, interviewees raised the issue of gender imbalance in Capstone classes.

Mrs. J. candidly admitted that "we have a very small White population [in the school]. I'll tell you exactly where we're lacking [in AP Capstone] is, as usual, in Black males. So I would say that is, if we were off kilter, it's going to be there. And it's also we're off kilter with males in general. So it doesn't look exactly like... It doesn't match it exactly." This echoed Ms. K.'s awareness that her AP Capstone classes are "Largely female dominated. Compared to the CP English classes that I teach throughout the day, I have more non-Hispanic kids, or more non Spanish-speaking kids in my AP classes, but still largely dominated by Spanish speakers and Hispanic students." When asked for a possible explanation, she suggested that "I think it's a representation at least, as I have assumed it to be, on our school campus that because they primarily come from honors English and the honors English class is dominated by female students, that there's that carry over. I also noticed that the students who dropped when I dropped from 80 to the 74 and then the 74 to the 71, were primarily male."

Mrs. H. noted that in her school, "we reflect the state very closely, except for Asian population, because we have a little bit higher Asian population in the school because we are a magnet school, school of choice . . . So, it's a very diverse school," but that "There is a much smaller number of Black students in my classes."

Mr. D., interestingly, did note that his approach to structuring his quote was centered entirely around addressing existing inequities. He said:

> It was also an attempt to bring a more diverse group of kids into class. When I first started teaching it three years ago, it was pretty much all White girls. I wanted to, if I put myself out there, that I'm teaching more than just White girl. I'm teaching topics that interest each person on an individual level. My hope was that it would attract a larger group of kids or a more diverse group of kids. I don't know if that's because of what I'm doing, but this year I have a very large group.

> I have more boys than I've ever had before. I have more kids of different ethnicities than I ever had before. The discussions have been richer. It's because it used to be, I'm the one leading discussion on minority groups. Well, I'm the least minority person you can find.

121

I'm a White male and I can only speak to what I see through my perspective. It's been nice to have someone of color going, "This is my perspective because this is who I am."

In this way, Mr. D. best reflects the intent of this study. His approach shows an awareness of himself, his positionality, and his perspective. His curricular planning emphasizes students' lived experiences and works towards developing students' critical consciousness, both in terms of navigating issues of race, gender and other social inequities and also getting students to understand and appreciate others from different backgrounds. His classroom culture is designed to build trust and rapport with students, and to get them to do so with each other. In this way, he hopes to get them to perform at a high level in the class and on the exam performance tasks, and he gives plenty of opportunites for targeted, meaningful feedback to help students achieve.

Or, as Mrs. J. said in her interview, "So, my idea of a fully... Not my idea, I mean this is in the literature, I didn't make this up. That after a deep, reflective, ongoing reflective practice of your own worldviews, a teacher's own worldviews, it's only at that point that you can say, "Dang, I can see how that has impacted my classroom. My views on this are impacting the way I'm teaching or the way I'm working with these particular students." So that's been like the mission of my entire career."

When asked if AP Capstone creates the opportunity for a more culturally responsive AP class, she said, "Okay. Opportunity to, yes. That's the key word. It definitely has the opportunity to impact teachers in that way. For sure."

V. DISCUSSION

To answer the question "To what extent do AP Capstone teachers use culturally responsive pedagogies?" this study surveyed a sample of both AP Seminar and AP Research teachers on five indicators of CRP: curriculum planning considerations, curriculum and thematic focus, instruction, assessment and feedback, classroom community. This focus was based on previous scholarship that operationalizes culturally responsive pedagogy. Namely, that cultural responsiveness encompasses teachers' relationships with students, their instructional practices, their assessment practices, their focus on rigor and skill development, their efforts at connecting learning within students' cultural referents, and their attempts to help students develop a critical consciousness (Powell et al., 2017; Howard, 2003; Gay, 2018).

Summary of Findings

This study finds that AP Capstone teachers generally claim to consider students' personal experiences in planning their curriculum, as well as to consider multiculturalism and cultural diversity. However, teachers choose topics dealing issues such as race and sexism to a much lesser degree, and relatively few select topics specifically situated in their students' unique cultural contexts. Siwatu (2011), found that many teachers lack self-efficacy with some dimensions of culturally responsive teaching, particularly those that require them to reduce the mismatch between their classrooms and students' home cultures. The current study seems to align with Siwatu's findings in this regard. Gay argues that many teachers feel discomfort discussing issues of race or culture, which results in a colorblind approach to teaching (2010). Unfortunately, when teachers discuss race and racism unskillfully, they may in fact further contribute to creating unwelcoming environments for their students of color (Chapman, 2013). Later scholars claim that teachers often see creating a diverse curriculum that acknowledges

students' cultures as a separate goal from academic excellence (Howard & Terry, 2011). The responses of teachers represented in the present study to some extent confirm this previous research. Gay (2010) claims that teachers are often least comfortable developing students' critical consciousness around issues of race and racism. This would explain why teachers' report including multicultural and diverse texts in this study, while doing less to investigate racism, sexism, or topics rooted in students' cultural communities.

AP Capstone teachers generally report that they attempt to create welcoming environments, and use frequent collaboration in class, as well as activities that build on students' prior knowledge, and differentiated instructional activities. AP Capstone teachers' assessment and feedback are largely informal, with conversations with students, peer to peer feedback, portfolios and reflections being the most common strategies. Most relevant to this study, while AP Capstone teachers nearly unanimously agree that students learn best when they see their cultures represented in the classroom, fewer than 20% agree that they actually represent students' cultures in the classroom. Again, Siwatu's (2011) study may explain this discrepancy. AP Capstone teachers may see the need to approach their classes in a culturally responsive manner but lack the self-efficacy to do so.

Previous researchers identified a need to study AP teachers' instructional practices with underrepresented minority students (Burton et al., 2002). Such culturally responsive practices include, but are not limited to identifying ways in which students' home cultures differ from the teacher's or schools; using students' own cultural backgrounds to make learning personally relevant; and using a variety of authentic assessments while allowing students to evaluate their own work and learning (Siwatu, 2007; Powell et al., 2017) While the AP Capstone teachers represented in this study vary in the ways they use students' cultural backgrounds to make

learning personally relevant, these teachers demonstrate higher uses of collaborative activities, and meaningful forms of feedback and assessment than the AP teachers represented in the 2005 study conducted by Paek et al.

Additionally, the findings in this study show a promising move away from the conclusions reached by Graefe and Richotte (2019) and Kolluri (2018), which suggest that AP teachers either do not know how to adapt instruction for student needs, or they feel that "content coverage" matters, rather than student skill development. The AP Capstone teachers I interviewed in this study unanimously spoke of the positive impact the two AP Capstone classes have on student skill development and college readiness. Each interviewee also described a process of modifying their curriculum in order to better serve student needs. Many AP Capstone teachers build collaboration into the class. Peer review is the most common way this occurs. In terms of assessment and feedback, many AP Capstone teachers de-emphasize grades and points in favor of deeper learning, feedback to help students succeed on authentic performance tasks, and student ownership over skill development. This stands in contrast to the lecture and multiple-choice exam heavy approaches that Paek et al. identified in their study of AP teachers (2005).

One possible explanation for this shift in practice is the nature of the course and the assessments themselves. AP Seminar and AP Research students do not complete traditional multiple choice style exams. The AP Seminar assessment program consists of two performance tasks, which include a process paper and a presentation each, as well as an end of course assessment that requires students to evaluate the logic and supporting evidence of a short argument, and to compose their own logical argument based on evidence provided. The AP Research course requires one year-long primary research project and an accompanying presentation, with end of course exam. Thus, teachers may be naturally incentivized to focus on

student skill development, collaboration and authentic assessment by design. This aligns with the College Board's stated design of the AP Capstone program.

Kolluri (2019) gives an example of two Los Angeles area schools that deliberately use culturally responsive practices to support student success, honoring students' Latinx backgrounds and attempting to connect local issues and community problems to the course content. Several of the teachers represented in the current study adopt similar approaches in their AP Seminar classes. This suggests that the AP Capstone program does in fact have the potential to encourage teachers create a much more culturally responsive AP class for students.

Interview data revealed that AP Capstone teachers who work towards cultural responsiveness reflect on their own perspectives and positionality in the classroom. As Howard argues (2003), critical self-reflection about a person's own awareness and experiences with race, and how they inform one's perspective, is a necessary step towards cultural responsiveness. This seems to be the true demarcation between teachers adopting a "multicultural" approach and those adopting a truly culturally responsive approach. Culturally responsive teachers in this study chose topics that engage students' lived experiences, and center student voice and choice in the curriculum. Additionally, AP Capstone teachers, both AP Seminar and who incorporate culturally responsive approaches feel students perform at a high level when they research topics they feel personally connected to. This often involves having students examine their own educational experiences. They also work to developing students' critical consciousness, as well as students' capacity to appreciate the lives and experiences of students from backgrounds different than their own. Those teachers who do this fulfill a vision closer to Paris and Alim's (2014) concept of a pedagogy that fosters cultural pluralism.

126

These same culturally responsive AP Capstone teachers create safe, welcoming environments; they use a variety of methods to learn students' lives and cultural identities and encourage students to understand appreciate others from different backgrounds. This is in keeping with the research showing that effective teachers focus on whole child instruction and skill development (Gay, 2018; Ladson-Billings, 1992). These same teachers create a more humanizing atmosphere than students may get in some other classes.

This study finds very few predictors of an AP Capstone teachers' use of culturally responsive pedagogy. Very few teacher and school characteristics are direcly associated with teachers' use of Culturally Responsive Pedoagogies. To a limited extent, teacher experience may be associated with use of CRP. Male teachers, however, are less likely to address issues of gender and sexism with students. One of the few schoolwide predictors of a teacher's use of CRP is the percentage of students of color; a higher percentage of students of color is positively associated with use of CRP. The higher percentage of students of color, the higher likelihood a teacher is using culturally responsive approaches.

Most significantly, teacher expectations and perceptions are associated with use of the items this study terms 'effective practices.' Those teachers who expect fewer than half of their students to pass either the exam or the course are also less likely to use effective practices. These findings further reinforce the idea that use of culturally responsive pedagogies is tied deeply to teacher expectations of students. This is especially true of AP Research teachers, for whom the variability in culturally responsive teaching was found to be associated only with their expectations of students and not any other external factors. The results of this study show that use of effective practices accounts for the largest difference in scores.

These findings reinforce the results of previous studies that show teacher perceptions of student ability impacts minority students' AP success. Burton et al. (2002) show that effective teachers whose Black and Latinx students consistently outperform predicted exam scores also rated these students' academic ability highly on a separate questionnaire. Burton suggests that the teachers held a high subjective perception of their minority students. Cherng (2017) suggests a possible causal relationship, as a teacher's perception of student ability has a measurable impact on minority students. The current study suggests a possible mechanism that may explain this. Those teachers who expect more than half of their students to pass the course and exam are statistically much more likely to use effective practices.

In AP Capstone, students of color are still underrepresented when compared with the larger school population, though there is naturally some correlation between the percentage of students of color at a school and the percentage in AP Capstone classes. This finding aligns with previous research showing that racial gaps in AP participation tend to be fairly pronounced within schools (Bittman et al., 2017; Theokas & Saaris, 2013). Additionally, schools with a higher academic achievement index tend to have significant Black-White AP participation gaps and schools with predominantly White teachers tend to have pronounced Latinx-White participation gaps (Kettler & Hurst, 2017). Interviewees in the current study noted this same trend. While this study did not gather data about schools' academic performance ratings, all interviewees described their schools overall academic performance in positive terms.

Previous studies suggest that schools can do more to understand the experiences of minority students, and the reasons why they do not pursue AP coursework (Kolluri, 2019; Kettler & Hurst, 2017). Three of the six participants in this study offered a hypothesis as to why students of color, and Black and Latinx males in particular, participate in AP Capstone at lower rates.

128

Two of these respondents attributed this to students being uninterested in or "afraid" of the courses. These teachers also mentioned that they currently do not actively recruit students for their AP Capstone classes. This finding aligns with the earlier research of Burton et al. (2002). One possible interpretation for this is that these teachers may paradoxically be choosing to include race and culture as thematic topics for their course, without actually considering the race and culture of the students in their classes, or more significantly those students who are underrepresented in their classes.

Recommendations

Recommendations for the College Board

Currently the College Board has the following as its equity and access policy for the AP Capstone program:

> We encourage the elimination of barriers that restrict access to AP for students from ethnic, racial, and socioeconomic groups that have been traditionally underrepresented. Schools should make every effort to ensure that their AP classes reflect the diversity of their student population. College Board also believes that all students should have access to academically challenging coursework before they enroll in AP classes, which can prepare them for AP success. It's only through a commitment to equitable preparation and access that true equity and excellence can be achieved (AP Capstone Implementation Guide).

While this statement is commendable, it does not explicitly state the factors that restrict access to AP course access for many students of color. As a worthwhile point of comparison, in 2009 the International Baccalaureate program commissioned a report to identify reasons why potentially qualified students in participating schools do not pursue or earn the IB diploma. This report found that "reasons for the diploma gap have more to do with perceptions of students and programs about the program" (Diploma Gap Study). Also of note, the report's authors find that:

> While most teachers and administrators agree that IB is a curriculum good for all students, most schools do not operate the program in this fashion; instead, programs are run as extensions of honors programs for elite students, with entrance requirements,

complex application processes, making it particularly hard for high-needs students to gain entrance to a program generally considered for others. In turn, these practices feed heavily into student perceptions (Diploma Gap Study).

These findings bear directly on the AP Capstone program. College Board should conduct an equity audit of the way the AP Capstone program has thus far been implemented. Doing so will enable the organization to precisely describe the factors that prevent capable students of color from enrolling in the AP Capstone program.

In addition to studying implementation of AP Capstone, the College Board should also conduct equity audits to have schools describe the steps they take to recruit and encourage students of diverse backgrounds to enroll in AP Capstone. They should make available the results of these findings, to aid school leaders in enacting concrete policies to combat existing structures that perpetuate racist outcomes. In the same way that the College Board requires AP teachers to submit a syllabus each year for course authorization, the College Board should require schools to submit evidence of a student recruitment and placement plan, to ensure that schools do in fact eliminate barriers to access, and positively reach out to qualified students, While the College Board currently requires all new AP Seminar and AP Research teachers to undergo mandatory training, it should increase training opportunities for veteran teachers. In this study, I observed an association between teaching the course for more than a year and adoption of culturally responsive approaches. Trainings for veteran teachers can thus focus specifically on culturally responsive pedagogies.

Lastly, as a way of combatting student and teacher perceptions of AP Capstone that perpetuate racist outcomes, the College Board should continuously work to curate examples of the work of successful Black, Latinx and Indigenous students, especially when this work centers on students' cultures and lived experiences. This may in part help combat racist assumptions

130

about which students are AP students. In essence, College Board has the power to start enacting

a top-down cultural change in AP programs, by visibly demonstrating a commitment to

antiracism, and by enforcing its own equity and access recommendations. College Board should

act on this capacity for not only AP Capstone classes, but all AP classes.

Recommendations for AP Capstone Teachers

As Gay (2018) writes, culturally responsive teachers focus on whole child development

and students' growth in skill development rather than content coverage. The present study finds

that many AP Capstone teachers also focus on skill development rather than content coverage.

However, several teachers in this study go farther in supporting students social and emotional

well-being. Four of the six interviewees in this study make it an explicit point to get to know

their students via journaling, one-on-one conversations, or other means. These teachers also use

the knowledge they gain about their students to shape their curriculum and classroom

experiences. The performance task and skill-focused design of the AP Capstone classes may to

some extent create greater opportunities for teachers to use this approach. Other AP Capstone

teachers who adopt these approaches would be working to create more inclusive, welcoming

environments for students of all backgrounds.

Several teachers in this study described additional instructional tools for learning and

investigating students' cultures. These include the cultural identity self-assessment that Ms. R.

described, and the journaling assignments that Ms. K., Mr. D., and Mrs. J. use in their classes.

Interview data revealed that these teachers were often inspired to use these approaches based on

suggestions and recommendations from colleagues, often during the required AP Capstone

summer institutes. This finding suggests that those teachers who use culturally responsive

approaches may inspire their colleagues to also adopt these approaches. So, culturally responsive

AP Capstone teachers are uniquely situated to influence their peers to better address their students' cultural needs. Several online communities and informal peer-to-peer networks for AP Capstone teachers exist to share best practices and resources. Culturally responsive AP Capstone teachers who are active in these communities and networks should consider using their influence to encourage other teachers to evaluate their own curriculum and approaches.

Additionally, teachers' pedagogical choices have a direct impact on student success, especially for students from non-dominant teachers. As Mr. D. admits in his interview, many new AP Capstone teachers may feel as if their first few years teaching the course are a steep learning curve, where they are still trying to figure out the best approach. However, veteran teachers who have familiarized themselves with the courses can and should use culturally sustaining approaches as a major consideration when planning classes. Rather than focusing on the course, pacing or content, they should instead reflect on who their students are, who is not represented in their class, what they know about their students' lives and backgrounds, and work to reduce any inequities in regard to who is honored and valued in their classes.

Recommendations for AP Capstone Consultants

Unlike other AP classes, the AP Capstone program requires new teachers to attend a mandatory summer training prior to being allowed to teach the course. During these summer trainings, consultants for the College Board train new teachers on the goals and requirements of the courses, as well as the skills, assessments, planning considerations and other logistics. Consultants spend part of the training session working with each teacher being trained to help them figure out the best way to implement their Capstone courses in their school's unique context. This includes feedback on pacing, curriculum, skill sequencing, grading practices and

other considerations. Many of my fellow AP Capstone consultants report maintaining contact with trainees as they teach their courses for the first time.

Consultants should use the results of the current study to inform their work with their teacher trainees during the summer institutes. As the AP Capstone courses are brand new for many teachers, consultants also have the potential to impact teachers' classroom approaches in a significant way. As Ms. R., Mr. D., and Ms. K. report, they decided to situate their curriculum within their students' local communities and cultural identities as a result of the suggestion of a colleague during these summer trainings. Thus, consultants also have a unique ability to influence the way AP Capstone courses are taught. They also may encourage teachers to engage in the sort of reflection that leads to more culturally responsive approaches.

Specifically, teacher trainers should stress the importance of learning, and centering students' cultural identities in their course planning. They should also share resources and lessons dedicated to helping teachers discuss issues of race and racism, sexism and other cultural issues, in ways that empower students of color rather than alienate them. They should also share resources with teachers designed to have all students critically examine issues of race and racism nationally, as well as locally.

Recommendations for School Leaders

This study finds that students of color are still underrepresented in the AP Capstone program compared to their overall school populations. As previous research has shown, open access alone is ineffective in reducing disparities in AP participation (Kettler & Hurst, 2017). Schools that do effectively reduce disparities in AP participation provided additional support structures for students and professional development for teachers. They also worked to change teachers' perceptions of and expectation for students (Griffon & Dixon, 2017). This suggests that

schools whose populations students of color are underrepresented in AP Capstone should take several steps.

Leaders of schools that offer the AP Capstone program should intentionally assign teachers who believe they can address the cultural needs of all students to teach the AP Capstone classes. Several interviewees also described how existing programs on their campus hinder some students from being able to access AP Capstone, or in other ways discourage students from enrolling. While the majority of interviewees described Capstone classes that mirror the national trend of overrepresentation of female students and underrepresentation of male students, one interviewee described how her classes comprising majority male students. Her explanation was that her school site has AP Capstone embedded within an existing STEM magnet, which follows the national trend of male students overrepresented in STEM AP classes and female students underrepresented.

Other interviewees described how some students of color may have had unpleasant experiences with previous AP work, or otherwise be "scared" to join the AP Capstone classes. This suggests that school leaders at sites like this by following the example of the schools that Griffon and Dixon (2017) report on, by increasing access while also providing professional development for teachers to shift teacher perceptions of students, as well as teacher expectations. 62% of AP Seminar teacher in this study agreed that AP Seminar is a good first AP class for students. Thus, school leaders have an opportunity to potentially use the AP Capstone program to enact the sort of programmatic change the Griffon and Dixon report on. This could be especially impactful, give Capstone's potential for cultural responsiveness. More specifically, school leaders should work to change their overall school cultures. These changes need to include a guarantee that all students have access to qualified teachers not only in AP Capstone, but in all

classes that might direct students into the AP Capstone program. Additionally, they should provide additional academic supports to all students, to ensure that all students can succeed in advanced classes. More significantly, though, they should work to develop a multicultural college-going identity.

Additionally, several interviewees in this study were not familiar with how students are initially recruited for AP Capstone. However, those interviewees whose responses most showed indications of cultural responsiveness described how they were actively working with their administration to increase representation of students of color. As Cherng (2017) shows, many students of color choose to enroll in advanced classes based on the personal suggestions of an adult, often a teacher. School leaders should consider this, and work with AP Capstone teachers as well as others, to identify capable students and personally reach out to encourage them to enroll in the program. This includes developing connections with all parent groups, as well as the larger community, to support students taking advanced class. More significantly, school leaders should work to understand the processes by which students in their schools are tracked, and work to eradicate racist bias in school tracking processes.

Study Limitations

This study draws on a sample of AP Capstone teachers nationwide. To maximize representativeness, I randomly selected participants (Fowler, 2014). I also posted the survey directly to several online communities where AP Capstone teachers are active and requested that fellow AP Capstone consultants distribute the survey to their past trainees. So, while the sample is not entirely random, it is purposively constructed. To determine representativeness, I compared my sample to the larger population of AP Capstone teachers and determined that that sample is largely representative in terms of geographical distribution (Huck, 2012). As College

Board does not track AP Capstone teachers' race, ethnicity, or gender, I am not able to make a decisive determination as to representativeness along these lines. However, in line with existing research (Burton et al., 2002), fewer than 10% of the teachers sampled identified as teachers of color. While these teachers would likely provide valuable insight in their interviews, every teacher identifying as a teacher of color either declined to provide contact information for further research or taught in a majority White school with survey responses indicating low attempts at cultural responsiveness or did not respond to requests for an interview. This omission of teachers of color in the interviewee sample represents a significant limitation to this study, as well as an avenue for future research. Additionally, several interviewees in my sample mentioned the impact a teacher of color had on their curriculum planning during the AP Capstone trainings. Thus, future research should seek to identify these teachers to study.

Additionally, low response rates and attrition may limit the conclusions of the study (Huck, 2012). I emailed 770 teachers directly and received 250 responses. I am unable to track how many participants responded via the survey link I posted to online communities, or that other consultants emailed. Thus, the survey response is below 30%, but the exact rate is indeterminable. Of the 250 respondents, I considered 216 valid for analyses, meaning that they answered all substantive questions about curriculum, instruction, feedback and assessment, and community. However, only 174 of these 216 answered all demographic questions. As a result, some respondents were excluded from my correlational analyses. These respondents may also exhibit some degree of response bias, as they may represent those teachers most enthusiastic about sharing their perspectives on teaching the course. Future research can address this by distributing an abbreviated version of the survey to increase participants' willingness to respond (Fowler, 2014).

Additionally, my own personal biases as a fellow AP Capstone teacher may be a possible threat to validity of my interpretations. It may be that I harbor unspoken attitudes about the proper way to teach these courses. Reactivity bias is also a possibility (Maxwell, 2013). Since this project will focus on pedagogy, decision making and teacher beliefs, teachers may choose socially desirable responses. However, interviewees were candid in their responses, discussing their own challenges and shortcomings. Additionally, my position as a consultant and trainer for College Board, as well as fellow AP Capstone teacher creates the possibility that I may have imposed my own bias and perspectives on participant responses. In order to minimize my own bias and ensure internal validity of the qualitative data collected, I conducted member checks with participants via email (Merriam & Tisdell, 2016). Several participants provided documents related to their interview responses, such as syllabi, lesson plans, and examples of student work. Thus, I was able to triangulate my analyses of many interviewee responses.

Conclusions and Future Directions

I conducted this study to see to what extent AP Capstone teachers are using culturally responsive approaches to support the academic development of students of color, who have historically been underrepresented in AP classes. The findings here suggest some positive developments, with much room for us all to grow. Like most of us in education, many AP Capstone teachers can still better serve their students of color by critically reflecting on their own perspective, and by getting to know those students in their classes as well as those students who are not represented in their classes and designing learning experiences that support and sustain students' cultures.

This study also investigated possible correlations between teacher demographics, school factors, and a teacher's use of culturally responsive practices. I found very few associations here,

which is reassuring in a way. If a teacher's approach to their classes is not largely predicted by external variables, then any teacher can engage in the sort of reflection necessary to adopt a culturally responsive approach. Despite this, I did find some associations between gender and use of culturally responsive approaches. The number of non-binary teachers in this study is too few to accurately generalize, suggesting a need for possible research. Additionally, male AP Seminar teachers are less likely to teach topics and themes that promote development of students' critical consciousness, particularly in regard to race and gender. Future research should attempt to further investigate these findings, and study possible reasons why this may be the case.

While this study examined teachers' approaches, it did not investigate the impact of these approaches on students. Currently, no formal study has explored the extent to which students of color believe that AP Capstone offers the opportunity for culturally responsive AP coursework. Thus, there is a need to conduct further research into student experiences, particularly in those classes where teachers indicate that they are using culturally responsive approaches. Additionally, future research should study the effect of such practices on students' exam performance. Along those lines, a study that identifies teachers who show notable success in overcoming the AP achievement gap with their students of color would yield valuable data to share best practices.

My analysis of teachers' approaches is based on teachers' interview responses, along with some triangulation based on documents they've provided. While I have been impressed with the instruction and approaches that I have heard, there is a need for a more in-depth qualitative analysis of teachers' classrooms. Such qualitative research might also investigate how

these teachers work to engage students' families and communities in supporting their academic success.

Additionally, this study found that students of color are still underrepresented in AP Capstone, even when teachers use culturally responsive approaches. Interviewees revealed a broad range of approaches at their school sites in how students are recruited for or made aware of AP Capstone. Additionally, many school sites have unique local conditions that impact how AP Capstone is implemented. Future research should examine school sites' programming decisions, as well as implementation of AP Capstone, to identify possible causes to explain the underrepresentation of students of color in AP Capstone classes. Such research might provide useful data to help reverse this trend of underrepresentation.

Perhaps the most necessary avenue for future research is in the area of shifting teacher beliefs and perceptions of students, especially in the context of advanced classes. Teacher beliefs, both stated and implicit, have a powerful impact on the sorts of students who get into advanced classes, as well as how those students experience AP classes. This creates an imperative for future researchers to study ways to shift teachers' assumptions, and to create more proactive antiracist mindsets.

Personal Reflection

After conducting this study, I have had occasion to reflect on next steps for my own work. These findings suggest changes I should make to my own classroom practices, as well as in my leadership capacity at the large, suburban charter high school where I currently hold a leadership position. Additionally, given my role as a consultant who trains AP Capstone

teachers, and my access to the College Board leadership, I have several ways in which I can work to overcome systemic issues of racism and try to recruit others in antiracist work.

In terms of my own classroom practices, I have had occasion to reflect on the ways in which my own teaching impacts students. I offer a quote from one of the students who inspired me to conduct this study. I met this student as an 11th grader, when another teacher recommended that he take my AP Seminar class. He had, by his own admission, been largely uninterested in school until his junior of high school, at which point he experienced an awakening of sorts. Upon graduating high school, he wrote me the following note:

> You gave me the opportunity to become curious about my culture, and, in doing so, be able to develop an identity for myself. I encourage you to keep finding students who, like me, have that potential, but have yet to find that sense of motivation to purse an education. More importantly, I challenge you to also make students curious about their own identities and how they can use their passion to create change in the community. It has often been said, "the tortoise only makes progress when its neck sticks out." I am convinced that anyone can succeed in the educational system if they are given an equal opportunity and the motivation to succeed.

This year, he will begin his first year as a doctoral student at this university.

While I am touched to receive these sentiments, I know there are, and have been throughout my teaching career, students who have been left out of the curriculum, and damaged by this omission. Thus, I am conscious of my former students' challenge to "make students curious about their own identities and how they can use their passion to create change in the community." This includes the imperative to continuously learn about the students in my classroom, and to engage their parents and communities in their learning.

I have also recently had the opportunity to start this work in my leadership capacity at the school where I teach. I am working with a group of students who came to me with the goal of getting English teachers on our campus to diversify their curriculum. Rather than simply adopting more diverse texts, though, I am working with these students to enact change in how

our teachers plan, structure their courses and interact with students, to create a more antiracist English department that serves the needs of all students. This includes getting teachers to understand the impacts of tracking and other racist practices on our campus, directly naming them, and engaging teachers in difficult conversations about their own assumptions and biases.

Lastly, I will be using my own access to College Board leadership to work towards a more just and equitable program. While there is much that is commendable about the AP Capstone program, the results of this study suggest that nationwide, it is mainly being implemented and taught in a colorblind fashion that reinforces current racist trends. I intend to use the results of this study, as well as my experiences teaching the course and training teachers, to shift the culture of AP Capstone from the top-down, by sharing these findings. I also hope to affect change horizontally by imploring my fellow consultants to do the same, as well as those teachers I train.

APPENDIX A. Survey

AP Capstone Study

Study on AP Capstone Curricula and Approaches.
This study is being conducted to examine the various ways teachers are approaching their AP Capstone classes. Given the wide range of possible topics, curricula and thematic approaches in the program, this study seeks to understand how teachers are planning and teaching their courses. Your candid opinions and perspectives will help inform our understanding of this unique program. Please note that your privacy will be protected by ensuring that all survey responses are aggregated and de-identified. Thank you very much for your participation!

About the Researcher
Spencer Wolf is an AP Capstone teacher-- both AP Seminar and AP Research--as well as a consultant for the College Board and a doctoral student at the University of California, Los Angeles. This study is being conducted as part of a dissertation in Educational Leadership. You were selected as a possible participant in this study because you are a current AP Capstone teacher. Your participation in this evaluation study is voluntary.

What will happen if I take part in this research study?
If you volunteer to participate in this study, the researcher will ask you to complete an online survey, and to indicate your willingness to be contacted for further qualitative investigation. The survey will include questions about your background, school characteristics, and your planning and instructional practices (including curricula, assessment, etc.) You may be asked to participate in an interview via telephone or video chat, and share further documents, such as syllabi and lesson plans, if selected

How long will I be in the research study?
The initial survey should take no more than 20 minutes. If you are willing, and selected, you may be contacted and asked to participate in an additional interview of approximately 1 hour.

Are there any potential risks or discomforts that I can expect from this study?
There are no anticipated risks or discomforts.

Are there any potential benefits if I participate?
Your participation in this study will be used to understand how teachers are approaching AP Capstone. It is expected that the findings of this study could lead to sharing of best practices among other AP Capstone teachers and benefit the program generally.

Will information about me and my participation be kept confidential?
Any information that is obtained in connection with this study and that can identify you will remain confidential. It will be disclosed only with your permission. Confidentiality will be maintained by removing identifying information from datafiles and storing all datafiles in secure, password protected computer servers accessible only to the researcher. Your data, including de-identified data may be kept for use in future research."

What are my rights if I take part in this study?
You can choose whether or not you want to be in this study, and you may withdraw your consent and discontinue participation at any time. Whatever decision you make, there will be no penalty to you. You may refuse to answer any questions that you do not want to answer and still remain in the study.

Who can I contact if I have questions about this study? The research team: If you have any questions, comments or concerns about the research, you can talk to one of the researchers. Please contact: Spencer Wolf at (661) 557-1014, or mspencerwolf@g.ucla.edu or the faculty sponsor, Mark Hansen at markhansen@ucla.edu

UCLA Office of the Human Research Protection Program (OHRPP):
If you have questions about your rights as a research subject, or you have concerns or suggestions and you want to talk to someone other than the researchers, you may contact the UCLA OHRPP by phone: (310) 206-2040; by email: participants@research.ucla.edu or by mail: Box 951406, Los Angeles, CA 90095-1406.

Q1 Do you agree to take part in this study?
    Yes
    No

Q2 How many sections of **AP Seminar** did you teach in 2019-2020?

▼ I did not teach AP Seminar in 2019-2020. ... 8

Q3 How many sections of **AP Research** did you teach in 2019-2020?

▼ I did not teach AP Research in 2019-2020. ... 8

The next set of questions ask about your experience teaching **AP Seminar**.

Q5 Please indicate how you feel about the **difficulty of teaching** AP Seminar.

	a lot less difficult	somewhat less difficult	somewhat more difficult	a lot more difficult
Compared to other AP classes, teaching AP Seminar is . . .				
Compared to other non-AP classes, teaching AP Seminar is . . .				

Q6 Please indicate how you feel about the **flexibility of teaching** AP Seminar.

	a lot less flexibility	somewhat less flexibility	somewhat more flexibility	a lot more flexibility
Compared to other AP classes, teaching AP Seminar provides . . .				
Compared to other non-AP classes, teaching AP Seminar provides . . .				

Q7 Please indicate your **enjoyment of teaching** AP Seminar.

	a lot less enjoyable	somewhat less enjoyable	somewhat more enjoyable	a lot more enjoyable
Compared to other AP classes, teaching AP Seminar is . . .				
Compared to other non-AP classes, teaching AP Seminar is . . .				

Q8 Please indicate how you expect your AP Seminar students will perform in the course this school year.

	fewer than 25%	between 25% and 50%	between 50% and 75%	more than 75%
The number of my students I expect to earn a 3 or higher on the exam is . . .				
The number of my students I expect to earn a C or higher . . .				

Q9 Please indicate the extent to which you agree AP Seminar can benefit students.

	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
AP Seminar is a good first AP class for students.				
AP Seminar benefits students' academic growth.				
AP Seminar benefits students' academic growth more than other AP classes.				
AP Seminar benefits students' academic growth more than other non-AP classes.				
AP Seminar is a good class for all college-bound students.				

Q13 Please indicate how you feel about the **difficulty of teaching** AP Research.

	a lot less difficult	somewhat less difficult	somewhat more difficult	a lot more difficult
Compared to other AP classes, teaching AP Research is . . .				
Compared to other non-AP classes, teaching AP Research is . . .				

Q14 Please indicate how you feel about the **flexibility of teaching** AP Research.

	a lot less flexibility	somewhat less flexibility	somewhat more flexibility	a lot more flexibility
Compared to other AP classes, teaching AP Research provides . . .				
Compared to other non-AP classes, teaching AP Research provides . . .				

Q15 Please indicate your **enjoyment of teaching** AP Research.

	a lot less enjoyable	somewhat less enjoyable	somewhat more enjoyable	a lot more enjoyable
Compared to other AP classes, teaching AP Research is . . .				
Compared to other non-AP classes, teaching AP Research is . . .				

Q16 Please indicate how you expect your AP Research students will perform in the course this school year.

	Fewer than 25%	Between 25 and 50%	Between 50 and 75%	Above 75%
The number of my students I expect to earn a 3 or higher on the exam is . . .				
The number of my students I expect to earn a C or higher is . . .				

Q17 Please indicate the extent to which you agree AP Research can benefit students.

	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly Agree
AP Research benefits students' academic growth.				
AP Research benefits students' academic growth more than other AP classes.				
AP Research benefits students' academic growth more than other non-AP classes.				
AP Research is a good class for all college-bound students.				

The next set of questions ask about your curriculum planning for **AP Research.**

Q20 How much emphasis do you place on having students learn each of the following types of research in your **AP Research** course?

	No emphasis	Little emphasis	Some emphasis	This is a major emphasis of my course
Participatory Action Research				
Surveys				
Ethnography				
Interviews				
Arts-based research				
Experiments				
Focus groups				
Content analysis				
Correlational research				

Q21 How often do you model the following goals of research in your **AP Research** course?

	Never/Hardly ever	Several times a year	Once or twice a month	Once or twice a week	Almost every class session/period
Creating (solutions to problems, art works, new technologies)					
Exploring quantitative relationships between variables/constructs					
Exploring phenomena					
Explaining phenomena					

The next set of questions ask about your curriculum planning for AP Seminar.

Q22 How much emphasis do you place incorporating each of the following factors in your AP Seminar curriculum?

	No emphasis	Little emphasis	Some emphasis	This is a major emphasis of my course
The personal experiences of my students				
The home languages of my students				
Material that reflects the cultural diversity of students in my classes				
Resources and materials that promote multiculturalism				
Topics on which I personally have expert knowledge				
Texts that students are likely to see in college courses				
Texts that students are likely to see on the AP Seminar End of Course exam				
Texts from published textbooks (e.g. The Language of Composition, The American Pageant)				
Texts from published anthologies, (e.g. The Best American Essays)				

Q23 Optional. In a few words, describe what you feel is most important in choosing texts and curriculum.

Q24 How much emphasis do you place on the following types of topics in your **AP Seminar** curriculum?

	No emphasis	Little emphasis	Some emphasis	This is a major emphasis of my course
Topics generated directly by students				
Topics addressing general social problems				
Topics addressing cultural stereotypes and prejudices				
Topics addressing sexism				
Topics addressing racism				
Topics addressing gender issues				
Topics addressing privilege and power dynamics				
Topics addressing social problems in your school's neighborhood, town or city				
Topics addressing social problems in your students' unique cultural communities				

Q26 In a few words please describe the main topics, issues or themes you taught in your **AP Seminar** course in 2019-2020.

Q27 How do these topics, issues or themes compare to the ones that you taught in 2018-2019?
    Mostly the same
    I made some changes
    I made significant changes
    I did not teach AP Seminar in 2018-2019

Q28 Optional. In a few words, why did you select new topics, issues, or themes for the 2019-2020 year?

Q29 Do you plan on teaching these same topics, issues or themes in the 2020-2021 school year?
    Yes
    Yes with some changes
    No
    I am not teaching or am unsure if I am teaching AP Seminar in 2020-2021

Q30 Optional. In a few words, why did you choose new topics, issues or themes in the 2020-2021 school year?

Q35 How much emphasis do you place on including the following considerations into your **AP Research** curriculum?

	No emphasis	Little emphasis	Some emphasis	This is a major emphasis of my course
The personal experiences of my students				
The home languages of my students				
Material that reflects the cultural diversity of students in my classes				
Resources and materials that promote multiculturalism				
Topics on which I personally have expert knowledge				
Texts that students are likely to see in college courses				
Lessons and texts from published textbooks (e.g., Practical Research, The Bedford Research, Research Methods: Design and Analysis)				

Q36 Optional. Please describe some of the examples, texts or curricula you use in **AP Research**.

Q37 How much emphasis do you place on including the following types of topics in your **AP Research** curriculum?

	No emphasis	Little emphasis	Some emphasis	This is a major emphasis of my course
Topics generated directly by students				
Topics addressing general social problems				
Topics addressing cultural stereotypes and prejudices				
Topics addressing sexism				
Topics addressing racism				
Topics addressing gender issues				
Topics addressing privilege and power dynamics				
Topics addressing social problems in your school's neighborhood, town or city				
Topics addressing social problems in your students' unique cultural communities				

Q38 How often do you use the following instructional approaches in **AP Seminar**?

	Never/Hardly ever	Several times a year	Several times a term	Several times a month	Almost every class session/period
Lecture					
Teacher-led whole-group discussions					
Teaching end of course test strategies					
Activities that build on students' prior knowledge					
Collaborative activities					
Student-directed discussions (e.g., Socratic seminars, etc.)					
Targeted instruction to small groups of students					
Targeted instruction to individual students					

Q39 How often do you use the following instructional approaches in **AP Research**?

	Never/Hardly Ever	Several times a year	Several times a term	Several times a month	Almost every class session/period
Lecture					
Teacher-led whole-group discussions					
Activities that build on students' prior knowledge					
Collaborative activities					
Student-directed discussions (e.g., Socratic seminars, etc.)					
Targeted instruction to small groups of students					
Targeted instruction to individual students					

Q40 How effective do you feel each of the following instructional approaches are?

	Not at all effective	Minimally effective	Somewhat effective	Very effective
Lecture				
Teacher-led whole-group discussions				
Activities that build on students' prior knowledge				
Collaborative activities				
Student-directed discussions (e.g., Socratic seminars, etc.)				
Targeted instruction to small groups of students				
Targeted instruction to individual students				

Q41 How often do you use the following assessment approaches in your **AP Seminar** classes?

	Never/Hardly Ever	Several times a year	Several times a term	Several times a month	Almost every class session/period
Multiple-choice questions					
Short answer questions (e.g., sentence or paragraph length response)					
Essay questions					
Formative Presentations					
Portfolios and Reflections					
Informal conversations with students					

Q42 How often do you use the following assessment approaches in your **AP Research** classes?

	Never/Hardly Ever	Several times a year	Several times a term	Several times a month	Almost every class session/period
Multiple-choice questions					
Short answer questions (e.g., sentence or paragraph length response)					
Essay questions					
Formative Presentations					
Portfolios and Reflections					
Informal conversations with students					

Q43 How often do you give students feedback in the following formats?

	Never/Hardly ever	Several times a year	Several times a term	Several times a month	Almost every class session/period
Numerical or letter grades					
Phrase or sentence level descriptions of strengths and weaknesses					
Page length descriptions of student strengths and weaknesses					
Teacher-led conversations with individual students about student strengths and weaknesses					
Student-led conversations about individual students' strengths and weaknesses					
Student-led peer to peer feedback					

Q44 How effective do you feel each of the following types of feedback are in helping students develop their skills?

	Not effective at all	Minimally effective	Somewhat effective	Very effective
Numerical or letter grades				
Phrase or sentence level descriptions of strengths and weaknesses				
Page length descriptions of student strengths and weaknesses				
Teacher-led conversations with individual students about student strengths and weaknesses				
Student-led conversations about individual students' strengths and weaknesses				
Student-led peer to peer feedback				

Q45 Please indicate the extent to which you agree with each of the following statements about classroom environment.

	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
Students learn best when they see their cultural backgrounds reflected in an academic environment.				
I make it a point to highlight the cultural backgrounds of students in my classroom.				
Learning happens most effectively when I build a strong sense of community.				

Q46 Optional. In a few words, what are some specific activities or strategies you use to develop a sense of community?

Q49 Optional. In a few words, what value, if any, do you see in students taking **AP Seminar**?

Q50 Optional. In a few words, what value, if any, do you see in students taking **AP Research**?

Q51 In a few words, what specific goals for the course do you communicate to your **AP Seminar** students?

Q51 In a few words, what specific goals for the course do you communicate to your **AP Research** students?

The next six (**6**) questions ask about AP Capstone enrollment at your entire campus in 2019-2020.

Q52 In which grade level or levels do students at your school take **AP Seminar**? Select all that apply.
   9th
   10th
   11th
   12th

Q53 In which grade level or levels do students at your school take **AP Research**? Select all that apply.
   9th
   10th
   11th
   12th

Q54 How many sections of **AP Seminar** did your school offer in 2019-2020?

▼ Unsure ... 10 or more

Q55 How many sections of **AP Research** did your school offer in 2019-2020?

▼ Unsure ... 10 or more

Q56 Approximately how many students at your school were enrolled in **AP Seminar** in 2019-2020?

▼ 1-9 ... Unsure

Q57 Approximately how many students at your school were enrolled in **AP Research** in 2019-2020?

▼ 1-9 ... Unsure

The next questions ask about the AP Capstone classes that you personally taught in 2019-2020.

Q58 Approximately how many students did you personally teach in **AP Seminar** in 2019-2020?

▼ 1 ... 200 or more

Q59 Of the **AP Seminar** students whom you taught in 2019-2020, how many students . . .

. . . completed the course with a grade of C or higher?	▼ I prefer not to say ... 200
. . . submitted all their assessment components?	▼ I prefer not to say ... 200
. . . earned a score of 3 or higher?	▼ I prefer not to say ... 200
. . . will be taking AP Research in 2020-2021?	▼ I prefer not to say ... 200

Q60 Approximately how many students did you personally teach in **AP Research** in 2019-2020?

▼ 1 ... 200 or more

Q61 Of the **AP Research** students whom you taught in 2019-2020, how many students . . .

. . . completed the course with a grade of C or higher?	▼ I prefer not to say ... 200
. . . submitted all their assessment components?	▼ I prefer not to say ... 200
. . . earned a score of 3 or higher?	▼ I prefer not to say ... 200

The next questions ask about your school demographics. Please answer to the best of your ability, based on your current knowledge. If you do not know, or do not have easy access to this information, please select "Unsure."

Q62 What was the total number of students enrolled in your school in 2019-2020?

▼ 1-99 ... Unsure

Q63 Approximately what percentage of students at your school received free or reduced lunch in 2019-2020?

▼ 0-9% ... Unsure

Q64 What percentage of seniors enrolled in your school in fall 2019 graduated in spring 2020?

▼ 0-9% ... Unsure

Q65 What percentage of 2020 graduates entered a four-year college?

▼ 0-9% ... Unsure

Q66 Approximately what percentage of students in your school in 2019-2020 were English Learners?

▼ 0-9% ... Unsure

Q67 Approximately what is the percentage of students **at your school** in each of the following racial/ethnic groups in 2019/2020?

Native American/American Indian	▼ 0-9% ... Unsure
Asian/Asian American	▼ 0-9% ... Unsure
Black/African American	▼ 0-9% ... Unsure
Latinx	▼ 0-9% ... Unsure
White	▼ 0-9% ... Unsure
Other	▼ 0-9% ... Unsure
Two or more races	▼ 0-9% ... Unsure

Q68 Approximately what is the percentage of **AP Capstone students whom you taught** in each of the following racial/ethnic groups in 2019/2020?

Native American/American Indian	▼ 0-9% ... Unsure
Asian/Asian American	▼ 0-9% ... Unsure
Black/African American	▼ 0-9% ... Unsure
Latinx	▼ 0-9% ... Unsure
White	▼ 0-9% ... Unsure
Other	▼ 0-9% ... Unsure
Two or more races	▼ 0-9% ... Unsure

Q69 Approximately what percentage of **AP Capstone students whom you taugh**t received free or reduced lunch in 2019-2020?

▼ 0-9% ... Unsure

Q70 Does your school have any of the following requirements for entrance or admission? (Please select all that apply).

	Yes	No	Unsure
Test results			
Grades			
Letters of recommendation			
Interview			
Other (Please explain)			

Q71 How do students at your school learn about AP Capstone? Please select all that apply.
AP information nights
Recruitment videos posted to school website
Recruitment videos shown in classes
Teacher presentations to Honors or AP classes
Teacher presentations to all students
Direct outreach to students based on AP Potential scores
Counselor meetings with students
Student-to-student classroom presentations
Word of mouth
Other _____

Q72 In which state is your school located?

▼ Alabama ... Outside of the United States

Q73 In which city is your school located?

Q74 Which of the following best describes the area in which your school is located?
Urban/large city
Suburban
Small town
Rural area

Q75 Which of the following best describes your school?
Public, part of a district
Public charter, part of a network
Public charter, independent
Private, religious
Private, non-religious
Other (Please specify) _____

The next questions ask about your background and teaching experience.

Q76 What is your gender?
    Male
    Female
    Non-binary
    I self-describe as _____
    I prefer not to say

Q77 Which of the following best describes your race/ethnicity? Please select all that apply.
    Native American/American Indian
    Asian/Asian American
    Black/African American
    Latinx
    White
    Other (Please specify) _____
    I prefer not to say

Q78 Including the 2020-2021 school year, how many years total have you been teaching?

▼ 1 ... 35

Q79 Including the 2020-2021 school year, how many years have you taught AP Seminar?

▼ 1 year ... 5 years or more

Q80 Including the 2020-2021 school year, how many years have you taught AP Research?

▼ 1 year ... 5 years or more

Q81 Which other AP courses do you teach, if any? Please select all that apply.

Q82 Which of the following best describes the primary content area in which you teach?

▼ English Language Arts/ Literature ... Other (Library and Media specialist, etc) Optional: Please specify

Q84 Which of the following best describes how you came to teach **AP Seminar**? Please select all that apply.
I volunteered to teach it
A colleague recommended that I teach it
My school leadership requested that I teach it
Other _____

Q85 Which of the following best describes how you came to teach **AP Research**? Please select all that apply.
I volunteered to teach it
A colleague recommended that I teach it
My school leadership requested that I teach it
Other _____

Q86 Which of the following best describes how you initially designed your **AP Seminar** course syllabus? Please select all that apply.
I developed it entirely myself
I developed it in collaboration with a colleague or colleague(s) at my school site
I adapted it from a course audit syllabus
I adapted it from a syllabus from a different school site

Q87 Which of the following best describes how you initially designed your **AP Research** course syllabus? Please select all that apply.
I developed it entirely myself
I developed it in collaboration with a colleague or colleague(s) at my school site
I adapted it from a course audit syllabus
I adapted it from a syllabus from a different school site

Q88 Which of the following academic degrees you hold? Please select all that apply.
Bachelor's degree
Master's degree
Education specialist or professional diploma based on at least one year's work beyond master's degree
Doctorate/PhD
Professional degree (e.g. M.D., LL.B, J.D., D.D.S.)

Q89 **Follow up interview**
Based on your responses, the researcher may be interested in your insight into how AP Capstone is being taught. Follow-up interviews will be conducted remotely, via video chat or telephone. Interviews will cover topics such as specific unit plans teachers have designed, as well students' engagement with particular topics, texts and teaching and assessment strategies.

If you agree to a interview, you will be prompted to enter your name and email address on the following page. This information will not be shared with anyone besides the researcher.

Are you willing to be contacted for a possible follow-up interview?

Yes
No

Q90 Please provide your name and email address.

    Your name _____

    Email address _____

APPENDIX B. Interview Protocol

1.   What is a topic or text that you're teaching right now that you're excited about?

How/why did you decide to teach that?

More generally speaking, I'd like to know more about how you plan your course.

2.   Tell me about your students. What kind of students do you have in your AP Capstone

classes? What can you tell me about their backgrounds?

   a. Outside of class, who are they? What kind of cultural context do they exist in?

   b. What are some specific approaches you take to getting to know your students'

   and their backgrounds?

   c. How do you think their backgrounds impact their engagement in class? Their

   growth in your class?

3.   Broadly speaking, what are your goals for the course and for students?

   a. How does this class fit in with your school's mission and vision? Your own

   educational philosophy?

4.   Tell me how you communicate these goals, and support students in reaching them.

5.   How is Capstone different than any other courses you teach? In what specific ways is

Capstone a different teaching challenge than your other courses?

   a. How do you approach it differently? How is the experience different for kids?

6.   What topics and themes did you choose to frame your course? Why these ones?

   a. How do students respond to your curriculum?

7.   What key texts do you use in class? How/why did you choose these ones?

      a.   How do students respond to those? To what extent does this text or texts allow students to examine issues of cultural importance?

8.   Describe how you have students interact with these texts. What do you do to help them engage with the topics you've chosen?

9.   Describe some of the strategies you use to engage students and develop their skills

10.   Describe some of the strategies you use to guide them to success on the performance tasks?

      a.   Do you have favorite strategies that you use to help students engage?

      b.   Do you have specific strategies that you've found to be effective?

11.   Describe how you create your classroom culture/environment.

      a.   Describe some specific strategies—what's it like to be a kid in your class?

12. Describe some of the ways you allow students to make their own cultural backgrounds an explicit focus of the course content?

13.   Describe your instructional planning: what skills do you focus most on throughout the year? Which did you emphasize? How? Why?

14.   Have you made any major changes to how you teach your class since the first time you taught it?

      a.   What worked the first time? What didn't? What did you struggle with?

15.   How do you guide students into their topic selection for the performance tasks? How do you set them up to be successful?

16.   What kinds of topics do students in your class gravitate towards for the performance tasks? Tell me more about that.

      a.   Do you have any theories as to why students favor these types of topics?

17.   Describe some of the activities or other in class experiences you plan for your students. How do you try to engage with your kids?

18.   How do you know when your kids are responding to the topics or texts you've picked? How do you monitor that?

        a. How do you know when a particular lesson, [or assignment, activity, or project] effectively engaged students? Can you give an example?

        b. How do you know when a particular lesson, or assignment, activity, or project] wasn't effective for your students? Can you give an example?

19.   Describe your assessment approach. How do you assess students? How do you give feedback? What are the main things you assess? How is Capstone different from other classes you may have taught?

20.   What does class time look during the performance tasks? How do you structure interactions with kids?

17. How does your own background impact how you interact with your Capstone students?

APPENDIX C. Codebook for Qualitative Analysis

Teacher reflection

Teachers reflecting on own perspective and positionality

Other teachers inspiring teachers to reflect on responsiveness of curriculum

More experience with course, more ability to diversify curriculum

Teachers using the class to raise students' awareness of 'real world'

Social justice issues

Political issues

Environmental issues

Mental Health

Public education

Students critically analyzing social issues as part of their exam work

Students investigating race in performance tasks

Students investigating culture in performance tasks

Students investigating gender in performance tasks

Students investigating other topics

Developing students' Critical Consciousness in class- activities and lessons

Fostering intercultural understanding: Students learn to understand and appreciate others

from different backgrounds

Encouraging students to explore issues across cultural context

Developing tolerance by challenging student's prejudice

Developing students' critical consciousness to analyze gender issues

Developing students' critical consciousness by getting students to express and actively

understand perspectives different from their own

Developing students' critical consciousness to analyze race and racism

The struggle of getting students to recognize their own privilege and perspective

Students investigating general issues in their communities

Classroom community

Students are encouraged to explore alternative viewpoints

Students learn to listen and understand other perspectives to develop understanding

Creating a safe, welcoming atmosphere

Getting to know students on a personal level

Learning students' lives and identities through journaling/interaction

Viewing student identity as dynamic and multi-faceted

Building classroom culture by beginning with low stakes conversation, moving to
critical discussion

Safe, welcoming teacher interactions with students

Curriculum Rooted in Students' local communities- topics and texts

Analyzing general social issues in students' communities

Analyzing racial issues in students' local contexts

Analyzing cultural issues in students' local contexts

Analyzing gender issues in students' local contexts

Teacher Expectations of Students

Expectations for success on exam

Expectations to produce meaningful work

Expectations for students to perform poorly due to disengagement

Gendered expectations for student interests

Curriculum Planning

Planning for student skill development, rather than content

Curriculum aligned with student interests

Student voice in curriculum

Curriculum on issues of race in America

Curriculum Planning- cultural issues, generally

Diversifying curriculum to represent student's racial backgrounds

Representation of minority students in student demographics

Recruiting students to increase access for underrepresented minority students

Recruiting, other factors

Other attempts to increase representation

Assumptions about reasons for underrepresentation

General knowledge about socioeconomic status

Knowing races and cultures represented in class

Value of Capstone- meaningful, transferable skills

Value of Capstone diversify curriculum

Value of course- encourages exploration of diverse perspectives

Value of course- student academic skill growth

Value of course- student awareness of larger social issues

Value of course, students explore personal interests

Value of Course, student personal growth

Value of Course, College Preparation

Value of Course, Other opportunities

Potential burden on students when combined with other courses

Assessments and feedback

Assessment- grades deemphasized in favor of deeper learning

Assessment- formative feedback for success on exam performance tasks emphasized

Feedback for student ownership of skill development

Instructional activities

Scaffolded skill development, with exemplars

Students Learn Cooperatively and Collaboratively

Students work in groups for mutual support on exam performance tasks

Students construct academic work collaboratively

Students visually represent their work and present for formative feedback from peers

Students engage in frequent peer review to encourage reflection on work

Former students who have been successful on exam mentor current students

Former students who've gone to college share benefits of class to current students

Impact of Covid on learning

Negative impacts on feeling of community/connectedness

Burden on teachers- new modes of teaching

Limitations on types of student work

Need to modify curriculum to maintain student interest

Student reluctance to engage critically with topics

Local Implementation of Capstone

Assigning elective credit to Seminar/Research

Capstone within the context of existing academic programs

Academic programming influencing students enrolled in course

Teachers expressing the need to advocate for Capstone and clarify nature of

classes to admin

Working to create more flexibility for students to take Seminar

Schedule needs

Skill development

Exploratory Factor Analyses and Reliability Analyses

Here I discuss the factor analyses and reliability analyses I conducted in order to construct my culturally responsive pedagogy scores.

AP Seminar

The *Curriculum Planning* block focuses on factors that teachers consider important when planning curriculum. This block includes 9 items total, including some that suggest cultural responsiveness, as well as non-responsive considerations that AP teachers might nonetheless base their curriculum planning on. *Topics and Themes* focuses on the actual content of teachers' courses, rather than the factors that they consider important in planning curriculum. Again, this block contains 9 items total, some of which likely suggest cultural responsiveness, as well as other items that AP teachers might incorporate into their classes. *Instructional Strategies* includes 8 items total. These include items related to collaboration and differentiation, as well as more typical AP teacher instructional strategies. The *Assessment* block includes 6 items related to typical AP class instructional strategies, strategies that may be particular to AP Capstone, and items that may suggest cultural responsiveness. The *Feedback* block comprises 6 items, based on similar considerations. Lastly, the *Classroom Community* block consists of 3 items related directly to teachers' beliefs about classroom community and culture, all of which might suggest a culturally responsive approach to creating community in the classroom.

Within the *Curriculum Planning* block, items 2-5 loaded on factor 1, and items 6-9 loaded on factor 2, as Table D1 shows. Items 2-4 were then labelled *Culturally Responsive Curriculum*. Item 5, which reads "curriculum on which I have expert knowledge" was not included in the combined score. While there is likely overlap between this item and *Culturally*

Responsive Curriculum, this was not seen as representing an aspect of culturally responsive curriculum specifically. Items 6-9 all loaded on factor 2. These items were combined to create a *Non-Responsive Curriculum* score.

Table D1. Factor Loadings for Seminar Curriculum Planning

	Factor 1	Factor 2	Uniqueness
SEM CURRIC PLAN 1			0.851
SEM CURRIC PLAN 2	0.538		0.677
SEM CURRIC PLAN 3	0.975		0.215
SEM CURRIC PLAN 4	0.700		0.548
SEM CURRIC PLAN 5	0.404		0.785
SEM CURRIC PLAN 6		0.502	0.645
SEM CURRIC PLAN 7		0.493	0.684
SEM CURRIC PLAN 8		0.886	0.347
SEM CURRIC PLAN 9		0.859	0.322

Note. Applied rotation method is promax.

For the *AP Seminar Topic* block, items 2-7 loaded onto Factor 1. I combined these items together to compute a score I termed *Critical Consciousness*. Items 8-9 loaded separately onto factor 2. Based on this, I combined them into a separate score named *Relevant Topics*.

Table D2. Factor Loadings for Seminar Topics

	Factor 1	Factor 2	Uniqueness
SEM TOPICS 1			0.956
SEM TOPICS 2	0.602		0.634
SEM TOPICS 3	0.856		0.283
SEM TOPICS 4	0.933		0.116
SEM TOPICS 5	0.934		0.132
SEM TOPICS 6	0.884		0.198
SEM TOPICS 7	0.846		0.303
SEM TOPICS 8		0.658	0.507
SEM TOPICS 9		0.964	0.002

Note. Applied rotation method is promax.

Exploratory factor analysis of the *Instructional Strategies* block yielded three initial factors. Items 1, 3 and 4 initially loaded on to factor 2. Item 2 did not load on to any factor. Item 4 also loaded on to factor 3. Items 7 and 8 loaded on to factor 8. Initially this block of questions was conceived as representing three separate constructs, with items 1-3 measuring non-responsive approaches, items 4-6 measuring student centered approaches, and items 7-8

166

representing differentiated instruction and support. Revisiting the questions, item 4, "activities that build on students' prior knowledge" did not bear any connection to both "lecture" and "teaching end of course strategies." I performed a separate factor analysis with items 1-3 removed. When this was performed, items 4-6 clearly loaded on to factor 2, and items 7-8 loaded on to factor 1. So, items 4-6 were combined to compute a *Student-Centered Approaches* score, and items 7-8 were combined to create a *Differentiated Instruction score*. Items 1-3 were left out of the final analysis.

Table D3. Factor Loadings for Seminar Instructional Strategies

	Factor 1	Factor 2	Uniqueness
SEM INST STRAT 4		0.596	0.651
SEM INST STRAT 5		0.643	0.555
SEM INST STRAT 6		0.450	0.809
SEM INST STRAT 7	0.652		0.467
SEM INST STRAT 8	1.052		-0.001

Note. Applied rotation method is promax.

The next two blocks of questions focused on assessment and feedback, respectively. In the *Assessment* block, items 3, 4, and 5 all loaded on to factor 1, and items 1, 2, and 6 did not load onto any factor. Upon closer examination, the three items that did load onto factor 1 most closely describe the College Board assessments for which students earn an AP score. Given the nature of this course, it is entirely to be expected that teachers prioritize the types of assessment for which students earn an AP score. However, this score does not necessarily represent a dimension of culturally responsive pedagogy. Upon a closer review of the literature, I decided to focus on the practices that teachers use to provide formative feedback as a more likely indicator of cultural responsiveness, especially given the evidence that their summative assessment practices do not deviate far from the performance tasks determined by College Board.

Table D4. Factor Analysis Seminar Assessment

	Factor 1	Uniqueness
SEM ASSESS 1		0.999
SEM ASSESS 2		0.979
SEM ASSESS 3	0.535	0.714
SEM ASSESS 4	0.675	0.544
SEM ASSESS 5	0.543	0.705
SEM ASSESS 6		0.964

Note. Applied rotation method is promax.

On the *Feedback* block, items loaded onto two factors. Items 2 and 3 both loaded onto factor 2, and items 4,5 and 6 loaded onto factor 1. Item 1, multiple choice tests showed a high degree of uniqueness. While it seems unlikely that teachers are using multiple choice tests in this class, some evidence exists that a small subset of teachers may be continuing this practice. Items 2 and 3 comprise two forms of written, evaluative feedback. Items 4, 5 and 6 comprise teacher-led conversations with students, student-led conversations, and peer-to-peer student feedback. Items 4,5, and 6 were combined to form a score for *Formative Feedback.*

Table D5. Factor Loadings for Seminar Feedback

	Factor 1	Factor 2	Uniqueness
FEEDBACK 1			0.850
FEEDBACK 2		0.620	0.575
FEEDBACK 3		0.530	0.631
FEEDBACK 4	0.423		0.799
FEEDBACK 5	0.948		0.105
FEEDBACK 6	0.480		0.778

Note. Applied rotation method is promax.

On the community block of items, items 1 and 2 loaded onto factor 1, and item 3 ("learning happens most effectively when I build a strong sense of community") showed a uniqueness factor of .95, and there was little variation in the responses to this item (96% percent of participants responded "strongly agree"). As a result, this item was left out of the final analysis, while items 1 and 2 were combined to create a score for *Centering Students' Cultures.*

Table D6. Factor Loadings for Seminar Classroom Community

	Factor 1	Uniqueness
COMMUNITY 1	1.008	-0.015
COMMUNITY 2	0.406	0.835
COMMUNITY 3	0.223	0.950

Note. Applied rotation method is promax.

Table D7. Final Exploratory Factor Analysis Seminar practices

	Factor 1	Factor 2	Factor 3	Uniqueness
SEM CURRIC PLAN 2		0.614		0.636
SEM CURRIC PLAN 3		0.710		0.487
SEM CURRIC PLAN 4		0.563		0.497
SEM TOPICS 2	0.631			0.598
SEM TOPICS 3	0.808			0.274
SEM TOPICS 4	0.925			0.128
SEM TOPICS 5	0.935			0.108
SEM TOPICS 6	0.860			0.200
SEM TOPICS 7	0.847			0.295
SEM TOPICS 8		0.456		0.656
SEM TOPICS 9		0.685		0.472
SEM INST STRAT 4			0.357	0.771
SEM INST STRAT 5			0.584	0.674
SEM INST STRAT 6			0.434	0.817
SEM INST STRAT 7		0.356	0.526	0.537
SEM INST STRAT 8			0.460	0.743
FEEDBACK 4			0.358	0.875
FEEDBACK 5			0.508	0.746
FEEDBACK 6			0.635	0.606
COMMUNITY 1		0.508		0.704
COMMUNITY 2		0.720		0.590

Note. Applied rotation method is promax.

Factor 1, critical consciousness, showed a moderate correlation of .518 with Factor 2, cultural relevance, and a weak correlation of .104 with Factor 3, effective practices. Factors 2 and 3 showed a moderate correlation of .341.

Table D8. Factor Correlations

	Factor 1	Factor 2	Factor 3
Factor 1	1.000	0.518	0.104
Factor 2	0.518	1.000	0.341
Factor 3	0.104	0.341	1.000

In order to further reduce the data and combine variables, I performed one final exploratory factor analysis on all 21 items. Part of the rationale for this is to see distinguish between those practices and approaches that could be considered generally effective that are necessary conditions for cultural responsiveness, and practices that actually engage with student culture. The items Seminar Curricular Planning 2, 3 and 4, Seminar Topic Selection 8 and 9, and Community 1 and 2 all loaded on to Factor 2. These items were combined one final time to create the variable *Cultural Relevance.* The items Seminar Topics 2-7 retained the same factor grouping as they in prior analysis. I chose to keep these items as a separate variable with the name *Critical Consciousness,* as in the prior analysis. The items Seminar Instructional Strategies 4-8, and Feedback 4, 5 and 6 all loaded on to Factor 3. While Seminar Instructional strategies 7, targeted instruction to small groups of students, also loaded on to Factor 2, this factor loading of .356 was weaker than this item's load of .526 on Factor 3. This item was thus then only included in the third final variable, which I labelled *Effective practices.*

Table D9. Final Exploratory Factor Analysis Seminar practices

	Factor 1	Factor 2	Factor 3	Uniqueness
SEM CURRIC PLAN 2		0.614		0.636
SEM CURRIC PLAN 3		0.710		0.487
SEM CURRIC PLAN 4		0.563		0.497
SEM TOPICS 2	0.631			0.598
SEM TOPICS 3	0.808			0.274
SEM TOPICS 4	0.925			0.128
SEM TOPICS 5	0.935			0.108
SEM TOPICS 6	0.860			0.200
SEM TOPICS 7	0.847			0.295
SEM TOPICS 8		0.456		0.656
SEM TOPICS 9		0.685		0.472
SEM INST STRAT 4			0.357	0.771
SEM INST STRAT 5			0.584	0.674
SEM INST STRAT 6			0.434	0.817
SEM INST STRAT 7		0.356	0.526	0.537
SEM INST STRAT 8			0.460	0.743
FEEDBACK 4			0.358	0.875
FEEDBACK 5			0.508	0.746
FEEDBACK 6			0.635	0.606
COMMUNITY 1		0.508		0.704
COMMUNITY 2		0.720		0.590

Note. Applied rotation method is promax.

Factor 1, critical consciousness, showed a moderate correlation of .518 with Factor 2, cultural relevance, and a weak correlation of .104 with Factor 3, effective practices. Factors 2 and 3 showed a moderate correlation of .341.

Table D10. Factor Correlations

	Factor 1	Factor 2	Factor 3
Factor 1	1.000	0.518	0.104
Factor 2	0.518	1.000	0.341
Factor 3	0.104	0.341	1.000

AP Research

AP Research factor analyses yielded roughly the same results, with some variability in factor loadings.

Table D11. Factor Loadings for Research Topics

	Factor 1	Uniqueness
RES TOPICS 1		0.923
RES TOPICS 2	0.640	0.591
RES TOPICS 3	0.881	0.223
RES TOPICS 4	0.959	0.081
RES TOPICS 5	0.950	0.097
RES TOPICS 6	0.959	0.081
RES TOPICS 7	0.933	0.129
RES TOPICS 8	0.829	0.312
RES TOPICS 9	0.796	0.366

Note. Applied rotation method is promax.

Table D12. Factor Loadings for Research Instructional Strategies

	Factor 1	Factor 2	Factor 3	Uniqueness
RES INST STRAT 1				0.806
RES INST STRAT 2		1.074		-0.006
RES INST STRAT 4	0.587			0.666
RES INST STRAT 5	1.017			0.004
RES INST STRAT 6	0.432			0.754
RES INST STRAT 7			0.490	0.718
RES INST STRAT 8			1.030	-0.011

Note. Applied rotation method is promax.

Table D13. Factor Loadings for Research Assessment

	Factor 1	Factor 2	Uniqueness
RES ASSESS 1			0.916
RES ASSESS 2		0.781	0.457
RES ASSESS 3		0.576	0.712
RES ASSESS 4		0.411	0.746
RES ASSESS 5	1.043		0.004
RES ASSESS 6			0.862

Note. Applied rotation method is promax.

Table D14. Factor Loadings for Research Feedback

	Factor 1	Factor 2	Factor 3	Uniqueness
FEEDBACK 1	0.422			0.777
FEEDBACK 2	0.914			0.181
FEEDBACK 3	0.310	0.477		0.690
FEEDBACK 4			0.659	0.517
FEEDBACK 5		0.726	0.314	0.333
FEEDBACK 6		0.447		0.732

Note. Applied rotation method is promax.

Table D15. Factor Loadings for Research Community

	Factor 1	Uniqueness
COMMUNITY 1	1.016	-0.032
COMMUNITY 2	0.499	0.751
COMMUNITY 3	0.500	0.750

Note. Applied rotation method is promax.

Table D16. Final Factor Loadings for Research

	Factor 1	Factor 2	Factor 3	Uniqueness
RES CURRIC PLAN 2	0.353	0.310		0.657
RES CURRIC PLAN 3		0.594		0.460
RES CURRIC PLAN 4		0.556		0.543
RES TOPICS 2	0.666			0.489
RES TOPICS 3	0.895			0.227
RES TOPICS 4	1.015			0.074
RES TOPICS 5	0.973			0.106
RES TOPICS 6	1.015			0.074
RES TOPICS 7	0.950			0.157
RES TOPICS 8	0.821			0.299
RES TOPICS 9	0.763			0.345
RES INST STRAT 4			0.559	0.672
RES INST STRAT 5			0.931	0.180
RES INST STRAT 6			0.527	0.687
RES INST STRAT 7		0.528		0.693
RES INST STRAT 8		0.438		0.837
FEEDBACK 4				0.944
FEEDBACK 5			0.461	0.568
FEEDBACK 6			0.527	0.692
COMMUNITY 1		0.742		0.505
COMMUNITY 2		0.452		0.593
COMMUNITY 3		0.550		0.754

Note. Applied rotation method is promax.

Table D17. Final Factor Correlations for Research

	Factor 1	Factor 2	Factor 3
Factor 1	1.000	0.561	0.342
Factor 2	0.561	1.000	0.714
Factor 3	0.342	0.714	1.000

Table D18. Research Composite CRP Scores

Variable	# of Items	ω	C.I. Lower Bound	C.I. Upper Bound	Maximum Score	M	SD
Culturally Responsive Curriculum Planning	3	.821	.750	.877	9	4.586	2.164
Critical Consciousness	6	.951	.932	.967	18	9.637	4.916
Relevant Topics	2	-	-	-	6	3.333	2.009
Student-centered strategies	3	.729	.612	.825	12	8.316	2.270
Differentiated Strategies	2	-	-	-	8	5.066	1.769
Formative Feedback	3	.644	.322	.778	12	7.840	2.194
Centering Student Culture	2	-	-	-	8	6.240	1.228
Overall CRP Score	22	.886	.833	.916	73	47.97	11.031

Table D19. Final Reduced and Combined Research CRP Scores

Variable	# of Items	ω	C.I. Lower Bound	C.I. Upper Bound	Maximum Score	M	SD
Cultural Relevance	7	.864	.798	.906	23	14.169	4.04
Critical Consciousness	6	.951	.932	.967	18	9.637	4.916
Effective Strategies	8	.700	.545	.800	29	22.227	4.622
Overall CRP Score	21	.825	.648	.876	73	47.970	11.031

APPENDIX E.

Multiple Linear Regression Models

Seminar Teacher Demographics Analyses

The tables in this section present regressions of the following scores onto teacher demographics

for AP Seminar teachers: CRP Score, Critical Consciousness Score, Cultural Relevance Score,

and Effective Practices Score

Table E1. AP Seminar Teacher Demographic Coefficients for CRP Score

Model		Unstandardized	Standard Error	Standardized	t	p	95% CI	
							Lower	Upper
H_0	(Intercept)	49.354	0.828		59.576	$< .001$	47.710	50.997
H_1	(Intercept)	49.212	4.362		11.283	$< .001$	40.548	57.876
	Teacher of Color?	-2.120	2.712	-0.081	-0.782	0.436	-7.507	3.267
	Teacher Male?	-2.246	1.833	-0.127	-1.225	0.224	-5.887	1.395
	Veteran Teacher?	2.621	4.205	0.076	0.623	0.535	-5.732	10.973
	Teacher Social Science?	-1.402	2.238	-0.066	-0.626	0.533	-5.847	3.044
	Teacher STEM?	0.159	2.775	0.006	0.057	0.955	-5.353	5.670
	TEACHR YRS EXP	-0.175	0.117	-0.159	-1.490	0.140	-0.407	0.058
	TEACHER YRS SEM	0.716	0.783	0.115	0.914	0.363	-0.840	2.272

Notes: $R^2 = .072$ ($F_{7,91} = 1.015$, $p = .426$). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E2. AP Seminar Teacher Demographic Coefficients for Critical Consciousness

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	12.646	0.374		33.845	$< .001$
H_1	(Intercept)	14.530	1.896		7.663	$< .001$
	Teacher of Color?	0.496	1.179	0.042	0.421	0.675
	Teacher Male?	-2.497	0.797	-0.313	-3.133	0.002
	Veteran Teacher?	-1.249	1.828	-0.081	-0.683	0.496
	Teacher Social Science?	-2.123	0.973	-0.221	-2.182	0.032
	Teacher STEM?	-0.239	1.206	-0.020	-0.198	0.843
	TEACHR YRS EXP	-0.045	0.051	-0.091	-0.885	0.378
	TEACHER YRS SEM	0.387	0.341	0.138	1.138	0.258

Notes: $R^2 = .072$ ($F_{7,91} = 2.086$, $p = .053$). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E3. AP Seminar Teacher Demographic Coefficients for Cultural Relevance

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	15.717	0.366		42.903	< .001
H_1	(Intercept)	13.421	1.924		6.974	< .001
	Teacher of Color?	-1.255	1.197	-0.109	-1.049	0.297
	Teacher Male?	-0.441	0.809	-0.056	-0.545	0.587
	Veteran Teacher?	3.634	1.855	0.239	1.959	0.053
	Teacher Social Science?	0.355	0.987	0.038	0.360	0.720
	Teacher STEM?	-0.252	1.224	-0.022	-0.206	0.837
	TEACHR YRS EXP	-0.038	0.052	-0.077	-0.726	0.469
	TEACHER YRS SEM	-0.022	0.346	-0.008	-0.064	0.949

Notes: $R^2 = .006$ ($F_{7,91} = 1.079$, $p = .383$). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E4. AP Seminar teacher demographic Coefficients for Effective Practices

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	20.990	0.454		46.259	< .001
H_1	(Intercept)	21.260	2.429		8.752	< .001
	Teacher of Color?	-1.361	1.510	-0.095	-0.901	0.370
	Teacher Male?	0.692	1.021	0.071	0.678	0.500
	Veteran Teacher?	0.236	2.342	0.013	0.101	0.920
	Teacher Social Science?	0.366	1.246	0.031	0.293	0.770
	Teacher STEM?	0.650	1.545	0.045	0.421	0.675
	TEACHR YRS EXP	-0.092	0.065	-0.153	-1.408	0.162
	TEACHER YRS SEM	0.351	0.436	0.103	0.804	0.424

Notes: $R^2 = .041$ ($F_{7,91} = .557$, $p = .789$. b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Research Teacher Demographics Analyses

The tables in this section present regressions of the following scores onto teacher demographics for AP Research teachers: CRP Score, Critical Consciousness Score, Cultural Relevance Score, and Effective Practices Score.

Table E5. AP Research Teacher Demographic Coefficients for Culturally Responsive Pedagogy

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	48.106	1.306		36.834	< .001
H_1	(Intercept)	53.414	6.389		8.360	< .001
	Teacher of Color?	-3.493	3.438	-0.127	-1.016	.314
	Teacher Male?	6.420	3.169	0.257	2.026	.047
	Veteran Teacher?	-8.624	6.477	-0.187	-1.332	.188
	Teacher STEM?	-0.456	3.478	-0.017	-0.131	.896
	Teacher Social Science?	0.915	3.846	0.030	0.238	.813
	TEACHR YRS EXP	0.004	0.182	0.003	0.024	.981
	TEACHER YRS RES	0.530	1.230	0.061	0.431	.668

Notes: R^2 = .092 ($F_{7,91}$ = .887, p = .522). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E6. AP Research Teacher Demographic Coefficients for Critical Consciousness

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	9.759	0.594		16.420	< .001
H_1	(Intercept)	10.630	2.985		3.561	< .001
	Teacher of Color?	-0.792	1.606	-0.063	-0.493	.624
	Teacher Male?	1.545	1.481	0.136	1.043	.301
	Veteran Teacher?	-0.753	3.026	-0.036	-0.249	.804
	Teacher STEM?	-0.340	1.625	-0.028	-0.209	.835
	Teacher Social Science?	1.122	1.797	0.081	0.624	.535
	TEACHR YRS EXP	0.044	0.085	0.068	0.520	.605
	TEACHER YRS RES	-0.423	0.575	-0.107	-0.736	.465

Notes: R^2 = .043 ($F_{7,91}$ = .396, p = .901). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E7. AP Research teacher demographic Coefficients for Cultural Relevance

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	14.147	0.529		26.727	< .001
H_1	(Intercept)	17.784	2.542		6.996	< .001
	Teacher of Color?	-0.099	1.365	-0.009	-0.072	0.943
	Teacher Male?	0.482	1.259	0.048	0.383	0.703
	Veteran Teacher?	-3.356	2.574	-0.182	-1.304	0.197
	Teacher STEM?	1.297	1.380	0.121	0.939	0.351
	Teacher Social Science?	2.212	1.529	0.181	1.447	0.153
	TEACHR YRS EXP	0.024	0.073	0.042	0.333	0.740
	TEACHER YRS RES	-0.505	0.488	-0.146	-1.035	0.305

Notes: R^2 = .121 ($F_{7,91}$ = 1.176, p = .330). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E8. AP Research Teacher Demographic Coefficients for Effective Practices

Model		Unstandardized	Standard Error	Standardized	t	p
H₀	(Intercept)	21.377	0.546		39.188	< .001
H₁	(Intercept)	24.409	2.685		9.092	< .001
	Teacher of Color?	0.737	1.445	0.064	0.510	0.612
	Teacher Male?	0.298	1.332	0.029	0.223	0.824
	Veteran Teacher?	-4.515	2.722	-0.235	-1.659	0.102
	Teacher STEM?	1.118	1.461	0.100	0.765	0.447
	Teacher Social Science?	2.237	1.616	0.175	1.384	0.171
	TEACHR YRS EXP	-0.010	0.076	-0.016	-0.126	0.900
	TEACHER YRS RES	0.198	0.517	0.055	0.383	0.703

Notes: $R^2 = .082$ ($F_{7,91} = .773$, $p = .612$). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Seminar Teacher Beliefs Analyses

The tables in this section present regressions of the following scores onto teacher beliefs for AP Seminar teachers: CRP Score, Critical Consciousness Score, Cultural Relevance Score, and Effective Practices Scores.

Table E9. AP Seminar Teacher belief Coefficients for CRP

Model		Unstandardized	Standard Error	Standardized	t	p
H₀	(Intercept)	49.464	0.753		65.716	< .001
H₁	(Intercept)	45.516	6.223		7.314	< .001
	Enjoy overall?	1.298	3.809	0.034	0.341	0.734
	expect most students to succeed?	4.186	2.882	0.143	1.453	0.149
	Agree Good First AP?	0.224	1.611	0.014	0.139	0.889
	Agree good for all college?	-1.317	4.812	-0.027	-0.274	0.785

Notes: $R^2 = .026$ ($F_{7,91} = .704$, $p = .591$). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E10. AP Seminar teacher expectation Coefficients for Critical Consciousness

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	12.688	0.336		37.709	< .001
H_1	(Intercept)	12.725	2.760		4.610	< .001
	Enjoy overall?	1.231	1.539	0.076	0.800	0.425
	expect most students to succeed?	-0.289	1.202	-0.023	-0.241	0.810
	Agree Good First AP?	0.532	0.711	0.069	0.748	0.456
	Agree good for all college?	-1.292	2.270	-0.053	-0.569	0.570

Notes: $R^2 = .012$ ($F_{7,91} = .357$, $p = .839$). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E11. AP Seminar Teacher expectations Coefficients for Cultural Relevance

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	15.777	0.335		47.158	< .001
H_1	(Intercept)	18.143	2.771		6.548	< .001
	Enjoy overall?	0.468	1.696	0.027	0.276	0.783
	expect most students to succeed?	-0.944	1.283	-0.073	-0.736	0.464
	Agree Good First AP?	0.736	0.717	0.101	1.027	0.307
	Agree good for all college?	-2.471	2.142	-0.113	-1.154	0.251

Notes: $R^2 = .023$ ($F_{7,91} = .616$, $p = .652$). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E12. AP Seminar teacher expectation Coefficients for Effective Practices

Model		(Intercept)	Standard Error	Standardized	t	p
H_0						
H_1	(Intercept)	47.775	1.311		36.431	< .001
	Enjoy overall?	54.141	5.579		9.704	< .001
	expect most students to succeed?	2.187	4.046	0.055	0.541	0.590
	Agree Good First AP?	8.842	3.399	0.265	2.601	0.011
	Agree good for all college?	-17.842	3.735	-0.478	-4.778	< .001

Notes: $R^2 = .099$ ($F_{7,91} = 2.934$, $p = .024$). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Notes: $R^2 = .335$ ($F_{7,91} = 11.421$, p.<.001. b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Research Teacher Beliefs Analyses

The tables in this section present regressions of the following scores onto teacher beliefs for AP Research teachers: CRP Score, Critical Consciousness Score, Cultural Relevance Score, and Effective Practices Scores.

Table E13. AP Research Teacher Expectation Coefficients for Critical Consciousness

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	9.677	0.584		16.577	< .001
H_1	(Intercept)	4.137	2.808		1.473	0.145
	Enjoy overall	2.448	2.045	0.146	1.197	0.236
	Expects most students to succeed?	2.336	1.764	0.162	1.324	0.190
	Agree good for all college?	1.449	1.983	0.086	0.731	0.467

Table E14. AP Research teacher attitude Coefficients for cultural relevance

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	14.218	0.533		26.695	< .001
H_1	(Intercept)	9.114	2.656		3.431	0.001
	Enjoy overall	3.443	1.925	0.215	1.789	0.078
	Expects most students to succeed?	1.791	1.618	0.134	1.107	0.272
	Agree good for all college?	0.430	1.778	0.029	0.242	0.810

Notes: $R^2 = .0726$ ($F_{7,91} = 1.828$, p = .151). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E15. AP Research teacher attitude Coefficients for effective practices

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	21.097	0.547		38.559	< .001
H_1	(Intercept)	14.544	2.605		5.582	< .001
	Enjoy overall	2.870	1.889	0.172	1.519	0.133
	Expects most students to succeed?	4.710	1.587	0.338	2.968	0.004
	Agree good for all college?	-0.221	1.744	-0.014	-0.126	0.900

Notes: $R^2 = .167$ ($F_{7,91} = 4.542$, p = .006). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Seminar School Contexts Analyses

The tables in this section present regressions of the following scores onto school contexts for AP Seminar teachers: CRP Score, Critical Consciousness Score, Cultural Relevance Score, and Effective Practices Scores.

Table E16. AP Seminar school context Coefficients for CRP

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	49.175	0.999		49.210	$< .001$
H_1	(Intercept)	52.534	12.912		4.069	$< .001$
	School Majority White?	5.220	2.752	0.292	1.897	0.062
	Capstone Majority White ?	-6.550	2.850	-0.352	-2.298	0.024
	Public District School?	6.015	9.271	0.242	0.649	0.519
	Private School?	3.141	9.701	0.122	0.324	0.747
	Suburban?	-8.486	9.193	-0.452	-0.923	0.359
	Urban?	-3.534	9.445	-0.142	-0.374	0.709
	Small Town or Rural?	-7.805	9.432	-0.334	-0.828	0.411

Notes: $R^2 = .116$ ($F_{7,91} = 1.345$, $p = .242$). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E17. AP Seminar school context Coefficients for Critical Consciousness

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	12.675	0.415		30.527	$< .001$
H_1	(Intercept)	13.119	5.384		2.437	0.017
	School Majority White?	2.247	1.147	0.303	1.958	0.054
	Capstone Majority White?	-2.096	1.188	-0.271	-1.764	0.082
	Public District School?	0.977	3.866	0.095	0.253	0.801
	Private School?	-0.603	4.045	-0.056	-0.149	0.882
	Suburban?	-1.453	3.833	-0.186	-0.379	0.706
	Urban?	0.881	3.938	0.085	0.224	0.824
	Small Town or Rural?	-1.339	3.933	-0.138	-0.341	0.734

Notes: $R^2 = .109$ ($F_{7,91} = 1.265$, $p = .280$). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E18. AP Seminar School Context Coefficients for Cultural Relevance

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	15.787	0.415		38.061	$< .001$
H_1	(Intercept)	17.336	5.251		3.301	0.001
	School Majority White	-0.187	1.119	-0.025	-0.167	0.868
	Capstone Majority White	-2.286	1.159	-0.296	-1.973	0.052
	Public District School	1.950	3.771	0.189	0.517	0.607
	Private School	1.457	3.946	0.136	0.369	0.713
	Suburban	-2.035	3.739	-0.261	-0.544	0.588
	Urban	-0.336	3.841	-0.033	-0.088	0.930
	Small Town or Rural	-2.395	3.836	-0.247	-0.624	0.534

Notes: $R^2 = .151$ ($F_{7,91} = 1.829$, $p = .095$). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E19. AP Seminar School Context Coefficients for Effective Practices

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	20.712	0.518		39.949	< .001
H_1	(Intercept)	22.079	6.842		3.227	0.002
	School Majority White	3.160	1.458	0.341	2.167	0.034
	Capstone Majority White	-2.167	1.510	-0.224	-1.435	0.156
	Public District School?	3.088	4.912	0.239	0.629	0.532
	Private School?	2.286	5.140	0.171	0.445	0.658
	Suburban?	-4.997	4.871	-0.513	-1.026	0.308
	Urban?	-4.079	5.004	-0.316	-0.815	0.418
	Small Town or Rural	-4.071	4.997	-0.336	-0.815	0.418

Notes: R^2 = .078 ($F_{7,91}$ = .867, p = .537. b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Research School Contexts Analyses

The tables in this section present regressions of the following scores onto school contexts for AP

Research teachers: CRP Score, Critical Consciousness Score, Cultural Relevance Score, and

Effective Practices Scores.

Table E20. AP Research School Context Coefficients for CRP

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	48.915	1.592		30.719	< .001
H_1	(Intercept)	58.000	10.857		5.342	< .001
	School Majority Students of Color?	0.338	4.617	0.016	0.073	0.942
	Capstone Majority SOC	4.483	4.829	0.199	0.928	0.359
	Public District	-8.052	5.431	-0.265	-1.482	0.146
	Charter School	-22.813	12.518	-0.305	-1.822	0.076
	Suburban?	-4.038	11.959	-0.177	-0.338	0.737
	Urban?	-5.187	12.518	-0.181	-0.414	0.681
	Small town or rural?	0.128	12.727	0.004	0.010	0.992

Notes: R^2 = .070 ($F_{7,91}$ = 1.073, p = .399). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E21. AP Research School Context Coefficients for Critical Consciousness

Model		Unstandardized	Standard Error	Standardized	t	p
H₀	(Intercept)	9.881	0.756		13.069	< .001
H₁	(Intercept)	10.000	5.068		1.973	0.056
	School Majority Students of Color?	2.728	2.155	0.265	1.266	0.213
	Capstone Majority SOC	-2.856	2.254	-0.268	-1.267	0.213
	Public District	-1.874	2.536	-0.130	-0.739	0.464
	Charter School	-3.290	5.844	-0.093	-0.563	0.577
	Suburban?	0.496	5.583	0.046	0.089	0.930
	Urban?	0.290	5.844	0.021	0.050	0.961
	Small town or rural?	6.214	5.942	0.431	1.046	0.302

Notes: R^2 = .065 ($F_{7,91}$ = 1.301, p = .275). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E22. AP Research School Context Coefficients for Cultural Relevance

Model		Unstandardized	Standard Error	Standardized	t	p
H₀	(Intercept)	13.894	0.633		21.947	< .001
H₁	(Intercept)	14.000	4.078		3.433	0.001
	School Majority Students of Color?	1.407	1.734	0.164	0.812	0.422
	Capstone Majority SOC	-2.796	1.814	-0.313	-1.541	0.131
	Public District	1.292	2.040	0.107	0.633	0.530
	Charter School	-5.771	4.702	-0.194	-1.227	0.227
	Suburban?	-1.794	4.492	-0.198	-0.399	0.692
	Urban?	-0.229	4.702	-0.020	-0.049	0.961
	Small town or rural?	3.303	4.781	0.274	0.691	0.494

Notes: R^2 = .092 ($F_{7,91}$ = 1.872, p = .101). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

Table E23. Research School Context Coefficients for Effective Practices

Model		Unstandardized	Standard Error	Standardized	t	p
H₀	(Intercept)	21.064	0.691		30.476	< .001
H₁	(Intercept)	16.000	4.409		3.629	< .001
	School Majority Students of Color?	1.013	1.875	0.108	0.540	0.592
	Capstone Majority SOC	-0.325	1.961	-0.033	-0.166	0.869
	Public District	-3.598	2.206	-0.273	-1.631	0.111
	Charter School	-13.832	5.083	-0.426	-2.721	0.010
	Suburban?	7.039	4.856	0.712	1.449	0.155
	Urban?	10.832	5.083	0.868	2.131	0.039
	Small town or rural?	10.589	5.168	0.804	2.049	0.047

Notes: R^2 = .152 ($F_{7,91}$ = 2.020, p = .077). b is the unstandardized coefficient. SE is the standard error. ß is the standardized coefficient.

APPENDIX F.
Complete List of AP Seminar Thematic Topics

Below is the list of verbatim responses to the survey item asking AP Seminar teachers to

desribe their course topics and themes.

Globalization: cultures and markets, Language evolution and extinction, single parent homes, work-life balance

The historical, socio-economic and racial history of Alexandria, VA through the lens of Identity and food.

I primarily focus on the myth of justice in America. Injustice is plentiful in our country, unfortunately. I also look at identity and representation, and I'm starting to do more with the African Diaspora content.

We discussed the concept of education and the problems and issues related to the educational system. We also discussed concepts related to the concepts of success

Wage gap, homework, monsters, happiness

Immigration and invasion; war and protest; gender equality

Femicide- particularly focuses on Latinx communities, slacktaviam, mental health stigma in minorities and in armed forces, CRISPR sleep apnea

We worked on the idea of intellectual property, work, police procedures, feminist theory, education, etc.

Economic disparity, technology innovation

diversity/discrimination/privilege, social media and aesthetic, protest and democracy

Defining Happiness and Impact of Technology on Human Interactions

technology/impact, animal behavior/care, drugs/pharamceuticals

Superheroes and their role in culture and social justice

Education to practice Performance Task 2, Food to practice Performance task 1.

Education, food poverty

social and environmental issues

The Green New Deal, and the 1960s; as well as various topics brought up by my students

Socioeconomic inequality, the impact of social media on culture, the role of space and place in identity

Students are free to explore their chosen topics, but I do provide supplemental materials, texts, and articles that stimulate their thinking and debate skills, such as racial and ethnic stereotypes, cultural exploration, education, and mental health.

My theme was injustice, and it focused on the idea of privilege and power and highlighted acts of injustice. I use the Innocence Project to help build my theme as well.

For their mock IRR, students looked at the effectiveness of juvenile Incarceration in America.

Environmental issues, particularly environmental issues facing the Houston/Gulf Coast area.

Identity, power

i try to be as topical and relevant as possible.

Water rights in the West; Incarceration; student selected topics

Social Networks, Urban Networks, Happiness

Topic: Identity through Various Lenses

Major themes included conspiracy theories, through which students worked on stereotypes, national security, profiling, and psychological issues such as the Mandela effect. We used the Work source packet as a practice PT2 and students explored race relations in terms of redlining, the school-to-prison pipeline, and other issues.

For Unit 2 (Argument) we focused on the ethics and economic

cultural traditions, privacy and surveillance, ethics

The majority of our work is student-driven topics. We do one unit that is specifically focused on local current events/issues and the students naturally gravitate towards more social justice topics for the group and individual projects and AP performance tasks

Impact of social media platforms; population theory (use of natural resources)

Our "common thread" was "The City: Urban Affairs",Äì we explored issues like gentrification, red-lining, public safety, urban decay, public art, transportation equity, etc.

Local and current events, intelligence

Physical literacy, locavorism, early childhood education.

Survival

Entering Adulthood, Environment

Identity and Equity

In 2019-2020, the class's main topics were: poverty, education, mass hysteria, fairy tales, happiness

Power- digital amnesia- ,ÄúANTI,Äù

social justice

I teach about Protest, the Role of Art in society, and Class and the fight for resources

I change every year. One year we used Gladwell's Outliers for stimulus material, one year we focused on ecological balance, and this year we focused on issues Covid brought up in our society.

understanding our community and human nature; the cost of college; sleep;

"The American Dream", "The War Against Intelligence", "Equity and Access to Healthcare", "College Prep vs. Career Prep"

technology, control of information, censorship

This answer is going to be the same as my last one - this is a completely student led course for me in terms of topics of discussion and research.

First semester, we all did a unit on the role of smartphones in the lives of young people, like a mini-IWA. I chose this topic since I had stimulus pieces prepared. For the next unit, a mini-team project, students generated lists a local, school problems and chose one to focus on. Generally, the theme was education. For the IRR, second semester, students had a list of 5 current topics to investigate and decide on a question.

Students chose to examine sexism, gender roles, racism and privilege.

How does a person's race and/or gender affect their voice?

Democracy

Our overarching theme was Voice. More specifically, how does a person's race or gender impact how their voice is heard?

Cancel Culture, Race in America, and then student generated topics

We addressed a wide variety of topics, themes, and global issues utilizing multimedia sources, research articles, and current events, as well as texts from Global Issues, Local Arguments by June Johnson and several different Bedford Researcher books, as well. I would say that cultural identity and justice (social, cultural, linguistic, environmental) are my two main themes in teaching this course in 2019-2020.

The class examples centered on art. Students chose most other topics addressed.

we have 1 group topic that focuses on Education. From there, it is student selected

social media usage; individual impact on the environment; issues with the current American educational system

I teach a science-research themed AP Seminar course. The main topics include Science as a Human Endeavor, Innovation & Sustainability

Poverty, privilege, power, social class

Protest, Gender, Activism

Multiculturalism vs Colorblindness, Intersectionalism, Dystopias, Human Rights

Immigration, systemic racism, implicit bias

Overcoming adversity, crime and justice, animal rights

Criminal Justice Issues, The Power and Problems of Social Media, and topics related to the College Experience

Ethics and personal responsibility

I focused on the themes of; Power structures, automation, Culture, citizenship, and happiness

Identity, technology, education, politics, social issues

Problems with Power

Overpopulation and space exploration were required, all other topics were chosen by students

White privilege, social injustice, social media, gender gaps, race issues

The theme of 19/20 was the Californian Dream; looked at the Salton Sea, changing populations; Chavez and the UFW, immigration, and college

Privacy in the Digital Age, Gender Bias in Media, Equity in Education

Student Created Topics; Educational Equity

STEM, ethics in medicine and engineering, current events

Wealth and Poverty/Leadership/The Future/Identity

Education, social mobility, and access to opportunity

power, change, sexism, love

Our theme was "survival" - we explored this theme on a personal level, looking at class systems and other hierarchies, looking at looking at environmental issues of survival (endangered species, extinction, evolution...)

Science

Race/Culture, Power of the Inidividual, Power of Nature, War and Revolution, Socio-economics

I focus on issues in American education and on ethical practices in technological advancements.

Plagiarism, education and gender

The general focus of my class is resource disparity.

Education/Technology/Psychology

Technology and specifically its impact on the modern world

The two major themes were power and identity. using those broader themes, students had numerous opportunities to probe topics that fall within those themes that are of personal import.

Favorite - Power of Language to: shape thinking, inspire, and destroy/ 2nd Fav - Wealth and Poverty/ 3rd Fav - Complexity of Identity

human genetic engineering, use of animals in research, the effectiveness of stem cell therapies, concussions (Seminar is the 2nd in a series of course in a biomedical program)

The practice unit focused on white privilege.

I focused on Identity, beginning with personal identity, moving to gender identity, then to racial identity, and culminating with National identity.

climate change, globalization, gender inequality, racism

Our fall units, focused on current events/issues, and then units voted on by students were the environment and gender

Social Justice

We house AP Seminar in our Catholic Theology department, so we focus on topics that relate to Catholic Social Teaching.

We focused on the CA wildfires and the Flint, MI water crisis. Generally the content of major projects is student driven. The main parameter I set for the students is that their goal must be to convince an audience to take the topic seriously.

We relied primarily on social and academic issues as presented by digestible secondary sources (e.g. The Atlantic). Major research topics were chosen entirely by students.

Labor and Wages, Impact of Smartphones, past AP stimulus packets.

Student choice

education, food, transformation

Inequality in America; Climate Change; Affordable Care Act; The Green New Deal; the presidential election

Space and Myth, Legend, and Lore

The health of our Oceans, the growth of our community

Money - many of my practice articles have a common theme of money. This is because I teach at an affluent, suburban, non-diverse school. These students don't yet know or understand NOT having money, so I introduce them to money/power, money/relationships, money/ethics.

I had a major theme for each anchor text: Frankenstein tied into responsible experimentation and one's obligation what one makes; Hiroshima looks at the overarching impact of nuclear weapons and power on our world, as expressed through art and history; Ways of Dying looks at both traditions of death and grief around the world as well as issues of racial inequity and social justice; The Bonesetter's Daughter looks at generational and cultural differences impact relationships within a family as well as the onset of dementia or Alzheimer's as a gateway into mental health from both a biological and psychological perspective.

race and identity; technology and nature; outliers and overlooked

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