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Patches in the Leaky Pipeline: The Influences of School Contexts on Students' College
Preparation and Choice

DISSERTATION

Submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

In Educational Policy and Social Context

By

Chenoa Summer Woods

Dissertation Committee:
Associate Professor Thurston Domina, Chair
Associate Professor Maria Estela Zarate
Assistant Professor AnneMarie Conley

2014

DEDICATION

To
my loving mother

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ABSTRACT OF THE DISSERTATION

Patches in the Leaky Pipeline:

The Influences of School Contexts on Students' College Preparation and Choice

By

Chenoa S. Woods

Doctor of Philosophy in Education

University of California, Irvine, 2014

Associate Professor Thurston Domina, Chair

This dissertation is a mixed-methods examination of college preparation and choice as developed in three related yet independent studies. In light of the American Graduation Initiative and other current movements to increase college degree completion, this dissertation explores the relationships between schools' interventions, college-going culture, and personnel, and students' postsecondary preparation and plans. The first study assesses an early college intervention implemented in sixth grade classrooms. It finds that exposure to this treatment increases students' potential sources of college knowledge, students' conversations about college and careers, and increases in students' college knowledge. The second study uses data from seven high schools in one school district to explore student-school counselor interactions within various college-going cultures. The findings indicate that schools with broader views of postsecondary preparation have small negative or non-significant effects on completing key college preparation steps and four-year college plans, yet across contexts, students who meet with their school counselor for more college-related reasons have higher odds of progressing through the college preparation process. The last study of the dissertation explores access to

higher-level coursework within the same school district. While some principals and school counselors are concerned about limiting access to Advanced Placement (AP) courses to prevent and reduce burnout, others act in ways to increase AP participation. However, results suggest that these practices do not consistently predict students' AP course and exam participation. Taken together, this dissertation highlights the need for early, clear, and consistent college information and opportunities to adequately prepare for college. Schools have the capacity to shape students' postsecondary trajectories and teachers, counselors, and interventions can patch the leaky educational pipeline.

Chapter 1

Introduction

In light of President Obama's American Graduation Initiative and the Obama-Biden Agenda for College Affordability, college preparation and attendance is at the forefront of the current administration. President Obama's (2009) goals for the United States to become the global leader in college graduates by 2020 and to increase young adults' certificate and college degree completion highlight the importance of higher education and its role in securing a middle class lifestyle and ensuring the U.S. remains an international powerhouse in terms of technological advances, innovations, and fueling our economy.

The college and career readiness campaign has placed postsecondary preparation at the forefront of K-12 education. In recent years, as the social and economic returns to education have increased, college enrollment has become a universal goal for high school students. However, the United States is not currently the global leader in college degree attainment, in part because students from low-income and underrepresented minority backgrounds attend college at lower rates than their peers (Aud, et al., 2011; OECD, 2011; Solorzano, Villalpano, & Oseguera, 2005). An important precursor to ensuring degree attainment is students' access to key preparation tools and resources. We need to better understand how and why students choose to go to college, what factors influence these decisions, and the types of material and human resources students use to make these decisions. As a way to reach the President's goals, special attention should be put on ensuring college access and preparation opportunities for the United States' growing college student populations: Latino students, low-income students, and potential first-generation college students.

Although there has been extensive research on the influence of high schools, college access programs, and influential adults on students' college choice process (e.g. Cabrera & La Nasa, 2000a; Freeman, 1997; Hossler & Gallagher, 1987; McDonough, 1997; Plank & Jordan, 2001; Perna, 2006) there remain significant college preparation, application, enrollment and completion gaps for underrepresented minority students, students from low-income backgrounds, and first-generation college students. This dissertation explores these students' sources of college information, college preparation activities, and postsecondary plans. Situating the studies within schools, this dissertation uncovers how school-based interventions and resources can patch the leaky K-16 educational pipeline.

Theoretical Framework and Background to the Studies

This dissertation draws upon the theoretical framework of Perna's (2006) college choice model. Students' college choice processes occur in layered contexts, where individual-level factors; the school and community context; institutions of higher education; and social, economic, and policy factors influence college preparation and destination (Perna, 2006). This framework argues that multiple factors influence students' college choice process and a variety of pathways lead to college attendance. In Perna's model, the habitus (layer one) includes the students' background characteristics, social capital, and cultural capital. This layer also includes students' understandings of the costs and benefits of attending college, students' academic ability and preparation, or human capital investments, and other influences from the immediate environment.

In the second layer, influences on students' college choice come from the school and community contexts. This layer includes the availability and types of college preparation resources and structural supports and barriers. Here, Perna borrows from McDonough's (1997)

notion of organizational habitus, which acknowledges that schools can both provide avenues to and create roadblocks for students' postsecondary preparation and participation.

Layer three reflects influences from colleges and universities on students' college choice. Institutions can sway students based on how they communicate information about their campus, the campus characteristics, admissions policies, and through active recruitment.

The final layer explains the influences of macro-level forces: social, economic, and policy contexts. Changes in the population, economic climate, and state and federal policies can impact students' college destinations. Perna claims that in addition to college choice, this model may be applied to college preparation activities, or intermediate points in the college choice process, which indicates that this framework is appropriate for this dissertation.

Perna's model borrows from Hossler and Gallagher's (1987) three-phase college choice model but situates the process in nested contexts instead of a linear progression through stages. This dissertation expands Perna's framework by more explicitly positioning the contexts along the college search process continuum, emphasizing the impact of Perna's nested contexts over time. Figure 1.1 presents a simplified version of Perna's concentric boxes of multiple contexts elongated to illustrate their likely influence throughout the college search stages (Cabrera & La Nasa, 2000b; Eccles, Vida, & Barber, 2004; Hossler & Gallagher, 1987).

I situate this dissertation in Perna's framework because it recognizes the influences of multiple contexts. The three studies relate most closely to the second layer, the school and community context. The first study assesses the impact of an in-class college preparation curriculum, drawing on the influence of the school and its use of a school-based intervention. Study two examines school-level influences on students' intermediate steps along the college choice process and their college destination. Part of the examination includes uncovering the

relationships between student-school counselor interactions at the school level, and how these interactions are related to students' college preparatory outcomes. Similarly, study three takes place in level two because it examines how school personnel define, understand, and implement the academic preparation component of college-going culture and relationships between this college-going culture and students' AP program participation.

In addition to considering the relationships between context and students' choice process, this dissertation takes into account how students choose to interact with or utilize college resources. Even in the same contexts some students take advantage of available offerings while others do not and this dissertation explores how these differences occur. I argue that it is the individual's habitus (layer one) that facilitates uptake of resources offered at the school and community level in Perna's model. The students' existing social, cultural, economic, and human capital influence the degree to which the school and community impact the college choice process. This dissertation not only considers the decision making process in context, but also argues that context, access to resources, and resource utilization impact students' ultimate postsecondary choices in all phases of the search process. Instead of positioning the choice process towards the end of high school, I argue, as have others (e.g. Eccles, Vida & Barber, 2006), that the choice process can begin early and is reiterative and dynamic, often occurring over many years.

Although not a focus here, this dissertation also acknowledges that all four layers of Perna's model directly and indirectly influence students' decision making. Changes in other contexts could influence the resources, supports, and barriers in level two. For example, if statewide financial aid policies change, high school counselors may need to provide supplemental information about scholarships, fellowships, work-study options, or internships for

students who no longer qualify for traditional financial aid. Each layer of Perna's model is interconnected, affects the others, and ultimately influences students' outcomes.

Focusing on how schools influence students' college choice, previous literature explores various aspects of the high school context and their relationships with students' college preparation, attendance, and completion. School context can include school norms, human and material resources, student body demographics, access to coursework and programs, and other school and neighborhood variables.

McDonough (1997) claims that the organizational habitus, the environment of the school, impacts students' college destinations. High schools can influence students' college attendance through two facets of school structures: formal structures and resources, and institutional norms that convey college-going values (Hill, 2008; 2012). Formal structures and resources may be counselors' quarterly review of students' transcripts or a program implemented to ensure all students take the SAT. Institutional norms may include high schools' annual college preparation and attendance patterns, for example, which can influence college enrollment. The percentages of students in the high school's previous graduating class who attended college and applied for financial aid can influence college application and choice (Engberg & Wolniak, 2010; Perna & Titus, 2005; Roderick, Coca, & Nagaoka, 2011). Other school-level factors, such as the availability of human, social, and cultural capital influence students' two- and four-year college attendance. The average level of math course taken, the average GPA, and the average number of AP courses taken all positively influence students' four-year college enrollment (Engberg & Wolniak, 2010). These patterns of college preparation can be embedded in schools and communicate part of the college-going culture.

Schools and school personnel can create and maintain a college-going culture, or a school-wide culture of college preparation and attendance for every student, to support postsecondary preparation (McClafferty, McDonough, & Nunez, 2002; McDonough, 1997; Plank & Jordan, 2001). Postsecondary preparation for all students, access to reliable college information and resources, and awareness of and access to college admissions tests and a college-preparatory curriculum are several key aspects of a college-going culture (McClafferty, McDonough, & Nunez, 2002). Implementing a college-going culture requires the effort of all school staff, students, and parents alike. Nevertheless, school counselors provide the college counseling infrastructure; unlike teachers who lead academic preparation for college, school counselors guide students through the planning and application process (Hill, 2012). Yet students enjoy differential access to school counselors based on race/ethnicity, SES, school size, urbanicity of the school, and academic performance (Bryan, Holcomb-McCoy, Moore-Thomas, & Day-Vines, 2009; Kimura-Walsh, Yamamura, Griffin, & Allen, 2008; Lee & Eckstrom, 1987). This inequitable access may influence students' ability to gather college information and fully engage in the college search process

For the purpose of this dissertation, I define college-going culture as the schoolwide postsecondary preparation for all students. This preparation includes the pervasive belief that college is possible for all students, important college information, and opportunities to prepare for college. Postsecondary preparation broadly implies that students should be prepared for a variety of college and career options, including certificate and degree programs, internships, and work. The emphasis is on creating a match for the student where they can pursue their goals successfully. It is important to note that a college-going culture does not imply that all students will attend a four-year institution directly out of high school.

College-going culture can be particularly important for students whose parents lack college education or who come from communities with few college-educated role models. Compared to students whose parents have less education, more students with college-educated parents aspire to attend college, complete the minimum academic requirements for college, enroll in higher levels of math or Advanced Placement courses, take the SAT or ACT, apply to college, and enroll in college (Choy, Horn, Nunez & Chen, 2000; Engberg & Allen, 2011; U.S. Department of Education, 2001; Perna & Titus, 2005). Although parents with lower levels of education are supportive of their child's goals they may lack the tangible resources or educational experiences to transmit important information during their child's college search process (Gonzalez, Stoner & Jovel, 2003; Reese, Balzano, Gallimore, & Goldenberg, 1995). Thus, school-based resources and a well-developed college-going culture can provide what these students may not be receiving from their home environments.

It remains unclear how school personnel define, create, and implement schoolwide norms and college-going culture, which influence students' college choice process. Particularly for students who are less predisposed to participate in the college search process based on limited resources in their communities, schools and schools' college-going culture may be the patches that save these students from leaking out of the education pipeline.

Purpose & Preview of the Studies

The purpose of this dissertation is to further our understanding of how and why students prepare for college within their school contexts. This dissertation explores how students interact with school-based interventions, including curricula, counseling, and programs, and how these interventions relate to students' college preparatory beliefs, knowledge, and actions. Because these interventions are situated within a college-going culture on campus, a key piece of this

dissertation is how the school-level college-going culture is implemented on campuses and its influences on students' college choice process.

This dissertation is composed of three distinct studies. The first paper analyzes sixth grade students' survey responses in relation to their exposure to Kids on Campus, an early college outreach curriculum implemented in their classrooms. The Kids on Campus program provided teachers with eight college and career lessons to teach during regular class time. This study's main research questions are

1. Does the delivery of college and career information embedded in academic content influence students' identification of sources of college knowledge?
2. Does the delivery of college and career information embedded in academic content influence who students talk to about college?
3. Does the delivery of college and career information embedded in academic content increase students' college knowledge?

To answer these questions, the study examines the difference between students' pre- and post-surveys for the treatment and control classrooms, which allows for an evaluation of the impact of the curriculum on students. Findings indicate that exposure to the in-class intervention increases students' sources of college information, facilitates more conversations with others about college and careers, and increases students' college knowledge.

The second study unpacks previous findings claiming counselors' effectiveness in the college preparation process. Specifically, this study explores the precollege counseling model of one school district and examines student-counselor interactions and their relationships with students' college preparation and postsecondary plans within various college-going culture contexts. The research questions for this study are

1. Which factors predict students' utilization of precollege counseling?
2. How do student-school counselor interactions about college relate to preparing for and planning to attend college within various college-going cultures?

The data for this study come from students' senior exit surveys and interviews with school personnel. The interviews reveal two main college-going cultures within the district: schools either support a broad range of postsecondary options and aim to *expand students' horizons* or schools take on a *focused preparation* approach, concentrating students' preparation activities for admissions to four-year institutions. One school in the district falls in the *middle ground*.

However, results indicate that relative to students in the reference school, students at all schools were more likely to complete important steps along the college choice process if they met with their school counselor for more college-related reasons. Additionally, students who reported meeting with their counselor for a variety of these reasons were more likely to plan to attend a four-year institution, as compared to planning to attend a community college or other non-baccalaureate degree-granting institution.

The third study uses the same data as above to uncover how schools and school personnel conceptualize the academic preparation component of college-going culture. The research questions for this study are

1. How do school personnel conceptualize their school's access to the AP program and the processes by which they assign students to AP courses? That is, how do school counselors and principals describe one aspect of college-going culture: access to rigorous college prep and higher-level courses?
2. How does this academic preparation component of college-going culture at each school relate to students' AP course enrollment and AP exam participation?

The school personnel discuss multiple mechanisms that they employ when assigning students into AP courses. The data are organized into a gatekeeping spectrum, where some schools operate with more open access policies by honoring student, parent, and teacher requests, and other schools close access to AP courses by using grade thresholds or other numeric formulas. After positioning schools long the gatekeeping spectrum, it appears as though gatekeeping practices make little difference in students' likelihood of participating in the AP program. Relative to the reference school, after controlling for student and school-level variables, students in all schools are more likely to enroll in an AP class and take an AP test.

Significance

The three studies work to explain how and why students in urban public schools utilize resources made available to them by their teachers, counselors, and schools. It also explains how utilization of these resources influences students' outcomes: how they view and engage with sources of college information; their college knowledge; their progress through the college choice process; and their participation in the AP program.

This dissertation addresses several gaps in the literature. First, college access and higher education researchers believe that early college awareness and preparation benefits students, however, this is often taken as self-evident. Few studies specifically examine access to early college programs, interventions, or students' early college choice processes (see Cabrera and La Nasa (2000a) and Eccles, Vida, & Barber (2004) for exceptions). For example, many references to early college preparation refer to beginning preparation earlier in high school, or examine college access programs that begin in middle school (Perna & Swail, 2001; Swail, 2000). Study one of this dissertation explores students' early college access and awareness by examining 6th grade students' interactions with an in-class intervention. Focusing on students before they enter

middle school supports the transition between elementary and middle school with students' college knowledge and potential sources of college information. Therefore, students enter their new environment with a foundation of college knowledge.

Additionally, teachers, and elementary school teachers in particular, have been a missing piece of the college access and preparation literature. High school counselors tend to be the focus of most studies (e.g. McDonough, 1997; Woods & Domina, forthcoming) and therefore the literature leaves teachers of earlier grades as an understudied potential source of college knowledge. Study one positions elementary school teachers as an important resource for students' college choice processes.

Although there has been some recent work exploring schools' college-going culture and the effects of school counselors on students' college choice, there are still glaring gaps in this literature. Although small-scale studies are informative, much of the work on college-going culture is not generalizable to larger populations (e.g. Holland & Farmer-Hinton, 2009; Jarsky, McDonough, & Nunez, 2009; Roderick, Coca, & Nagaoka, 2011). Study two adds to the college-going culture literature as it highlights the different ways in which schools enact college preparation attitudes, activities, and goals on their campuses. Similarly, study three explores how schools implement one aspect of college-going culture, the academic preparation piece, by exploring how school personnel use a variety of gatekeeping strategies to broaden or narrow access to AP courses. These gatekeeping mechanisms are part of the college-going culture that school personnel communicate to students.

Furthermore, the work around school counselors often examines only broad aspects of college guidance. Two main studies exploring the effects of meeting with a school counselor for college information pull from the Educational Longitudinal Study of 2002 and use the same key

variable (Bryan, Moore-Thomas, Day-Vines, & Holcomb-McCoy, 2011; Belasco, 2012).

Although these two studies increase our knowledge of how school counselors influence students' college application and attendance patterns, they do not account for the types or content of these interactions. Study two is designed to expand on the work of Bryan and colleagues (2011) and Belasco (2012) as it uses a composite variable of student-counselor meetings to explore a more nuanced variable measuring precollege counseling within various college-going cultures.

Relevant Terms

In this dissertation I use the term “college choice process” to describe the actions, decisions, and behaviors students exhibit as they prepare for and apply to college. Similar terms such as “college search process,” “college preparation process,” or other terms indicating the stages leading to college application and attendance should be considered synonymously.

Throughout the dissertation “college” is meant to include any type of postsecondary institution, including trade/technical schools, community colleges, and four-year institutions, unless specifically stated otherwise. The term “four-year college” refers to any college or university that primarily grants bachelor’s degrees. These institutions may be public, private, and/or out-of state. “Postsecondary plans” more generally refers to options that include various postsecondary institutions in addition to entering the military, workforce, or other plans. Other key terms are defined throughout the dissertation as appropriate.

Organization of the Dissertation

This dissertation examines the college choice process by exploring interventions, available resources, students' interactions with adults and programs that provide opportunities for college preparation, and the extent to which students utilize these material, human, and programmatic resources. In the following three chapters I cover each study in detail, beginning

with an introduction and literature review. Next, I outline the research approach and describe the sample, including participants, data sources, and settings. I also cover the relevant variables and concepts, as well as the analytical methods employed. Then, I provide a discussion and conclusion for each study, including practical implications, directions for future research. The final chapter of this dissertation links the three studies together and makes an argument for the significance of the research presented.

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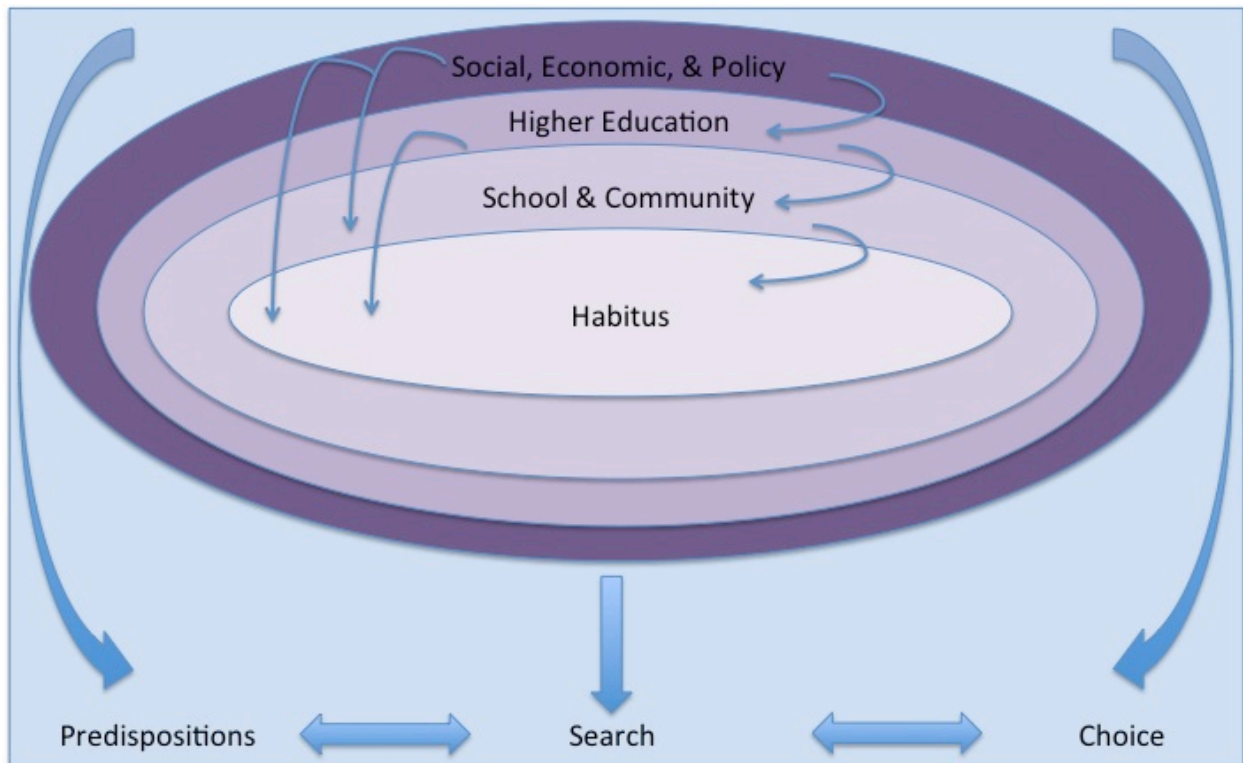


Figure 1.1. College choice model adapted from “Studying College Access and Choice,” by Laura W. Perna, 2006, in J.C. Smart (ed.), *Higher Education: Handbook of Theory and Research*, Vol. XXI, 99-157.

An Early College Outreach Curriculum Increases Students' College Social Capital, College Talk, and College Knowledge

Today, most students believe they will attend and complete college (National Center for Education Statistics, 2012). Despite high levels of college aspirations, many students, and Latino and low-income students in particular, do not have adequate or accurate college knowledge: they are ill informed of what is required for admission into four-year colleges, college costs, and the financial aid application process (Grotsky & Jones, 2007; Horn, Chen & Chapman, 2003; Kirst & Venezia, 2004; Tornatzky, Culter, & Lee, 2002). This is in part because many students have limited access to familial and school-based sources of college information and precollege counseling (Kimura-Walsh, Yamamura, Griffin, & Allen, 2008; Lee & Ekstrom, 1987; Venezia, Kirst, & Antonio, 2003; Woods & Domina, forthcoming). These information and access issues can contribute to Latinos' and low-income students' higher rates of enrollment in community colleges and other non-degree granting programs and their lower rates of enrollment in four-year universities (Chapa & Schink, 2006; Solorzano, Villalpando, & Oseguera, 2005; Venezia, Kirst, & Antonio, 2003). Building a foundation of college knowledge is crucial for the later preparation, application, and enrollment stages in the college search process.

School personnel, and teachers in particular, have the ability to impact students' postsecondary trajectories. From the literature, we know that student-teacher interactions and perceptions of teacher support positively influence Latino students' academic outcomes, school engagement, and students' help-seeking behaviors (Martinez, DeGarmo, & Eddy, 2004; Garcia-Reid, 2007; Garcia-Reid, Reid, & Peterson, 2005; Woolley, Kol, & Bowen, 2009; Plunkett, Henry, Houlberg, Sands, & Abarca-Mortensen, 2008; Stanton-Salazar, Chavez, & Tai, 2001). Thus, student-teacher relationships and teachers' demonstration of support are invaluable in

promoting students' academic success. The literature, however, has not yet emphasized the roles that teachers can play in promoting college attendance. More specifically, we propose that "teaching college" in classrooms can be a mechanism by which teachers can interact with students around college planning and information. We define teaching college as intentionally and explicitly engaging students in discussions and lessons that provide an understanding of what college is, how to adequately prepare, financial aid information, possible career options, and other related information. In this definition, teachers not only serve as social supports for students' future academic success, but also facilitate their knowledge and preparation for postsecondary enrollment as well. Teachers, in addition to school counselors, can draw upon their own experiences and knowledge to teach college. We suggest that there is room to explore how teachers can "teach college" in the context of daily instruction.

The current study addresses the need for increasing early college knowledge by assessing the impact of Kids on Campus, an early college access curriculum implemented in sixth grade classrooms. The program embedded college knowledge into math and English language arts curricula, and positioned the classroom teacher as the prominent provider of college and career information. The intervention equips teachers with the tools they need to deliver college knowledge while developing trusting relationships with their students. This novel approach emphasized the role of the classroom teacher and situated issues of college access in a P-12 context. The intervention was deliberately designed for sixth grade students in elementary schools so students could enter middle school with a foundational understanding of how to prepare for college.

This study explores the relationships between the Kids on Campus intervention and students' college knowledge. Using change scores comparisons, we first examined how students

identify potential sources of college information before and after receiving the intervention. Secondly, we explore how receiving the intervention affects students' classroom discussions about college and other related information. Lastly, the study evaluates the effect of the intervention on students' college knowledge.

Literature Review

Preparing for college is a recursive process that involves information gathering and decision-making, often over many years. In Perna's (2006) college choice model, multiple contexts influence students' understandings of college preparation and enrollment. In her model, one such context that influences college planning is the school and community context, which includes access to school resources. This study addresses such a resource that students, mostly Latino and working-class, can access in their classrooms and schools. Namely, we propose that classroom teachers can play an important role in shaping students' perceptions of college accessibility and college knowledge.

In the United States, student and parent aspirations to attend college are nearly universal (National Center for Education Statistics, 2012). Nonetheless, real discrepancies exist in who enrolls in college. Latino students enroll in college at lower rates than their peers and are often concentrated in community colleges (Chapa & Schink, 2006; O'Connor, Hammack, & Scott; 2010; Solozano, et al. 2005). Understandably, community colleges are often the more affordable option and may allow students to commute from home; however, enrollment in a community college is also related to a lower likelihood of completing a college degree (Choy, 2002; O'Connor, et al. 2010). Thus, there remain large gaps between Latino student college access and success when compared to their White peers. One possible explanation of this issue is the differential access to college knowledge available to students that enroll in college and those who

do not (Hooker & Brand, 2010; Zarate & Pachon, 2006). Indeed, precollege counseling, which is often limited or absent at the high schools which low-income students attend, explains part of the college enrollment gap between low-income students and their more affluent peers (Plank & Jordan, 2001). This study addresses this source of imbalance in college access and proposes that “teaching college” in young students’ classrooms is one way to deliver crucial college knowledge and encourage students to expand their information sources.

Information Channels

An important body of work indicates that college plans are influenced by a variety of factors including family’s socioeconomic status, social networks, academic achievement and educational experiences, and students’ self-concepts and beliefs (Davis-Kean, 2005; De La Rosa, 2006; Dubow, Boxer, & Huesmann, 2009; Eccles, Vida & Barber, 2004; Percy, 2009). However, it is less clear how students acquire information about college, and whether there is formal or informal precollege guidance from teachers, counselors, or other school personnel during the elementary and middle school years. An often-used model of college access positions parents, school counselors and, increasingly, private counselors as key purveyors of college-going support and guidance (Hossler & Gallagher, 1987; McDonough, 1997b). However, this model does not adequately capture the unique challenges faced by Latino students and their families in accessing college (Zarate, Saenz, & Oseguera, 2011).

Most Latino parents do not attend U.S. schools or colleges and tend to have lower levels of formal education (Aud, Fox, & Kewel Ramani, 2010). Thus, they often lack knowledge about applying to college and financial aid. In fact, the majority of Latino parents lack knowledge of college admissions criteria, financial aid instruments, and familiarity with state and national grants; they overestimate college costs; and they cannot distinguish between community college

and state college costs (Calderone, 2006; Cunningham, et al., 2007; Kimura-Walsh, Yamamura, Griffin, & Allen, 2009; Post, 1990; Tornatzky, et al., 2002; Zarate & Pachon, 2006).

Nevertheless, despite having low educational levels, Latino parents indeed encourage and offer support for higher education (Delgado-Gaitan, 1992; Gandara, 1982; Tornatzky, et al., 2002).

Additionally, older siblings often help with college planning or replace parents as information sources when parents are not able to assist their children with the college application process (Ceja, 2006; Perez & McDonough, 2008).

Despite providing emotional support and encouragement to attend college, many working-class Latino parents lack the tangible information and networks to assist their children in applying for college (Ceja, 2004). Thus, it is not surprising that many Latino and low-income students and families turn to schools and school personnel for information, guidance, and preparation for college (Goff, Patino, & Jackson, 2004, Gonzalez, Stoner, & Jovel, 2003; Kim & Schneider, 2005; Kimura-Walsh, Yamamura, Griffin, & Allen, 2008; Perna, 2004; Plank & Jordan, 2001; Tornatzky, Cutler, & Lee, 2002). However, the schools these students attend are often under-resourced, understaffed, or lack adequate counseling resources (Bridgeland & Bruce, 2011; Kozol, 1990; Lee & Ekstrom, 1987; McDonough, 1997; Woods & Domina, forthcoming). Because Latino students often have limited access to college-educated parents, college guidebooks, and private counseling, they particularly rely on school personnel as sources of college and career information (Hossler & Foley, 1995; McDonough, 1997).

In schools, school counselors are expected to lead the college preparation process and evidence shows that students' communication with counselors is related to students' college preparation and enrollment (Goff, Patino, & Jackson, 2004; McDonough, 2004). Nonetheless, there are significant limitations in accessing precollege counseling with counselors. Counselors

at public schools typically have large student caseloads and work with students with a variety of needs and challenges, which can limit time for adequate precollege counseling (Kirst & Venezia, 2005; Woods & Domina, forthcoming). Although counselors can be influential in the college preparation process, their insufficient time with students and varied responsibilities limit their ability to equitably prepare all students for a postsecondary education.

Because counselors at public schools are not as accessible as optimally desired, students may have more interactions and closer relationships with classroom teachers, as they are more present in students' daily activities. Although students report that teachers play a pivotal role in steering them to adequate college preparation, it appears from this work that teacher-derived college knowledge is informally shared and may be only available to high achieving students (Gonzales, et al. 2003; Zarate & Gallimore, 2005). Given counselors' inaccessibility and the critical need to provide college information to first-generation prospective college students, we ask whether teachers can play a more formal and prominent role in preparing students for college and providing essential college knowledge.

Another, often less discussed, source of college information is peers. As they enter adolescence, peers gain influence in students' academic trajectories. During this stage, precisely coinciding with their transition into middle school, adolescents place decreasing value on academics (Eccles et.al, 1989; Eccles, Wigfield, Harold, & Blumenfeld, 1993). At the same time, the relationships that youths develop in early adolescence begin to shift. Peer relationships become more important in early adolescence and youths relate less with adults as peers become a main source of social support (Berndt, 1979; Buhrmester & Furman, 1986; Furman, 1989; Lynch & Dante; 1997; Parker et al. 2006). These developments position peers to become either strong proponents or detractors of college preparation.

Given the propensity for peers to gain a larger role in students' lives, we question whether peers can become an additional source of support or information for college preparation. Perhaps teacher-led classroom instruction opens opportunities for peers to dialogue about college and postsecondary plans. When students rely more on each other instead of adults, it stands to reason that peers can exchange information that may shape each other's futures. Peers have the potential to reinforce what parents, school counselors, and teachers communicate about college.

Teaching College

In this paper, we propose that receiving college information from teachers embedded in classroom instruction can open information channels between teachers and students. Using Stanton-Salazar's (1995) concept of "institutional agents" (i.e. school staff members who have pivotal information and are open to sharing such information), we argue that teachers can gain the role of institutional agents when they embed their classrooms with college knowledge and opportunities to discuss, learn about, and prepare for college. Classroom teachers are the non-familial adults students see most often and can therefore have a critical role in developing students' perceptions of college accessibility by increasing their college knowledge. Not only will college knowledge embedded in academic instruction directly provide students with college information, the process can also propel trusting relationships where students can rely on or begin to expect college information and support from teachers (Coleman, 1988; Gonzales, et al. 2003; Stanton Salazar, 1995; Farmer-Hinton, 2008). In addition, we argue that embedding college information in academic instruction contributes to building a classroom college-going culture, or a shared classroom expectation that all students are prepared for a range of postsecondary options, including college (Corwin & Tierney, 2007). Thus, delivering college

information is more than promoting memorization about college eligibility requirements but also implicitly increasing the role of the teacher in shaping perceptions of college accessibility.

For the purpose of this study, “teaching college” employs the perspective of the teacher as the “more knowledgeable other” (Vygotsky, 1978). In lessons we designed, teachers guide understandings of why college is important, how students can prepare for college, discuss opportunities for financial aid and scholarships, and link education with occupations. In short, the lessons facilitate purposeful instruction to increase students’ awareness of the necessary steps, practices, and methods to prepare for college, including eligibility for four-year institutions. We propose that teaching college in a developmentally appropriate way will support students’ college preparation by increasing their college knowledge and augmenting their support network to include teachers.

College Knowledge

We borrow from Conley’s (2008) definition of college knowledge, which includes the “contextual knowledge associated with application and acculturation to college” (p. 4). Having college knowledge involves the awareness of steps to proceed through the college choice process and valuing the importance of completing these steps. In identifying which college knowledge is helpful for students to learn in the early years, we rely on previous literature that identifies college knowledge that has implications for preparing for and enrolling in college. This includes but is not limited to knowledge of college admissions requirements and examinations; financial aid and college costs; college life; and understanding the relationships between educational and occupational goals.

Lack of college knowledge may result in difficulty progressing through the college choice process. For example, students need to complete at least three actions in order to enroll in

four-year postsecondary institutions in the U.S.: take college admissions tests, complete college entrance requirements, and apply to college (Klasik, 2012). Students may inadvertently take themselves out of the admissions eligibility pool if they are not informed or prepared for completing these requirements (Hooker & Brand, 2010; Horn, Chen, & Adelman, 1998; Klasik, 2012).

Another critical, albeit less precise, dimension of college knowledge is academic preparation, such as completing a challenging course load and the required courses for college admission. Research has documented the importance of completing the required coursework with a high degree of curricular intensity for enrolling in a four-year university (Attewell & Domina, 2008; Cabrera & La Nasa, 2000; Finkelstein & Fong, 2008; Klasik, 2012), persistence in college (U.S. Department of Education, 2001) and degree attainment (Adelman, 2006). Unfortunately, in many high schools, high school graduation requirements are not aligned with college admissions requirements, resulting in students graduating from high school ineligible to attend four-year institutions (Gonzalez, et al. 2003; Auerbach, 2002). In California, the setting of this study, eligibility to four-year colleges and universities depends, in part, on having taken a specific combination of high school classes in various core subjects that have been evaluated to meet “A-G requirements”. Without adequate understanding of what is required for college admissions, student may passively progress through high school without knowing whether they are receiving adequate college preparation. In fact, in California the majority of high school graduates graduate without having completing requirements to attend a public four-year in-state university (Zarate, et al. n.d.). We argue that students are better able to advocate for their own academic trajectories when they are equipped with information regarding the importance of completing college preparatory high school courses.

Financial aid knowledge is one of the largest disparities in college knowledge that has been documented among Latino families and students (De La Rosa, 2006; McDonough & Calderone, 2006; Zarate & Fabienke, 2007; Zarate & Pachon, 2006). Existing research confirms that parents without a college education, non-English speaking parents, and parents and students of color are most likely to lack accurate financial aid knowledge (De La Rosa, 2006; McDonough & Calderone, 2006; Zarate & Fabienke, 2007; Zarate & Pachon, 2006). For example, Latino and working class families tend to overestimate college costs, are unaware of various types of financial aid, and do not know how to complete a financial aid application (Grotsky & Jones, 2007; Horn, et al. 2003; Kirst & Venezia, 2004, Zarate & Pachon, 2006). These misperceptions, in turn, have been found to play a role in determining whether Latino students enroll in college (Nunez & Kim, 2012). The existing research also explores ways to address the financial aid knowledge deficits. For example, when low- to moderate-income students receive tangible assistance in completing financial aid applications, in addition to financial aid information, they are more likely to submit the application and enroll in college (Bettinger, Long, Oreopoulos, & Stanbonmatsu, 2009). Additionally, identifying and using more sources of financial aid information has positive implications for enrolling in college (Plank & Jordan, 2001). These findings highlight the need for students to learn where to acquire reliable and accurate financial aid information before they form their perceptions of college accessibility.

Early College Knowledge

Given the discrepancy in college knowledge among certain communities, including Latino families, we propose that delivering college information early can support students' college aspirations with useful knowledge. We are not alone in proposing pre-high school interventions (see Gandara & Bial, 2001; Swail, 2000; Gullatt & Jan, 2003; MacDonald & Dorr;

2006; Perna, 2002; Perna & Swail, 2001). Despite a uniform appeal for earlier college outreach, there are few existing programs that target elementary or middle school-aged students (Gandara & Bial, 2001; Swail, 2000). From the little research on early college outreach, we also know that programs that are long lasting, embedded in state standards, and institutionalized in schools are more desirable (Cates & Schaeffle, 2011; Domina, 2009; Druckman, 2007; Gullatt and Jan, 2003; Gandara & Bial, 2001; Moran, Cooper, López, & Goza, 2009).

Students also have much to gain from receiving college access outreach earlier. First, students and parents develop their college and occupational expectations well before middle school and these expectations can influence students' later college planning (Eccles, Vida & Barber, 2004; Zarate & Gallimore, 2005; Cabrera & La Nasa, 2000). Receiving college information early on and learning the connections between careers and college may help shape a college-going identity that, in turn, leads to college expectations. Second, preparations to fulfill college eligibility requirements and initiate college-prep curricular trajectories begin in upper elementary and middle school. Students are often placed in advanced, honors, college preparatory, or remedial courses in high school based on their previous grades, achievement test scores, and teacher recommendations (Oakes, 1985). For example, Atanda (1999) finds that students who enrolled in algebra in eighth grade were more likely to take higher-level courses in high school and eventually apply to four-year colleges. In ideal middle school settings, the default curriculum would prepare all students for a college-eligible academic trajectory. Because this is often not the case (Auerbach, 2002; Zarate & Pachon, 2006; Oakes, 1985), students need to advocate for themselves and seek adequate preparation before high school.

It may not be enough to learn college knowledge in order to change students' schooling trajectory. However, we propose that delivering college information embedded in a standards-

based curriculum facilitates conversations about college, students will come to view college-going as a normalized expectation, and students will learn to identify future sources of college knowledge. This may influence the number and types of college-related conversations students have, both at younger ages and throughout adolescence. The curriculum may help students identify college-educated adults in their immediate lives and encourage students to inquire about the ways in which they can pursue a postsecondary education.

Purpose of the Study

As we have reviewed, college knowledge from school-based personnel can promote college preparation (Hooker & Brand, 2010). Conversations with college knowledgeable adults, such as teachers, can facilitate helpful relationships with teachers that can link students to college knowledge, and, in turn, influence students' perceptions about college access. We developed one such early college outreach intervention, Kids on Campus, to increase college knowledge among mostly Latino 6th grade students in Southern California.

The objective of this study is to examine whether the intervention has an impact on students' potential sources of information, conversations about college and careers, and college knowledge. The research questions of this study are: *1) Does the delivery of college and career information embedded in academic content influence students' identification of sources of college knowledge? 2) Does the delivery of college and career information embedded in academic content influence who students talk to about college? 3) Does the delivery of college and career information embedded in academic content increase students' college knowledge?*

We expect that as a result of this intervention, students will learn to identify multiple potential sources of college knowledge, they will have more conversations with teachers and others about college and careers, and students' college knowledge will increase. In the long term, we

conjecture that greater exposure to crucial college knowledge and sources of college knowledge will provide them with an understanding of how to navigate the college preparation process.

Methods

The Intervention: Kids on Campus

This study examines the impacts of Kids on Campus, an early college outreach intervention for sixth grade students. Kids on Campus aimed to provide students with an early awareness of college by introducing them to basic college knowledge, career options, and ways to prepare for college. This intervention targeted sixth graders because it is a crucial period in students' development both socially and academically, before transitioning to middle school. Additionally, in the district in which the intervention was implemented, sixth grade is at the elementary school. Thus, students have only one classroom teacher, and this allowed us to focus the intervention and evaluation on one teacher for each student. A previous version of the program was deployed in various school districts in Southern California and informal feedback indicated that it was a popular and well-liked program. We adapted the existing program to an eight-lesson curriculum and aligned each lesson to meet specific California state and Common Core national sixth grade mathematics and English language arts standards.

The lessons that we developed addressed a variety of career and college topics, including college information, career planning, academic preparation, and financial aid information. The first lesson introduced students to the variety of colleges and universities in California. Lesson two exposed students to relevant postsecondary vocabulary terms such as “financial aid” and “undergraduate.” During lesson three students planned a hypothetical road trip to visit multiple college campuses throughout California. For lesson four, students learned about campus life and designed their own college brochure. In lesson five, students drew connections between careers

and college majors, and in lesson six students learned which classes are required for admission to California's public four-year universities. Lesson seven explained various types of financial aid and lesson eight taught students about different campus characteristics throughout the California State University system. The lessons were approximately one hour in length and used a variety of materials including visual aids, road maps, institutional data from real colleges, and campus brochures.

Before teachers implemented the curriculum, we trained them to deliver the lessons to their sixth-grade students over a four-month period in the spring of 2012. Teachers received a one-hour training by the researchers and an associated consultant. The training largely provided an overview of each lesson and instructions for collecting evaluation data for the study. As part of the training, teachers received a binder that contained the eight lesson plans, each with scripted lessons and detailed cognitive and affective learning objectives. In addition, teachers received master copies of all handouts and a CD with accompanying PowerPoint presentations for each lesson.

Sample

The three elementary schools were first selected to participate in this study based on existing relationships with principals or word-of-mouth recommendations. Two of the schools were randomly designated as treatment schools and the third school served as the control group. This research design allowed us to observe treatment effect differences between treatment and control groups. Each treatment school had 4 sixth-grade classrooms and the control school had 6 sixth-grade classrooms, for a total of 14 classrooms with approximately 35 students enrolled per classroom (see Table 2.1). The resulting distribution is such that 61% (n=289) of the sample received the treatment.

A total of 470 unique students answered pre- or post- surveys or both. Seventy-one percent of them completed both pre- and post-surveys (n=334). Statistical comparisons between those with complete data (pre- and post-surveys) and those with incomplete data reveals significant differences in having siblings who attended college and having at least one parent who completed high school ($p < .05$). That is, students who completed both surveys were more likely to have siblings who had attended college and at least one parent who completed high school. The primary reason for not having completed both surveys, as explained by the teachers was being absent the day one of the surveys were administered.

The resulting sample is largely Latino/Hispanic (92%) with the remaining students identifying as another race or multiracial. However, school-reported data has recorded 92% to 97% Latino/Hispanic student enrollment at these three schools in these grade levels for the year of program implementation (California Department of Education, 2013). Thus, we deduce that the majority of students who omitted the race identification questionnaire item were Latino/Hispanic. The sample was approximately half male and half female (see Table 2.2 for student demographics). Additionally, between 91% and 95% of the schools' populations are designated as having qualified for free and reduced lunch, a proxy indicator for socioeconomic status (California Department of Education, 2013). Moreover, only 32% of the respondents had at least one parent who had completed high school. And only 48% of the students had at least one sibling who had ever attended college. We describe this sample as mostly Latino students from households with low incomes. There were no significant differences between the treatment and controls groups based on gender, race/ethnicity, parental education levels, or whether students had siblings in college.

Instrument

Teachers in both the treatment and control settings administered a pre-treatment survey in January or February of 2012, before the first lesson in the case of the treatment schools. The purpose of the student surveys was to evaluate the impact of the program on students' college and career plans, expectations, and college knowledge. Specifically, 39 survey items measured students' college and career plans, knowledge of college and financial aid information, awareness of sources of information, and conversations with others about college and careers. Most of the survey questions were dichotomous (yes/no or true/false) or multiple-choice items. Teachers administered the post-treatment survey in May 2012, after the implementation of the last lesson in the case of the treatment schools. The time span between the last lesson and administration of the post-survey varied between classrooms and ranged from 24 hours to 1 week.

Variables

There are several variables that helped us assess how the early college access curriculum influenced students' conversations about college, knowledge of sources of college information, and college knowledge. The three groups of dependent variables are: 1) changes in sources of college knowledge, 2) changes in students' reported conversations about college and careers, and 3) increases in college knowledge. Although other survey items were helpful in assessing the impact of the intervention, our focus here is on these three sets of outcomes.

Sources of College Knowledge. This set of variables came from the survey question "If you have questions about college, who would you be able to ask?" and offered the following options: parents/guardians, siblings, friends/classmates, teachers, and guidance counselors. If the student indicated that they had spoken with one of these people about college, the variable was coded as "1" and if not, it was coded as "0".

Conversations about College and Careers. Four survey items captured changes in students' conversations about college and careers in class and with parents, siblings, friends, and school counselors. The first survey item measured the frequency that students spoke with their parents about college: "How many times during this school year have you talked about college with your parents or guardians?" The possible categorical responses were never, 1-2 times/sometimes, 3-4 times/often, and 5 or more times/regularly. A second survey item measured the frequency students reported speaking with their teachers about college with the same scaled response options as the first variable discussed prior. A third dichotomous item asked, "This year, in class, I have talked about possible careers I can choose from" (No/Don't know=0 and Yes=1). A fourth survey item asked, "Who have you ever talked to about going to college?" and the options listed were: parents/guardians, siblings, friends/classmates, teachers, and guidance counselors. Respondents could select as many items as they wished. These choices, in turn, were coded dichotomously so that selected items were coded as "1=Yes" and unselected items were coded as 0=No.

College Knowledge. Seven survey items assessed students' college knowledge. These items covered information about financial aid, knowledge of what a college major is, and knowledge of course requirements to be eligible to a public university in California. In the survey item addressing knowledge of course requirements, students were asked to identify the number of years of study required for a specific subject (i.e., math, English, etc.). Students had to select a number from 1-4. The other items in this group of variables consisted of true or false items with statements such as, "If a student gets a scholarship to pay for college, he or she will have to pay it back". Items in this category were recoded where correct answers were coded as 1, and incorrect answers were coded as 0.

Limitations to the Data

This dataset could not offer controls for student academic performance, socioeconomic status, or home language. Therefore, we use school- and district-level data to estimate some of these demographic variables when describing our sample. While the sample is racially and socioeconomically homogenous, comparisons across academic performance would have been insightful.

Secondly, the generalizability of the results of this study is limited because the intervention was implemented on a small scale in an ethnically- and socioeconomically-homogenous school district. The student population was primarily Latino and low-income and it stands to reason that the effects of the program would vary for more diverse student populations. Implementation with this population was strategic, however, because of the traditionally low college attendance and completion rates for students from Latino and low-income backgrounds (Solorzano, Villalpando, & Oseguera, 2005).

Analysis

First, we examined mean comparisons of pre-survey responses to examine differences between treatment and control groups (see Table 2.3). Next, we examined change scores to determine significant mean changes between the pre- and post-treatment surveys of treatment and control schools for all dependent variables. Change scores allowed for the examination of differences between treatment and control groups across various college knowledge outcomes (Allison, 1990; Williams & Zimmerman, 1996). For example, if students indicated in the pre-survey that they spoke with their teacher about college one or two times and changed their answer in the post-survey to indicate that they spoke about college five or more times, we viewed this as an increase in the frequency that students and teachers discuss college; thus the

change score moved in the positive direction. The change scores measured the average distance students' responses moved between the pre- and post-treatment surveys and the *t*-tests determined whether the means of these differences across treatment and control groups were significant.

For dichotomous variables, a change score, and the means of change scores, measured the distance from “1” or “correct”. A negative change score indicated movement in the “incorrect” direction. For more rigorous thresholds of the effect of the intervention, we eliminated the cases where the respondent was correct (=1) in *both* pre- and post-treatment surveys because we wanted to focus our analysis on students that had room to “grow” or whose knowledge decreased over the span of the intervention. We felt this approach yielded a more conservative calculation of impact of the intervention program.

Results

Preliminary Results

The initial examination of the pre-treatment survey responses indicated that the mean for the control group was higher than the mean for the treatment group on several variables. However, the only consistent pattern that emerged was the control group's higher responses on the college knowledge variables (see Table 2.3). More students in the control group knew what a college major was; knew that there are several types of financial aid available; and correctly indicated whether loans or scholarships need to be repaid and whether good grades can help secure financial aid.

Sources of College Knowledge

More students who received the intervention identified teachers, school counselors, and siblings as potential sources of college knowledge after the treatment, compared to the control

group (see Table 2.4). The mean change in the number of students who identified teachers as sources of college information between the treatment and control groups were marginally significant ($t(332)=-1.930$, $\text{sig.}=0.055$). We noted that the significant difference between treatment and control groups was driven by the control group's decrease in identifying teachers as sources of college information in the post-treatment survey. The mean change of students who identified school counselors ($t(332)=-3.211$, $\text{sig.}=0.001$) and siblings ($t(332)=-2.746$, $\text{sig.}=0.006$) as sources of college information after the treatment was also significantly higher for the treatment group. The significant change in these differences is attributed not only to the increases in the number of treatment students who identify school counselors and siblings as sources of college information post-treatment, but also to a decrease in the number of control students who identified these sources of college information between the pre- and post-treatment surveys. It is important to note that the significant differences in identifying counselors and siblings as sources of college knowledge was apparent even though neither school counselors nor siblings were explicitly addressed in the curriculum content.

Conversations About College and Careers

In addition to students learning to identify sources of college knowledge, exposure to the treatment seems to have also had an effect on the presence and frequency of conversations with others about college and careers. The pre- and post-treatment changes of the frequency of college talk with teachers were significantly different between the treatment and control groups ($t(328)=-8.980$, $\text{sig.}<0.001$, see Table 2.4). In addition, the mean change of students who ever spoke with teachers about college was significantly different between those who received the treatment and those who did not ($t(332)=-4.463$, $\text{sig.}<0.001$). The mean change of the number of students who reported talking about careers in class was significantly higher for the treatment group ($t(329)=-$

5.050, sig.<.001). Finally, the mean change of the number of students who reported having conversations with counselors about college was significantly higher for the treatment group ($t(332)=-3.870$, sig.<.001). The significant differences in the change scores were due in part to a decrease in control group students' reports of speaking with others about college and careers after the first survey.

The findings also indicated that the intervention may have led to conversations with others besides school personnel, such as peers and siblings. The changes between the treatment and control groups in having conversations with peers ($t(332)=-2.723$, sig.=.007) or siblings ($t(332)=-2.812$, sig.=.005) about college after the treatment were significant. The differences between the two groups for students who speak with siblings are significant despite the fact that there is only a slight increase, pre- and post- treatment, in the proportion of treatment students that identify peers and siblings as sources of college knowledge. In fact, the significant differences in the change scores are due, in part, to the fact that fewer students in the control group reported speaking with a peer or sibling about college after the first survey.

Finally, no factor associated with parents as a source of college knowledge or as someone to speak to about college had significantly different changes between the treatment and control groups (see Table 2.4). This finding may reflect that there was no explicit parent component in the curriculum.

College Knowledge

The results indicated that the intervention led to an increase in students' college knowledge, including information about college entrance requirements and financial aid (see Table 2.4). More students in the treatment group identified the correct number of years of English ($t(231)=-3.469$, $p<.001$) and math ($t(270)=-1.896$, $p<.049$) required for admission to a

four-year university in California after the treatment, compared to the control group. The intervention appeared to have had no significant effect on students' knowledge of science, history, or non-English language requirements. Additionally, after the intervention more students in the treatment group reported knowing what a college major is ($t(254)=-9.058, p<.001$).

Some of the starkest differences in college knowledge between treatment and control groups, post-treatment, were related to financial aid knowledge. As noted, more control group students had correct college knowledge in the pre-treatment survey (see Table 2.3). Some of these significant differences are driven by the decreases in the control group's responses after the first survey. Of the students who lacked financial aid knowledge before the intervention, significantly more students who received the intervention could identify that several types of financial aid are available ($t(135)=-3.566, p<.001$), knew that earning high grades may help students secure financial aid ($t(122)=-4.220, p<.001$), and identified whether loans ($t(170)=-4.977, p<.001$) or scholarships ($t(159)=-5.684, p<.001$) need to be repaid (see Table 2.4)

Discussion

The early college outreach curriculum embedded in math and English language arts classroom instruction was designed to equip teachers with tools to infuse college information in classrooms and provide students with a basic understanding of college and careers. Our results indicate that the intervention allows students to identify teachers and school counselors as sources of college information and is an effective way to facilitate conversations with teachers and others about college and careers. It appears as though the process was also effective in increasing students' college knowledge.

After the intervention, more students in the treatment group were able to identify teachers as key sources of college information compared to students in the control group. Part of this

effect is driven by a decrease of control group students who identified teachers as sources of college information. This decrease may be due to peers gaining a larger influence in adolescents' lives, as predicted by developmental literature (Eccles et.al, 1989; Eccles, Wigfield, Harold, & Blumenfeld, 1993). We conjecture that the intervention appears to have stymied students' decreasing reliance on adults for college information. Early interventions such as this one may reinforce teachers and other adults as important resources, resulting in an increase or plateauing effect of students' dependence on adults for college information.

It appears that students receiving the intervention not only learned to identify teachers as a source of college and career information, but they also engaged in conversations with them about college majors, college admissions requirements, and financial aid. We acknowledge that teachers delivered the curriculum, so it is expected that conversations with teachers would increase as a result of the implementation alone. This is important nonetheless, in light of the fact that these important conversations about college happened less frequently for students in the control group.

The intervention increased the number of potential sources of college information to also include school counselors. Likewise, the intervention increased treatment students' conversations with school counselors. This is an interesting finding because there was no explicit curricular content on school counselors. It is possible that while implementing the intervention, teachers mentioned school counselors as a resource for students to use once they reach middle school or high school. Teachers may have also reflected on their own college preparation and search processes, and mentioned school counselors as a key player in their own educational journeys. Identifying school counselors, in addition to teachers, may facilitate students' self-advocacy for college preparation in the middle and high school years. Another possible explanation is that the

school counselor came into the classroom during a lesson or the teacher invited the school counselor to talk to the students about college. However, this is an unlikely scenario given that elementary school counselors focus less on college preparation and may be consumed with organizing standardized assessments at this time of the year. These findings indicate that conversations with teachers about college and careers in the classroom context also broaden students' range of potential sources of college information, which is precisely what we anticipated as an outcome of the intervention: a flow of information from teachers to students as teachers draw upon their own experiences to infuse college knowledge into the classroom.

Although siblings were not a key component of the intervention, more students in the treatment group identified siblings as potential sources of college information and reported having more conversations with their siblings. Driving some of these effects is the control group's decrease in identifying siblings as sources of college information and a decrease in conversations with siblings during the treatment period. It appears as though the intervention staved off students' declining propensity to use siblings for college information. Students in the treatment group may be more likely to continue to rely on older siblings to help in the college planning process when parents do not possess college information, as shown in previous research (Ceja, 2001, 2006; Perez & McDonough, 2008).

Considerably more students in the treatment group had conversations with their peers about college, as compared to those in the control group. Again, these broader information channels may serve as a means to increase students' college knowledge. We interpret these results with caution, however, because peers may not always provide accurate or optimal college information (Perez & McDonough, 2008; Person & Rosenbaum, 2006). Nevertheless, we assert

that when young students discuss college frequently and with multiple people, they are more likely to develop an awareness of college and receive reinforcement of their plans.

Moreover, it appears that through the conversations that ensued, students increased their college knowledge about A-G course requirements, college majors, and financial aid information. This is compelling, given that previous research indicates that awareness of required coursework and financial aid is particularly influential in students' postsecondary trajectories (Adelman, 2006; Attewell & Domina, 2008; Klasik, 2012; Horn, Chen & Adelman, 1998; Horn, et al. 2003; Zarate & Pachon, 2006). Equipping students with a foundation of college knowledge earlier in their academic careers may provide students with a starting point to develop a college-going identity, practical tools to prepare for college, and an awareness of the college application and financial aid processes. For example, because Latino and low-income students are more sensitive to college costs (Ellwood & Kane, 2000) an early awareness of the availability and variety of financial aid may ease students' worries about financing college. As Perna (2004) notes, most students and families receive financial aid information too late, after decisions – often related to academic preparation – are made.

Interestingly, there were no significant changes in students' reports of identifying parents as sources of information or having conversations about college and careers with their parents. One reason for this may be that generally, students already talk with their parents about their educational futures, which our data also indicates (not shown). However, post-treatment survey responses indicate that only 18% of the full sample spoke with their parents about college 5 or more times, reflecting a need to increase the frequency of parent-child interactions about college and careers. An alternative explanation is the limited worth teachers place on the role of Latino parents in students' college preparation, and thus not mentioning parents as a source of college

information in the delivery of the lessons. In the preliminary analysis of interviews with the teachers in the study, it appears as though teachers placed low value on parents' ability to effectively communicate college information to the students, despite their emphasis that parents should be a key player in students' college planning process. Another possible explanation for the non-significant results is that parents' roles in the college choice process may have been absent from the classroom conversations, given that the roles of parents were not an explicit part of the curriculum.

We argue that with additional sources of college knowledge at an early age, students will be better equipped to advocate for themselves in middle and high school, seek out college knowledgeable adults, and make informed decisions about college. Although it is unknown whether the intervention will have an effect on students' college attendance or completion, by increasing the number of people students believe are college knowledge purveyors, and providing a foundation of college knowledge, the intervention may impact students throughout their college search process, starting in sixth grade. With additional sources of college information, students may seek answers from multiple people, thus gaining a better understanding of college preparation, the application process, and enrollment.

Practical Implications and Future Directions

While conducting this study, we came to understand that the Kids on Campus curriculum is flexible and adaptable. Teachers and schools augmented the intervention, using their professional judgment to make it appropriate for their classroom, student population, and teaching style. When lessons are augmentable, teachers may be more likely to implement the curriculum because of its flexible nature. Teachers incorporated the intervention with preexisting lessons or developed school-wide activities to build upon the lessons and foster a college-going

culture. Moreover, when teachers present the material throughout the academic year, lessons can easily build on the skills and knowledge students have developed in their regular coursework.

Previous research has shown that parents are instrumental in encouraging students' educational aspirations and in providing support throughout the college choice process (Gonzalez, 2012). Despite not being integrated into the current intervention, we acknowledge that parental involvement is an essential component of a high-quality college-going culture. We believe that with manageable tweaks in the curriculum, parents could easily be incorporated into the curriculum, thus engaging parents in the educational process and facilitating early, and perhaps consistent, parent-child conversations about college. For example, including parents in the Kids on Campus curriculum could be particularly helpful when learning about possible sources of financial aid since parents' actions to find out financial aid information are heavily influential in Latino students' four-year college enrollment (O'Connor, et al. 2010).

The intervention has potential to be implemented in similar schools and classrooms. The curriculum does not require a large time investment for training teachers or for planning outside of their busy schedules. Given the low-cost yet effective nature of the intervention, we argue that it can be easily scaled up to additional schools and classrooms. Replication of this study could result in a better understanding of how the intervention affects students across educational contexts.

As suggested by Latinos' and low-income students' increasing college participation rates, many underrepresented students are able to navigate the college preparation and admissions processes adequately. However, many remain uninformed, underprepared, and lack networks that communicate college knowledge. Often, when students do have access to crucial information it is too late to alter academic trajectories. This study argues that teachers can

effectively utilize an in-class intervention to expand students' potential sources of college information, increase the number and types of college-related conversations occurring, and augment students' college knowledge to include critical information.

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Table 2.1

Study Sample

	Treatment Schools	Control Schools	Total
Number of Schools	2	1	3
Number of Classrooms	8	6	14
Number of Students	205	129	334

Note. Study sample includes students with data on both the pre- and post-surveys.

Table 2.2

Student sample

	Male		Hispanic/ Latino		Parent graduated high school		Sibling attended college	
	Percent	N	Percent	N	Percent	N	Percent	N
Treatment Schools	47.8	98	93.2	191	31.2	64	47.8	98
Control Schools	45.0	58	89.9	116	33.3	43	48.8	63
Total Sample	46.7	168	91.9	307	32.0	107	48.2	161

Table 2.3

Comparison of Means from Treatment and Control Groups' Pre-Survey Responses

	Treatment	Control	Difference	Significance
Sources of College Knowledge				
Teacher	0.746	0.76	-0.014	0.784
School counselor	0.117	0.163	-0.046	0.235
Peers	0.292	0.188	0.104	0.032
Sibling	0.293	0.419	-0.126	0.018
Parent	0.678	0.636	0.042	0.427
Conversations About College and Careers				
Teacher	0.395	0.597	-0.202	0.003
School counselor	0.2	0.7	-0.5	0.020
Peers	0.463	0.465	-0.002	0.976
Sibling	0.454	0.527	-0.073	0.192
Parent	0.819	0.814	0.005	0.915
Frequency of college talk with teacher	0.21	0.26	-0.05	0.000
Frequency of college talk with parents	0.25	0.24	0.01	0.049
Spoke in class about careers	0.631	0.703	-0.072	0.176
College Knowledge				
English requirement	0.264	0.38	-0.116	0.039
Math requirement	0.229	0.245	-0.016	0.751
Science requirement	0.242	0.239	0.003	0.951
History requirement	0.204	0.156	0.048	0.306
Language requirement	0.253	0.204	0.049	0.342
Knows what a college major is	0.198	0.444	-0.246	0.000
Knows several types of financial aid	0.635	0.75	-0.115	0.031
Knows loans need to be repaid	0.51	0.724	-0.214	0.000
Knows scholarships do not need to be repaid	0.535	0.75	-0.215	0.000
Knows grades help secure financial aid	0.722	0.879	-0.157	0.001

Note. Results shown are means from t-tests of students' pre-survey responses.

Table 2.4

Treatment Group Students Increase Sources of College Knowledge and Conversations with Others About College and Careers

	N	Mean of change score between pre- and post-surveys (Standard Deviations)		Difference	<i>t</i>	<i>p</i>	df
		Treatment	Control				
Sources of College Knowledge							
Teacher	334	0.102 (0.036)	0.008 (0.043)	0.094	-1.93	0.055	332
School counselor	334	0.088 (0.033)	-0.078 (0.038)	0.166	-3.211	0.001	332
Peers	333	0.049 (0.041)	0.063 (0.044)	-0.014	0.218	NS	331
Sibling	334	0.073 (0.032)	-0.078 (0.046)	0.151	-2.746	0.006	332
Parent	334	-0.02 (0.038)	-0.016 (0.047)	-0.004	0.066	NS	332
Conversations About College and Careers							
Teacher	334	0.249 (0.040)	-0.039 (0.050)	0.288	-4.463	0.000	332
School counselor	332	0.074 (0.021)	-0.055 (0.021)	0.129	-3.87	0.000	330
Peers	334	0.146 (0.039)	-0.031 (0.054)	0.177	-2.723	0.007	332
Sibling	334	0.014 (0.034)	-0.147 (0.048)	0.161	-2.812	0.005	332
Parent	333	0.006 (0.029)	0.155 (0.016)	-0.149	0.21	NS	331
Frequency of college talk with teacher	334	1.14 (0.091)	0.039 (0.079)	1.101	-8.98	0.000	328
Frequency of college talk with parents	330	0.039 (0.067)	0.125 (0.083)	-0.086	0.812	NS	328
Spoke in class about careers	331	0.281 (0.036)	-0.015 (0.047)	0.296	-5.05	0.000	329

College Knowledge							
English requirement	233	0.161 (0.048)	-0.107 (0.059)	0.268	-3.469	0.001	231
Math requirement	272	0.048 (0.048)	-0.094 (0.056)	0.142	-1.896	0.059	270
Science requirement	260	0.044 (0.044)	0.089 (0.066)	-0.045	0.591	NS	258
History requirement	272	0.101 (0.048)	0.058 (0.051)	0.043	-0.577	NS	270
Language requirement	263	0.043 (0.048)	0.04 (0.057)	0.003	-0.039	NS	261
Knows what a college major is	256	0.582 (0.041)	-0.088 (0.066)	0.67	-9.058	0.000	254
Knows several types of financial aid	137	0.465 (0.082)	-0.041 (0.120)	0.506	-3.566	0.000	135
Knows loans need to be repaid	172	0.447 0.067	-0.155 0.107	0.602	-4.977	0.000	170
Knows scholarships do not need to be repaid	161	0.467 (0.068)	-0.222 (0.104)	0.689	-5.684	0.000	159
Knows grades help secure financial aid	124	0.202 (0.098)	-0.467 (0.121)	0.669	-4.22	0.000	122

Chapter 3

The High School to College Transition: College-Going Culture, Student-Counselor Interactions, and the College Preparation Process

In 2009 President Obama introduced the American Graduation Initiative and the Obama-Biden Agenda for College Affordability in order to increase college degree completion. President Obama's (2009) goals of increasing community college completion and establishing the United States as the global leader in college graduates underscores the importance of understanding how high schools and school personnel prepare their students for college. Given the changing demographics of the U.S., and California in particular, some of the energies spent to achieve these goals must focus on low-income, minority, and future first-generation college students.

Students across the country prepare for college in a variety of ways and in multiple contexts, the most salient of which is arguably the high school they attend. Most students believe they will attend college and plan to do so, but the high schools they attend can play a large role in students' postsecondary trajectories. High school students prepare for college by taking required courses, taking the SAT, filing for financial aid, and completing college applications, but the opportunities to complete such actions vary with students' access to key resources at their schools and within their local communities.

At the focal point of academic preparation are teachers, whereas school counselors often spearhead the college preparation and guidance process. Notably, the American School Counselor Association (ASCA, 2013) argues that part of a high school counseling program is providing assistance in the "postsecondary planning and application process" and "career awareness and the world of work." Counselors can engage in precollege counseling through

classroom guidance, individual guidance, and/or collaborating with teachers and parents (ASCA, 2013).

High school counselors serve a variety of roles, and allocating time for precollege counseling can be difficult. Public school counselors have a variety of roles and duties, and precollege counseling accounts for nearly a quarter of their time; nevertheless, private school counselors spend more than half of their time on college advising, indicating that public school students may be at a disadvantage when it comes to college knowledge and access for college preparation opportunities (Clinedinst, Hurley, & Hawkins, 2011). Previous research indicates that counselors and adequate access to precollege resources are influential in students' postsecondary preparation, application, and enrollment (e.g. Belasco, 2013; Bryan, Holcomb-McCoy, Moore-Thomas, & Day-Vines, 2009; Hill, 2012; Freeman, 1997; Kimura-Walsh, Yamamura, Griffin, & Allen, 2008; Lee & Eckstrom, 1987; McDonough, 1997; Muhammad, 2008; Woods & Domina, forthcoming).

One aspect of preparing students for a range of postsecondary options, including college, is having consistent and intentional conversations with students about college. These conversations, combined with hands-on assistance and opportunities for preparation can contribute to a precollege counseling model, a key principle of college-going culture (MacDonald & Dorr, 2006). This study aims to unpack previous findings that indicate counselors' effectiveness in the college preparation process. Specifically, this study explores the precollege counseling model of Towering Pines School District (pseudonym) and examines student-counselor interactions and their relationships with students' college preparation and postsecondary plans within various college-going culture contexts.

Background to the Study

Although most students believe they will attend college, there is incongruence between students' college aspirations, their preparation habits, and their ultimate postsecondary destinations. For example, although more than 90% of students aspire for a bachelor's degree in 10th grade, fewer than 50% of these students enroll in a four-year institution after high school (Klasik, 2012). As recent as 2012, less than 34% of all 25- to 29-year-olds had completed a bachelor's degree or higher; the completion rates are even lower for Black, Latino, Pacific Islander, and American Indian/Alaska Natives (Aud, et al. 2013). Particularly for low-income students and students of color, this gap could be evidence of limited access to or differential uptake of school-based precollege resources.

Although most parents value education and support their child's postsecondary goals, some parents have limited experience with U.S. education systems, formal schooling experiences, and concrete college information (Aud, Fox, & Kewel Ramani, 2010; Zarate, Saenz, & Oseguera, 2011; Gandara, 1982; Tornatzky, Cutler, & Lee, 2002). Thus, they tend to rely on schools to provide college guidance to their child, which positions schools and school personnel as key players in students' college preparation processes. Therefore, the school environment and its leaders can shape students' postsecondary trajectories in meaningful ways. In particular, counselors, who are charged with the duties of college preparation and guidance, become the key people to prepare students for the college choice and transition processes.

Part of preparing for college is having the ability to navigate through the multiple steps of the college preparation "gauntlet" by acquiring "college knowledge" or information about the college and financial aid application processes at multiple stages throughout the college choice process (Conley, 2007; Klasik, 2012; Roderick, Nagaoka, & Coca, 2009). Testing and

curriculum is another aspect of students' college knowledge and college-going culture. The importance of college admissions tests, test dates, fees, and opportunities for test preparation must be communicated to all students. Students also need access to courses required for college admission including higher-level courses and Advanced Placement (AP) or International Baccalaureate (IB) classes and tests. Taking the SAT or ACT and completing required coursework are both important steps in preparing for college, and four-year institutions in particular (Adelman, 2006; Attewell & Domina, 2008; Belasco, 2013; Cabrera & La Nasa, 2000; Conley, 2007; Klasik, 2012).

Counselors and school counseling departments within high schools influence students' postsecondary trajectories (McDonough, 1997). However, despite good intentions, counselors face limited resources to engage in precollege counseling. Counselors have large caseloads and scarce resources, and need to focus their time and energy on certain groups of students, often average or underachieving students (McDonough, 1997; Perna, et al. 2008; Woods & Domina, forthcoming). Certain students, particularly those from underrepresented backgrounds or rural areas, have even less access to school counselors (Lee & Eckstrom, 1987).

Nevertheless, there is ample evidence that school counselors can positively impact students' college destinations, particularly when equipped with adequate resources and reasonably-sized caseloads. Counselors can do this in a variety of ways, all of which should include clear, consistent, and accurate information and guidance about the college preparation and application processes. School counselors shape how schools promote college going, create a college-going culture, and offer opportunities for students to prepare for college. Encouragement from school counselors can be particularly influential for underrepresented students and their college preparation process (Farmer-Hinton & Adams, 2006; Wimberly & Noeth, 2004).

Developing and maintaining a college-going culture across the high school campus can communicate to all students that college is a likely and viable option for life after high school. Postsecondary preparation for all students, including access to reliable college information and resources, and awareness of and access to college admissions tests and a college-preparatory curriculum are several key aspects of a college-going culture (Corwin & Tierney, 2007; Holland & Farmer Hinton, 2009; MacDonald & Dorr, 2006). Implementing a college-going culture requires the effort of all school staff, students, and parents alike. MacDonald and Dorr argue that “the overarching goal of cultivating a college going culture is for all students to be prepared for a full range of post-secondary options through structural, motivational, and experiential college preparatory opportunities” (p. 3). There are nine critical principles of college-going culture, each of which can be used to create a plan that will initiate and facilitate a college-going culture on campus. As Corwin and Tierney (2007) state, “culture is the intersection of beliefs and practices” indicating that actions, on behalf of the school personnel, the students, and their families are integral in a college-going culture (p. 1). Nevertheless, school counselors often provide the college counseling infrastructure. Unlike teachers who lead academic preparation for college, school counselors guide students through the planning and application process (Hill, 2012).

Following the framework of MacDonald and Dorr (2006), this paper focuses on a precollege counseling model, an adaptation of their comprehensive counseling model. One aspect of a precollege counseling model is engaging in college talk with all students. College talk includes the “clear, ongoing communication about college so that all students develop a college-going identity” allowing students to understand the requirements and expectations of adequately preparing for college, and staff to understand their own role in promoting a college-going culture (MacDonald & Dorr, 2006, p. 5).

Working from the definition provided by MacDonald and Dorr (2006) I define the precollege counseling model as one in which continuous and meaningful conversations about college occurs in combination with access to assistance, preparation, and information. A precollege counseling model must include counselor-student interactions about college information and admissions requirements, financial aid, and the application process. Although interactions with school counselors about college entrance requirements are related to college applications and college attendance (Belasco, 2013; Bryan et al. 2011) we know little about how and what students and counselors talk about when they engage in precollege guidance, and how these student-counselor interactions relate to other measures of college preparation and enrollment.

Methods

Context of the Study

Towering Pines School District (TPSD) is located in California and serves a large, diverse, urban population. It has a strong centralized district and college preparation initiatives flow from the district to each of the high schools. Nevertheless, school counselors are responsible for nearly all of the college outreach efforts including instruction of college and career units, college and financial aid information sessions, and course planning. Most of the college emphasis originates at the district level but each high school has flexibility to implement programs and policies that fit their school.

Semi-structured interviews with high school counselors (n=7) provide a broad illustration of how each school describes its college-going culture and college preparation practices. Inductive analysis and open coding are used to loosely group schools based on their college preparation beliefs and practices. All of the school counselor interviewees had a variety of

counseling and other education-related experience; no counselors were new to the school counseling profession or Towering Pines School District. All counselors were female except for the counselor at Lupine Hills High School. For the interview with Hibiscus High School, two counselors participated simultaneously in the same interview. Although this study is not a qualitative investigation, the counselors' descriptions of the schools provide context and a general understanding of schools' college-going culture. I used broad, holistic coding to explore the interview data (Miles, Huberman, & Saldaña, 2014; Saldaña, 2013).

Two broad themes emerged from the interview data: school counselors described college-going culture as either a way to *expand horizons* or as a means to *focus students' preparation for a four-year institution*. Whereas there are multiple aspects of college-going culture, for the purpose of this study, college-going culture is conceptualized as either expanding students' horizons for college, preparing students for four-year university admissions, or a combination of the two. Although, as noted above, college-going culture has been defined in the literature, those implementing the culture on campus (i.e. school counselors) can conceptualize and put into place a college-going culture quite differently.

Expanding horizons. Golden Poppy, Western Azalea, and Mountain Lilac High Schools explain college-going culture as a way to expand students' horizons, help them think about and plan for the future, and provide them with a range of options for postsecondary life. For example, the counselor at Golden Poppy emphasizes that "education doesn't end with high school" and "there are different opportunities out there." Similarly, the counselor at Western Azalea explains that a college-going culture involves "looking beyond just getting your high school diploma" so students can "move on and have a nice career, life after high school." The counselor at Mountain Lilac envisions a college-going culture that "[creates] an environment where kids are exposed to

different options when they graduate high school...and especially on this campus, college-going culture doesn't necessarily have to be a four-year college." Counselors in these schools believe that there are multiple ways to gain a postsecondary education, including certificates, trade schools, or through participating in the military. Schools that fall into the Expanding Horizons category do not focus narrowly on local four-year institutions, but understand and support a broad range of postsecondary educational options, including private schools, the military, and community colleges.

Focused preparation. Other schools in the district place a heavy emphasis on completing the A-G requirements and other college application processes to bolster admissions into four-year universities, namely California State Universities (CSU) and University of California (UC) institutions. Counselors in these schools talk consistently about making sure students have high enough grades to satisfy the A-G requirements (i.e. required coursework), ensuring that students register for and take the SAT, and apply to at least one university, likely a CSU. For example, at Seaside Daisy High School, sophomores create a CSU Mentor online account to enter their grades and courses starting in freshman year. They continue this annually so when students are seniors, their profile is nearly complete. Likewise, the counselor at Desert Sage notes that "everyone fills out a Cal State app. Whether they are eligible or not, just to get familiar with it." Also, when Desert Sage counselors do classroom presentations, they are "based around A-G and everyone being eligible to apply to a four-year; whether they choose to go or not, that's a different story." At these schools there is little discussion about trade or technical schools or the military. Desert Sage, Hibiscus, and Seaside Daisy all fall into the Focused Preparation category.

The Middle Ground. Lupine Hills High School operates in the middle ground, preparing

all students for college, while also aiming to create the best match between students and their postsecondary choice. Whereas there is heavy focus on high grades, completing the A-G requirements, and taking the SAT, the counselor there does not focus solely on Cal State and UC campuses for his students. In fact, he laments that students don't consider "options for other institutions...because when they don't get into a UC of their choice, I see a lot of students go to a community college and try to transfer to a UC." He wants students to know "Hey, you still have your dream, you still have college dreams out there. You still have college options" even if they are not admitted to the top UC campuses. He asserts that there are postsecondary options for the middle achieving student, but it might not be a UC or CSU, and he is wary of students' relying on the transfer path to achieve the goal of attending a top-tier university. Lupine Hills is the only school in this category and it draws from both the Expanding Horizons and Focused Preparation viewpoints. Notably, Lupine Hills also looks less like the other schools in the district; it serves a much smaller Latino population and a much larger Vietnamese population. It is also the highest performing school, with an Academic Performance Index (API) of 873. For these reasons, the effects of the Middle Ground category may be a result of other school-level factors in addition to its college-going culture.

Although many of the college preparation practices are replicated in the high schools across the district, the way counselors discuss college-going culture and college preparation, and the methods for implementing opportunities to engage in the college preparation process vary. For example, schools in both the Expanding Horizons and College Preparation categories help students create an online profile for the CSU application. However, the Expanding Horizons schools put a greater emphasis on exposing students to a range of postsecondary options, instead of focusing solely on four-year college admissions. Similarly, if asked, all counselors would

indicate that their goals are to prepare students for college, but it is the way in which counselors define or explain college-going culture that distinguish schools into the aforementioned categories. It is also worth noting that college-going culture includes much more than these broad categories. In this study these three descriptions serve as a mean to differentiate how schools conceptualize college-going culture and the college preparation process, but are not meant to be exhaustive or wholly inclusive of every definition or aspect of college-going culture.

Data & Analytic Sample

Together with Towering Pines School District's college and career readiness coordinator and assistant superintendent I developed a senior survey asking students about their high school experiences, their use of school resources and interactions with personnel, and their postsecondary preparation and plans. The school counselors administered the survey to all seniors before graduating, and more than 3,000 students completed it in June 2012. The survey was administered in two parts, and the current study includes only students who had responses on both sections of the survey. Additionally, survey data was matched with district-reported demographic information, such as previous academic achievement and background variables. For the purposes of this study, analyses are limited to students who attended the seven comprehensive high schools in the district. Although there are two additional continuation/adult education high schools, this study focuses on the experiences of students in more traditional high school settings, where precollege counseling is likely more available and a college-going culture is more salient. The final analytic sample includes data from 2,808 high school seniors.

The student sample is largely Latino (46%) and Vietnamese (32%) (see Table 3.1). Slightly over half of the students are female (53%) and 21% are English language learners. Thirty-six percent of the students have at least one parent who has attended some college and

81% aspire to complete a bachelor's degree or higher. Although the student survey data do not indicate students' socioeconomic status or household income, a majority of the students in TPSD are considered low-income (see Table 3.2).

When considering the seven comprehensive high schools in the district, there are some noticeable differences between schools (see Table 3.2). For example, schools' Academic Performance Index (API) scores range from a low of 737 to a high of 873, a spread of 136 points. Hibiscus High School has the second highest API score in the district, and has the smallest population of English language learners and students from low-socioeconomic backgrounds. However, Desert Sage High School has the lowest API score and serves the most students who are English learners or are from low-SES backgrounds. Comparing these two schools and examining Table 3.1, it is apparent that the schools in the district vary dramatically in their academic ratings and the student populations they serve.

To that end, research questions for this study are (1) Which factors predict students' utilization of precollege counseling? and (2) How do student-school counselor interactions about college relate to preparing for and planning to attend college within various college-going cultures?

Analysis

The study uses ordinary least squares, logistic, and multinomial logistic regressions to explore how students utilize and interact with school counselors, how meeting with school counselors is related to several important college preparation steps, and how these student-counselor meetings relate to the type of postsecondary institutions students are planning to attend within schools' college-going culture. Logistic regression is used when the outcome variable is dichotomous and multinomial logistic regression is used when the dependent variable is

categorical, with three or more possible outcomes. Standard errors are clustered by school, since students are grouped by schools and are not assumed to have independent errors.

I employed multiple imputation using a multivariate normal model to account for missing data. The dependent variables are not imputed, resulting in varying sample sizes for each outcome measure.

Precollege counseling scale. The composite counseling variable was created from several items (described in more detail below) resulting in a scale with a mean of 2.5 and a range from 0 to 5 (see Table 3.3). Students with a score of 0 had not met with a school counselor about college at all, and students with a score of 5 met with a school counselor for 5 college-related reasons. This variable is the dependent variable for research question (1) and the independent variable of interest for research question (2).

1. Reasons for meeting with school counselor. These variables come from the survey question “Did you meet with your school counselor for any of the following reasons while you were at this high school?” Students could select as many answers as appropriate, and possible answers ranged from academic issues to college preparation, to career assistance. Meeting for (a) scholarship/financial aid information; (b) college information; and (c) college application assistance are included in the precollege counseling scale.
2. College plans and processes. A survey question asked students to select from a list the college preparation activities or steps they had done. One option was “met with counselor to discuss college plans and processes”. This dichotomous variable is also included in the precollege counseling scale.
3. College entrance requirements. Students were also asked to indicate with whom they met

for college entrance requirements and their school counselor was one of the possible options. This is the final variable that contributes to the precollege counseling scale.

College preparation & postsecondary plans. The main dependent variables fall into two broader categories: engagement with the college preparation process and postsecondary plans. Engagement in the college preparation process includes (1) taking the SAT, and/or ACT; (2) filing a financial aid application; (3) completing one or more college application; and (4) submitting transcripts to a postsecondary institution. Each of these variables is dichotomous.

Postsecondary plans include three possible options, which provide a broad picture of students' postsecondary plans: no college plans, community college or other non-baccalaureate degree-granting institution, and four-year institutions. I also include a similar variable with five possible outcomes that allows for a comprehensive understanding of where students in TPSD plan to attend college. This is important given that the three-tier public postsecondary system in California is clearly delineated and the vast majority of high school graduates in California attend an in-state institution. There are more than 100 open-access community colleges, 23 CSU campuses, and 10 UC campuses (1 of which is primarily for advanced degrees). This series of outcomes indicates the type of postsecondary institution the student plans to attend: (a) no college; (b) vocational, trade school, or community college; (c) California State University, (d) University of California, or (e) other college plans, which includes attending an in-state private college/university, or any out-of-state college/university. For both postsecondary plans analyses, the modal response is to attend a vocational, trade school, or community college and serves as the reference category.

Control variables. Each full model accounts for students' gender, race/ethnicity, educational aspirations, parental college participation, English language status, English language

arts and math standardized test scores, and math test subject. Dummy variables indicate whether the student was female; aspired to obtain a bachelor's degree or higher; whether a parent had attended at least some college; and whether the student tested in algebra I/geometry or summative high school/integrated math, as compared to algebra II (see Table 3.1). This distinction is made because algebra II is the required math for high school graduation, thus students testing in summative high school or integrated math are testing in a math that is higher than required, and students testing in algebra I or geometry are testing in a math below the 12th grade level. Because this sample is heavily Vietnamese (32%) it is important to isolate the effects for Vietnamese students versus students of other Asian backgrounds. Therefore, the race/ethnicity categories include Vietnamese, other Asian, Latino/Hispanic, White, and all other students. Latino is used as the reference category for all equations because it is the modal response.

Results

Precollege Counseling Model

Students meet with school counselors for a variety of reasons related to preparing for college (see Table 3.3). The most common reason students met with a school counselor was for college plans and processes (63.6%). More than half of the students indicated meeting for college entrance requirements (58.2%) and college information (57.4%). Over one-third of the students met with a counselor for financial aid assistance and 32.1% of students met with their counselors for help on college applications.

Table 3.4 uncovers the school college-going culture and student-level variables that impact whether students meet with a school counselor for a variety of reasons. First, model (1) indicates the influence of the college-going culture on their likelihood of meeting with a

counselor for a variety of college-related reasons. In reference to the Focused Preparation schools, students attending Expanding Horizons schools or Lupine Hills (which borrows from both the Focused Preparation and Expanding Horizons practices) meet with counselors for more college-related reasons. Model (2) introduces student demographics including gender, race/ethnicity, English language learner status, parents' level of education, and aspirations to complete a college degree. Females, Vietnamese students, and students who aspire for a bachelor's degree or higher meet with school counselors for more college-related reasons ($b=.150, p<.01$, $b=.245, p<.01$, and $b=.493, p <.001$, respectively). English language learners meet with counselors for fewer reasons ($b=-.232, p <.05$). In this model, the effects of schools' college-going culture generally remain consistent.

The full model adds student's academic achievement. Although there are no significant effects on students' English language arts or math standardized scores, whether a student tested in a higher level course positively predicts students' meetings with school counselors, whereas testing in a lower-level math course negatively predicts student-counselor meetings ($b=.219, p <.05$ and $b=-.269, p <.05$, respectively). This could be evidence that students in certain classes are receiving more counseling resources, compared to students who are not enrolled in grade-level math. Once controlling for these variables, the positive effect of being Vietnamese disappears, but the positive effects for females and those planning to complete a bachelor's degree see school counselors for significantly more reasons.

Comparing the college-going culture effects between models (1) and (3) reveals that college-going culture influences students' utilization of precollege counseling with school counselors even after controlling for students' demographics and achievement. Relative to schools in the Focused Preparation category, students in Expanding Horizons schools meet with

counselors for more college-related reasons ($b=.338, p <.01$). Even when accounting for student differences, schools structure access to school counselors differently, which results in an inequitable distribution of services to students throughout the district. Students in Expanding Horizons schools may be meeting with counselors to discuss a broader range of postsecondary options and therefore may have more questions or need additional assistance to plan for life after high school. Students in schools that focus almost exclusively on completing college entrance requirements may need to meet with counselors for fewer reasons if they are not exposed to a variety of options.

College Preparation

In Towering Pines School District, students prepare for college in a variety of ways. Although only 58.3% of students take the SAT, most students complete a financial aid application and one or more college application (73.0% and 70.5%, respectively). However, only 43.8% of students submit high school transcripts to a postsecondary educational institution (see Table 3.5).

SAT/ACT. Logistic regression results indicate that students' high school context influences their likelihood of taking a college entrance exam. Compared to students at Focused Preparation high schools, students at the Middle Ground school are more likely to take the SAT/ACT (see Table 3.6). In model (2), once student-level demographic variables are introduced, females, Vietnamese and other Asian students are more likely to take the SAT ($OR=1.304, p<.05, OR=4.050, p <.001$ and $4.002, p <.001$, respectively). However, English language learners are less likely to take the SAT ($OR=.188, p<.001$). Students planning to complete a bachelor's degree or higher have 362% higher odds of taking the SAT, relative to students not planning to complete a college degree. In this model, the school context effects of

attending the Middle Ground high school shrinks, but remains significant. In model (3) student achievement variables are introduced. As expected, students with higher scores on English language arts and math standardized test scores are more likely to take the SAT. Similarly, students testing in a higher-level math course have higher odds of taking the SAT (OR=2.902, $p < .001$) and students testing in a lower-level math course have lower odds of taking the SAT (OR=0.187, $p < .001$). In this model, the effects of English language status and aspirations for a college degree remain significant, as does the effect of being Asian. Although the effect of being Vietnamese disappears, females and other Asian students are more likely to take the SAT (OR=1.575, $p < .01$ and OR=2.058, $p < .01$, respectively). The significant effects of college-going culture remain consistent from model (2). In the next model, I examine the effect of the precollege counseling scale on whether students take the SAT. Net of school- and student-level variables, meeting with a school counselor for more college-related reasons positively and significantly influences students' odds of taking the SAT (OR=1.590, $p < .001$). When examining college-going culture and its relationship with students' likelihood to taking a college admissions test, there are inconsistent effects. In the full model, the effect of attending an Expanding Horizons school reemerges in this model (OR=.781, $p < .05$) but the effect of attending a school that draws on both the Expanding Horizons and College Preparation (e.g. the Middle Ground) attenuates when including student-counselor meetings.

Financial aid applications. The next models examine students' likelihood of completing a financial aid application (Table 3.6). In model (5) students in the Middle Ground school, relative to students in Focused Preparation schools, are more likely to complete a financial aid application but this effect does not hold in the remaining models. In all models, females, Vietnamese students, and those planning to complete a bachelor's degree have higher odds of

completing a financial aid application. English language learners (model (6) only) and students whose parents have attended college (all models) are less likely to complete a financial aid application. In model (7) students' English language arts scores and whether the student tested in a higher-level math course positively and significantly predict students' likelihood of filing a financial aid application. In the last model for this outcome, after controlling for school- and student-level variables, meeting with the school counselor for more college-related reasons positively and significantly predicts completing a financial aid application (OR=1.605, $p < .001$). Student-school counselor meetings increase students' odds of filing for financial aid, indicating that these student-counselor meetings play a larger role in predicting the likelihood of completing an application than the larger school-wide college-going culture.

College applications. In Table 3.7 models (1-3) there is no significant effect of attending an Expanding Horizons school. In model (2) the effects of student demographics (e.g. gender, other Asian, English language learner status, and aspirations for a bachelor's degree) are consistent with previous models, without a positive effect for Vietnamese students. Similarly, in model (3) the student demographic variables are generally consistent with previous models. In the full model, once controlling for school- and student-level variables, meeting with school counselors for more college-related reasons is significantly and positively indicative of students' odds of completing a college application (OR=1.526, $p < .001$). In this model, the effect of attending an Expanding Horizons high school emerges and negatively predicts college application completion (OR=.760, $p < .001$). One possible explanation is that compared to students who are in Focused Preparation high schools, students in Expanding Horizons high schools are not pressed to complete applications; for open access colleges, applications may be completed on a rolling basis and therefore may not be emphasized in the precollege counseling

curricula to the same degree. Although these schools are more likely to include trade/technical schools and community colleges in their postsecondary options, they may not facilitate the application submission process. Nevertheless, meeting with school counselors for college-related reasons increases students' odds of completing a college application by 53%, even when controlling for college-going culture.

High school transcripts. In the full model, meeting with a school counselor for more college-related reasons is related to 49% higher odds of submitting a high school transcript, after controlling for college-going culture and student-level variables (Table 3.7). College-going culture does not appear to have any significant effect on students' odds of submitting a high school transcript to a college or university. Thus, even when accounting for various types of high school college-going culture, student-counselor meetings positively influence one of the final steps of the college application process.

Postsecondary Plans

Towering Pines students have a variety of postsecondary plans, with most students planning to attend a community college, trade, or technical school (56%). 20% of students plan to attend a CSU campus while only 12% of students plan to attend a UC campus. Even fewer students plan to go to a private school or move out of state for school (4%). However, more than 7% of students plan to not attend any postsecondary institution after high school (see Table 3.5).

Table 3.8 presents findings for whether students plan to not attend college or plan to attend a four-year institution, relative to planning to attend a community college or other non-baccalaureate degree-granting institution. In the full model, students attending a school with the Expanding Horizons culture are more likely to plan to not attend college (OR=1.421, $p < .01$). However, meeting with a school counselor for more college-related reasons is negatively related

to students' planning to not attend college (OR=.657, $p < .001$). In the models estimating students' likelihood of planning to attend a four-year institution, college-going culture effects vary. In model (5), the effect of attending the Middle Ground high school increases students' odds of planning to attend a four-year institution by 49%, but these effects reverse in the subsequent models. Once controlling for student demographics and achievement variables, the effects of attending this school lessens students' odds of planning to attend a four-year college. Attending an Expanding Horizons high school has a negative but non-significant effect on students' odds of four-year college plans. However, meeting with school counselors for more college-related reasons significantly increases students' odds of four-year college plans (OR=1.326, $p < .01$).

When examining postsecondary plans with five options (see Table 3.9), model (1) reveals similar patterns to those in Table 3.8. Students in the Middle Ground school are less likely to plan to do something other than attend college after high school, but this effect does not hold once accounting for student achievement variables. Conversely, there is no effect of attending an Expanding Horizons school until introducing achievement variables, and this effect remains positive and significant in model (4). In the full model, seeing the school counselor for more college-related reasons reduces students' odds of planning to not attend any college (OR=.655, $p < .001$). Comparing models (5) and (8), the school context effects reverse. Whereas in model (5) students in the Middle Ground school were more likely to plan to attend a California State University campus as compared to students at Focused Preparation schools, in model (8), students at the Middle Ground high school have lower odds of planning to attend a CSU (OR=.603, $p < .001$). Attending an Expanding Horizons high school has a negative but non-significant effect on planning to attend a CSU. There is a positive and significant effect, once

controlling for school- and student-level characteristics, of meeting with a school counselor. Students who meet with school counselors for more college-related reasons have 43% higher odds of planning to attend a CSU. Similar to the CSU campuses, students attending Lupine Hills high school are less likely to plan to attend a UC, relative to students at Focused Preparation high schools, once controlling for student demographics and achievement variables (models (7), (8), and 9)). The effect of the student-school counselor meetings remains significant and positively increases students' odds of planning to attend a UC (OR=1.313, $p < .01$). In model (16) students at Lupine Hills High School are less likely to have alternative college plans compared to students at Focused Preparation high schools (OR=.569, $p < .05$) but there is no significant effect of attending an Expanding Horizons school on students' likelihood of planning to enroll in a different type of institution. The significant yet negative effect of attending the Middle Ground school may suggest that although the qualitative data indicate the head counselors' desire for students to explore private schools or other options that lead to college degrees, these hopes do not play out either in the college preparation practices or the application patterns for his students. There is no effect of student-counselor meetings on having alternative college plans (OR=.991, $p > .05$), likely because school counselors in California focus their efforts on directing students to local community colleges, CSUs, or UCs, and cannot adequately guide students to smaller, lesser known, or more selective institutions.

Discussion

This study explored the influence of schools' college-going culture and student-school counselor meetings on students' postsecondary preparation and plans. When students meet with school counselors for a variety of reasons, they are more likely to progress through the college preparation and application processes. Thus, school counselors should engage all students in a

variety of conversations about college information, admissions and application processes, and financial aid. Because this study included a scale variable of multiple reasons students met with a school counselor to prepare for college, this study builds on previous literature indicating that school counselors affect students' college application and attendance patterns (Belasco, 2013; Bryan et al., 2011; Woods & Domina, forthcoming). Including multiple reasons or measures of meeting with a school counselor covers additional important aspects of the student-counselor relationship and the overall college-going culture of the school context. Nevertheless, this study leaves room to explore how other aspects of student-counselor interactions, including frequency, setting, and type (i.e. individual, small group, or whole classroom) influence the college preparation and application processes.

One of the first steps of engaging the college preparation and application process is taking the SAT or ACT. This study reveals that student-counselor meetings positively influence students' odds of taking the SAT, even after controlling for student demographics, academic ability, and school-level effects. The SAT is required for most four-year institutions, so if students do not take the exam they are taking themselves out of the eligibility pool.

Another step in the college application process is filing for financial aid. Results indicate that meeting with counselors for more reasons increases students' odds of completing a financial aid application. Students and parents tend to overestimate the costs of college and therefore believe it is unaffordable (Kirst & Venezia, 2004). Additionally, previous research indicates that specific assistance, in addition to financial aid information influences students' likelihood of completing and submitting a FAFSA form (Long, Bettinger, Oreopoulos, & Sanbonmatsu, 2009). Therefore, meeting with counselors about financial aid may help students have a more realistic understanding of net costs and possible funding sources.

Completing a college application and submitting high school transcripts may be the most important steps in applying to college; without completing the application process, students cannot enroll in college. This study indicates that student-counselor meetings increase students' odds of completing a college application and submitting transcripts. Although not tested in this study, submitting transcripts may be viewed as students' commitment to attend a specific institution.

Students' postsecondary plans are composed of aspirations, eligibility, and other factors related to student-college fit. This study demonstrates that meeting with counselors for a variety of college-related reasons influences students' likelihood of planning to attend certain types of colleges but not others. Student-counselor meetings decrease students' likelihood of planning to do something other than attend college (e.g. work or enter the military) but does not appear to affect students' likelihood of planning to attend more selective institutions such as private schools, or out-of-state colleges. One explanation is that counselors in California focus on California institutions, since there are over 100 public not-for-profit two- and four-year schools in the state. Due to their limited time and dynamic roles, counselors may be unable or unprepared to help students apply to lesser-known schools where few students attend. Counselors have a large impact on helping students choose CSU campuses, likely the local institution, where many students attend annually and the high schools tend to have stronger connections with university staff and students. However, counselors may be missing an opportunity to provide students with a wider range of college options.

The effect of students' college degree aspirations was consistent across all outcomes. Students who aspired to complete a bachelor's degree or higher met with school counselors for more reasons. Additionally, these students were more likely to progress through the four stages

of the college preparation and application processes. Not surprisingly, having aspirations to complete a bachelor's degree also predicted students' lower odds of planning to not attend college, and students' higher odds of planning to pursue CSU or UC options. Thus, consistent with previous research, college aspirations are important in predicting students' postsecondary preparation and participation (Cabrera & La Nasa, 2000; Hossler & Gallagher, 1987; Klasik, 2012).

The effect of the college-going culture on student outcomes is less consistent. Whereas students in Expanding Horizons schools meet with counselors for more college-related reasons, this study cannot explain the mechanisms behind this finding. It is possible that when counselors are more agnostic in their views of postsecondary options, students are more likely to solicit advice and guidance. It could also be that these schools are unable to clearly prepare students for this broader range of options, and therefore students seek out additional help to answer questions. Attending an Expanding Horizon school, as compared to a Focused Preparation school, has either no effect or a small negative effect on students' outcomes. This is as expected because students in schools that support a broad range of postsecondary options may not be strategically funneled into the college preparation steps, as compared to schools that take a more focused approach to college planning. Even after accounting for attending an Expanding Horizons school, meeting with school counselors positively increases students' odds of progressing through the college preparation process, indicating that school counselors can mitigate larger school-level barriers to college.

Limitations and Plans for Future Research

This study focuses on a school district in California with high enrollment rates of Latino, Vietnamese, and low-income students. This district also has a strong centralized focus and a

college-going mission that permeates each school; but in other settings, where the student demographics vary or the central district plays a different role, these findings may not hold. Nevertheless, the study highlights the critical role of high school counselors in students' college choice process, a finding that is consistent with previous literature (Belasco, 2013; Bryan, et al. 2011; Gonzalez, et al., 2003; McDonough, 1997; McDonough, 2004).

Although the data in the senior surveys expand upon previous work to disentangle student-counselor interactions, there are additional measures that are not included here. Understanding the contexts and types of these meetings can provide an even clearer picture. For example, additional research to explore how the frequency of student-counselor interactions and the setting or type of precollege counseling (e.g. classroom-based or individual meetings) influence students' postsecondary trajectories could result in local, state, and national policy changes establishing a minimum number of student-counselor meetings per academic year.

Furthermore, there are several desired variables that are not present in the current data. There were no measures of income or socioeconomic status for each student, so the current analyses cannot control for economic factors. Examining school-level data is the best proxy for income in the current data. Similarly, there are no postsecondary enrollment, attendance, or units-completed variables in the current data. The students filled out the senior survey during their last days of high school, and it is possible that their plans changed over summer. Although postsecondary plans can be used to estimate students' college destinations, a variable measuring whether the student actually enrolled in their stated institution would bolster the findings of this study. Future research could explore similar variables looking at postsecondary outcomes such as college enrollment, completion, and labor market outcomes. Although this study builds on previous work that explores how school counselors prepare students for college, there is still

limited understanding of how school counselors effectively reach students. Additional research is needed to help schools and counselors establish best practices, particularly for underrepresented minority and low-income students, who tend to rely heavily on school-based resources for precollege support (Goff, Patino, & Jackson, 2004; Gonzalez, Stoner & Jovel, 2003; Tornatzky, Cutler, & Lee, 2002).

Call for Action

One way to reach Obama's "55% by '25" goal is to better prepare for college the growing underrepresented minority and low-income populations in California and other states with similarly changing populations. This study emphasizes how interactions with school counselors and access to their college knowledge can positively affect students' postsecondary trajectories. Thus, districts and administrators must protect counselors' time and allot adequate resources for college preparation and planning. Even in this district, with a heavy focus on college preparation, few high schools have a dedicated space to provide students with access to college choice materials, literature, or computers to conduct college searches. Counselors must be prepared and willing to help all students develop a clear plan to pursue and succeed in their postsecondary plans. Opportunities for professional development and networking with college admissions personnel may allow counselors to engage in additional meaningful interactions with students, supporting their postsecondary plans and providing the assistance to help them achieve their goals.

As with precollege counseling, career counseling and facilitating connections between education and future occupations are important for students to see the utility of a postsecondary education. Most counselors in this district indicated career counseling as a possible area for improvement, noting insufficient time as a reason for limited career counseling. College and

career counseling is particularly important for schools in communities where students have few college-educated role models. These students and families rely on schools and counselors to provide them with adequate, accurate, and timely information. A more comprehensive approach to counseling including stronger career guidance may provide students, particularly those who do not enter a four-year institution directly, with a clearer path for the future.

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Table 3.1

Student Sample

	%	N
Latino	45.6	1280
Other	1.8	51
Other Asian	6.9	193
Vietnamese	32.2	905
White	13.5	379
Female	52.8	1482
English Language Learner	21	591
Parents have some college	35.7	1001
Aspires for bachelor's degree or higher	81.1	2276
Mountain Lilac	15.2	428
Golden Poppy	12.9	362
Hibiscus	13.2	372
Desert Sage	14.2	400
Lupine Hills	15.1	425
Western Azalea	15.4	433
Seaside Daisy	13.8	388

Table 3.2

School Profiles

	2011 API Score	Latino	Vietnamese	Other Asian	Other Race	White	English Language Learner	Percent of School Low- Income
Mountain Lilac	737	76.7	13.7	4.0	1.0	4.6	30.6	85.0
Golden Poppy	757	46.8	27.8	7.8	2.6	14.9	22	75.1
Hibiscus Desert	845	23.4	6.2	15.2	3.3	52.0	7.3	27.6
Sage Lupine	735	74.8	16.7	3.1	0.8	4.6	31.4	85.9
Hills Western	873	13.0	74.7	6.1	0.7	5.4	12.1	71.9
Azalea Seaside	804	48.9	29.9	5.8	2.8	12.5	17.4	63.3
Daisy	820	33.1	53.6	7.0	1.8	4.3	26.0	74.8

Note. The percent of schools that is designated as low-income is reported by the California Department of Education for 2011.

Table 3.3

Reasons Students See High School Counselors

	%	N
College Application Assistance	32.1	815
College Entrance Requirements	58.2	1477
College Information	57.4	1457
College Plans and Processes	63.6	1615
Financial Aid	41.6	1056
Precollege Counseling Scale	--	2.5 (.032)

Note. The precollege counseling scale variable is a 0-5 scale measuring whether the student met with a school counselor for any of the reasons indicated. Mean and standard deviation presented.

Table 3.4

Factors Influencing Student-Counselor Meetings

	Student-School Counselor Meetings		
	(1)	(2)	(3)
College-Going Culture	0.356***	0.362**	0.338**
Expanding Horizons	(0.043)	(0.079)	(0.082)
Middle Ground	0.384***	0.173*	0.144
	(0.059)	(0.064)	(0.061)
Female		0.150**	0.163**
Race/Ethnicity		(0.034)	(0.032)
Vietnamese		0.245**	0.086
		(0.043)	(0.048)
Other Asian		0.253	0.130
		(0.127)	(0.139)
White		-0.095	-0.110
		(0.084)	(0.081)
Other Race/Ethnicity		-0.152	-0.128
		(0.230)	(0.227)
English Language Learner		-0.232*	-0.059
		(0.064)	(0.067)
Parents Have At Least Some College		0.027	0.013
		(0.044)	(0.043)
Aspires for a Bachelor's Degree or Higher		0.493***	0.408***
Math Subject Tested		(0.062)	(0.066)
Algebra I or Geometry			-0.269*
			(0.086)
Higher-Level Math			0.219*
			(0.071)
Standardized Math Score			0.042
			(0.023)
Standardized English Language Arts Score			0.042
			(0.021)
Constant	-0.215***	-0.716***	-0.688***

	(0.031)	(0.087)	(0.087)
N	2467	2467	2467

Note. $*=p<.05$; $**=p<.01$; $***=p<.001$. Reference category for college-going culture is Focused Preparation. Reference category for race/ethnicity is Latino. Reference category the level of math tested is algebra II.

Table 3.5

Students' College Preparation & Postsecondary Plans

	%	N
College Preparation		
Took SAT/ACT	58.3	1633
Filed Financial Aid Application	73.0	2023
Submitted one or more college application	70.5	1964
Submitted transcripts to one or more postsecondary institution	43.8	1223
Students' Postsecondary Plans		
No College	7.4	193
Community College or Vocational School	56.3	1,463
California State University	20.1	523
University of California	12	312
Other College Plans	4.2	108

Note. Other college plans include attending an in-state private college or university or an out-of-state college or university.

Table 3.6

The Relationships Between College-Going Culture, Student-Counselor Meetings, Taking the SAT, and Filing a Financial Aid Application

	Took SAT				Filed a Financial Aid Application			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
College-Going Culture								
Expanding Horizons	0.878 (0.072)	0.964 (0.092)	0.910 (0.106)	0.768* (0.091)	1.049 (0.095)	1.053 (0.131)	1.003 (0.135)	0.855 (0.092)
Middle Ground	3.466*** (0.478)	1.634*** (0.193)	1.444* (0.209)	1.385 (0.236)	3.094*** (0.499)	1.238 (0.194)	1.075 (0.190)	1.010 (0.166)
Female		1.304* (0.164)	1.575** (0.219)	1.485** (0.211)		1.475*** (0.122)	1.527*** (0.160)	1.442** (0.161)
Race/Ethnicity								
Vietnamese		4.050*** (0.740)	1.491 (0.330)	1.453 (0.337)		5.455*** (1.266)	3.984*** (0.994)	4.017*** (1.030)
Other Asian		4.002*** (1.042)	2.058** (0.536)	1.896* (0.507)		1.576** (0.242)	1.193 (0.199)	1.119 (0.220)
White		1.242 (0.166)	1.060 (0.137)	1.137 (0.140)		0.775 (0.148)	0.719 (0.136)	0.748 (0.130)
Other Race/Ethnicity		0.997 (0.200)	1.159 (0.256)	1.268 (0.330)		1.627 (0.444)	1.748* (0.442)	1.909** (0.468)
English Language Learner		0.188*** (0.023)	0.480*** (0.037)	0.481*** (0.041)		0.577*** (0.089)	0.945 (0.132)	0.961 (0.142)

Parents Have At Least Some College	1.073 (0.166)	1.005 (0.168)	0.992 (0.162)		0.739** (0.068)	0.700*** (0.058)	0.690*** (0.061)
Aspires for a Bachelor's Degree or Higher	4.615*** (0.388)	3.600*** (0.265)	3.103*** (0.203)		2.668*** (0.199)	2.226*** (0.189)	1.904*** (0.158)
Math Subject Tested							
Algebra I or Geometry		0.187*** (0.045)	0.198*** (0.045)			0.770 (0.139)	0.866 (0.164)
Higher-Level Math		2.902*** (0.252)	2.728*** (0.262)			1.649*** (0.141)	1.531*** (0.139)
Standardized Math Score		1.731*** (0.157)	1.734*** (0.149)			1.001 (0.084)	0.980 (0.081)
Standardized English Language Arts Score		1.503*** (0.093)	1.469*** (0.090)			1.387*** (0.120)	1.361*** (0.116)
Student-Counselor Meetings			1.590*** (0.080)				1.605*** (0.067)
N	2801	2801	2801	2801	2772	2772	2772

Note. Odds ratios presented. *= $p < .05$; **= $p < .01$; ***= $p < .001$. Reference category for college-going culture is Focused Preparation. Reference category for race/ethnicity is Latino. Reference category the level of math tested is algebra II.

Table 3.7

The Relationships Between College-Going Culture, Student-Counselor Meetings, Completing a College and Application, and Filing a Financial Aid Application

	Completed College Application				Submitted High School Transcripts			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
College-Going Culture								
Expanding Horizons	0.908 (0.081)	0.941 (0.104)	0.882 (0.076)	0.760*** (0.058)	0.866 (0.072)	0.980 (0.275)	0.969 (0.296)	0.844 (0.262)
Middle Ground	1.776*** (0.245)	1.035 (0.105)	0.896 (0.093)	0.843 (0.083)	1.898*** (0.219)	1.193 (0.282)	1.092 (0.275)	1.030 (0.263)
Female		1.489*** (0.143)	1.565*** (0.150)	1.485*** (0.147)		1.446*** (0.133)	1.641*** (0.171)	1.555*** (0.169)
Race/Ethnicity								
Vietnamese		1.873*** (0.202)	1.163 (0.128)	1.130 (0.121)		2.175*** (0.358)	1.072 (0.180)	1.040 (0.187)
Other Asian		1.478 (0.341)	1.020 (0.229)	0.953 (0.211)		2.425* (0.857)	1.430 (0.490)	1.371 (0.485)
White		1.026 (0.147)	0.962 (0.129)	1.010 (0.118)		1.749** (0.331)	1.607** (0.284)	1.718** (0.311)
Other Race/Ethnicity		0.721 (0.323)	0.758 (0.312)	0.805 (0.328)		0.966 (0.406)	1.021 (0.439)	1.075 (0.465)
English Language Learner		0.489*** (0.050)	0.855 (0.091)	0.871 (0.096)		0.333*** (0.028)	0.706*** (0.069)	0.720** (0.073)
Parents Have At		0.978	0.933*	0.930*		1.249*	1.167	1.170

Least Some College		(0.047)	(0.032)	(0.033)		(0.110)	(0.107)	(0.106)
Aspires for a Bachelor's Degree or Higher	3.457***		2.835***	2.471***	4.274***		3.346***	2.913***
		(0.268)	(0.272)	(0.227)		(0.671)	(0.560)	(0.457)
Math Subject Tested								
Algebra I or Geometry			0.608***	0.672***		0.439***	0.477***	
			(0.067)	(0.064)		(0.096)	(0.101)	
Higher-Level Math			1.781***	1.650***		1.797***	1.671***	
			(0.154)	(0.167)		(0.234)	(0.226)	
Standardized Math Score			1.106**	1.092*		1.364***	1.351***	
			(0.042)	(0.038)		(0.112)	(0.104)	
Standardized English Language Arts Score			1.347***	1.323***		1.437***	1.424***	
			(0.084)	(0.081)		(0.088)	(0.094)	
Student-Counselor Meetings				1.526***			1.489***	
				(0.081)			(0.098)	
N	2787	2787	2787	2787	2787	2787	2787	2787

Note. Odds ratios presented. *= $p < .05$; **= $p < .01$; ***= $p < .001$. Reference category for college-going culture is Focused Preparation. Reference category for race/ethnicity is Latino. Reference category the level of math tested is algebra II.

Table 3.8

The Relationships Between College-Going Culture, Student-Counselor Meetings, and Postsecondary Plans (Three Options)

	Attended No College				Four-Year University			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
College-Going Culture								
Expanding Horizons	1.147 (0.183)	1.140 (0.085)	1.261* (0.126)	1.435** (0.166)	0.866 (0.080)	0.996 (0.152)	1.043 (0.203)	0.943 (0.186)
Middle Ground	0.411** (0.137)	0.760* (0.090)	0.784 (0.103)	0.817 (0.119)	1.489*** (0.180)	0.729* (0.108)	0.606*** (0.088)	0.576*** (0.088)
Female		0.476*** (0.074)	0.469*** (0.073)	0.500*** (0.085)		1.335* (0.178)	1.776*** (0.247)	1.706*** (0.246)
Race/Ethnicity								
Vietnamese		0.408** (0.111)	0.402** (0.120)	0.413** (0.127)		3.885*** (0.624)	1.361 (0.304)	1.335 (0.313)
Other Asian		0.738 (0.397)	0.711 (0.390)	0.761 (0.441)		3.912*** (0.740)	1.764* (0.446)	1.762* (0.446)
White		1.315 (0.425)	1.299 (0.411)	1.237 (0.400)		1.643 (0.500)	1.281 (0.356)	1.336 (0.373)
Other Race/Ethnicity		1.530 (0.693)	1.600 (0.708)	1.533 (0.652)		1.152 (0.538)	1.291 (0.667)	1.345 (0.752)
English Language Learner		0.892 (0.154)	0.846 (0.152)	0.842 (0.150)		0.099*** (0.020)	0.283*** (0.066)	0.287*** (0.065)
Parents Have At Least Some College		0.999 (0.185)	0.984 (0.179)	0.968 (0.184)		1.055 (0.079)	0.878 (0.092)	0.875 (0.077)

Aspires for a Bachelor's Degree or Higher	0.246***	0.256***	0.293***		4.364***	3.624***	3.324***
	(0.045)	(0.045)	(0.046)		(0.796)	(1.022)	(0.938)
Math Subject Tested							
Algebra I or Geometry		1.568**	1.444*			0.731	0.776
		(0.241)	(0.220)			(0.274)	(0.308)
Higher-Level Math		0.963	1.029			2.882***	2.746***
		(0.182)	(0.211)			(0.401)	(0.392)
Standardized Math Score		1.141	1.157			1.875***	1.857***
		(0.123)	(0.133)			(0.132)	(0.132)
Standardized English Language Arts Score		0.993	1.010			1.821***	1.821***
		(0.142)	(0.138)			(0.134)	(0.138)
Student-Counselor Meetings			0.654***				1.332**
			(0.058)				(0.128)
N	2599	2599	2599	2599	2599	2599	2599

Note. Odds ratios presented. *= $p < .05$; **= $p < .01$; ***= $p < .001$. Reference category for college-going culture is Focused Preparation. Reference category for race/ethnicity is Latino. Reference category the level of math tested is algebra II. Reference category for postsecondary plans is community college/trade/technical school.

Table 3.9

The Relationships Between College-Going Culture, Student-Counselor Meetings, and Postsecondary Plans (Five Options)

	No College Plans				CSU			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
College-Going Culture								
Expanding Horizons	1.147 (0.183)	1.138 (0.085)	1.263* (0.128)	1.441** (0.170)	0.834 (0.094)	0.934 (0.129)	0.933 (0.146)	0.818 (0.133)
Middle Ground	0.411** (0.137)	0.760* (0.090)	0.781 (0.101)	0.813 (0.117)	1.429* (0.207)	0.789* (0.082)	0.637*** (0.072)	0.598*** (0.072)
Female		0.476*** (0.073)	0.469*** (0.073)	0.501*** (0.085)		1.351** (0.153)	1.631*** (0.182)	1.552*** (0.180)
Race/Ethnicity								
Vietnamese		0.410** (0.111)	0.405** (0.120)	0.416** (0.125)		2.656*** (0.261)	1.228 (0.195)	1.196 (0.204)
Other Asian		0.745 (0.399)	0.722 (0.395)	0.774 (0.449)		2.496*** (0.535)	1.454 (0.385)	1.445 (0.373)
White		1.312 (0.422)	1.299 (0.410)	1.240 (0.401)		1.502 (0.522)	1.230 (0.390)	1.291 (0.417)
Other Race/Ethnicity		1.537 (0.695)	1.610 (0.716)	1.545 (0.658)		0.733 (0.382)	0.886 (0.526)	0.920 (0.586)
English Language Learner		0.895 (0.155)	0.846 (0.151)	0.843 (0.149)		0.100*** (0.023)	0.254*** (0.062)	0.256*** (0.065)

Parents Have At Least Some College	1.003 (0.183)	0.987 (0.177)	0.972 (0.182)	0.966 (0.133)	0.856 (0.138)	0.849 (0.124)
Aspires for a Bachelor's Degree or Higher	0.246*** (0.045)	0.257*** (0.044)	0.294*** (0.046)	6.068*** (1.777)	4.751*** (1.779)	4.294*** (1.662)
Math Subject Tested						
Algebra I or Geometry		1.575** (0.242)	1.453* (0.222)		0.262*** (0.100)	0.280** (0.111)
Higher-Level Math		0.953 (0.181)	1.019 (0.209)		2.710*** (0.468)	2.561*** (0.438)
Standardized Math Score		1.141 (0.122)	1.158 (0.132)		1.513*** (0.082)	1.492*** (0.082)
Standardized English Language Arts Score		0.994 (0.141)	1.012 (0.138)		1.659*** (0.130)	1.657*** (0.134)
Student-Counselor Meetings			0.652*** (0.058)			1.432*** (0.155)
N	2599	2599	2599	2599	2599	2599

	UC				Other			
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
College-Going Culture								
Expanding Horizons	0.998 (0.142)	1.171 (0.204)	1.231 (0.394)	1.116 (0.371)	0.714 (0.152)	0.929 (0.346)	1.166 (0.460)	1.163 (0.488)
Middle Ground	1.997*** (0.340)	0.686* (0.129)	0.554* (0.143)	0.529* (0.143)	0.669 (0.221)	0.666 (0.172)	0.567* (0.129)	0.564* (0.138)
Female		1.307 (0.293)	2.244** (0.614)	2.152** (0.611)		1.352 (0.347)	1.788* (0.503)	1.799* (0.500)
Race/Ethnicity								
Vietnamese		11.795*** (4.088)	2.480* (1.049)	2.437* (1.069)		1.307 (0.532)	0.579 (0.271)	0.572 (0.271)
Other Asian		11.221*** (3.704)	3.121*** (0.922)	3.142*** (1.009)		2.582 (1.511)	1.449 (0.964)	1.438 (0.952)
White		1.090 (0.380)	0.600 (0.212)	0.623 (0.230)		2.791** (1.006)	2.070* (0.698)	2.075* (0.677)
Other Race/Ethnicity		2.009* (0.642)	2.160* (0.805)	2.195 (0.975)		2.076 (1.683)	2.266 (1.808)	2.276 (1.753)
English Language Learner		0.070*** (0.023)	0.339* (0.152)	0.338* (0.147)		0.211*** (0.041)	0.410** (0.132)	0.414** (0.134)

Parents Have At Least Some College	1.077 (0.157)	0.767* (0.089)	0.768* (0.096)		1.500* (0.275)	1.265 (0.276)	1.267 (0.271)
Aspires for a Bachelor's Degree or Higher	3.027*** (0.729)	2.533*** (0.629)	2.327** (0.598)		3.250* (1.785)	2.742 (1.644)	2.742 (1.548)
Math Subject Tested							
Algebra I or Geometry		0.528 (0.568)	0.569 (0.615)			2.664* (1.200)	2.661* (1.217)
Higher-Level Math		7.540*** (1.412)	7.181*** (1.327)			1.610*** (0.224)	1.605*** (0.207)
Standardized Math Score		2.999*** (0.443)	2.963*** (0.436)			2.126*** (0.303)	2.126*** (0.308)
Standardized English Language Arts Score		2.294*** (0.329)	2.298*** (0.326)			1.862*** (0.319)	1.863*** (0.320)
Student-Counselor Meetings			1.317** (0.131)				1.007 (0.148)
N	2599	2599	2599	2599	2599	2599	2599

Note. Odds ratios presented. *= $p < .05$; **= $p < .01$; ***= $p < .001$. Reference category for college-going culture is Focused Preparation. Reference category for race/ethnicity is Latino. Reference category the level of math tested is algebra II. Reference category for postsecondary plans is community college/trade/technical school.

Chapter 4

Exploring the Relationships Between College-Going Culture and Students' Advanced Placement Course and Exam Participation

College access scholars enthusiastically encourage high schools to implement and maintain a college-going culture on campus. Generally, the research agrees that building a college-going culture develops students' postsecondary educational aspirations by providing information so students can actively engage in their own college choice process (Corwin & Tierney, 2007; Jarsky, McDonough, & Nunez, 2009). College-going culture, among other aspects, includes developing a college-going identity for all students; schoolwide support from all staff and faculty; opportunities for high academic achievement; and gaining college knowledge and understanding college cultures (Conley, 2007; Holland & Farmer-Hinton, 2009; McKillip, Godfrey, & Rawls, 2012; Roderick, Nagaoka, & Coca, 2009). Yet schools, especially those serving low-income populations, face challenges to implementing a college-going culture. District- and school-level administrators may have inconsistent goals; there may be a lack of resources or personnel; low expectations may be embedded in the school or local community; or college guidance and preparation may be inequitably distributed (Corwin & Tierney, 2007). Additionally, achieving buy-in and collaboration among school personnel can be difficult, particularly when establishing a college-going culture is a new process (Jarsky, et al., 2009).

High school counselors are typically the school personnel charged with college guidance and preparation; therefore, they also set the tone for the school's college-going culture. Despite researchers' acknowledgements that college-going culture should be pervasive and reach all students schoolwide, often precollege guidance, advising, and college-going culture are concentrated in school counselors' offices (Corwin & Tierney, 2007; Holland & Farmer-Hinton,

2009). Despite previous research, there remains a need to better understand how high schools and school counselors implement a college-going culture on their campuses. College-going culture can shape the practices of the school, yet the schools' practices can also shape its college-going culture. Even in schools with strong college-going cultures, some students are not admitted into four-year institutions or fail to attend any postsecondary institution altogether. Thus, college-going cultures are not universally effective.

One of the many aspects of college-going culture is providing opportunities for students to engage in college preparatory curricula and provide access to higher-level coursework (Jarsky, et al., 2009). In light of an increasingly competitive college admissions process, students search for ways to stand out from their peers. Without access to college prep courses to fulfill college entrance requirements and Advanced Placement courses to enhance students' applications, students take themselves out of the four-year college eligibility pool (Kasik, 2012). Furthermore, access to AP and other higher-level courses is not equitable to all students for a variety of reasons. Low-income students, English language learners, and students in small schools are less likely to participate in the AP program (Klopfenstein, 2004b) and in 14% high schools in California no students took the SAT, ACT, or an AP exam (Edsouce, 2014).

This paper uncovers how schools' college-going cultures grant entry into AP courses and shape students' course taking. After exploring the mechanisms schools use to sort students into or out of AP, I examine whether these practices influence students' AP participation. This mixed-methods study uses interviews with school counselors and principals to understand how they assign students to AP courses. Then, it utilizes student survey data and school records to estimate students' participation in AP courses and exams.

Literature Review

It is well documented that academic performance and enrollment in higher-level coursework is related to a range of positive outcomes for high school students. In Adelman's (1999, 2006) classic studies, the data suggest that students' high school background, including high school curriculum, test scores, and class rank or GPA, has a large and significant influence on students' bachelor's degree completion. Included in the high school curriculum measure are units in core courses and participation in AP courses. In particular, students' highest level of math taken in high school has the most influence on students' college degree completion compared to any other part of the high school curriculum. Similarly, Attewell and Domina (2008) find that curricular intensity is related to college attendance, with the largest effects occurring for students enrolling in the least challenging course tracks. Curricular intensity is also positively related to SAT scores, enrolling in a four-year university, and for some students, bachelor's degree attainment. Postsecondary institutions may see AP students in particular as motivated and academically prepared, as students use AP courses to signal their curricular preparation (Oxtoby, 2007).

Advanced Placement Access and Success

The AP program is popular, widespread, and recognized by many postsecondary institutions worldwide. Expansion of the program began in the 1960s to combat the inequitable access to challenging coursework and broaden admissions at competitive colleges and universities. The program continued to expand in the 1980s and 90s, particularly for students of color, and continues to expand today. In 2012, more than 954,000 high school graduates took at least one AP exam, but 60% students who were academically prepared to succeed in AP courses either didn't enroll or didn't attend a high school that offered the course. Most of these students

identify as Black, Latino, or American Indian/Alaska Native (College Board, 2013a). Access to AP courses is particularly lower for underrepresented minority students, students from low-income backgrounds, and students whose mothers have lower levels of education. Students who are low-income or are English language learners are less likely to enroll in AP courses, and this result holds across all races (Klopfenstein, 2004a). Despite an increase in access to AP nationally, some student sub-groups remain underrepresented in AP courses. For example, low-income students' math and science AP participation grew by 24%, but Latino students' participation remained unchanged between 1994 and 2000 (Klopfenstein, 2004b). Similarly, schools with large populations of underrepresented minority and low-income students are expected to offer fewer AP courses, since these populations attend college at lower rates and classes at these schools would arguably be more difficult to fill (Klopfenstein, 2004b). Thus, access to AP coursework remains limited for some students.

When considering success on the AP exams, similar patterns emerge. Across the United States, only 19.5% of public high school graduates earned a passing score (three or higher out of five) on an AP test during high school. Despite an increase in pass rates over the past decade, White and Asian American students remain overrepresented among students who pass, compared to Black and Latino students (College Board, 2013a).

Examining California specifically, between 2002 and 2012 the state has had an increase in AP exam takers and those passing with a three or higher (College Board, 2013a). Compared to the rest of the country, California scores 6th, with 27% of its 2013 public graduating class passing one or more AP exam (College Board, 2014). Additionally, since 2010, California has increased the number of Black, Latino, and low-income students taking and passing AP tests (College Board, 2013b).

To expand the AP program and widen access for students traditionally not enrolled in advanced courses, California launched its California AP Potential Expansion (CAPE) pilot program to increase AP course offerings at 200 schools (College Board, 2014b). CAPE also provides teacher professional development and help in acquiring materials and textbooks. CAPE supports the new California state law that requires high schools to offer AP courses in English, history, math, science, and languages other than English in the 2013-2014 academic year if the school had not offered the course in the previous year (S. 532, 2011).

There are many known benefits to participating in AP courses and passing AP tests. The most relevant is arguably the high level of academic preparation and the potential to increase admission into selective colleges and obtain college credit. Enrollment in AP courses and AP test credit (scores) are associated with college freshman GPA; grades in intermediate college courses; grades in college science courses; college graduation; earlier college graduation compared to non-AP students; (Dougherty, Mellor & Jian, 2006; Morgan & Klarik, 2007; Sadler & Tai, 2007; Shaw, Marini, & Mattern, 2013). Given the positive outcomes related to AP participation, equitable access to the program is crucial in structuring equitable access to postsecondary education. How schools facilitate AP participation is part of their larger college-going culture.

College-Going Culture Typologies

School counselors are integral in implementing a college-going culture, and this college-going culture can directly relate to students' outcomes. Engberg and Gilbert's (2014) recent study categorizes high schools into three types of high schools: schools that present a divergent, emergent, or convergent college-going culture. Divergent schools spent less time on precollege counseling and were least likely to state college preparation as the school counseling departments' primary goal, whereas emergent and convergent schools were more likely to

emphasize and allot time to precollege counseling. The authors note that both norms and resources associated with each type of college-going culture are related to schools' four-year college rates. These typologies are similar to those presented by Hill (2008): traditional, clearinghouse, and brokering. Schools that operate with a clearinghouse model provide resources broadly yet rely on students and their families to seek out assistance, and brokering schools provide ample access to resources and facilitate the use of said resources. Conversely, traditional schools, provide limited resources and limited access to the resources that are available.

Another perspective is the college opportunity framework of Gonzalez, Stoner, and Jovel (2003). They posit that school personnel can act as agents of social capital but schools can act as sites of institutional neglect and abuse. Whereas school personnel provide social capital by emotionally supporting students, providing them with college information, and facilitating access for college preparation opportunities, neglect and abuse is exhibited when school personnel are unwilling or unable to prepare students for college and four-year institutions in particular.

The above frameworks are presented as a sampling of the ways in which scholars have conceptualized college-going cultures across schools. Although not an exhaustive list, it is clear that the range of college-going cultures includes schools that facilitate more and less access to college preparation opportunities, college knowledge, and precollege counseling. Part of these opportunity structures include the academic press and emphasis on enrolling in challenging courses, such as those offered by the AP program.

Within college preparatory practices are the high expectations for academic achievement through enrollment in higher-level courses and the availability of and access to this coursework. As Conley (2008) notes, part of achieving college readiness is mastering academic knowledge, skills, and behaviors. Classes that were previously taken only by four-year college-bound

students are now taken by more students as a way to prepare for community college, trade/technical schools, and the world of work; enrolling in challenging courses helps students pave their road to college and careers (Hines, Lemons, & Crews, 2011).

Linking School Counselors, College-Going Culture, and Advanced Placement

Across the board, advocates of college-going culture and college access scholars emphasize the importance of access to rigorous coursework and enrollment in higher-level courses to promote college readiness. For example, in their studies of access to the AP program, Solozano and Ornelas (2002; 2004) conclude that Latino students have limited access to AP at top schools both at the California statewide level and within Los Angeles Unified School District. They argue that to help combat the inequalities in AP participation, schools should implement a college-going culture that among other things promotes enrollment in rigorous classes (including AP courses) and provides intensive academic support. Similarly, Militello, Schweid, and Carey (2011) identify an achievement-oriented school focus, one that allows open enrollment in AP courses and supports high expectations for all students, as a domain for effective practice.

School counselors are critical in coupling college-going culture with academic achievement and challenging coursework. House and Hayes (2002) for example, advocate that school counselors “remove systemic barriers that impede the academic success of all students” and promote rigorous preparation for all students. Although counselors are trained to provide personal/social, academic, and career guidance, district policies, the school culture, or parents often limit counselors’ effectiveness. As Rosenbaum, Miller, and Krei (1996) conclude, school counselors report that they do not enjoy tempering students’ academic or professional goals. In their qualitative study of high school counselors, they argue that although counselors previously

guided students' postsecondary trajectories with a heavy hand, more recently counselors are less likely to act as gatekeepers when engaging in precollege counseling practices. One rationale they provide for this shift in practice is the widespread availability of college for students of all academic abilities and interests through community colleges' broad access policies. School counselors report that having candid conversations with students about their postsecondary options can be uncomfortable or inefficient; often students don't listen to counselors' advice or don't have the forethought to plan past high school. Additionally, parents often override counselors' guidance because they hold the best (although perhaps unrealistic) views of their child (Rosenbaum, et al. 1996).

The findings that Rosenbaum and colleagues (1996) present in this study can be applied to how counselors guide students into (or out of) AP courses. If school counselors no longer act as gatekeepers, they may encourage all students to challenge themselves by enrolling in AP courses, despite a lack of preparation. Conversely, if counselors act as they did previously, where they are more direct about students' academic abilities, counselors may limit access to the AP program and enact gatekeeping policies.

Research Questions

The current study seeks to uncover how high schools shape access to AP and other advanced courses. Additionally, this study examines how these practices relate to students' AP course enrollment and AP exam participation. Specifically, the study answers the following questions:

1. How do school personnel conceptualize their school's access to the AP program and the processes by which they assign students to AP courses? That is, how do school

counselors and principals describe one aspect of college-going culture: access to rigorous college prep and higher-level courses?

2. How do school personnel implement this aspect of college-going culture and how does it relate to students' AP course enrollment and AP exam participation?

Methods

This study examines one urban school district, Towering Pines School District (TPSD; pseudonym) located in California. Its schools serve a large, diverse population. TPSD has a strong centralized district and college preparation initiatives flow from the district to each of the high schools. Nevertheless, school counselors are responsible for nearly all of the college outreach efforts including instruction of college and career units, college and financial aid information sessions, and course planning. Most of the college emphasis originates at the district level but each high school has flexibility to implement programs and policies that fit their school.

There are seven comprehensive high schools in the district that are part of the current study. These schools provide an interesting study context: TPSD has been nationally recognized with the Broad Prize for Urban Education, an award that acknowledges schools' efforts of increasing achievement while closing achievement gaps. Furthermore, all seven high schools are silver medalists according to the U.S. News and World Report of high schools across the country. The district has ambitious goals yet serves students who are traditionally underrepresented in top performing schools and postsecondary institutions (see Table 4.1). Overall, high schools in the district are 45% Latino and 32% Vietnamese; 69% low-income; and 21% English language learners. Nevertheless, there is great variation between schools. The Academic Performance Index has a 138-point spread between the highest and lowest performing schools in the district. Similarly, whereas most schools in the district have relatively high

proportions of students who are low-income, one school has only 28% of its students designated as low-income. These characteristics make the district a site worthy of investigation. Although counselors and administrators work in the centralized district, each school has a unique population, neighborhood, and college-going culture.

This study utilizes two main sources of data from TPSD: interviews with school counselors and principals and students' senior exit surveys (described in detail below).

Interviews

In order to gain a qualitative understanding of the school district and its college-going culture, I conducted semi-structured interviews with one or two of the following personnel at each school: principal, head counselor, and/or other school counselor. The semi-structured interviews lasted between 25 and 90 minutes in length and asked questions regarding the college-going culture at their school, how students prepare for college, and the types of courses and programs offered at the school. Central to this study, the interview data reveal the academic preparation aspect of college-going culture: how schools structure access to AP courses and the processes by which counselors and other school personnel broaden or limit access to these and other higher-level courses.

I recruited interview participants via phone and email. The district's college and career coordinator provided names and contact information for the principals and head counselors for each high school. Names and contact information were also publically available on the schools' websites. A total of 11 interviews were conducted across the seven high schools, with at least one interview participant from each school (see Table 4.2). Two counselors at Desert Sage High School, those in charge of the junior and senior classes, participated in one interview at the same time. All participants were female with the exception of the head counselor at Lupine Hills High

School. None of the interviews were conducted with new employees, and all had been working in the district for a minimum of several years.

Working together with an undergraduate research assistant, I transcribed and read through the interviews multiple times. Initially, holistic coding was employed to gain a general understanding of how participants describe their schools' college-going culture and preparation processes. Holistic coding applies one code to a large chunk of data "to capture the overall contents and the possible categories that may develop" (Miles, Huberman, & Saldaña, 2014). Because interviews were conducted over the course of several months, the research team transcribed and began analyzing interviews as they were completed. It became apparent early on that principals and school counselors discussed access to AP courses in interesting ways. As the study progressed, we decided to pursue these questions in greater detail, focusing our reading and coding on the participants' responses related to course placement and exams.

We then used subcoding (Miles, et al. 2014; Saldaña, 2013) to further uncover the mechanisms the school personnel were describing and explore the differences between schools' practices. Through subcoding, the concept of the gatekeeping spectrum emerged and we placed schools' practices along the spectrum (described in greater detail below). I coded each interview individually, as did one undergraduate research assistant. Together in meetings we would discuss our codes and come to a consensus on how the codes should be applied. The school personnel described twelve main ways in which they sort students into AP courses with some methods weighted more heavily than others (see Table 4.3). We determined the magnitudes based on how the interview participants discussed each mechanism by considering the frequency each mechanism was mentioned, the amount of emphasis from the participant, and the clarity with which they spoke about each mechanism. Magnitude coding is used to indicate "intensity,

frequency, direction, presence, or evaluative content” and are appropriate for mixed-methods studies (Miles, et al. 2014).

Senior Surveys & Student Sample

Working with the Towering Pines School District’s college and career readiness coordinator and assistant superintendent I developed and administered a senior survey asking students about their high school experiences, their use of school resources and personnel, and their college preparation and destinations. All seniors were required to take this survey before graduating, and more than 3,000 students completed it in June 2012. According to the California Department of Education, there were 3,388 graduates of a cohort of 3,861 (California Department of Education, 2014). The data from the student surveys match district-reported data that include limited student-level demographics and academic performance indicators. The student survey was administered in two parts, and for the purpose of this study, only students who had responses for both portions of the survey are included in this dataset (n=2808). Incomplete or missing data are due to absences and/or lack of identifiable information (e.g. names or student identification numbers) to link the two portions of the student survey. Although the district administered the survey to all seniors and completion was “required”, there was no follow-up or concentrated effort to reach students who were not present during the data collection period. (Note: 732 cases were dropped because they were missing all data on first part of the student survey. Another 144 cases were dropped because they were missing all data from the second part of the survey. Finally, 26 cases were dropped because they were missing from the district-reported student data. This results in an analytical sample of 2,808 students.)

Variables and analysis. The student survey data are used to explore the relationships between students’ school context, personal characteristics, and their AP participation. The two

main dependent variables of interest are students' AP course enrollment and exam participation. Students answered the question "Which of the following have you done?" Two of the possible answers were "enrolled in at least one AP course" and "took at least one AP test."

The main independent variables are the school dummy variables. This model is a school fixed-effects model and can estimate the effects of school-level culture and variables not captured in other measures. The reference category is Lupine Hills High School because it is the highest performing school in the district (e.g. API score is 873).

Each full model accounts for students' gender, race/ethnicity, educational aspirations, parental college participation, English language status, English language arts and math standardized test scores, and math test subject. Dummy variables indicate whether the student was female; aspired to obtain a bachelor's degree or higher; whether a parent had attended at least some college; and whether the student tested in algebra I/geometry or summative high school/integrated math, as compared to algebra II (see Table 4.1). This distinction is made because algebra II is the required math for high school graduation, thus students testing in summative high school or integrated math are testing in a math that is higher than required, and students testing in algebra I or geometry are testing in a math below the 12th grade level. Because this sample is heavily Vietnamese (32%) it is important to isolate the effects for Vietnamese students versus students of other Asian backgrounds. Thus, the race/ethnicity categories include Vietnamese, other Asian, Latino/Hispanic, White, and all other students. Latino is used as the reference category for all equations because it is the modal response.

Logistic regression is used to estimate the effects of students' school on AP course and exam participation. I employed multiple imputation using a multivariate normal model to account for missing data; the dependent variables are not imputed. Although the full sample has

2,808 students, the models include students who do not have missing data on the outcome variables (n=2,624).

Results

The Gatekeeping Spectrum

The interviews reveal that schools in Towering Pines School District assign students into AP courses using a variety of methods and techniques. To some degree, all schools act as gatekeepers to AP courses, and each school can be situated along a gatekeeping spectrum, moving from open access to more limited access (see Figure 4.1). Some schools are more open access, granting students more choice in their own schedules. Open access schools tend to put lower emphasis on grades, test scores, and benchmarks. These schools may rely more heavily on student or parent requests, teacher recommendations, work ethic, or future plans. On the other end of the spectrum, gatekeeping schools highlight the importance of maintaining a high GPA, even if that results in under-placing students or enrolling in fewer advanced courses. These schools rely heavily on test scores, GPA, and previous course enrollment when they schedule students into AP courses. Counselors and administrators in these schools recognize the importance of grades when applying to college and use that as a guide to place students in appropriate courses (see Table 4.3).

Overall, principals and counselors describe the academic tracks within Towering Pines as relatively flexible and fluid. Across the district, students can take only one AP course or they can take multiple, depending on their previous academic achievement, ability, and desire. As one counselor says “Our AP sciences, our AP Math, our AP social sciences, they are all mixed. You know, you have college prep students and you have students that have been in honors classes in 9th and 10th” that enroll in these courses (HC3). Students can take AP courses in one subject and

not others, based on their strengths. As another counselor states, “We are meeting with each student and just because that student took AP US History doesn’t mean they have to go to AP Civics” (HC6). This quote illustrates that although a student was enrolled in an AP social science class previously, they do not need to continue in the AP track.

One exception to this is at Lupine Hills High School where the school counselor notes that entry into AP English is typically via honors English in the previous year. “The honors-AP track really only applies to English because a college prep track can lead to AP classes, but there is a difference between those with honors English that leads into AP English and such. You know, that’s the only major difference because it’s tough for a college prep kid to switch into the AP English” without going through honors English (HC3). No other school mentions a tight track between college prep, honors, or AP courses, indicating the fluidity of academic tracks in Towering Pines.

A Shift from Previous Practice

Working within these flexible tracks are multiple gatekeeping mechanisms aimed to provide individual students with their ideal number of AP courses and to enroll the ideal number of AP students school wide. These active gatekeeping practices that high schools implement reflect a shift from previous years. “In the past, anybody who wants to sign up for an AP class can go into an AP class... In the last few years, what we’ve done is really try to scrutinize because we’ve had so many kids signing up for AP classes and that’s great and all, but what happened was that we had kids that were taking on too many; then their GPAs were suffering” (HC2). The counselor at Hibiscus High School makes a similar comment: “We are trying different things because in the past we had a lot of students who were taking AP classes and they

weren't successful. So we had a lot of students that were in almost all AP classes but they had like 2.5 GPAs, and you know that's not going to happen, that's not going to work" (HC4).

Whereas previous practice was to allow students to choose their own classes and enroll in any number of AP classes, most counselors and principals indicate their use of grades, test scores, course rigor, and teacher recommendations when making class assignments. There has been a shift over the past several years to encourage students to make their course schedule work for them; students are guided to enroll in challenging coursework in subjects where their past performance predicts future success, and enroll in college-prep or honors courses in subjects where their grades or test scores indicate moderate performance. "Kids would like to self-select, and there was a lot of competition with kids, and kids really [buy] into the philosophy of more is better" (P1). This principal describes students' previous AP enrollment patterns as a "more is better" approach. Students who might be better off taking one or two advanced courses track themselves into taking five or six AP courses in one year, which although previously thought to be beneficial, "we know now that's not the case" (P1).

School personnel acknowledge that the change in the way they place students in AP courses may benefit the students even if it lowers the number of students enrolling in these courses. One school counselor notes, "It has brought down our numbers [of students enrolling in AP courses] but I think the kids are benefitting more, and I don't see kids falling apart on me, crying, you know..." (HC2). This counselor notes that the school administrators agree with the change in policy. Likewise, the counselor at Hibiscus High School notes that "there has been a decline because of" [the new policies limiting AP course enrollment] but she does not express concern over this. Other counselors do not mention that restricting access has had any detrimental effect on their "numbers" or if it has, it is not of concern. This highlights the fact that

schools are monitoring students' performance (i.e. GPAs) and are scheduling students to limit overloading them with an unmanageable course load.

Over Up-Leveling

The primary reason for limiting students' AP enrollment is to lessen students' chances of "over up-leveling" themselves. Over up-leveling, a phrase coined by the principal at Seaside Daisy High School, refers to the idea that a high-performing student may overload their schedule, which results in a lower GPA, and ultimately a lower likelihood of admissions into four-year postsecondary institutions. As one principal notes, "Kids would up-level themselves, and they would take what could have been a [University of California (UC)] kid and they turned themselves to a community college kid" (P1). This principal recognizes that UC campuses accept only high achieving students, but cautions students to not over-enroll in difficult courses. A counselor at the same school admits that "[placing] students more for success may lead to some under-placement, but we don't want them taking an honors class and getting a D because that does not help them get into college either" (HC1). Similarly, the counselor at Western Azalea High School notes that earning poor grades in advanced classes (instead of higher grades in college prep classes) is "counterproductive;" she would rather have students take fewer AP courses and earn higher grades than become overwhelmed by the challenging workload and receive lower marks.

At most schools, school counselors and administrators emphasize the importance of high GPAs over a rigorous course load, particularly when preparing for college. One counselor suggests "Let's not take five AP classes and get all Ds and Cs. Let's say, maybe you take three and get As and Bs in them" (HC2). Similarly, the head counselor at Lupine Hills High School tells students "We are going to focus on your GPA because that's the first thing through the door,

and then SAT scores, and then the rigor of your college courses” (HC3). The district has realized that a higher overall GPA is more beneficial than a lower GPA with more AP courses, and this reasoning is used to limit students’ AP enrollment.

Generally, the policies and practices across Towering Pines are geared towards keeping students out of too many AP courses. Counselors are inclined to limit students’ AP courses and they warn students against AP over-enrollment. The administration’s tendency to down-level students, or the under-placing of students in advanced courses, is the reaction to students’ tendency to over up-level themselves. At Seaside Daisy High School, the principal states that although there are students who can handle four or five AP classes it is not the norm, “nor should it be” (P1). She concludes by saying “the whole concept of kids get to pick their classes was gone years and years ago. We pick the classes for them because they are still teenagers” (P1). This comment emphasizes that students cannot be trusted to make the right decisions for themselves. Similarly, the counselor at Seaside Daisy comments that “we don’t give them all the options because some of them don’t lead to a good decision... basically we don’t share with them all of the options at the beginning. We share with them the ones that are going to give them the most success” (HC1). When scheduling students into classes, particularly students who have earned one or more D or F, counselors admit to not presenting students with all of their options. Another counselor responds, “We don’t really give them an option in what they’re taking. Yeah, you kind of have to direct them through it” (HC2). Counselors admit to limiting the information they give students to guide them to make the most appropriate decisions. Thus, gatekeeping AP courses can operate through students trusting counselors to present the best options for their future.

Counselors also down-level students to help students live a balanced, healthy life. At Western Azalea, the counselor comments that some students overburden themselves with an unmanageable workload. Students have lost sleep, cry, and even suffer from suicidal thoughts because of the demands of their courses and schedules. "...For awhile there it was really bad where I had kids wanting to commit suicide all the time because they can't handle all these classes" (HC2). The counselor notes that students should make sure to get plenty of rest and "have a balance in life; enjoy high school at the same time." Similarly, a principal at another school emphasizes life balance: "I think most important is the balance approach, where kids get the opportunity to potentiate but not break" (P1). Counselors emphasize that the school personnel would rather have students enroll in fewer AP courses if it means students are healthier, both physically and emotionally. Because counselors are now using gatekeeping techniques to limit students' over-enrollment, students may be enjoying more school-life balance without the stressors of an unmanageable course load.

School counselors create the master schedule of classes for the year, and when students want to switch classes it creates issues for class space and size. Therefore, closely monitoring AP enrollment rates eases the counselors' duties and may serve as an incentive to schedule students into non-AP courses where students are less likely to request a schedule change. As one counselor mentions, "Well, it's hard in October to transfer out of a class. And then you messed up your whole master schedule... You make your master schedule, we base it on the students' requests and then when you get a class with only 10 kids left in it because they realize [they can't handle the classes] and they want out. It's not good for [anybody] (HC2)." This counselor notes that the students suffer when they transfer out of a class that is six or eight weeks into the

semester. Similarly, it is difficult for school personnel to find an appropriate alternative class for these students to take.

At Seaside Daisy High School, the principal considers options for students to build their academic resume without succumbing to the pressures of an unmanageable AP course load. She suggests “Or maybe it’s better to take classes in the summer at a community college path, earn some college credit that way” (P1). This principal acknowledges the difficult admissions process, particularly for selective universities, but she does not want to see her students fall victim to “over up-leveling” and limit their chances of admission into an institution where they could otherwise have been admitted. Because Seaside Daisy operates towards the more closed-access end of the gatekeeping spectrum, the principal here provides options outside of traditional high school courses to ensure students remain competitive applicants.

District Recommendations, Formulas, And Matrices

To manage AP enrollment and limit over up-leveling, multiple gatekeeping methods are used. At most schools in Towering Pines School District, students are selected to participate in AP courses “through district recommendations. The district uploads test scores, benchmarks, SATs, previous grades, and then does recommendations that way. Teachers’ recommendations...and also student request[s]” (HC6). Although the counselor at Mountain Lilac High School does not provide details in how these district recommendations operate, the counselor at Desert Sage High School describes the matrix that the district provides. “The district gives us a matrix that includes the CSTs and their benchmarks and students’ grades, teacher recommendations. We do use the matrix sent from the district as our guide in helping us” (HC7). The matrix includes multiple indicators of student performance and also has a section for teachers to provide their class recommendations. If students receive a score of 15 or higher on

this matrix, then they are recommended for higher-level courses. Borderline students may be “considered” for higher-level courses. Although teacher recommendations are part of the matrix, they are optional and are thus used in a less consistent or systematic way. Borderline students who do not have teacher advocates may be under-scheduled despite the desire or ability to challenge themselves with honors or AP courses. The matrix provides a specific course in each subject for each student. The counselor notes that “Let’s say, [a student does] not make it on that matrix. That it doesn’t show that they should take an AP class, but we can see through their work ethic they’ve gotten good grades and their GPA is strong, and they want to try it, we give them the benefit of the doubt and we let them try it” (HC7). She continues with a warning to students that they should speak with the teacher so they “know what you are getting yourself into.” Nevertheless, the use of a district-provided matrix provides counselors at Desert Sage High School with a guide for placing students, even though students can pursue AP courses without a perfect recommendation from the matrix.

A counselor at Seaside Daisy High School references a different type of formula to place students into AP courses. She says “...one of our principals in another school [figured] out the approximate GPAs of students that got good scores on their AP exams and good grades in their AP courses and he came up with a kind of little guideline where you know, if the kid’s 3.37 [GPA] he could take two AP classes” (HC1). She admits, however, that “I don’t know what [this Principal’s] index thing means.” She is confused by the combination of grades, test scores, and AP courses and is not sure how to explain it, let alone use it. This counselor is wary of the district recommendations and formulas. She says “...that’s a problem I have. It seems to me that the district thinks that it can all be reduced to a numeric formula and that if they got this score,

this score and this number, then this is where they go. They even offered to automatically upload kids into the right courses at registration time” (HC1).

It is clear that across the high schools there are several formulas to assist counselors in scheduling students into advanced courses but the degree to which these formulas are used or are helpful varies. When counselors have mechanisms to bypass matrix equations or are unfamiliar with how to utilize the formulas it begs the question of their utility and fairness. Furthermore, automatically uploading students into courses may save time for counselors or administrators, but eliminates the need for real counseling to occur between students and their counselors. Whereas one counselor voices her opposition to the use of number crunching, others do not express such aversion to the practice of using a matrix or formula. However, with or without the use of formulas, the schools in Towering Pines utilizes test scores, benchmarks, and grades to place students into classes.

Test Scores, Benchmarks, and Grades

Even when not part of a formula, counselors use students’ standardized test scores, (CSTs) benchmarks, and grades to help students understand where an AP class is appropriate for their schedule. “We say, ‘Okay, if you had an advanced on your CST in English and math, then okay you can take those multiple AP classes. But like, if you have a low basic, um okay, then we’ll give you an AP class, you may have one. You may want to target that to your strengths”” (HC2). In this school, students who have advanced standardized test scores have more flexibility in taking a rigorous AP course load compared to students with lower scores. When discussing scheduling more generally, she comments “their score places them in the right class but they’re not earning those Cs or better” (HC2). Students must earn a grade of C or higher for college admissions requirements. When students do not earn these marks, they must use alternative

methods (such as credit recovery programs) to remain college eligible. Despite the assertion that they do not use only “data” to assign students to classes, the counselor at Seaside Daisy High School also expresses concern about how they will assign students to courses next year, since the state is adopting the Common Core standards and will not be administering CSTs this year. The Smarter/Balanced assessments are aligned with the Common Core standards, but since this is the first year of implementation they are not going to be scored. Therefore using test scores independently or as part of a matrix will prove problematic for the next course assignment cycle.

When students who may not be pre-recommended for AP courses request an AP class, counselors use CSTs as one way to determine their likelihood of success in an AP course. One counselor notes “...we review their final grades from June, plus their CST scores when we have them” (HC1). Although no school notes that CST scores are the final determinant of AP placement, it does play at least a small role at most schools, whether operating through a formula, matrix, or as part of the overall recommendation process.

Counselors also rely on previous grades and courses to schedule students into AP courses. As one counselor explains, “That’s just really based on their GPA. And if the students are packing certain GPAs it could open up more doors for them for AP” (HC3). Often, the interviews revealed the importance of grades and the emphasis on maintaining high GPAs, even if it results in students taking fewer advanced courses. One counselor notes “When we are scheduling, we would look at what classes they have taken. If we see that they are strong in certain areas” then the counselors are more likely to recommend the student take advanced courses in that subject (HC5). The counselor at Lupine Hills High School notes that the student who is in the running for valedictorian can “max out” on their AP courses, whereas students in the 3.5 GPA range can take a fewer advanced courses, and “if you are under a 3.0 then we are

trying to get above a 3.0 and so AP classes may not do that” (HC3). The rationale here is that students need to have a minimum GPA of 3.0 to be admitted into a four-year university. If students do not already have a 3.0, despite adding a point to the GPA, an AP course may be too rigorous to pay off for mid-level achievers.

More typically, however, counselors review transcripts that reveal the student is academically unprepared for an AP course. “Well, I’m looking at your transcript and I see two Ds, a C, and couple of Bs, and um, you’re not taking any honors or AP classes right now” (HC1). Another counselor laments, “a lot of [the students] don’t realize how important their grades are and they’d rather...it makes them slack off” (HC2). Likewise, the counselor at Hibiscus High School says to her students who may not be AP material “Let’s look at your GPA. This is not working out, you know? You need to have a higher GPA. Maybe you are going to be better placed in a regular class” (HC4). However, if the student still requests the AP course, after being informed that it might not be a good fit, the student can enroll with parental permission. Although no counselor or administrator wants students to earn grades of D or F, ultimately some do. A counselor comments that it is difficult to predict how students will perform in the future based on their previous course grades (HC1). Perhaps this indicates that additional methods of placing students into courses may result in higher grades or more appropriate course placement, particularly in more advanced classes.

Teacher and Counselor Recommendations

The district also uses teachers’ recommendations to place students into higher-level courses. As one counselor notes, teachers and counselors push students to enroll in academic courses and challenge themselves. “Our honors and AP teachers also do a lot to encourage students to move on to the next level.” When referencing college-prep teachers, she states “[The

teachers] might notice a student might be successful in a more advanced class, so they might talk to that student and say, ‘Hey, you might be really successful doing this’” (HC6). One counselor notes that teacher recommendations can be used to assign students into AP courses, particularly for students who don’t score well on standardized tests. “...Sometimes students don’t test well on the CST but the teacher knows what they’re capable of...” (HC6). The counselor at Desert Sage High School notes that there is good communication between the counselors and teachers. However, when she discusses teacher recommendations, she only provides examples of teachers recommending students out of AP courses. She notes that teachers may say “‘Hey, I don’t think this kid would be a good fit for next year’s AP class. You might want to take him out’” (HC7). Thus, it is clear that teacher recommendations can be used to up-level or down-level students.

Some students perform well in multiple courses and may have several teachers recommend AP courses for students. However, even in this instance counselors are wary of a schedule that is too heavy with advanced classes. “Even though he might be really awesome in all those subjects, if you overload him too much he is not going to be awesome. So we kind of watch out for that too” (HC1). Here, it appears as though counselors can override teachers’ recommendations if they fear the student may over up-level themselves. The strategy is not necessarily to limit students’ AP course enrollment, but to limit their over-enrollment in courses that may not play to their strengths or may create barriers to earning high grades. Again, the emphasis is on high grades, not a rigorous course load.

Moreover, counselors appear confident in their course placements. When students who are not traditionally considered AP material request to be placed in AP courses, the counselors can often predict the students’ lack of success. “...if it looks like they deserve to be upgraded they [will] get it, but I’ll tell you, most of the time they don’t” (HC1). Counselors in Lupine Hills

High School go so far as to have a chain of command when requesting higher-level courses. If the counselors do not recommend the student, the parent has a right to then approach the assistant principal and eventually the principal to request access. The counselor at Seaside Daisy High School will wait for the student to prove herself by earning high final grades, scoring well on the CST, or taking summer school (HC1). Another counselor explains that if the student or their parents sincerely request an AP class sometimes she concedes, but notes that “then they didn’t do well and then their parents come in and are like ‘Okay, you were right’” (HC7). Rare are the cases where lower performing students prove themselves and succeed in AP courses when not originally assigned to AP. Although some may be more flexible in assigning students to courses when they might not be typical AP material, counselors feel their predictions about students’ success are generally appropriate and accurate.

Future Plans, Goals, and Work Ethic

Several interview participants mentioned students’ future goals and plans when scheduling classes, however it is apparent that this is not a crucial factor in counselors’ decisions. One counselor asks students, ““Okay, let’s talk about where you’re going to be. Like what is your plan, your major?”” (HC2). She acknowledges that students planning to major in math or science fields should be completing three years of science and four years of math, which is more than the public California universities’ minimum entrance requirements. Another counselor notes that they take into consideration students’ strengths and “what they want to pursue,” however it is apparent that the more important factor in course placement is students’ academic track record or their “strengths” (HC6). The counselor at Lupine Hills High School discusses students’ future plans in conjunction with their GPA. He notes that if a student is “gunning for [UC] Berkeley or [UCLA], and you’re going for valedictorian, then we are going to max you out” (HC3). Lower

performing students will gain admission into fewer advanced courses. These counselors take into consideration students' future plans, yet in most schools, this aspect of assigning students to courses is secondary to student's previous performance, test scores, and grades.

When a student with a moderate academic record requests placement into an AP class the counselor considers the students' grades and whether they are currently enrolled in any higher-level courses (i.e. course load rigor). Before making final assignments for the fall semester, the counselor checks to see if students have proven themselves by completing summer school for any Ds (if applicable), earning appropriate CST scores, and maintaining high final grades at the end of the year. The counselor at Seaside Daisy High School notes that if students "deserve" to be placed in AP courses, and then they will be placed in those courses (HC1). Similarly, counselors mention students' work ethic and commitment to doing well in their courses. They say that a student "may qualify for honors English but he sure didn't work as an honors student this year" and the lack of work ethic may result in the student being placed in a lower level course. The counselor explains that although they want students to be challenged, they also want students to know and work within their limits. Often, the counselors know what students' limits are. Another counselor references that students "got to have some type of work ethic" to be placed into AP courses (HC2). The counselors and principals do not define work ethic, but it is notable that the interviews do not mention students' determination, drive, desire to be challenged, or other personality traits that may play a role in students' success in AP courses, exams, or college admissions. Even when work ethic is mentioned, interviewees do not weight it heavily in the course assigning process.

AP Exams

Students in Towering Pines School District may enroll in an AP class but they are not required to take the AP exam. Across the board, exams are noted as being “encouraged, but not required.” Nevertheless, some schools or teachers have various tactics to encourage exam participation. As one counselor notes, “I think some teachers might say it’s required, but it’s really not required” (HC6). Some teachers may encourage students to take the exam by presenting them with an alternative assignment or test (that would affect their course grade) if they choose not to take the AP exam (HC3, HC7). This indicates that although teachers encourage their students to sit for the exam, is it not a requirement for enrollment in the course.

As mentioned, school personnel limit students’ access into AP courses, yet the students continue to earn low scores on the AP exams. One counselor admits that her students don’t perform well. “...But we do not have a great success rate with APs, and I think that’s merely because our students don’t test well.” This counselor excuses her students for low exam scores because the students don’t perform well on standardized tests, yet this school uses standardized tests to assign students to AP courses.

Some AP exams appear easier to pass than others. “Well, Spanish for one, but mostly because everybody passes the Spanish one because they were native speakers” (HC6). The counselor at Mountain Lilac High School attributes success on the exams to students’ native language, instead of participation in the yearlong course. Two schools mention low pass rates as a rationale for limiting AP course enrollment. The counselor at Hibiscus High School notes that “that was actually another reason why we want to make sure that the kids that are in the AP classes are the right kids. Because we had a lot of kids who were not being successful in the classes and therefore were not taking the test. Because they knew ‘Wait a minute, I’m not even

doing well in that class, how am I going to pass the AP exam?” (HC 4). These comments indicate that the district’s focus has been promoting access to an appropriate level of advanced courses, while perhaps neglecting preparation for passing the exam. At Lupine Hills High School the counselor states “You always want to look at your AP data and see if you are overscheduling and under-scheduling students, and usually, that is a 60%, 70% pass rate. If I have a 97% pass rate then I want more students in that class” (HC3). At this high school, the counselor annually reviews the courses’ pass rates and adjust enrollment availability based on students’ performance. If more students are successfully passing AP exams in a given subject, it is more likely that there will be greater availability to enroll in that class in the following academic year.

The Open-Access School

After conducting interviews with counselors and administrators across the seven high schools in the district, the above patterns began to emerge quite clearly. However, there is one school in the district that appears to operate very differently. Golden Poppy High School describes its AP program in several ways that are inconsistent with the other schools in district.

First, Golden Poppy High School allows open access to AP courses. Students’ recommendations appear to provide entrée to the AP program without reservation. As the school counselor states, “But even if they don’t get the recommendation [from the teacher], if the student wants, really wants the class, and the parent is okay with it, we will allow them to take that class.” Teacher recommendations are part of the selection process, however student requests appear to trump barriers that in other schools may hinder students’ AP participation. In the interview with the school counselor at Golden Poppy, it was notable that grades, test scores, and benchmarks were largely absent from the conversation. When asked about students who do not initiate requests for AP courses, the counselor states that “when we are scheduling we look at

what classes they have previously taken.” Whereas other schools highlight the importance of the rigor and level of success the students demonstrate in their previous classes, the emphasis here appears to be on *whether* students had taken certain courses, not their *performance* in the courses. The counselor continues to say that when assigning AP classes they will consider “how you’ve done before” but, when compared to the importance of test scores and grades that the other schools put on their scheduling system, Golden Poppy High School negotiates these processes by applying greater weight to different AP scheduling criteria.

Golden Poppy High School also offers several honors and AP opportunities that are unique. One program designed to move students from a college-preparation class to an honors class involves students’ reflections on their own performance. In English classes, students “filled out a reflection sheet [putting] their scores of certain assignments and they write a paragraph or two about why they think they should...go into an honors class.” Teachers then discuss with their students whether moving into an honors class would fit the student well. Golden Poppy is also the only school in the district that offers an AP preparation program for freshman. “Teachers would select the top 35-40 incoming 9th graders to participate in this program where they are all in one class and the teachers collaborate within [biology, honors world history, algebra II/trig, and English I honors] to increase the rigor of those classes.” The program allows students to get “really, really prepared for those AP classes in 10th grade.” Another introduction that students at Golden Poppy receive is the AP night where all new AP students and their parents are invited to learn about the AP program, its benefits, and its requirements. In addition to this parental component, Golden Poppy has an AP contract which the student and parent both sign when enrolling in an AP course. These opportunities for development and parental involvement appear unique to Golden Poppy High School.

Additionally, Golden Poppy does not limit the number of AP courses a student takes. The counselor notes that they consider students' previous AP courses and their performance in those courses, but maintains, "our stronger students will take...five or six AP classes their senior year." However, some students may not be able to take more AP courses due to scheduling issues, and if there is only one section of each AP course, students may need to choose in which to enroll. Similar to the other schools, students at Golden Poppy are not required to take the AP exam even if enrolled in the course. The counselor mentions that the exam cost is an issue for students, but their Advancement Via Individual Determination (AVID) program voted to pay for the students who could not afford their fees.

Golden Poppy, unlike the other schools, appears to make a concerted effort to inform their students about AP, promotes student success in AP, and involves parents and teachers in the AP process. Their programming and open access policies provide students with opportunities to build a course schedule that increases their eligibility for competitive postsecondary institutions. No other school in the district takes such an active approach to prepare and enroll students in AP classes.

Quantitative Results

Across the district, AP enrollment rates range from 49% at Golden Poppy High School to 62% at Lupine Hills High School. On average, 55% of students in Towering Pines enroll in at least one AP course and 50% of students take at least one AP exam (see Table 4.1).

The quantitative results explore student- and school-level effects on students' likelihood of enrolling in an AP course and taking an AP exam. In Table 4.4, model (1) indicates that relative to Lupine Hills High School, attending any other school in the district decreases students' odds of enrolling in an AP class. (The effect of attending Hibiscus High School and

Western Azalea High School are negative but not significant.) In model (2), once student demographic variables are introduced, the school-level effects reverse. Attending any other school, relative to attending Lupine Hills High School increases students' odds of enrolling in an AP course. Additionally, females, Vietnamese, and other Asian students have higher odds of enrolling in an AP class (OR=1.369, $p < .01$, OR=3.674, $p < .001$, and 2.757, $p < .001$, respectively). Students with another racial/ethnic background and English language learners have lower odds of taking an AP class (OR= .471, $p < .001$ and OR=.159, $p < .001$, respectively). Students who aspire for a bachelor's degree or higher have 211% higher odds of taking an AP class. In the full model, the school-level effects remain significant and increase in magnitude. Once controlling for student demographic and achievement variables, students in any school, as compared to students at Lupine Hills High, are more likely to enroll in an AP course. Although the effects for gender and being from an other racial/ethnic background remain significant, the effects of being Vietnamese or other Asian disappear in the full model. In model (3), being White significantly lower odds of enrolling in an AP course (OR=.756, $p < .05$). In the final model student achievement also significantly predicts students' odds of taking an AP course. Math and English language arts standardized test scores positively influence students' odds of taking an AP class, as does testing in higher-level math. Conversely, testing in a lower-level math course decreases students' odds of taking an AP course by 69.1%.

Model (4) explores school-level effects on students' odds of taking an AP exam. Relative to students in Lupine Hills High School, students at any other high school are less likely to take an AP exam. (The effect of attending Western Azalea High School is negative but not significant). In model (5), once student demographics are introduced to the model, the school effects again reverse. Students at every school except Golden Poppy High School are

significantly more likely to take an AP exam, relative to students at Lupine Hills High School. In this model, there are similar effects of being female, Vietnamese, other Asian, or from another racial/ethnic background as to those in model (2). Again, English language learners have lower odds of taking an AP exam but students aspiring to complete a bachelor's degree have higher odds of taking an AP exam. In the full model, the school effects remain positive and significant, and a positive and significant effect for attending Golden Poppy High School emerges. In the full model, the effect of gender remains, as do the effects of being Vietnamese, from another racial/ethnic background, and being an English language learner. Similar to model (3), White students are less likely to take an AP exam, as compared to Latino students. Math and English language arts standardized test scores increase students' odds of taking an AP exam, as does testing in a higher-level math course. Testing in a lower-level math course decreases students' odds of taking an AP exam.

The reversal of the school effects can be explained by the understanding that Lupine Hills High School has the highest API score in the district (Table 4.4). Thus, models (1) and (4) operate as expected: students in higher performing schools appear to be more likely to take rigorous courses and exams. However, the interviews reveal Lupine Hills as a school that operates with slightly more closed access policies (see Figure 1). They heavily rely on grades when assigning students to AP classes, almost exclusively. Some students can “max out” on AP courses, but this is based on students' grades and desire/ability to graduate in the top of their class or attend a competitive university. Models (3) and (6) indicate that students in the highest performing school are actually least likely to take these crucial college preparation steps. This could be a function of limited seats in AP courses. Schools can only offer a certain number of AP courses based on the need, qualified teachers, and other resources. Lupine Hills High School

may have a more competitive environment where qualified or high-performing students are not selected into AP courses because of limited availability, whereas these same students in other schools would be placed in AP courses given a small pool of qualified students. As a hypothetical example, to fill an AP classroom at Lupine Hills, teachers and counselors may select 38 students with the highest GPA, and the average GPA of this group is 3.9. In another school, such as those at Hibiscus, the top 38 students to fill an AP classroom might have an average GPA of only 3.4.

When examining the qualitative data one might assume that students in schools with broader access to AP courses would have higher odds of planning to enroll in an AP course. The rationale behind this argument is that using a more holistic review of students, including qualitative and quantitative methods for placing students, may result in more students enrolling in AP courses who do not fit into these courses based on test scores alone. However once controlling for all variables in the model, students in every school, compared to students in Lupine Hills High School, are more likely to enroll in an AP course. Although the effect size for attending Golden Poppy is smaller than the effects of attending another school, it is still positive and significant ($p < .001$). Golden Poppy High School has the most open access policies and supports students' AP enrollment with transition programs and high levels of parental involvement. Therefore, once examining the quantitative data, it appears as though the methods by which students are placed into AP courses matter not. Students at schools that fall all along the gatekeeping spectrum participate in higher rates than those at Lupine Hills.

Similar patterns emerge when examining whether students took an AP exam. Students attending any school have higher odds of taking an AP exam, compared to students in Lupine Hills High School. Again, the effect for attending Golden Poppy is smaller than the effects of

attending some of the other schools, but it nevertheless positively and significantly predicts students' odds of taking an AP exam (OR= 1.292, $p < .001$). Other school-level factors, such as the population at each school, may be driving some of these results. Student-level factors not measured in the current models that may affect students' exam-taking behaviors may include their interest in the subject, their likelihood of attending a four-year university after high school, their satisfaction with the teacher and class environment, or whether they accessed additional study materials or assistance to prepare for the exam.

Discussion

This study uses qualitative interviews and quantitative student surveys to explore how schools in one school district structure access to Advanced Placement courses. A gatekeeping framework based on the interview data describes how schools across the district discuss their course assignment practices. The framework is a spectrum of open to closed access to AP courses. Schools in Towering Pines fall all along this spectrum, based on how heavily they weight students' requests, previous courses, or standardized test scores, for example. This spectrum is similar to the patterns Useem (1991, 1992) found in her examination of school districts in Massachusetts. Useem found that teachers a) typically reserved higher-level math courses for the best and the brightest or b) they allowed many students into higher-level math, encouraging a larger proportion of their students to enroll. However, because most schools in Towering Pines enact open- and closed-access gatekeeping strategies, I argue that the framework operates as a spectrum, instead of a dichotomy.

As is evident by the interviews conducted in this study, test scores on statewide standardized tests and grades/GPA appear to be the most important factors in predicting students' enrollment in an Advanced Placement course. All school counselors and principals act

as gatekeepers and provide students with more or less access to AP based on the types of gatekeeping practices they employ. These practices appear in every school except Golden Poppy, where they have an open door policy and programs to introduce students into AP courses. In Golden Poppy High School, students' requests, garnered with parental support, seem to be the entrée into AP courses. Underscoring these findings, the quantitative data indicate that students who perform higher on math and English language arts tests are more likely to enroll in AP courses and take the AP exam. Similarly, students who test in higher-level math, as compared to those testing in algebra II are more likely to take at least one AP class, and those testing in geometry or algebra I, as compared to those testing in algebra II, are less likely to take an AP class. Thus, the qualitative and quantitative data both indicate that students' academic performance is highly predictive of students' enrollment in AP courses.

When examining the quantitative data more closely, it appears that the schools students attend are also a large predictor in whether students enroll in AP courses. Whereas Lupine Hills has the highest API score across the district, once controlling for student-level demographics, students at this school actually enroll in AP courses at much lower rates. In fact, students at every school are significantly more likely to enroll in AP as compared to students at Lupine Hills High.

Because of the interesting effects occurring around Lupine Hills High, it is clear that other aspects of school-level culture and influences are at play in predicting students' AP course enrollment. Lupine Hills High may be the highest performing school, but the students in this school have lower odds of securing AP placement, which is necessary for admissions into selective colleges and universities. This "frog-pond" effect indicates that lower performing

students in lower performing high schools actually have greater access to AP courses than higher performing students at the higher performing high schools (Attewell, 2001).

When it comes to taking the AP test, no school requires it of the students who are enrolled in an AP class. The most common response was that it is encouraged, but not required. Some teachers and counselors appear to have different methods of encouraging their students to take the test, such as threatening them with an alternative assignment, however across the district an AP test is not required. When we consider the quantitative data, there are similar patterns for whether a student enrolled in an AP class. That is, compared to Lupine Hills High School, all other schools appear to have fewer students take an AP test (before controlling for student-level variables). However, once students' background and academic performance variables are included in the model, the effect of each school reverses. Students in all other high schools are significantly more likely to take an AP test as compared to students in Lupine Hills High. Effects of students' performance on taking an AP test are consistent with those predicting enrollment in an AP course; higher performing students and students testing in a higher-level math course are more likely to take an AP exam. These effects align with Espenshade, Hale, and Chung's (2005) work, which concludes that there is a negative effect of schools' academic environment on college admission. That is, students attending higher performing schools have lower chances of admissions at competitive colleges. The parallel between their work and the current study is that small frogs in big ponds (i.e. middle-performing students at Lupine Hills High School) are less likely to enroll in an AP course or take an AP exam.

It should also be mentioned that students' aspirations for a bachelor's degree or higher are also significantly and positively predictive of their likelihood to enroll in an AP class or take an AP test. This is not unexpected, given that students who aspire for a bachelor's degree are

more likely to plan to attend four-year institutions and therefore may want to increase their eligibility into more competitive colleges and universities. Enrollment in AP courses and AP test credit (scores) are associated with college freshman GPA; grades in intermediate college courses; grades in college science courses; college graduation; and earlier college graduation compared to non-AP students (Dougherty, Mellor & Jian, 2006; Morgan & Klarik, 2007; Sadler & Tai, 2007; Shaw, Marini, & Mattern, 2013).

When examining Golden Poppy High School more closely, it does not appear that their unique methods of preparing students and ushering them into AP courses do much to change the patterns of students' likelihood of enrolling in an AP course. Students at Golden Poppy are still significantly less likely to take an AP course (before controlling for student-level variables) and are significantly more likely to enroll in an AP course after controlling for student-level variables. Although the effect is smaller at Golden Poppy than it is in other schools, the effect is far from negligible. Thus, whether schools limit access to AP courses based on students' grades, test scores, and course load, or whether they open the doors to advanced courses and use programs and information sessions to prepare students for AP, other aspects of school culture and context have an influence in students' likelihood of enrolling in an AP course.

As noted in the interviews, most of TPSD operates in contrast to what early research in tracking and gatekeeping argues. Rosenbaum (1979) notes that students who leave the college academic track between 7th and 12th grades are unable to reenter this track during their high school careers. In Towering Pines, nearly all students are in the college prep track and movement between this track and the honors/AP level courses are fluid and flexible. Interviews reveal that students must prove their eligibility (usually by grades, test scores, or teacher recommendations)

but presumably, students move within and between college prep, honors, and AP courses. As in previous research, courses—not tracks—operate on a hierarchy of difficulty (Attewell, 2001).

Over Up-Leveling

One of the most prominent themes of the interviews was the over up-leveling of students across the district. When students enroll in too many AP courses, they, and their GPAs, suffer. Counselors and administrators limit access into AP courses primarily to preserve higher GPAs in manageable courses, so that students do not earn lower grades and over up-level themselves. Generally, the schools maintain that higher grades in college prep courses trumps lower grades in multiple AP courses. Schools also limit AP enrollment because students who over-enroll in AP courses are less likely to be able to balance a healthy lifestyle, academics, and social life. Similar to some students in Towering Pines, previous research indicates that AP students carry a heavy workload which results in sacrificing sleep, stressful schedules, and spending time with others or participating in extracurricular activities (Foust, et al. 2008; 2009; Hertberg-Davis & Callahan, 2008). Thus, for Towering Pines counselors and administrators, limiting access is about maintaining a healthy school-life balance, even at the cost of taking a less rigorous course load.

Rosenbaum, Stephan, and Rosenbaum (2010) caution against the college-for-all message and suggest that students should be informed of the consequences of enrolling in an open access institution. They disagree with withholding information to cultivate students (often unlikely) dreams. Some of the interview participants in this study withhold information from students yet in a different way than described by Rosenbaum and colleagues. They withhold information that narrows students' options, not broadens their access to AP courses. Additionally, most inform students of the potential negative consequences of overenrolling in AP courses and warn students

of the intense rigor of the program. Thus, TPSD does not operate in a strictly college-for-all culture but enacts gatekeeping strategies, at least when examining access to the AP program.

Limitations and Future Directions for Research

Although this study is novel in its use of both qualitative and quantitative data to explore access to AP courses, this study has several limitations. First, additional variables further exploring students' AP participation could be beneficial. For example, the current data only indicates whether students took one or more AP test or exam but does not include the number of courses or exams taken, whether the student took an AP exam for every AP course in which he or she was enrolled, in what subject they tested, or their AP exam scores. Since previous research indicates that passing an AP test is more influential than enrolling in an AP course in predicting students' college outcomes in college (Shaw, Marini, & Mattern, 2012) this additional data could provide a better understanding of how AP courses, exams, and school practices are related. Another drawback from the current data is the lack of income or socioeconomic status variables. The district no longer collects this data from students and families so school-level demographic information is the best proxy for SES.

The data for this study come from a large urban school district serving primarily low-income and minority students. Furthermore, the large proportion of Vietnamese students in this district is unique and warrants including them as a distinct racial/ethnic category, whereas in other studies and datasets they may be included in the more general "Asian/Asian American" category, so the current results related to students' race/ethnicity may not align closely with previous findings. Therefore, replicating this study in other contexts and student populations should result in greater generalizability of the results.

Unfortunately, recruiting interview participants was somewhat problematic. This process

spanned multiple months and interviews were conducted well after the student surveys were completed. Ideally, each school would have two or more participants to gain a well-rounded picture of the processes at each school and to serve as a means of triangulating data (Miles, et al. 2014). Nevertheless, I maintain that the data are relevant and reliable because no interview participant was new to the profession or new to the district at the time of the interview. Thus, their responses should still reflect the overall processes of their high school and those in Towering Pines School District.

Implications

The current study results in some important implications for practice. When combining the qualitative and quantitative findings, it appears as though the gatekeeping mechanisms that the schools employ tend to have little influence on whether students enroll in an AP class or take an AP exam. As such, perhaps it is less important for administrators and counselors, particularly at the district level, to spend much time and resources developing formulas and defining processes dictating AP participation. Because previous research indicates that passing an AP exam is more influential on students' postsecondary success (Shaw, et al. 2012) Towering Pines and its high schools could put more attention on preparing students to succeed on the exams. Appropriate access to AP courses is just one aspect of AP participation; exam testing and passing rates also need to improve. Although the AP pass rates are not available in the current data, in California only 27% pass one or more AP exam (College Board, 2014). Therefore, focusing on students' intense study of the material, providing AP teachers with adequate professional development opportunities, particularly in STEM subjects, and ensuring access to adequate supplies (e.g. lab materials) might be a better use of district and school resources. It is possible that more limited access to AP courses, in combination with greater emphasis on taking and

passing AP exams, will result in higher GPAs, exam pass rates, and four-year college admissions rates. This study challenges Towering Pines to put greater emphasis on students' exam preparation and participation, instead of simply "encouraging" it, as is the current practice across the district.

This study uncovers some of the mechanisms behind students' AP course enrollment and exam taking. By understanding the practices that school personnel enact on campus, we can better counsel students into their best course schedule. As noted, previous research indicates the importance of higher-level coursework, AP courses, and passing AP exams on students' college admissions, retention, and graduation rates. Therefore, equitable access to these courses is one important aspect of ensuring equitable access to a college education.

Conclusion

It is well understood that AP course enrollment and exam participation play a role in students' college preparation and admissions processes. This study explores how schools broaden and limit access to AP courses and finds that schools use a variety of gatekeeping mechanisms to build students' schedules. Open- and closed-access policies operate differently across the district, but overall appear to have little influence on students' likelihood of enrolling in an AP course or taking an AP exam. Students in the highest performing school in TPSD have the lowest odds of participating in the AP program, a finding that supports previous work indicating that attending a higher performing school may be detrimental for highest performing students (Attewell, 2001; Espenshade, et al. 2005). Nevertheless, students often enroll in AP courses to increase their chances of college admission. In addition to bolstering their college applications, AP students also gain knowledge and skills that position students to be successful once in college.

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Table 4.1

School Profiles

	2011 API Score	Latino	Vietnamese	Other Asian	Other Race	White	English Language Learner	Percent of School Low- Income	Enrolled in AP Class	Took AP Exam
Golden Poppy	757	46.8	27.8	7.9	2.6	15	21.9	75.1	48.8	39.1
Hibiscus	845	23.5	6.2	15.2	3.2	52	7.4	27.6	58.4	50.3
Mountain Lilac	737	76.4	14	4	1	4.6	30.7	85	50.4	49.1
Desert Sage	735	74.8	16.9	3	0.8	4.5	31.5	85.9	49.4	48.3
Lupine Hills	873	12.8	74.9	6.1	0.7	5.5	12	71.9	62.1	58
Western Azalea	804	48.9	29.9	5.9	2.8	12.4	17.5	63.3	56.3	52.3
Seaside Daisy	820	33	53.8	7.1	1.8	4.2	26	74.8	58	50
Overall	796	45.5	32.3	6.9	1.8	13.5	21.1	69.1	55	49.9

Note. The percent of schools that is designated as low-income is reported by the California Department of Education for 2011. The percent of students who enrolled in at least one AP course or took at least one AP exam is calculated only for students with complete data.

Table 4.2

Interview Participants

	Principal	School Counselor	Total
Golden Poppy	0	1	1
Hibiscus	0	1	1
Mountain Lilac	1	1	2
Desert Sage	0	2	2
Lupine Hills	1	1	2
Western Azalea	0	1	1
Seaside Daisy	1	1	2
			9

Note. The counselors at Desert Sage High School participated in one interview simultaneously.

Table 4.3

The Open Access-Closed Access Gatekeeping Spectrum and Mechanisms Used to Grant or Limit Access to Advanced Placement Courses

	Student request	Parent request	AP prep programs	Future plans / goals	Work ethic	Teacher recommendation	Schedule for strengths	Formula / matrix	Grades	Benchmarks	CST	Limiting info
Golden Poppy	X	X	X	X	X	X						
Hibiscus	X	X				X			X			
Mountain Lilac	X			X	X	X	X	X	X	X	X	
Desert Sage	X	X			X	X	X	X	X	X	X	
Lupine Hills							X		XXX			
Western Azalea	X			X	X		X		X		X	X
Seaside Daisy					X			X	X	X	X	XX

Note. The mechanisms listed progress from open access to closed access moving from left to right. One X indicates that the school uses that mechanism to grant or limit access into AP courses. More than one X indicates that the school places a higher emphasis on this mechanism.

Table 4.4

Students' Likelihood of Enrolling in AP Class and Taking an AP Exam

	Enrolled in an AP Class			Took an AP Exam		
	(1)	(2)	(3)	(4)	(5)	(6)
School						
Golden Poppy	0.583*** (0.086)	1.287*** (0.086)	1.954*** (0.162)	0.464*** (0.069)	0.968 (0.053)	1.292*** (0.083)
Hibiscus	0.859 (0.127)	1.833*** (0.256)	3.112*** (0.239)	0.732* (0.106)	1.737*** (0.209)	2.700*** (0.411)
Mountain Lilac	0.621*** (0.088)	2.067*** (0.170)	2.988*** (0.369)	0.700* (0.098)	2.293*** (0.193)	3.527*** (0.408)
Desert Sage	0.598*** (0.088)	1.840*** (0.143)	2.866*** (0.277)	0.676** (0.099)	2.058*** (0.165)	3.279*** (0.364)
Western Azalea	0.786 (0.112)	1.677*** (0.114)	2.438*** (0.223)	0.793 (0.112)	1.698*** (0.108)	2.381*** (0.205)
Seaside Daisy	0.846 (0.124)	1.505*** (0.044)	2.218*** (0.116)	0.724* (0.105)	1.198*** (0.034)	1.566*** (0.065)
Female		1.369** (0.138)	1.831*** (0.287)		1.341*** (0.107)	1.768*** (0.187)
Race						
Vietnamese		3.674*** (0.512)	1.061 (0.174)		1.341*** (0.107)	1.768*** (0.187)
Other Asian		2.757*** (0.514)	1.049 (0.238)		2.540*** (0.584)	1.002 (0.253)

White		1.082 (0.175)	0.756* (0.103)		0.887 (0.101)	0.565* (0.136)
Other		0.471*** (0.095)	0.377* (0.154)		0.301*** (0.085)	0.203*** (0.069)
English Language Learner		0.166*** (0.025)	0.537*** (0.092)		0.171*** (0.035)	0.580* (0.131)
Parent Has Some College		1.031 (0.091)	0.889 (0.064)		0.982 (0.105)	0.813 (0.093)
Aspirations for Bachelor's Degree or Higher		3.108*** (0.387)	2.465*** (0.294)		2.864*** (0.338)	2.199*** (0.185)
Math Subject Tested						
Algebra I or Geometry			0.309*** (0.097)			0.275*** (0.061)
Higher-Level Math			4.457*** (0.541)			3.467*** (0.445)
English Language Arts Standardized Score			1.999*** (0.191)			2.190*** (0.242)
Math Standardized Score			1.904*** (0.231)			1.805*** (0.256)
N	2624	2624	2624	2624	2624	2624

Note. Odds ratios presented; standard errors in parentheses. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Reference category for school is Lupine Hills. Reference category for race/ethnicity is Latino/Hispanic. Reference category for math subject tested is algebra II.

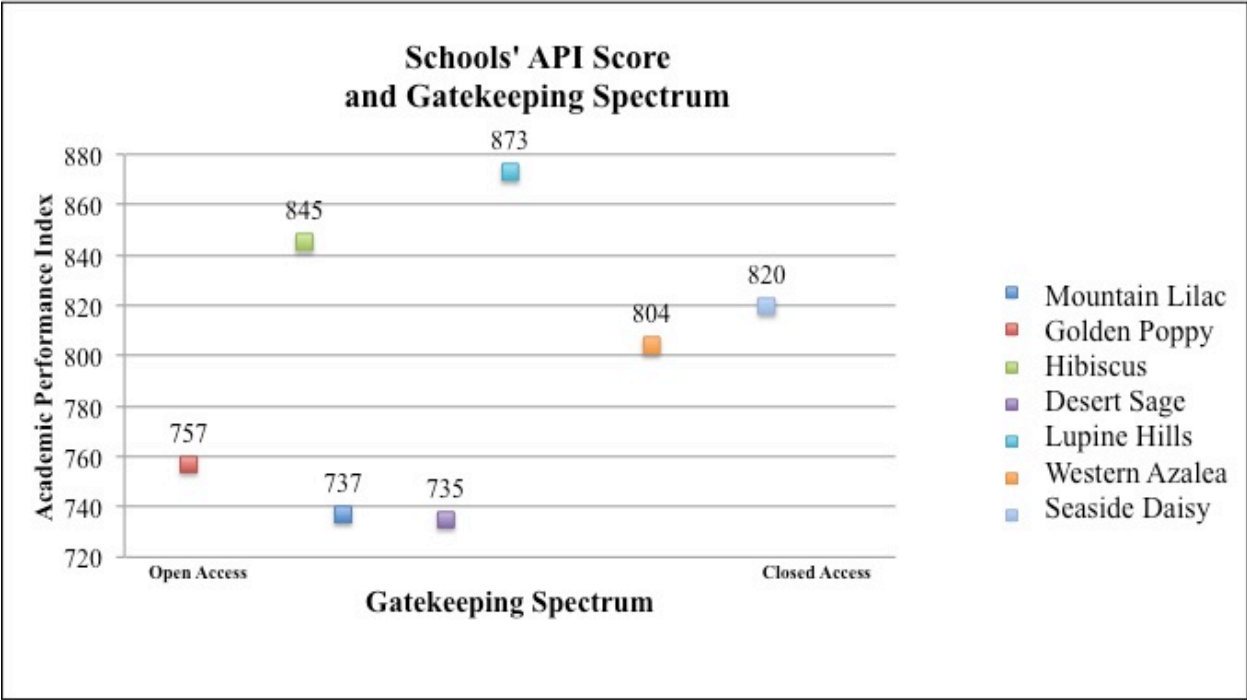


Figure 4.1. Schools’ relative location along the gatekeeping spectrum. Schools positioned more towards the right enact more open-access policies and schools positioned more towards the left enact more closed-access policies.

Chapter 5

Discussion

Over his past two terms, President Obama has introduced several initiatives aimed to increase college participation and completion. This agenda is spurred by the fact that many new jobs will require a college degree, a college degree can help maintain a middle class lifestyle, and currently, the United States ranks 11th among developed nations in postsecondary degree attainment (Stripling, 2008). Many of these initiatives are geared for low-income students' in particular. These plans include increasing access to need-based financial aid, expanding the "Pay as You Earn" loan repayment plan, and matching students with colleges and universities where they are more likely to complete a degree (The Executive Office of President, 2014).

Part of the College Completion Agenda is to meet the goal of 55% of the United States population between the ages of 25 and 34 completing a postsecondary degree or certificate. In attempts to reach this target, many of the efforts presented during President Obama's administration have been aimed at broadening access to college advising, including financial aid awareness, and test preparation. For example, the National Association for College Admissions Counselors will provide school counselors with additional advising tools, and other agencies are broadening access to SAT/ACT preparation through mentoring and advising (The White House 2014). Improving college preparation and precollege counseling can influence students' access to college, likelihood of attendance, and persistence once enrolled. Bolstering students' opportunities to engage in school-based college preparation experiences throughout the educational pipeline positions teachers, counselors, and other school leaders as the key players in students' college choice processes.

This dissertation underscores the current administration's goals of increasing college access and persistence to degree. Overall, this dissertation explores college preparation and access as a process from early adolescence through high school. The purpose of the dissertation is to understand how schools and school-based resources support students' college preparation and transition into college. It argues that early access to clear, consistent information and opportunities for college preparation, combined with conversations and meetings with knowledgeable adults influences students' college knowledge, likelihood of preparing for college in meaningful ways, and students' postsecondary plans. Schools and school personnel are the focal point of this dissertation, because many low-income, underrepresented minority, and potential first-generation college students rely on school-based resources for precollege counseling and college preparation (Kim & Schneider, 2005; Plank & Jordan, 2001).

Review of Findings

Early interventions and teachers as college knowledge brokers. Leveraging classroom teachers as college knowledge purveyors an early college curriculum as an in-class intervention provides students with opportunities to engage in conversations about college and develops students' college-going identity. Supporting students' college aspirations by providing them with potential sources of college information and early access to college knowledge provides a strong foundation for students' later college preparation.

Teachers, typically an untapped resource of college knowledge, have the potential to infuse their classrooms with college-related lessons and discussions. These conversations allow students to see their teachers and others as sources of college information to which they can ask questions and voice concerns about college. Elementary school teachers in particular have the opportunity to develop meaningful relationships with their students given that they spend a

significant amount of time with their students on a daily basis. When students have early access to college information from a trusted source, such as their classroom teacher, their understanding of college, financial aid, and careers increases.

College-going culture and school counselors. Study 2 explores high school students' interactions with their school counselors and how these interactions vary based on school contexts. This study concludes that most schools in Towering Pines School District tend to operate within one of two frameworks: schools can *expand students' horizons* by offering opportunities to prepare for a variety of postsecondary options, including trade/technical schools, the military, community colleges, and four-year institutions. Other schools operate with a *focused preparation* model, where the school staff emphasizes the importance of attending a four-year institution. However, despite the ways schools organize their college-going culture, interactions with school counselors are universal in increasing students' odds of preparing for and planning to attend college. Meeting with counselors to talk about college, financial aid, and related issues is associated with higher odds of progressing through the college preparation process, even after controlling for college-going culture.

Advanced Placement. Academic preparation and access to higher-level coursework is one of the most important aspects of college planning. This study uncovers how schools and school counselors structure access to Advanced Placement courses operating along a gatekeeping spectrum. The spectrum organizes schools that use more open-access policies, such as considering students' requests and providing AP bridge programs, or schools that use more closed-access policies, such as relying heavily on standardized test scores to place students. Qualitatively, schools throughout Towering Pines operate quite differently. However, when matching these findings with the quantitative results, it appears as though the ways schools

structure access to AP courses have little effect on whether students enroll in an AP class or take an AP exam. Other mechanisms within the schools, such as the student body demographics or API scores may be facilitating some of the differences in students' AP participation across the district. Nevertheless, understanding how schools sort students into higher-level courses broadens the college access literature since past research shows that high school courses play a large role in students' later academic outcomes (Adelman, 1999; 2006; Attewell & Domina, 2008).

Practical Implications

This dissertation has several practical implications for teachers, school counselors, and schools in general. First, elementary schools should consider implementing a college-going curriculum in their classrooms. When lessons are aligned with Common Core standards, teachers can easily include college lessons in their everyday practices. Likewise, teachers at all levels can rely on their own experiences and college knowledge to seek out opportunities to discuss and teach college to their students. Students, particularly students with few college-educated role models, will learn to turn to teachers, who are currently an untapped resource, for college information and guidance. Although teachers may not have specific college information, they are able to direct students to helpful resources and engage in meaningful conversations that can support students' college aspirations and encourage academic preparation and achievement. Even if teachers are hesitant to provide information due to their relative lack of training or outdated knowledge, initiating conversations with students about college can support their postsecondary goals, provide a starting point for information seeking, and communicate high expectations and a strong college-going culture.

In addition to teachers, school counselors are critical in students' college preparation. This dissertation highlights their roles as the key school personnel to provide precollege counseling and develop a college-going culture on campus. Schools and districts must support and protect counselors' college advising time and resources. Administrators should facilitate counselors' ability to meet with all students multiple times throughout the academic year and throughout students' high school careers to ensure accurate, timely, and useful college information and opportunities for preparation. Counselors should strategically build their meetings with students to cover a range of college, career, and financial aid topics so students can fully engage in the college choice process. Likewise, meeting with school counselors consistently can develop a strong college-going culture on campus, which further supports students' postsecondary plans. All school staff members create and maintain the college-going culture and should align their goals to best support students' transition into college, other training programs, the workforce, or the military. It is the school-level culture that influences the degree to which students have access to and utilize the college preparation resources and school personnel. This dissertation highlights the fact that resources cannot simply be presented to students; access to resources is only part of the equation. Students must also activate the resources available to them (i.e. seek out counselors' guidance).

One aspect of the college-going culture is supporting students' academic achievement by encouraging students to enroll in challenging coursework when appropriate. This dissertation uncovers the struggle counselors and administrators face when placing students into higher-level courses. Administrators, counselors, and teachers should promote a healthy level of academic press to promote students' eligibility for competitive four-year universities, without over-up-leveling students. As is done at Golden Poppy High School, more schools could provide

transition programs into AP courses for a range of students. Similarly, engaging parents in the process of enrolling in AP courses (e.g. by contracts that require signatures or parent information sessions) may help students make the best enrollment decisions together with the help of their parents and school counselors. AP enrollment and exam taking can influence students' postsecondary trajectories, but students must be informed about the level of rigor and commitment required to succeed in these challenging courses. Broad and direct communication to all students about what the AP program entails may open access to AP to more students while simultaneously shaping academic schedules to be the best personal fit for each student. These discussions about AP can be institutionalized for all students in addition to one-on-one consultation individually.

Overall, this dissertation calls that all school personnel support and promote students' postsecondary plans by providing them with a broad range of options to facilitate the choice process. If students receive guidance too late, are uninformed, lack academic preparation, or are otherwise ill-equipped to pursue a variety of academic and occupational options, then the counselors and the college-going culture of the school have failed the students. To truly have a college choice, students must be equipped and prepared to make informed choices that allow them to follow the best postsecondary match for them.

Some of this college preparation includes empowering students to seek out assistance from others. Whereas college students are expected to utilize campus-based resources and programs, teachers and school counselors in this dissertation are teaching elementary and high school students to actively participate in their own college search process by employing a variety of resources and personnel. When students develop these information-seeking strategies and skills, they are more likely to do so once on a college campus, where they are expected to be

more independent. Furthermore, when students develop an early awareness of college, are consistently presented with opportunities for guidance and college preparation, and are academically challenged, they are more likely to apply to college, plan to attend college, and may be more likely to persist once enrolling (Attewell & Domina, 2008; Eccles, Vida & Barber, 2004; Klasik, 2012; Long, Conger, & Iatarola, 2012; Wimberly & Noeth, 2005). Often, the college access and persistence literature is disjointed, but the work presented in this dissertation acts as a bridge between the two fields. The work in the current studies provides the foundation for students' later success once in college.

Recommendations for Future Research

Overall there is a need for additional research to better link school systems and support students throughout the educational pipeline. Students leak out of the pipeline at each step, and this dissertation shows that schools and school personnel can patch the leaks. Nevertheless, our current understanding of these issues leaves room for further investigation of how to best support and prepare students throughout their educational journeys.

Ideally, a follow-up of Study 1 with the students and teachers in this study would reveal lasting effects of the intervention on students' college preparation and choice processes. Following these students throughout middle and high school would indicate students did in fact seek out additional sources of college information, have more conversations about college and careers, and retain the college knowledge they learned. More generally, this study has two main recommendations for future research: additional study of early college preparation and additional study of teachers' roles in college planning. Although many researchers acknowledge that early college preparation is pivotal, there is limited research on college preparation and precollege counseling before the high school years (e.g. Eccles, Vida & Barber, 2004; Wimberly & Noeth,

2005). Particularly for students who have few college-educated role models, when school-based college advising begins late in high school, students are often underprepared for the admissions process due to lack of academic or financial planning earlier on. Thus, further research on students' and families' early college preparation is crucial to further understand how elementary and middle schools engage students in the college choice process. Furthermore, longitudinal studies that follow young students through high school, college, and the world of work could link early college awareness with eventual college attendance, completion, occupations, and later life outcomes (e.g. health and income).

Additionally, there is a dearth of research exploring classroom teachers' roles in college preparation and guidance. School counselors tend to be the focus of most college preparation research, but classroom teachers also hold college knowledge and can be critical sources of college information for all students. Currently, it appears as though teachers are an untapped source of college knowledge and additional research exploring how schools can leverage teachers to inform and guide students throughout their college choice process could result in larger social networks for students. Conducting evaluations of in-class curricula is one entrée to pursue this work. Additionally, ethnographies and other qualitative methods would uncover current practices teachers use to infuse their curriculum with college information.

There has been considerably more research exploring the role of college-going culture and school counselors on students' postsecondary preparation and destination. However, much of the current literature is prescriptive in describing what college-going culture should look like, versus how schools actually implement it on their campuses (see MacDonald & Dorr, 2006; Corwin & Tierney, 2007). Additional study of schools' college preparation practices and college-going culture will result in a better understanding of effective and results-based practices on

campuses. Although the current dissertation adds to the literature on school counselors' roles in college preparation, there are still many questions left unanswered. Previously used nationally representative datasets (e.g. Education Longitudinal Study of 2002) cannot account for type, frequency, or content of student-counselor interactions. Furthermore, there is limited research exploring the effects of precollege counseling on students' later educational and occupational attainment. More detailed measures of precollege counseling are crucial for understanding and implementing best practices of college preparation and advising. The recently released High School Longitudinal Study of 2009 includes more school counselor variables than previous datasets and exploration of this data would result in a greater understanding of school counselors in a younger cohort of students.

Although many researchers have examined the AP program this dissertation explores how schools within one district structure access into critical higher-level courses. Whereas previous research examines the effects of AP on students and disparities in participation among racial/ethnic minorities, few—if any—use mixed-methods approaches to examine mechanisms operating at the school- and district-levels. Study 3 could be replicated with other student populations and on a larger scale to further understand how schools interact with students related to their course placement. Future research can also consider more specific measures of AP participation: number of courses enrolled, number of exams taken, number of exams passed, exam score, and course/subject in which the student enrolled or tested. In addition to AP courses in particular, similar work should explore students' placement in honors, IB, and higher-level math courses. To expand the current study, I could explore AP test scores and pass rates and how these variables differ within each school. Additionally, I would like to examine how students' AP participation is related to later student outcomes, which could add to the current literature

underscoring the importance of the AP program in predicting students' trajectories. Similarly, exploring how AP participation mediates the effects of school culture on students' future outcomes would add to the relevant literature on the effects of schools on academic and occupational attainment.

Conclusion

The review of previous research and the current dissertation highlight the importance of college preparation and guidance for all students. These studies explored how schools and school personnel can shape students' college choice process and patch the leaky holes along the K-16 educational pipeline. Teachers, counselors, and administrators use a variety of methods and programs to support college-going student identity, preparation, and school culture. The school personnel in this dissertation embraced their roles of college knowledge purveyors and aimed to increase students' likelihood of attending and completing college. In-class curricula, counseling, and academic preparation work in concert to create a schoolwide college-going culture.

This dissertation explored college preparation and choice for primarily low-income and underrepresented minority students. Findings indicate that classroom, counseling, and academic interventions can influence these populations' college trajectories. To help meet President Obama's goal of 55% of the population earning a postsecondary degree or certificate by 2025, these interventions can be implemented broadly with similar populations. To increase the United States' overall college degree completion rates, traditionally underserved populations must receive more support and assistance throughout the K-16 pipeline. The studies in this dissertation conclude that school-based resources and supports can aid students' college preparation and the postsecondary transition process.

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