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# College Knowledge of 9th and 11th Grade Students: Variation by School and State Context

## **Abstract**

While college enrollment rates have increased over the last 40 years, gaps still exist across groups. College enrollment rates are lower for high school graduates whose parents have not attended college, those with low-incomes, as well as Black and Latino/a students than for other high school graduates (Baum & Ma, 2007; Ellwood & Kane, 2000; NCES, 2007; Thomas & Perna, 2004). Widening gaps in income and health insurance coverage between high school and college graduates (Baum & Ma, 2007) suggest the economic and social imperative of working to increase college-going rates among these underrepresented groups.

## **Disciplines**

Bilingual, Multilingual, and Multicultural Education | Disability and Equity in Education | Education | Educational Sociology | Race and Ethnicity

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## College Knowledge of 9th and 11th Grade Students: Variation by School and State Context

While college enrollment rates have increased over the last 40 years, gaps still exist across groups. College enrollment rates are lower for high school graduates whose parents have not attended college, those with low-incomes, as well as Black and Latino/a students than for other high school graduates (Baum & Ma, 2007; Ellwood & Kane, 2000; NCES, 2007; Thomas & Perna, 2004). Widening gaps in income and health insurance coverage between high school and college graduates (Baum & Ma, 2007) suggest the economic and social imperative of working to increase college-going rates among these underrepresented groups.

One source of differences across groups in college-related outcomes is knowledge about college and financial aid. Research shows that the

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more information and guidance a student has, the more likely the student is to enroll in college (Berkner & Chavez, 1997; Hossler, Braxton, & Coopersmith, 1989; Hossler, Schmit, & Vesper, 1999; King, 2004; Perna, 2004; Plank & Jordan, 2001). But, research also shows that a lack of knowledge about college, specifically financial aid, is prevalent in society today (Cunningham, Erisman, & Looney, 2007; De La Rosa, 2006; Grodsky & Jones, 2004; Horn, Chen, & Chapman, 2003; Perna, 2004; Venegas, 2006). Often this lack of knowledge is most pronounced among Latino and Black students and parents (Grodsky & Jones, 2004; Horn et al., 2003; Tomás Rivera Policy Institute, 2004), low-income parents (De La Rosa, 2006) and parents who have no direct personal experience with college (Brouder, 1987; Cunningham et al., 2007; Hossler, Schmit, & Bouse, 1991), and students who aspire to attend a two-year versus a four-year institution (Goff, Patino, & Jackson, 2004).

The limited available existing research focuses on describing the sources and timing of information about financial aid and college prices (Perna, 2004). This paper builds on prior research by exploring not only the sources of students' knowledge of college prices and financial aid, but also the nature and sources of other college-related knowledge and how this knowledge varies by school and state context.

Specifically, our research extends prior work by assessing differences in student knowledge of financial aid, costs, college preparation and education needed, as well as the sources of this knowledge. We also examine how students' college-related knowledge varies based on particular aspects of the context, including the average SES of students served by schools and the state policy environment.

Drawing on a multi-level model of college enrollment (Perna, 2006a) and data from descriptive case studies of 15 high schools, this study explores the following guiding questions:

1. What do 9th and 11th grade students know about "college," including college prices, financial aid, academic requirements, and the type and amount of postsecondary education needed to fulfill their specific career aspirations?
2. How do 9th and 11th grade students acquire college-related information?
3. How do college-related knowledge and sources of information vary across high schools and states?

### *Literature Review*

Students and parents tend to lack information or have mis-information about college. Students and parents tend to overestimate college prices

(De La Rosa & Tierney, 2006; Grodsky & Jones, 2004; Horn et al., 2003; Ikenberry & Hartle, 2000), and large percentages of parents and high school students are unaware of sources of financial aid (Immerwahr, 2003; Tomás Rivera Policy Institute, 2004) or underestimate the amount of financial aid available (De La Rosa & Tierney, 2006). Immerwahr (2003) also found that Latino students often had “bad” or misinformation about careers, and the amount of education needed for specific careers.

Research has shown that students with lower levels of information about college, especially information focused on cost and aid are less likely to expect to attend college (Flint, 1993; Horn et al., 2003), apply for admission to college (Cabrera & LaNasa, 2000), or actually enroll in college (Plank & Jordan, 2001). Students with less information about cost and aid are also less likely to be willing to take out loans to pay for college, or have parents that save for college (Ekstrom, 1991; Flint, 1997). The research does not establish causality though, and thus does not establish whether having knowledge causes a student to take steps to enroll in college (Perna, 2005).

Little has been written on the acquisition of students’ college-related knowledge during the 9th and 11th grades. Hossler, Schmit, and Vesper (1999) illuminated the changes during high school of students’ focus and intensity of their college information gathering. They found that in the sophomore year of high school students were not active in information-gathering about college, and cost and financial aid information was not of primary concern. They saw a change between 10th and 11th grades, as 11th graders were actively collecting information about colleges, particularly information about cost and financial aid. Similarly, Venezia, Kirst, and Antonio (2003) used surveys and focus groups of students in six states to determine that, compared to 9th graders, 11th graders were more informed about college preparation activities.

Research also suggests that sources of college information change as students progress through high school. Hossler, Schmit, and Vesper (1999) found that in the sophomore year of high school students’ primary sources of information about college came from family and peers. For 11th graders, however, the information network had expanded to include school personnel as well as college materials. Other research (De La Rosa, 2006; Goff, Patino, & Jackson, 2004; Tornatzky, Cutler, & Lee, 2002) also found that people, such as counselors, parents, and teachers were key college information resources for students in the 11th and 12th grade.

While many students rely on family members, and family often plays the strongest role in the college choice process (NPEC, 2007), not all students have parents with adequate knowledge about college. Tornatzky

et al. (2002) found that in a mini-test of college knowledge which encompassed questions related to cost differences in two- and four-year institutions, the value of AP courses, and academic planning, that two-thirds of all Latino parents in their study missed at least half of the questions. This lack of knowledge became more evident when the sample was broken down by socioeconomic status. On average, out of eight questions, the low socioeconomic status parents averaged 2.56 correct answers; the middle socioeconomic status parents averaged 3.32; and high socioeconomic status parents averaged 4.78. Twenty percent of parents in the study missed all 8 questions. Immerwahr (2003) also found that many Latino students have very little guidance from adults and peers to gain college knowledge.

The amount of knowledge that a student has also tends to vary by race/ethnicity and income. Parents of low-income students are often not aware of financial aid and the complex application process that requires tax forms, pin numbers, and repeated follow-up (De La Rosa & Tierney, 2006). Vargas (2004) found that underrepresented students do not naturally acquire college knowledge, since most students come from families with limited or no college experience. Consequently, these students rely on the school to provide information about college (Cabrera & LaNasa, 2001; Horn et al., 2003; Tomás Rivera Policy Institute, 2004; Tornatzy et al., 2002).

Reliance on high schools for information about college is problematic as often these same students attend inadequate high schools that provide minimal college guidance to students (McDonough, 1997; Perna et al., 2007; Rosenbaum, 2001; Rosenbaum et al., 1996). College guidance in high schools tends to vary depending on students' ability level, with high-performing students having access to the greatest number of resources (Venezia, Kirst, & Antonio, 2003).

Moreover, simply increasing the availability of information via electronic means is not sufficient. While having access to a web-enabled computer to gain information about the financial aid process, many students and their parents lack the instrumental knowledge needed to efficiently navigate websites in order to gain information about, and apply for, financial aid (NPEC, 2007; Venegas, 2006). Venegas also found that school staff members lacked sufficient training to help students to navigate on-line processes.

### *Conceptual Framework*

Following the example of others (e.g., Perna et al., 2008), the conceptual model for this study draws on the multi-level model of college en-

rollment developed by Perna (2006a) and the balanced access model developed by St. John (2003) and is pictured in Figure 1. Developed based on a review and synthesis of prior research, Perna's model draws on multiple theoretical perspectives and assumes that students' college-related decisions are shaped by multiple layers of context. The model identifies four layers of context: students and their families; K-12 schools; higher education institutions; and the broader societal, economic, and policy context.

This multi-level model, and the review of research on which the model is based, suggests that the most important student-level predictors of college enrollment are academic preparation and achievement, financial resources, knowledge and information about college, and family support (Perna, 2006a). The small number of studies that examine linkages among particular levels of context and student behavior suggest that student-level college enrollment behavior is also influenced by various levels of context, including families, schools and colleges, and states.

Quality and quantity of information about college plays a key role in how each layer of the model shapes college-going. The information

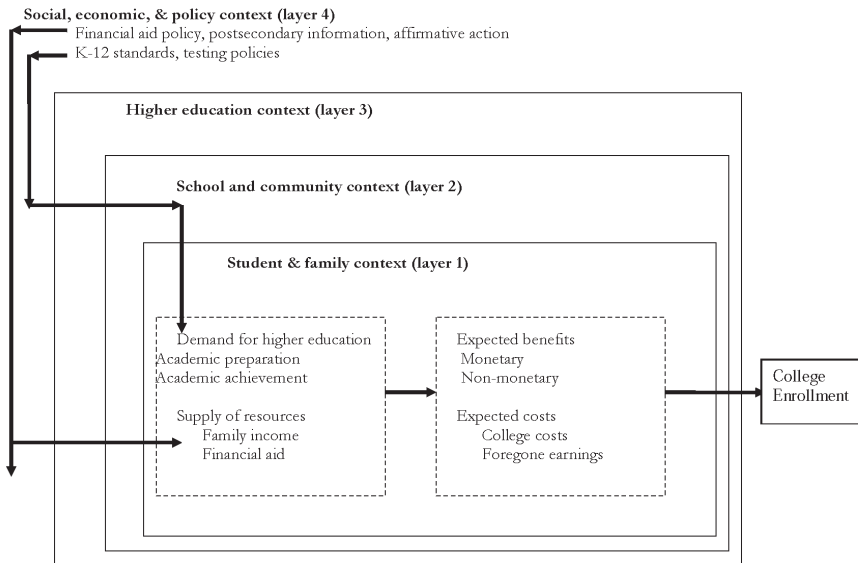


FIG. 1. Conceptual Model of Student College Enrollment with Policy Linkages  
 Source: Perna, Rowan-Kenyon, Bell, Thomas, & Li (2008).

available to students from their family is related to the educational attainment of family members and impacts whether students need more or less information from sources outside the family. At the school level, institutional agents such as counselors and teachers provide various resources including information about college (Stanton-Salazar, 1997). And yet the nature of this information and its effectiveness varies with the accessibility and orientation of college counseling (McDonough, 1997) as well as the relationship of students to institutional agents (Stanton-Salazar, 1997). The amount of information available to students is also impacted by relationships and activities with other students planning on attending college (Hossler & Stage, 1992; Perna & Titus, 2005). In terms of the higher education context, higher education institutions serve as sources of information both passively through their location and proximity to students (McDonough, Antonio, & Trent, 1997) and also actively through their marketing and recruiting efforts (Chapman, 1981).

Perna's (2006a) framework for understanding the role of multiple levels of context in shaping college enrollment behavior and the forces that shape an individual's college enrollment decisions is nuanced by St. John's (2003) work. St. John sheds light on the ways that public policy interventions shape college enrollment behavior. Specifically, St. John posits that K–12 policies pertaining to schooling and school reform (e.g., standards and testing) shape K–12 attainment and achievement; policy interventions (e.g., financial aid policy, postsecondary information, and affirmative action) shape postsecondary transitions and access; and college and university policies (e.g., financial and academic strategies) shape undergraduate and graduate student outcomes. State and federal policies may directly impact access to information through programs aimed at reducing college knowledge barriers. Policies also indirectly impact student information acquisition, for example, diverting school efforts from college orientation to standardized testing (Perna, Rowan-Kenyon, Thomas, Bell, Anderson, & Li 2008).

### *Research Method*

This paper uses multiple descriptive case studies of 15 high schools, 3 in each of 5 states. Case study methodology is appropriate given our interest in understanding not only *what* information students have about college, but also *how* students come to know this, and because of our focus on the “contextual conditions” that shape college opportunity (Yin, 2003b).



To select the high schools, we first purposively selected five states: California, Florida, Georgia, Maryland, and Pennsylvania. We selected these states because of their variation on a number of demographic, economic, political, and educational characteristics.

We then purposively selected the 15 high schools. We began by constructing a demographic and academic profile of all high schools in each of the five states using data from the Common Core of Data, the U.S. Census Bureau, and each state's department of education. Selecting three high schools within one school district or metropolitan area helps to control for alternative explanations for observed differences across schools. The three high schools in each state vary in terms of their demographic and academic characteristics. Specifically, one of the three schools in each state has above average student achievement and socioeconomic status, one has average student achievement and socioeconomic status, and one has below average achievement and socioeconomic status.

For example, the low-resource study schools in each of the five states had relatively lower average SAT scores, low percentages of students attending college after graduation and had lower percentages of students who passed state high school math and reading exams. At four of the five low-resource schools (i.e., CA, FL, GA, PA), less than 45% of graduating seniors enrolled in a two- or four-year college or university. Less than half of the students at three of the low-resource schools took the SAT, and the average score at these schools was under 900 (i.e., CA, FL, PA). With the exception of one low-resource school (i.e., MD) more than one-third of all students at the school received free or reduced lunch.

In contrast, the high-resource high schools sent over 60% of graduating students to a two- or four-year college or university. Less than 15% of students at the high-resource schools received free or reduced lunch, and three-fourths of all students passed the state high school math and reading exams. Over half of all students took the SAT and the average scores at these high-resource schools were over 1,000. The mid-resource schools had fewer students participating in free and reduced price lunch programs than low-resource schools, but more than the high-resource schools. Mid-resource schools also had higher college-going rates, higher levels of SAT participation and average SAT scores, and higher pass rates for state high school exams, but did not perform at the level of the high-resource schools on any of these indicators. For a more detailed description of the states and study schools, please see Perna, Rowan-Kenyon, Thomas, Bell, Anderson, & Li (2008).

*Data Collection and Analysis*

Reflecting Yin's (2003a) emphasis on the role of theory in guiding case study research, we developed data collection protocols based on the conceptual framework and a review of what is known from the literature about the predictors of college enrollment. The use of these protocols also helped ensure comparability of data collection procedures across the 15 schools (Yin, 2003a). Part of a larger study of the ways that federal, state, and local policies influence college opportunity, the protocols included such questions as: What type of career do you think you will have at age 30 and what type of education do you think you will need to do that? How do students at this school learn about financial aid?

Data for this paper rely primarily on data collected from individual and focus group interviews at each of the 15 high schools. At each school, we conducted focus groups with 9th grade students, 11th grade students, 9th grade parents, and 11th grade parents, and semi-structured interviews with teachers and counselors. The interviews and focus groups were audio-recorded and transcribed. Between 20 and 58 individuals at each school participated in the study, for a total of 596 participants.

To analyze the data, we first created a case study database (Yin, 2003b) that included transcriptions from the focus groups and interviews, as well as data from the policy analyses and demographic and academic profiles. We developed a preliminary list of codes using the conceptual framework and knowledge of prior research, while also allowing additional codes to emerge. We employed HyperResearch software to assist in the coding and compiling of data into categories.

We used several strategies to ensure the trustworthiness and credibility of the findings and conclusions. To ensure construct validity, we collected information from multiple sources including participants with different perspectives (i.e., students, parents, teachers, counselors) (Yin, 2003b). In addition, we produced a draft case study report for each school and asked the primary contact at each school (typically a school counselor) to review the report and provide feedback (Yin, 2003b).

*Limitations*

This study has several limitations. Although this study provides an in-depth understanding of student knowledge about college and the roles of the school and the state and economic policy context in shaping this knowledge, the findings are based on case studies of 15 schools. Therefore, the findings of this study cannot be generalized to all schools and states. Second, we spoke with a small number of people, between 20 and 58 individuals, at each school. The student participants in this study all

aspired to college, so they were not necessarily representative of the student body. Finally, our discussions with 9th and 11th graders at one point in time at these high schools point to differences between the two groups but do not allow us to draw conclusions about changes over time from 9th to 11th grade. Other factors at these schools could cause the difference we see. While important, these limitations do not minimize the contribution of this examination of 9th and 11th graders knowledge about college.

### *Results*

The following themes emerged from the data analyses: (a) Although all students knew general steps required to enroll in college, 11th grade students had more detailed information about the college process; (b) Family members were the primary sources of information for most students, followed by the Internet, and the high school; (c) The amount of college information that a student has is influenced by the social, economic, and policy context that the student inhabits.

#### *9th and 11th Graders' College-Related Knowledge*

Students described their knowledge of several aspects of “college,” including academic requirements, college prices, and financial aid. All of the students we spoke with generally knew the steps required to enroll in college. All students knew that they needed to take the SAT and to keep their grades up. When 9th graders were asked how they were preparing for college, most stated that they were concentrating on academics, as this was the “transition year” from middle school. Eleventh grade students tended to have a more developed idea of what they actually needed to do. Most 11th graders had taken the SAT at least once or were registered to take it before the end of 11th grade. Students also knew academic performance was important, and some indicated awareness of particular curricular requirements, such as the need to take four years of math or two years of a language. At the upper-resource schools and some middle-resource schools, students were typically aware that the more AP classes that they took, the more “marketable” they would be to colleges.

In terms of college prices, both 9th and 11th graders were aware of the variation in prices due to type of institution (e.g., two- vs. four-year, public vs. private, and in-state vs. out-of-state). A substantial share of 9th and 11th grade students described their perceptions of the high cost of textbooks when asked about college prices. This is a representative comment from a 9th grader attending a low-resource school: “You have

to buy your books; books are very expensive. Books are really expensive. I looked at it one time and I can't remember but books cost—thousands of dollars and stuff. That's a lot of money for a book."

Relatively few participating 9th graders were willing to provide specific estimates of actual college prices. The few 9th grade students who volunteered offered estimates that tended to vary wildly, with the majority of students greatly overestimating the sticker price of college. As one example, when asked how much it cost to go to college, a 9th grade student at a low-resource school responded: "I'm not sure. Thousands and thousands."

More 11th graders than 9th graders were able to accurately estimate college prices, supporting the findings of Hossler, Schmit, and Vesper (1999), with many students reporting reasonable estimates not only of tuition but also room and board. Nonetheless, while students were able to estimate the "sticker price" of some institutions, students were not able to share what the average student actually paid to attend a particular institution. As one example, an 11th grade student at the same low-resource school reported that the price of going to college for one year was:

Well, in-state maybe, \$15,000. Out of state, 35 plus. Well, it depends, like, public universities . . . I know places, like, I don't know, like, Florida—I know that's a public school, and if you went out-of-state it would be like, what, \$25,000 a year? . . . But private schools like in-state, about 30,000 plus, at least.

When asked about financial aid, students in 9th and 11th grade tended to have vague knowledge of financial aid and the process. All students, no matter the grade level, tended to have a general awareness that financial aid was "out there." In a representative comment, a 9th grade student at a mid-resource school in Maryland shared:

Financial aid is—well, you got to fill out a lot of papers and—take in your taxes. From what I hear, you bring in your taxes and they see if you're qualified or not. Then they get if you're having problems with money or if you're not making that much, so they help you out a little.

In terms of knowledge of particular types of financial aid, most students are aware of "scholarships" and "loans." Ninth graders generally believed that scholarships were awarded for both academic and athletic achievement in accordance with the findings in Venezia, Kirst, and Antonio (2003). Many students also believed that there was a large group of "odd" scholarships out there for things like being left handed or having to do with duct tape. As one example, an 11th grade student at the mid-resource Maryland school shared:

I know there are just a number of scholarships anywhere you look . . . like in the grocery store, there is like a grocery store scholarship, and just like— almost every institution has some sort of scholarship to get even if it's just for like a \$1000.

While 11th graders knew that they could obtain information about scholarships from the guidance office or on-line with FastWeb, very few provided detailed information about scholarship applications.

Eleventh graders were more likely than 9th graders to report having heard of programs such as Pell Grants and state need-based grant programs, but still did not know the mechanics of applying for these forms of aid. Some students knew of the FAFSA and knew that parents' tax forms were a part of the process, but were not actually sure how to fill out and submit their information.

#### *Sources of College-Related Information*

The analyses also shed light on the sources that 9th and 11th grade students use to acquire college-related information. Both 9th and 11th graders report learning about college and financial aid, specifically scholarships, from posters and announcements at school. Students also frequently cite the Internet as a place to get information. For the most part students mention “websites” or “the Internet” in general without reference to specific websites. The specific websites that students infrequently mention are FastWeb, the College Board, and individual college sites. Students complained that college websites promote the school but that cost information is not readily available. Students generally report that needed information is not easy to locate, a finding that is consistent with other research (e.g., Venegas, 2006). Students did not mention state or federal governmental websites designed to channel college information to high school students.

The most salient difference in college-related sources of information between 9th and 11th graders is the relative reliance on family and friends. Although students in both grades mention obtaining information about college from family and friends, 9th graders rely on these sources almost exclusively and for all aspects of the college-going process. Family members cited most frequently are parents, siblings, and cousins. Eleventh graders, however, report obtaining information not only from family and friends, but also school-based resources such as teachers, college counselors, and career centers. This finding is consistent with other research (De La Rosa, 2006; Goff et al., 2004; Tornatzky et al., 2002).

For example, 11th grade students discuss a number of ways that teachers provide college-going knowledge. Some describe the ways that

particular courses, such as high-school transition courses, incorporate explicit attention to college and career planning and exploration. Others note that some teachers provide informal information regarding colleges that specialize in their teaching area, as well as information on college requirements and financial aid. In one example, a student at a low-resource school describes a teacher's role in providing information about financial aid by stating:

[The teacher has] given us the college career portfolios, and then what we do is we build on it. She gives us a list of words, definitions, spellgrams and all that, then she explains to us each one, what they are, how we're going to use them, financial aid. She's actually going to give us the applications for financial aid so we can fill them out ourselves.

Eleventh graders also describe the role of guidance counselors in providing college-related information in both individual and group settings. Students view counselors as having the most complete knowledge about college going and financial aid, particularly sources of scholarships. Schools vary widely, however, with regard to the perceived accessibility and helpfulness of the counselors. For example, a student at the low-resource school in Georgia complained:

The counselors like announce when they have new scholarship funds and stuff, but it still doesn't seem like they do very much in the way of pushing people to go to college. I mean, we've gotten . . . new counselors in the past couple years and it seems to be getting a little better, but still it's not very, it's still not that helpful. I think we should have counselors who are specified for those kinds of things, like guiding someone.

Conversely, a student at the low-resource school in Florida noted the helpfulness of the counselor whose job is exclusively college guidance:

She supplies the tests, she registers them to take the ACT and the SAT, gets them registered. She also does the financial aid. She pretty much helps you, steers you in the right direction. She helps you find out what colleges you might be interested in. She does a lot because you probably don't know where to start.

Students attending schools with a counselor or career/college center director specifically designated for college guidance express a familiarity with and a great deal of confidence in the knowledge, reliability, and helpfulness of this person. They view this person as a convenient, and in some instances, almost "savior-like," one-stop resource for all of their college information needs. This resource existed at all schools in the Maryland and Florida districts that we visited as well as the high-resource Georgia school and the low-resource California school.

Eleventh graders also mention looking up information in college/career centers and obtaining assistance and information from the directors of these centers. An 11th grader at the middle-resource school in California said:

We also have a very good career center. You can go in there anytime and look up either any major you want or any college you want and they're basically there to help you find a college. So it's a really great place.

Some 11th graders refer to using college search software in these career centers that gives them institutional choices based on their interests or grades and test scores. Other school-based sources of information mentioned by 11th graders are college-going programming such as college fairs and meeting with college representatives that have visited their school. Very few of even the 11th graders, however, have attended financial aid-focused meetings, as these meetings seem to be targeted exclusively toward seniors. Students perceive that they will need more information about financial aid but few have begun inquiring about it in earnest.

Eleventh graders, when asked what their school could do to help them realize their goals frequently mentioned the need for more one-on-one and active forms of information dissemination rather than simply posting information. A student at the high resource school in California said:

And I think if people are forced, they're like looking at it in their hand, then it's so much more accessible to them to just go online instead of coming to the business office, not knowing where to go, trying to find paper with this small amount of information that you don't know how to interpret. And I think as counselors continue to come to classes and give you papers with helpful information about scholarships, I think that's the best way.

In the age of information overload, students tend to be attracted to information that is easy to locate and understand.

#### *Information Varies Based on Layers of Context*

The analyses also reveal variations in the nature and sources of information not only by grade level but also based on the local and state college-going policy environment and the type of high school attended. Students in general have a tenuous grasp of the array of financial aid opportunities available to them and the steps necessary to obtain them. However, students in the states with large merit-aid programs, Florida and Georgia, have greater awareness that state-level funds exist. Furthermore, they have general knowledge of the criteria for receiving these awards and incorporate these requirements into their college planning. Specifically, students know that, to receive the state aid, they have to

stay in-state and must maintain high GPAs. Students in these states, especially at high-income serving schools, actively strategize about staying in-state for their undergraduate degrees and then going elsewhere for graduate school. An 11th grade student at a Florida school said:

A lot of kids, they are applying for Bright Futures [the state's merit-based financial aid program], especially and they're really counting on that. And for the majority of the seniors that are graduating, most of them stay in Florida just because of the money issue and you know, then they'll get their graduate degrees later. You know the undergraduates is really like, it's not so much where you need to be out-of-state.

Most students in need-based aid states have not heard of the need-based programs and did not know that financial assistance from the state is available to lower-income students.

Another population of students that has more knowledge about financial aid are those involved in early intervention programs such as Upward Bound, AVID (Advancement Via Individual Determination, a program available in the California schools), and similar local programs. These programs emanate from either the state or local level, are offered either as classes or as extracurricular activities, and provide extensive information about financial aid programs and the steps to qualify for them. Students in these programs knew of local, state, and federal programs and could provide concrete information about the requirements for these funds. As illustrated by the following exchange between the focus group interviewer and 9th graders at the California low-resource school, students in these programs were consistently the only ones who had heard of the specific financial aid programs.

Interviewer: Okay. How many of you all here know what FAFSA is? Show of hands. Two of the eight. How many of you know what a Pell Grant is? [The same two students] You are both in AVID?

Students: Yeah.

Students in California manifested an understanding not present in the other study states of the tiered higher education system in the state. Students in all states differentiated between two- and four-year schools and recognized the exclusivity of the state flagship institution but only California students recognized systematic differences between different types of state public four-year institutions. Students knew that University of California schools were more prestigious and more expensive than the California State system. Surprisingly, however, few California students expressed knowledge of the state-wide A-G high school curriculum requirements for admission to the state's four-year institutions.



This lack of knowledge of specific academic requirements is consistent with findings from other research, including Venezia and Kirst (2005).

College-related knowledge also differed based on the predominant income group served by the high school. For example, students at all schools were aware of student loans as a means for paying for college. At low- and to some extent middle-income serving schools, discussions of loans commonly provoked comments about people they knew who were either greatly burdened by paying off loans after graduating or had not completed a degree and still had the loans to pay back. One student from the Florida low-resource school shared:

I have known a couple of people who have done that [taken out loans], and at the same time . . . They've gotten through college, but at the same time they had to struggle finding jobs to pay back their money due to the interest charges that some of these loans have, and trying to pay it back can sometimes be a struggle to some of these people.

Conversely, students at high-income serving schools viewed loans more neutrally as one of many ways to finance the more selective institutions they wish to attend. This view is typified by the comments of a student at the high-resource school in Pennsylvania:

I do think it's worth it because if you get like a great job later then you should—Like, paying them the money and all that stuff to get the training is like nothing compared to like how you feel about your job and stuff. And, depending on what kind of job you have, it's—it might not even be a lot of money to you, if you get like a great job and you get paid a lot. Then paying back the money's going to be like, oh it's a little bit, I don't care about that.

Another difference was the greater likelihood at higher income schools that students, both 9th and 11th graders, know that graduate school is often needed beyond an undergraduate degree. An 11th grader at the high-income serving school in Florida said:

And there's like more specialized careers once you have your graduate education, and you can really pursue the subject that you want to practice and the subject you want to study . . . And especially like if you want to do medical school, like if you want to be a doctor or be a lawyer . . . there's no other alternative. Like you've just got to do it.

### *Discussion*

The findings from this study point to the lack of consistent mechanisms in most schools to channel information to students about the breadth of available educational opportunities available and the availability of financial aid and how to access it. The lack of sufficient struc-

tures to provide this information to students throughout their high school careers, while problematic for all students, is particularly likely to result in lower educational attainment for low-income students and those whose parents have not attended college (Perna, 2004).

Ninth graders rely mostly on their friends and family, and sometimes the Internet, for information about college. This finding raises questions about the nature of the information that the students are receiving. In the case of family and friends, information is anecdotal and may be proscribed in terms of what information family and friends have due to their own personal and idiosyncratic experiences. The problem with reliance on family and friends for information is particularly salient for low-income students, as these students are less likely to have parents and friends who have attended college. These parents encourage their children to attend college but often lack the experience or knowledge to assist their children in the process (Rowan-Kenyon, Bell, & Perna, 2008). In the case of the Internet, it is unclear which websites students are using and how much skill students have in sorting through the large amount of college information available (NPEC, 2007; Venegas, 2006). Research in other domains has shown that unguided Internet research can lead to frustration and eventual turning away from the Internet as a resource, but that provision of reliable sites yields more productive searches (Shaw et al., 2006). Students also perceive that specific college sites are less about the provision of objective information than about advertising the institution. In short, the sources 9th graders most commonly use (i.e., family, friends, and the Internet) are unfiltered, variable, and in some cases unreliable.

As students move closer to the time of actual college enrollment they begin to utilize more formal school sources of information about college: their teachers, counselors, college fairs and college representatives. Our work does not reveal whether this shift is due to student willingness to seek out school sources or because the school sources are made more available to older students. While students cite using school staff to learn about careers and college, in most schools these encounters are haphazard and due to individual rather than systematic efforts by students, teachers, or counselors. Many students knew of available college information resources, but, as juniors, had yet to employ them. Only in certain schools were the dots being connected systematically between high school course work and college awareness and preparation. Again, this disparity is less problematic for students in the upper-resource schools as these students are more likely to have parents who attended college and can offer their experiences as models to their children. Thus, while efforts at the school level of Perna's (2006a) model

could compensate for the lack of information about postsecondary education for individual students, most schools do not systematically fulfill this role.

The findings also underscore the absence of activities in all schools that are aimed at educating students about financial aid prior to their senior year. "Financial aid nights" occur at virtually all schools. The presenters at these sessions vary from financial aid staff of colleges to representatives of the state student finance commissions. The integrated models of Perna (2006a) and St. John (2003) employed here assume that knowledge of financial aid impacts student perceptions of the feasibility of college and consequently the preparation that students undertake. This assumption calls into question the "just in time" nature of most financial aid nights. The lack of financial aid awareness activities early in high school, and even as late as the spring of 11th grade is an issue at all types of schools, but obviously is more salient at middle- and lower-income serving schools where more students depend on the school for financial assistance and where parents are less likely to have gone to college and financed higher education themselves. Based on similar findings, Hossler et al. (1999) recommended targeting early financial aid information to parents rather than students, as students seem unprepared for and uninterested in this information. Targeting information to parents is more likely to be effective in middle- and upper-income serving schools where both students and parents perceive that parents are an integral part of the college application process (Rowan-Kenyon et al., 2008). Students at low-income serving schools, however, more often expressed that these efforts would be their own responsibility.

### *Policy Recommendations*

Although there is a lack of systematic early provision of college awareness and financial aid information to students at most high schools in all states, there are exceptions. The activities that create these exceptions serve as the basis for four policy recommendations.

Students who participated in early intervention programs such as Upward Bound and AVID consistently knew more about college and financial aid than their peers. These programs appear to provide information about college and financing college to a variety of underserved populations early enough, some even in middle school, to shape their decisions and preparation throughout high school (Cunningham et al., 2007). The participants were some of the few in our study who knew about the state and federal programs available to help finance college and could detail the steps necessary for applying for need-based financial aid. Nonethe-

less, although these programs provide a wealth of information to some groups of students, they inform only those participating students and thus leave the remainder of the school population without the knowledge needed. Moreover, even when available, spaces in these programs are limited, and thus only a fraction of eligible students are able to benefit.

The findings from this exploratory study suggest the merits of broadening the reach of these programs through increased funding and finding ways to integrate the information provided in these programs into the school's larger college-encouragement activities. Similarly, examinations of Indiana's Twenty-First Century Scholars Program suggest that providing assurances of the availability of financial aid to students in the 8<sup>th</sup> grade encourages students to engage in behaviors that promote college enrollment (e.g., St. John et al., 2005). Therefore, a key component of this integration is the provision of college and financial aid information to all students early enough in their high school careers to demystify college going, provide reassurance that financial aid is available, and encourage academic preparation (Perna, 2004).

The middle-income serving school in California provides a good example of a way to ensure that all students receive the college guidance they need. This high school facilitates periodic career exploration, provision of college information, and actual practice with application procedures through an English class activity called a "career portfolio." These activities allow students to update career interests as they progress through high school and provide consistent linkage of career aspirations with educational avenues to achieve them. These activities also require students to keep track of their activities and accomplishments to put on applications, give them practice in writing essays, and teach the steps for applying to college and need-based financial aid. All English classes in the school participate in this activity. These in-class activities are supported by a staffed career center that provides many resources, both in print and online, for career and college exploration. This curricular innovation appears to be a low-cost means of bringing career and college awareness to all students.

The findings from this study also point to clear advantages of having designated places and people for students to consult about their post-high school futures. Where these resources exist, students consult them regularly and feel reassured by their presence. Where they do not exist, students feel overwhelmed by having to search for what they need and intimidated by the protocols of guidance offices. Designation of a college counselor could involve hiring another person but also could entail simple reorganization of how counselor duties are divided. The low-income serving school in California employs a unique method of provi-

sion of college counseling to students through use of a University of California student volunteer who meets with students one day a week. Creation of a college center, especially with a director, can be a costly undertaking that would likely need district underwriting.

State merit-aid programs such as HOPE in Georgia and Bright Futures in Florida raise a number of questions regarding equity that have been explored in the college access literature (e.g., Heller & Marin, 2002, 2004). Our findings, however, point to at least one way in which these programs are succeeding: large numbers of students in these states are aware of these programs and understand the basic criteria for being awarded these funds. This knowledge in turn plays a large role in students' academic preparation for college and their thinking about which institutions they might attend. In contrast, far fewer students knew about state programs in California, Maryland, and Pennsylvania, programs that award funds based on need. The difference in awareness may be due to the simplicity of the merit aid criteria as well as marketing efforts to publicize the programs. More research needs to be done to determine how state need-based programs might achieve the visibility of the merit-aid programs and the resultant guidance this knowledge provides to students in their postsecondary planning.

### *Conclusions and Directions for Future Research*

Knowledge about college is commonly believed to be important to promoting college enrollment. Consistent with prior research (e.g., De La Rosa, 2006; Grodsky & Jones, 2004; Horn et al., 2003; Perna, 2004), this study describes students' general absence of knowledge about college, specifically financial aid. This study demonstrates that knowledge about the college-going process is somewhat greater for 11th than 9th grade students, but that even for 11th graders, substantial gaps exist in knowledge regarding college prices and the programs available for financing college. Although some programs provide college-related information to 9th and 10th grade students, particularly in the area of career exploration, school programs related to college still tend to focus on 11th and 12th grade students. These findings are particularly problematic, given that early information about college, college prices, and financial aid could provide the impetus for students to engage in other college-preparatory behaviors (Perna, 2004).

Based on the findings from this study, we recommend three areas for future research. After data were collected for this study, multiple new online initiatives were released that provide information about college on the state and national level (e.g., "KnowHow2Go," GAcollge411,

icanaffordcollege.com, College Navigator). Future research should explore the influence of these programs on students' college-related knowledge, and the effects of knowledge gained through these programs on college-related outcomes, especially for students from underserved populations. Second, future research should explore the availability of information about college for individuals who have graduated from high school, but did not immediately attend college. Prior work on college knowledge has focused on students who enrolled immediately after graduating from high school. The percentage of "non-traditional" students enrolling in higher education is rising, and is anticipated to continue rising (NCES, 2007); the role of information in the college going of this group should be explored. Finally, because this study explores students' college-related knowledge at one point in time, future research should use a longitudinal design to examine the ways that students' college-related knowledge causes various college-related outcomes.

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