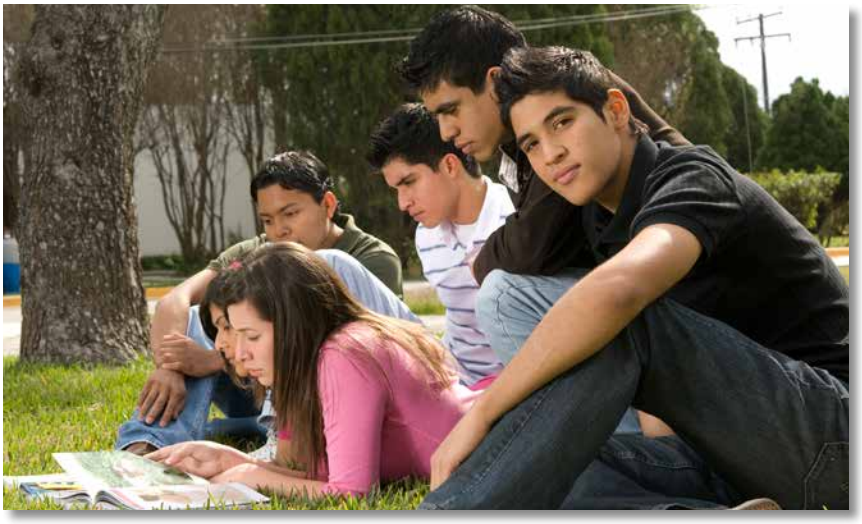
ACT Policy Research Report

Informing Educational Planning and Advising for Students from At-Risk Demographic Groups

Results from a Survey of High School Seniors Who Took The ACT®



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ACT®

Introduction

The overwhelming majority of high school students aspire to earn a postsecondary degree.[2] Despite high educational aspirations, students from some demographic groups are generally less likely than their peers to enroll in college after high school.[3] Among college enrollees, students from these same demographic groups are less likely to persist in college and complete a degree.[4] Students who are generally considered at greater risk than their peers for not persisting to a college degree include economically disadvantaged, underrepresented racial/ethnic minority, and first-generation students. These students also tend to be:

- Less academically prepared for college[5]
- More likely to require remedial coursework in college[6]
- Less knowledgeable about college planning and admissions[7]

But students from all demographic groups must be prepared to compete in a technology-based economy. The majority of jobs over the next decade will require some form of postsecondary education.[8] Moreover, that education has concrete benefits: the average earnings of workers who hold a bachelor's degree are nearly two times greater than those of workers with only a high school diploma.[9]

In recent years postsecondary institutions have been under considerable pressure to increase their retention and degree completion rates while maintaining equal opportunity and diversity in student enrollments; they are also being required to be more transparent about their net prices, graduation rates, and average student-loan debts.[10] As a result, postsecondary institutions continue to invest resources in better understanding the cognitive and noncognitive factors associated with student persistence for improving degree completion. Specifically, institutions are interested in identifying students at risk of dropping out of college and implementing interventions that address the needs of these students, including the unique needs of students from underserved demographic groups.

This study examines the precollege academic preparation, achievement, behaviors, and other noncognitive characteristics of recent high school seniors in the midst of the college planning and application process. The study has two primary goals:

- Learn more about students' attributes and needs, including those of students from the following at-risk demographic groups:
  - First-generation students (defined as those whose parents did not enroll in postsecondary education)[11]
  - Racial/ethnic minority students (African American, American Indian, Hispanic, and Native Hawaiian and Other Pacific Islander combined)[12]
  - Lower-income students (defined as those from families whose annual income is less than $36,000)[13]

Among students taking The ACT, the percentages of high school graduates aspiring to complete a post-high school credential include:[1]

- **First-generation: 94%**
- **African American: 86%**
- **Hispanic: 83%**
- **Lower income: 95%**

- Identify information that could be used to help shape educational planning and advising strategies that facilitate student success in college, especially those strategies targeted to meet the needs of students from at-risk demographic groups.

In particular, the study looks at the following characteristics:

- Academic preparation and achievement
- Academic behaviors and high school engagement
- Parental involvement
- College planning activities
- College concerns and financial issues
- College intentions

Based on the study's findings, this report suggests ways secondary and postsecondary institutions can enhance educational planning and advising strategies that are aimed at boosting students' chances of enrolling and succeeding in college.

Study Details

Data for the study consisted of 6,820 high school seniors who took The ACT in fall 2012 and completed an online questionnaire (representing 12% of the total sample surveyed). The questionnaire asked about students' academic engagement; the involvement of their parents in their college planning; and their own college intentions, planning activities, expectations, commitment, and financial concerns.[14] The study data was weighted to resemble that of all seniors taking The ACT nationally in 2012–2013 in terms of student demographics and achievement levels.[15] Approximately one-fifth (21%) of the survey respondents were first-generation students, 32% were racial/ethnic minority students, and 30% were lower-income students.[16]

To learn more about the unique attributes and needs of first-generation, racial/ethnic minority, and lower-income students, the percentages of agreement, participation, or activity frequency for these student groups were compared to those of their peers.[17] Categories were used to describe the magnitudes of group differences.[18] Overall percentages for all students were generally reported to provide context. Group differences were also examined by ACT Composite score range (1–18, 19–23, 24–36) to account for academic achievement levels. Group differences of five or more percentage points were considered to be of practical significance.

Academic Preparation and Achievement

Being well prepared academically is important for college success. Research has shown that, regardless of demographic group, students who take rigorous, higher-level high school coursework are more likely than those who do not to be ready for college, and students who are ready for college at the time they graduate from high school are more likely than those who are not to persist beyond their first year of college and to complete a degree in a timely manner.[19]

In this study, an overwhelming majority of first-generation, racial/ethnic minority, and lower-income students indicated that they plan to enroll in college (over 90% of each group), and more than 90% of those planning to enroll indicated they would do so within six months of graduating from high school. The majority of these students (at least 90%) also indicated that they have the knowledge and skills needed for their post-high school plans. This finding was seen for both lower- and higher-scoring students[20] and for each student demographic group.

However, compared to their peers, high school students from at-risk demographic groups were less likely to have taken a core curriculum, to have taken higher-level mathematics and science coursework, to have participated in a dual-credit or a concurrent-enrollment program, and to be expecting to earn more than six college credit hours while in high school (table 1).[21] Differences in academic preparation were even greater between lower- and higher-income students. For example, 43% of lower-income students indicated that they had participated in a dual-credit or concurrent-enrollment program while in high school, compared to 54% of higher-income students.

Not surprisingly given these differences in academic preparation, first-generation, racial/ethnic minority, and lower-income students had substantially lower average ACT Composite scores (by more than 3 score points), were less likely to earn a high school grade point average of 3.0 or higher (by 9 to 18 percentage points), and were less likely to meet the individual ACT College Readiness Benchmarks (by 22 to 35 percentage points).[22] Given that only 26% of all students in the study met all four ACT Benchmarks, these findings illustrate that for many students, especially for those from at-risk groups, there is a discrepancy between students' actual and perceived levels of college readiness.

Among those who took The ACT, the percentages of 2013 high school graduates nationally who were ready for first-year, credit-bearing college courses included:

- **64% for English Composition**
- **44% for College Algebra**
- **44% for social science courses**
- **36% for Biology**

Table 1. Academic Preparation by Student Demographic Group[23]

Coursework	All students (%)	Demographic group comparisons: First-generation (vs. non-first-generation)	Minority (vs. White/Asian)	Lower-income (vs. higher-income)
		Less likely to indicate:		
Take HS core curriculum	82	●	○	●
Take HS math coursework beyond Algebra II	68	◉	●	◉
Take HS Biology, Chemistry, and Physics	42	●	○	◉
Participate in dual-credit/dual-enrollment program in HS	49	●	●	◉
Expect to earn more than six college credit hours in HS	30	●	●	◉

Note. HS = high school; the following symbols indicate, in percentage points, the magnitude of difference:

○ = 0–4; ● = 5–9; ◉ = 10–14; ⬤ = 15–19; ⬤ = 20 or more.

Table reads as: 82% of all students took a high school core curriculum. First-generation and lower-income students were less likely than non-first-generation and higher-income students, respectively, to take a high school core curriculum (differences in the 5–9 percentage-point range). Racial/ethnic minority students were as likely as White/Asian students to take a high school core curriculum (difference in the 0–4 percentage-point range).

For higher-scoring students, differences in academic preparation among the demographic groups included:

- Racial/ethnic minority (53%) and lower-income (51%) students were less likely than White/Asian (60%) and higher-income (60%) students to have participated in a dual-credit/dual-enrollment program in high school.
- Lower-income (45%) students were less likely than higher-income students (51%) to expect to earn more than six college credit hours in high school.

These findings suggest that there is still a need to:

- Encourage more students, including those from the at-risk demographic groups, to take rigorous, higher-level high school coursework, especially in mathematics and science.
- Intervene with appropriate instruction and resources in earlier grades to make certain all students are prepared for higher-level high school coursework.
- Ensure students from all demographic groups have equal access to rigorous high school coursework, including the opportunity to earn college credit hours while in high school.
- Educate students about what it means to be ready for college, regardless of the type of college they plan to attend.

More than 90% of first-generation, racial/ethnic minority, and lower-income students indicated they have the knowledge and skills needed for their post-high school plans. However, nearly one-half of students from these groups did not meet any of the ACT College Readiness Benchmarks. These findings suggest there is a discrepancy between students' perceived and actual levels of college readiness.

Students need to know how well they must perform academically to have a reasonable chance of success in first-year, credit-bearing college courses and to avoid having to take remedial coursework. Avoiding remedial courses—which typically are not credit bearing—can help students prevent delays in educational program completion and avoid the extra financial costs associated with remediation.

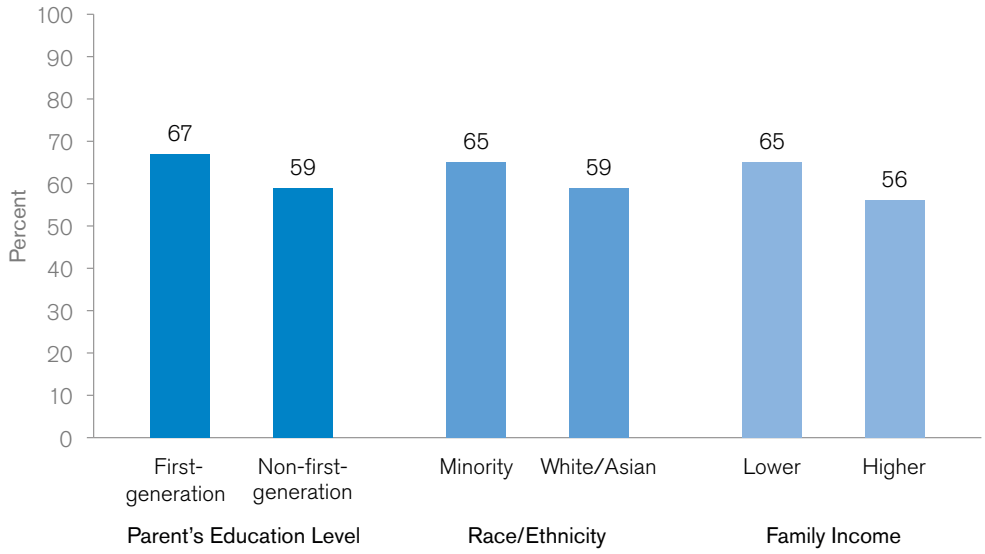
Academic Behaviors and High School Engagement

Prior research has shown that measuring students' academic behaviors and other psychosocial skills more accurately identifies students at risk of poor grades in college and of dropping out than measures of academic achievement alone.[24] Academic behaviors that have been shown to be important for student success can be grouped into three broad areas:[25]

- Motivation
- Social engagement
- Self-regulation

In terms of students' study skills and high school engagement levels, many (but not all) students indicated that, *always or almost always,* they put forth their best effort in school (61%), are well-prepared for in-class activities (55%), turn in their class assignments on time (72%), and are challenged by their high school courses to perform to the best of their academic abilities (51%).[26] Responses slightly differed among the student demographic groups for some of these academic behaviors. For example, first-generation, racial/ethnic

Figure 1. Percentage of Students Indicating That They Always or Almost Always Put Forth Their Best Effort in School by Student Demographic Group



minority, and lower-income students were slightly more likely than their peers to indicate that they *always or almost always* put forth their best effort in school (by 6 to 9 percentage points; see figure 1).[27]

High school seniors were also asked about the number of hours a week they spend doing homework and studying outside of class, including study halls, evenings, and weekends.[28] Their responses showed that:

- Higher-scoring students were two times more likely than lower-scoring students to indicate studying more than ten hours (38% vs. 19%). This result generally held true for each student demographic group.
- About one-half of first-generation (49%), racial/ethnic minority (47%), and lower-income (50%) students indicated studying five or fewer hours (compared to 45% for all students).
- Only about one-fourth of first-generation (24%), racial/ethnic minority (26%), and lower-income (25%) students indicated studying more than ten hours (compared to 27% for all students).

Many students in this study were academically successful in high school (as measured by high school grade point average) without spending much time outside of class studying. But, given the discrepancies between students' actual and perceived levels of college readiness, the study's findings call into question whether students are developing the types of academic behaviors and study skills that are needed to be successful in the college environment. Learning and performance expectations can substantially differ between high school and college.[29] College students spend less time in class, but they are expected to spend more time outside of class studying and doing homework (e.g., two to three hours per week for every hour in class). Indeed, about one-third of high school

seniors from each demographic group in this study indicated it will be difficult to keep their academic commitments in college such as attending classes and being prepared for class discussions.[30] Even higher-scoring students have been found to lack the motivational drive and necessary study and time-management skills to be successful in the college environment.[31]

Development and mastery of the academic behaviors and study skills that are necessary for college success are important indicators of college readiness.[32] It is important to help students, including those from the at-risk demographic groups, to graduate from high school academically prepared with realistic college expectations and strong academic behaviors and study skills that can enhance their chances of achieving their educational goals and being successful in the college environment.

Parental Involvement

Parents can strongly influence students' educational aspirations and college plans.[33] Prior research has suggested that parents of first-generation, racial/ethnic minority, and lower-income students are often unfamiliar with the college planning process, and therefore these students often lack the guidance and support at home that can help contribute to their success in college.[34]

Even though most students in this study (nearly 90%) indicated that their parents discuss with them what they need to do to prepare for college and/or career and are involved in their post-high school plans, lower percentages were seen for first-generation and lower-income students when compared to non-first-generation and higher-income students (table 2).

First-generation and lower-income students were less likely than non-first-generation and higher-income students to indicate that their parents:

- **Discuss with them what they need to do to prepare for college and/or career**
- **Are involved in their post-high school plans**

Table 2. Parental Involvement by Student Demographic Group[35]

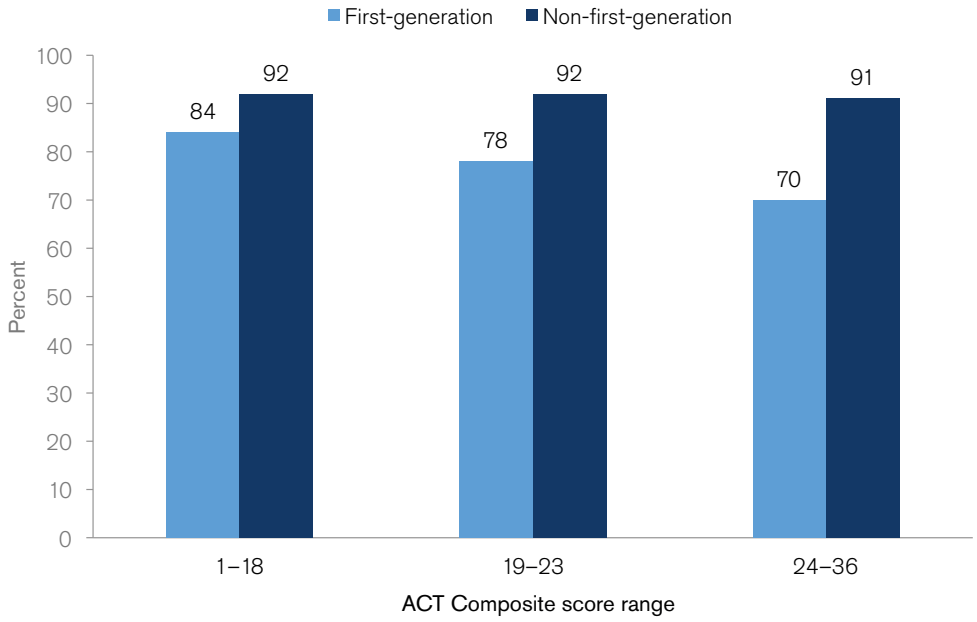
Parental involvement	All students (%)	Demographic group comparisons: First-generation (vs. non-first-generation)	Minority (vs. White/Asian)	Lower-income (vs. higher-income)
		Less likely to indicate parents:		
Discuss with them what they need to do to prepare for college and/or career	89	◉	●	◉
Are involved in post-HS plans	86	◉	●	◉
Check that HS class assignments and projects are done	46	●	○	●

Note. HS = high school; the following symbols indicate, in percentage points, the magnitude of difference:

○ = 0–4; ● = 5–9; ◉ = 10–14; ⬤ = 15–19; ⬤ = 20 or more.

Table reads as: 89% of all students indicated that their parents discuss with them what they need to do to prepare for college or career. First-generation, racial/ethnic minority, and lower-income students were less likely than non-first-generation, White/Asian, and higher-income students, respectively, to indicate this (differences in the 10–14 percentage-point range by parents' education level and family income, and in the 5–9 percentage-point range by race/ethnicity).

Figure 2. Percentage of Students Indicating That Their Parents Discuss with Them How to Prepare for College and Career by Parents' Education Level and ACT Composite Score Range



Among higher-scoring students, first-generation students were substantially less likely than non-first-generation students to indicate that their parents discuss with them what they need to do to prepare for college and/or career (70% vs. 91%, respectively)—a larger difference than that seen among similar lower-scoring students (84% vs. 92%).

Students from these two at-risk groups were also slightly less likely to indicate that their parents regularly check to make sure that they have completed their class assignments and projects.[36] Similar results were seen for racial/ethnic minority students compared to White/Asian students, although to a lesser degree.

Surprisingly, larger group differences in parental involvement were generally seen among higher-scoring students than among lower-scoring students. In most cases, it was higher-scoring students from at-risk groups who were least likely to indicate that their parents were involved in college planning and other activities. For example, as shown in figure 2, higher-scoring first-generation students (70%) were less likely than higher-scoring non-first-generation students (91%) and lower-scoring first-generation students (84%) to indicate that their parents discuss with them what they need to do to prepare for college and/or career.

Findings from this study highlight the reasons first-generation and lower-income students may need extra help and support with the college planning process. There still appears to be a need to increase the involvement of parents in educational planning and advising activities and discussions, especially for students from the at-risk demographic groups with higher scores on The ACT. Such programs should aim to "empower parents to be involved to shape their children's educational futures."[37]

College Planning Activities

The college planning process can be daunting for high school students, especially for students whose parents are not familiar with the process. Helping students start the planning process earlier may open up more college opportunities for students from all demographic groups, especially for those with higher scores on The ACT.[38]

Table 3. Early Participation in College Planning Activities by Student Demographic Group[39]

College planning activity	All students (%)	Demographic group comparisons: First-generation (vs. non-first-generation)	Minority (vs. White/Asian)	Lower-income (vs. higher-income)
		Less likely to participate:		
Discuss post-HS plans with school counselor*	72	●	○	●
Determine education or training required for jobs of interest	75	●	●	●
Review college admissions requirements	88	●	○	●
Take The ACT before senior year*	63	⬤	⬤	⬤
Determine colleges that offer major or training of interest	88	●	○	●
Visit colleges*	66	⬤	●	⬤
Attend college fair*	64	○	○	○
Interact with college admissions counselor*	56	◉	○	◉
Compare college costs	77	●	●	◉
Apply to colleges	74	●	○	●

Note. HS = high school; the following symbols indicate, in percentage points, the magnitude of difference:

○ = 0–4; ● = 5–9; ◉ = 10–14; ⬤ = 15–19; ⬤ = 20 or more.

* Differences also seen among higher-scoring students.

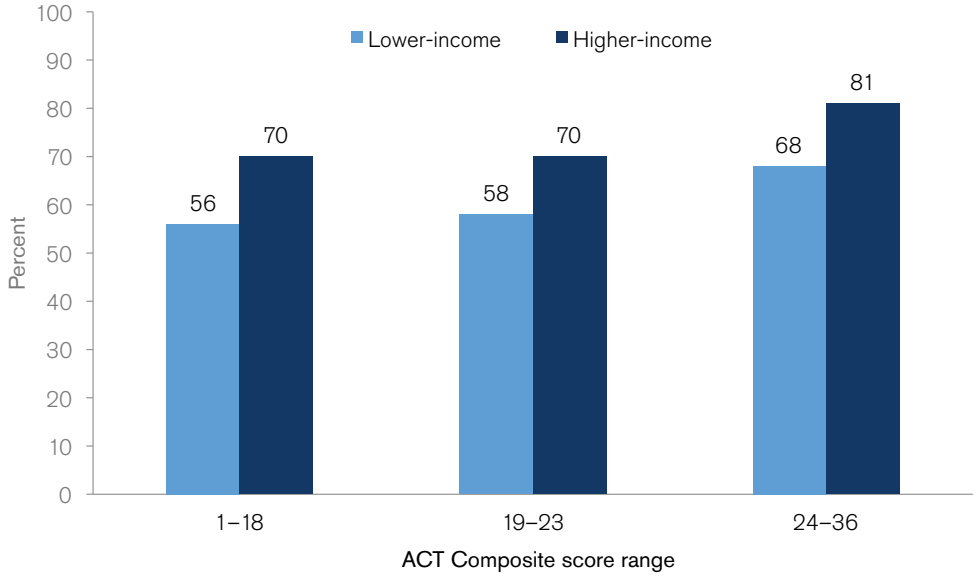
Table reads as: 72% of all college-bound students discussed their post-high school plans with a school counselor before or during the fall of their senior year. First-generation and lower-income students were less likely than non-first-generation and higher-income students, respectively, to do this (differences in the 5–9 percentage-point range). Racial/ethnic minority students were as likely as White/Asian students to discuss their post-HS plans with a school counselor (difference in the 0–4 percentage-point range).

In this study, first-generation, racial/ethnic minority, and lower-income students were found to be less likely than other students to participate early in college educational planning activities (defined as occurring before or during the fall of their senior year; see table 3). Relatively large group differences were seen for the following planning activities:

- Taking The ACT prior to their senior year
- Visiting colleges
- Interacting with college admissions counselors
- Comparing college costs

In particular, the largest differences in early planning were seen between lower- and higher-income students. Moreover, for each student demographic group early participation in planning activities increased as ACT Composite score increased (illustrated in figure 3 for lower- and higher-income students visiting colleges).

Figure 3. Percentage of Students Visiting One or More Colleges before or during the Fall of Their Senior Year by Family and ACT Composite Score Range



Within each ACT Composite score range, lower-income students were considerably less likely than higher-income students to visit one or more colleges before or during the fall of their senior year. This finding also held true when examined by parents' education level and race/ethnicity.

However, even among students with higher scores on The ACT, those from at-risk groups were less likely than their peers to have participated early in the following activities:

- Discuss post-high school plans with their school counselor (by 7 percentage points for first-generation students)
- Take The ACT before their senior year (by 13 to 15 percentage points)
- Visit colleges (by 10, 11, and 13 percentage points for racial/ethnic minority, first-generation, and lower-income students, respectively)
- Attend a college fair (by 6 percentage points for lower-income students)
- Interact with a college admissions counselor (by 9 percentage points for first-generation and lower-income students)

In addition, approximately one-half of students from all demographic groups indicated having difficulty:[40]

- Identifying their interests related to their educational and career goals (46% for all students)
- Deciding what post-high school educational options are best for them (44%)
- Making plans needed to pursue their education (55%)

These findings suggest there is a need to encourage all students, especially those from the at-risk demographic groups, to start the college planning process earlier, including exploring their interests and taking The ACT prior to their senior year. For example, high school counselors could be more proactive in informing economically disadvantaged students about fee waiver opportunities for testing, and they could encourage all students to take The ACT in their junior year and again early in their senior year to gauge their readiness for college. States that administer The ACT test to all of their public school eleventh graders do so as a means not only to gauge students' readiness for college, but also to broaden the post-high school opportunities available for all students, including entry to the college-going process.[41]

Early interactions with school counselors (as early as ninth grade) have been shown to be positively related to first-generation students' attitudes and plans about college.[42] In terms of the benefits of students' exploring their interests early, prior research has suggested that if students' measured interests are similar to the interests of others in their chosen college majors, they are more likely to persist in college and complete a degree in a more timely manner.[43]

College Concerns and Financial Issues

Students' concerns about how they will pay for college have increased as college costs have risen.[44] Moreover, a lack of timely and accurate information about the financial aid process has been shown to influence students' chances of initially enrolling and persisting in college.[45]

In this study, an overwhelming majority of high school seniors indicated concern about how they are going to pay for their education after high school (more than 90%; see table 4)—a finding seen for most student demographic groups. However, lower-income students were slightly more likely than higher-income students to indicate this concern (96% vs. 86%, respectively). Moreover, students from at-risk groups were considerably more likely than their peers to *strongly agree* that this is an area of concern for them (by 12, 16, and 29 percentage points for racial/ethnic minority, first-generation, and lower-income students, respectively).

Many seniors also indicated they were concerned about their ability to adapt to college life (56%), with higher percentages seen among the at-risk student demographic groups.

Table 4. College Concerns by Student Demographic Group[46]

		Demographic group comparisons		
Concern	**All students** (%)	**First-generation** (vs. non-first-generation)	**Minority** (vs. White/Asian)	**Lower-income** (vs. higher-income)
		More likely to indicate concern about:		
Ability to adapt to college life	56	◉	●	◉
How to pay for college	92	●	○	◉

Note. The following symbols indicate, in percentage points, the magnitude of difference:
○ = 0–4; ● = 5–9; ◉ = 10–14; ⬤ = 15–19; ⬤ = 20 or more.

Table reads as: 56% of all college-bound students indicated concern about their ability to adapt to college life. First-generation, racial/ethnic minority, and lower-income students were more likely than non-first-generation, White/Asian, and higher-income students, respectively, to be concerned about this (differences in the 10–14 percentage-point range by parents' education level and family income, and in the 5–9 percentage-point range by race/ethnicity).

Table 5. Financial Issues by Student Demographic Group[48]

Financial issues	All students (%)	Demographic group comparisons: First-generation (vs. non-first-generation)	Minority (vs. White/Asian)	Lower-income (vs. higher-income)
		More likely to indicate:		
Need financial aid	92	●	●	◯
Work while in college	79	◯	●	⬤
		Less likely to indicate:		
Have plan to pay for college	77	●	○	●
Family resources will pay for first year	51	⬤	◯	⬤

Note. The following symbols indicate, in percentage points, the magnitude of difference:

○ = 0–4; ● = 5–9; ◯ = 10–14; ⬤ = 15–19; ⬤ = 20 or more.

Table reads as: 92% of all college-bound students indicated that they need to receive financial aid in order to attend college. First-generation, racial/ethnic minority, and lower-income students were more likely than non-first-generation, White/Asian, and higher-income students, respectively, to indicate this (difference in the 5–9 percentage-point range by parents' education level and race/ethnicity, and in the 10–14 percentage-point range by family income).

In accordance with their financial concerns, most students (greater than 90%) from each demographic group said they need to receive financial aid in order to attend college (see table 5).[47] However, only 62% had started to learn about the financial aid process.

Even though first-generation and lower-income students indicated at a higher percentage that they expect to work while attending college, they were somewhat less likely than other students to have a plan in place for how they will pay for college. About 50% of students indicated that family resources will pay for most of their first-year college expenses. Substantially smaller percentages were seen for first-generation and lower-income students. Despite these concerns, students from at-risk demographic groups were as likely as their peers to indicate:

- They are committed to completing a college degree (more than 90%).
- The benefits of a college degree are worth the costs (more than 95%).

The findings in this section highlight high school seniors' concerns about their ability to adapt to college life and their financial concerns about going to college. Financial concerns and barriers often lead to students stopping out of college for a period of time with intentions of eventually returning to finish their degrees. However, students who stop out are generally at greater risk of not completing their degrees.

Prior research has shown that many students who would have qualified for financial aid did not apply for it because they either lacked the knowledge and information about the application process or they were unaware of their eligibility for aid.[49] Offering classes or seminars on financial literacy and strategies for successfully transitioning from high school to college may be beneficial for high school students and their parents, especially for first-generation, racial/ethnic minority, and lower-income students.[50]

College Intentions

Prior research has suggested that certain college-attending behaviors can positively influence timely degree completion, while others can negatively influence completion. For instance, noting that a majority of part-time college students never complete their degrees, Complete College America explained, "the longer it takes the more life gets in the way of success."[51] Additionally, transferring from one institution to another can increase time to degree completion and reduce the likelihood of completing a degree.[52] More positively, other studies suggest that college students can benefit from continuous full-time college enrollment for making greater progress toward degree completion and from living on campus for becoming more socially engaged.[53]

In this study, when high school seniors were asked about their short- and long-term college intentions and plans, first-generation, racial/ethnic minority, and lower-income college-bound students were less likely to indicate they would initially enroll in a four-year institution, live on campus, or enroll as a full-time student (table 6). They were more likely to indicate they would simultaneously enroll in multiple types of institutions during their first term, transfer to another institution before completing a college degree, and stop out of college for a term or more after initial enrollment.

Table 6. College Intentions by Student Demographic Group[54]

College intentions	All students (%)	Demographic group comparisons: First-generation (vs. non-first-generation)	Minority (vs. White/Asian)	Lower-income (vs. higher-income)
		Less likely to indicate intent to:		
Enroll in four-year institution	87	●	○	●
Live on campus	66	⬤	○	⬤
Enroll full-time	95	●	●	●
		More likely to indicate intent to:		
Enroll in multiple institutions first term	12	●	●	◉
Transfer to another institution	26	●	●	◉
Stop out of college for a term or more	20	◉	◉	◉

Note. The following symbols indicate, in percentage points, the magnitude of difference:

○ = 0–4; ● = 5–9; ◉ = 10–14; ⬤ = 15–19; ⬤ = 20 or more.

Table reads as: 87% of all college-bound students indicated that they planned to initially enroll in a four-year postsecondary institution. First-generation and lower-income students were less likely than non-first-generation and higher-income students, respectively, to indicate this (differences in the 5–9 percentage-point range). Racial/ethnic minority students were as likely as White/Asian students to plan to initially enroll in a four-year postsecondary institution (difference in the 0–4 percentage-point range).

Demographic group differences in college intentions were generally smaller among higher-scoring students than among lower-scoring students. For higher-scoring students, the only notable difference in college intentions among the demographic groups was that first-generation and lower-income students were less likely than non-first-generation students and higher-income students to plan to live on campus (67% vs. 82% and 72% vs. 86%, respectively).[55]

Given the college intentions of high school seniors from at-risk demographic groups, findings from this study and those from prior research suggest it is important to ask students about their own college intentions and to identify the primary reasons behind their intentions. Possible options can then be explored with students, such as financial aid or scholarships that would allow them to focus on their studies and engage in college-attending behaviors that can positively influence timely degree completion.

Summary and Implications

Findings from this study are in general agreement with those previously reported in the literature for first-generation, racial/ethnic minority, and lower-income college students.[56] This study focuses specifically on high school seniors in the midst of the college planning and application process who took The ACT. Findings suggest students continue to need education and guidance in the following areas:

- Preparing better academically for college
- Knowing what it means to be ready for college
- Developing strong academic behaviors
- Starting the college and career planning process earlier
- Finding the help and support they need to pursue and achieve their educational goals

From a practical perspective, educators, counselors, and advisors at both the secondary and postsecondary levels can use this study's results to help evaluate and inform their educational planning and advising strategies as they attempt to better equip students with the knowledge, skills, and support they need to enroll and succeed in college. Postsecondary institutions might also find the results useful for identifying ways to strengthen their high school outreach efforts, freshman orientation, and onboarding strategies. Educational planning and advising strategies should include the following types of activities, all of which have also been suggested by others:

1. **Early Monitoring.** Monitor student progress to college readiness early and often, and intervene with students who are not on target while there is still time for them to catch up before they graduate from high school.[57] For postsecondary institutions, student monitoring might include setting up early alert systems to intervene with students identified as being at risk of not persisting and succeeding in college.[58]
2. **Educational and Career Guidance.** Provide students with educational and career guidance. Encourage them to:
   - Take rigorous high school coursework through their senior year to better prepare for more educational and career options. Preparing well academically in high school is critical for students to accomplish their future career goals.

- Explore career options based on their own skills, interests, and aspirations. Through ACT Profile, students can explore careers and college options that are a good match with their individual strengths, interests, and values.
- Begin the college planning process early (including taking The ACT during their junior year).[59]

3. **Secondary/Postsecondary Partnerships.** Collaborate in secondary/postsecondary partnerships to get relevant information into the hands of high school students, including those with higher scores on The ACT, prior to their senior year. Such information could include tips about:
   - College admissions/course placement processes[60]
   - Financial aid processes, options, and available services[61]
   - Realistic college expectations
   - Positive behaviors that influence college success (such as being academically self-disciplined, socially engaged, continuously enrolled, and working part time or not working while in school)[62]
4. **Academic Behaviors.** Evaluate academic behaviors and noncognitive characteristics of students to get a more holistic view of students' college readiness levels; use this information in advising and intervention programs.[63] Examples of academic behaviors and noncognitive characteristics that have been shown to predict success in college include:[64]
   - Motivation (such as academic discipline, goal striving, study skills, vocational interests, academic goals, and achievement needs)
   - Social engagement (such as social connection and social activity)
   - Self-regulation (such as steadiness and academic self-confidence)
   - Personality attributes (such as conscientiousness)
5. **Additional Resources.** Equip first-generation, racial/ethnic minority, and lower-income students with the resources and tools they need to succeed:
   - Offer academic and social support services, including classes/seminars targeted to meet students' needs.[65]
   - Raise student awareness of all the resources available to them, and actively encourage students to take advantage of these resources.[66]
   - Help students understand and know how to use information about financial aid and postsecondary institutions to make informed college decisions.[67]
   - Inform students' parents about and involve them in the college planning, admissions, and onboarding processes.[68]
   - Increase students' exposure to the college environment.[69]
6. **Mentoring.** Engage faculty and peers in mentoring first-generation, racial/ethnic minority, and lower-income students.[70] Fostering these types of relationships might help to provide these students with academic and social support beyond high school and beyond their first-year of college.[71]

Finally, examining the academic behaviors, other noncognitive characteristics, and the interests and goals of incoming students can help postsecondary institutions improve their retention strategies, including those intended to help first-generation, racial/ethnic minority, and lower-income students persist and succeed in college. ■

Notes

1 ACT, *The Condition of College and Career Readiness 2013: National* (Iowa City, IA: ACT, 2013); ACT and the Council for Opportunity in Education (COE), *The Condition of College and Career Readiness 2013: First-Generation Students* (Iowa City, IA: ACT, 2013).

2 ACT, *The Condition of College and Career Readiness*; ACT and COE, *The Condition of College and Career Readiness 2013: First-Generation Students*.

3 Justine Radunzel and Julie Noble, *Tracking 2003 ACT-Tested High School Graduates: College Readiness, Enrollment, and Long-Term Success,* ACT Research Report 2012-2 (Iowa City, IA: ACT, 2012); Susan Aud, William Hussar, Grace Kena, Kevin Bianco, Lauren Frohlich, Jana Kemp, Kim Tahan, and Katie Mallory, *The Condition of Education 2011,* NCES 2011-033 (Washington, DC: US Department of Education, National Center for Education Statistics, 2011).

4 Radunzel and Noble, *Tracking 2003 ACT-Tested High School Graduates,* 2013; Thomas D. Snyder and Sally A. Dillow, *Digest of Education Statistics 2010,* NCES 2011-015 (Washington, DC: US Department of Education National Center for Education Statistics, Institute of Education Sciences, 2011); Jennifer Engle and Vincent Tinto, *Moving Beyond Access: College Success for Low-Income, First-Generation Students* (Washington, DC: The Pell Institute, 2008).

5 ACT, *The Condition of College and Career Readiness*; ACT and COE, *The Condition of College and Career Readiness 2013: First-Generation Students*.

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8 Anthony P. Carnevale, Nicole Smith, and Jeff Strohl, *Help Wanted: Projections of Jobs and Education Requirements through 2018* (Washington, DC: Georgetown University Center on Education and the Workforce, 2010).

9 Anthony P. Carnevale, Tamara Jayasundera, and Ban Cheah, *The College Advantage: Weathering the Economic Storm* (Washington, DC: Georgetown University Center on Education and the Workforce, 2012). This finding held true even amidst the post-2008 economic recession.

10 Beckie Supiano, "Why Giving Prospective Students More Information Is Unlikely to Change Where They Go to College," *Chronicle of Higher Education*, January 31, 2014, http://chronicle.com/article/Why-Giving-Prospective/144219/.

11 A first-generation student is defined differently by a number of organizations, often differing in the extent of exposure to postsecondary education (e.g., enrolled, attended, or completed) as experienced by disparate combinations of parent/guardian arrangements (e.g., highest extent of exposure for one parent/guardian or both parents/guardians). The definition used in this report is consistent with that used by the National Center for Education Statistics.

12 The combined group of racial/ethnic minority students includes those racial/ethnic groups that are often considered underrepresented in postsecondary education.

13 Student demographic characteristics, including parents' combined annual income, were provided by students at the time they registered to take The ACT.

14 Over 50,000 randomly selected high school seniors who registered to take The ACT on a national test date in October and December 2012 were invited by email the week following the test administration to complete an online questionnaire. The questionnaire primarily consisted of level-of-agreement or frequency-type questions based on 5- or 6-point Likert scales. Reminder emails were sent to nonrespondents. Seniors taking The ACT in the fall included a mix of repeat and first-time test takers.

15 Our sample of high school seniors who took The ACT is likely a more homogenous group of students than that of all high school seniors nationally as it primarily represents a group of college-bound seniors. About 54% of all 2013 high school graduates (about 1.8 million) nationally took The ACT.

16 Nine percent of the students did not provide their race/ethnicity, 10% did not provide any information about their parents' education levels, and 20% did not provide their parents' combined annual income.

17 Results for first-generation students are compared to those of non-first-generation students; non-first-generation students include those who had at least one parent who had enrolled in postsecondary education. Results for racial/ethnic minority students are compared to those of White and Asian students combined. Results for lower-income students are compared to those of higher-income students; higher-income students include those from families whose annual income was $80,000 or more.

18 Weighted percentages are reported. The percentage of students not responding to the survey items did vary by question (the percentage ranged from less than 1% to 9% for most items), but did not substantially differ across the student demographic groups. For each item, the percentages are based on students who responded to the item only (that is, students who did not respond to an item were not included in the denominator).

19 ACT, *Readiness Matters: The Impact of College Readiness on College Persistence and Degree Completion* (Iowa City, IA: ACT, 2013); Kasey Klepfer and Jim Hull, *High School Rigor and Good Advice: Setting Up Students to Succeed* (Alexandria, VA: Center for Public Education, October 2012), http://www.centerforpubliceducation.org/Main-Menu/Staffingstudents/High-school-rigor-and-good-advice-Setting-up-students-to-succeed/High-school-rigor-and-good-advice-Setting-up-students-to-succeed-Full-Report.pdf; ACT, *Mind the Gaps: How College Readiness Narrows Achievement Gaps in College Success* (Iowa City, IA: ACT, 2010); Clifford Adelman, *The Toolbox Revisited: Paths to Degree Completion from High School Through College,* (Washington, DC: US Department of Education, 2006).

20 Lower-scoring students included those with an ACT Composite score of 18 or below. Higher-scoring students included those with an ACT Composite score of 24 or above.

21 High school coursework taken/planned and grades earned were provided by students at the time they registered to take The ACT. A core curriculum is defined as four years of English and three years each of mathematics, social studies, and science; it includes courses taken and planned. Categories of higher-level high school mathematics courses include courses beyond Algebra II such as Trigonometry, Calculus, and Other Math beyond Algebra II. The expected number of college credit hours that a student expects to earn by the time they graduate from high school includes dual-credit/dual-enrollment hours and credit by exam hours (such as Advanced Placement).

22 Jeff Allen, *Updating the ACT College Readiness Benchmarks,* ACT Research Report No. 2013-6 (Iowa City, IA: ACT, Inc., 2013); ACT, *What are the ACT College Readiness Benchmarks?* (Iowa City, IA: ACT, 2013). ACT developed its College Readiness Benchmarks to help students identify the subject areas in which they are ready for college and career. The Benchmarks are the minimum scores on The ACT that represent the level of achievement required for students to have a high probability of success in the following first-year, credit-bearing college courses: English Composition, College Algebra, social science courses, and Biology.

23 Less than 1% of the students in the sample did not respond to high school coursework and grade items, 7% did not respond to whether they had participated in a dual-credit/dual-enrollment program, and 9% did not provide their expected number of college credit hours earned while in high school.

24 Jeff Allen and Steve Robbins, "Effects of Interest-Major Congruence, Motivation, and Academic Performance on Timely Degree Attainment," *Journal of Counseling Psychology* 57, no. 1 (2010): 23–35; Jeff Allen, Steven B. Robbins, Alex Casillas, and In-Sue Oh, "Third-Year College Retention and Transfer: Effects of Academic Performance, Motivation, and Social Connectedness," *Research in Higher Education* 49 (2008): 647–664; Steven B. Robbins, Jeff Allen, Alex Casillas, Christina Hamme Peterson, and Huy Le, "Unraveling the Differential Effects of Motivational and Skills, Social, and Self-Management Measures from Traditional Predictors of College Outcomes," *Journal of Educational Psychology* 98 (2006): 598–616.

25 Steven B. Robbins, Kristy Lauver, Huy Le, Daniel Davis, Ronelle Langley, and Aaron Carlstrom, "Do Psychosocial and Study Skill Factors Predict College Outcomes? A Meta-Analysis, " *Psychological Bulletin* 130 (2004): 261-288.

26 Four to five percent of students did not respond to these survey items.

27 There were other differences: racial/ethnic minority students were slightly less likely than White/Asian students to indicate that they *always or almost always* turn in their class assignments on time (66% vs. 75%); they were also more likely to indicate that they *always or almost always* are challenged by their high school coursework to perform to the best of their academic abilities (59% vs. 48%).

28 Six percent of students did not respond to this survey item.

29 David T. Conley, *Redefining College Readiness*, Vol. 5 (Eugene, OR: Educational Policy Improvement Center, 2011).

30 A higher percentage was seen for lower-scoring students than for higher-scoring students (42% vs. 27%).

31 Megan Balduf, "Underachievement among College Students," *Journal of Advanced Academics* 20, no. 2 (2009): 274–294.

32 David T. Conley, *Redefining College Readiness* (Eugene, OR: Educational Policy Improvement Center, 2007).

33 Heather T. Rowan-Kenyon, Angela D. Bell, and Laura W. Perna, "Contextual Influences on Parental Involvement in College Going: Variations by Socioeconomic Class," *The Journal of Higher Education* 79, no. 5 (2008): 564–586.

34 Steven B. Westbrook and Joyce A. Scott, "The Influence of Parents on the Persistence Decisions of First-Generation College Students," *Focus on Colleges, Universities, and Schools* 6, no. 1 (2012): 1–9; George L. Wimberly and Richard J. Noeth, *Schools Involving Parents in Early Postsecondary Planning* (Iowa City, IA: ACT, 2004).

35 One percent of the students did not respond to the first two parental involvement items, and 5% did not respond to the third item in table 2.

36 "Regularly" check was defined as indicating that, more often than not, their parents check that they have completed their class assignments and projects. "More often than not" included the following frequency responses: *always/almost always* and *usually*. Other possible responses included *about half the time*, *occasionally*, and *rarely/never*.

37 Rowan-Kenyon, Bell, and Perna, "Contextual Influences."

38 Caroline M. Hoxby and Sarah Turner, *Informing Students about Their College Options: A Proposal for Broadening the Expanding College Opportunities Project*, The Hamilton Project Discussion Paper 2013-03 (Washington, DC: The Brookings Institution, 2013); George L. Wimberly and Richard J. Noeth, *College Readiness Begins in Middle School* (Iowa City, IA: ACT, 2005).

39 The grade level when students first took The ACT was available for all students in the sample. Eight percent of the students did not respond to the college planning activity items.

40 Fourteen percent of students did not respond to these items.

41 ACT, *Noncollege-Bound Students: A Closer Look* (Iowa City, IA: ACT, 2013).

42 Alexandria Walton Radford and Nicole Ifill, *Preparing Students for College: What High Schools Are Doing and How Their Actions Influence Ninth Graders' College Attitudes, Aspirations and Plans* (Arlington, VA: National Association for College Admissions Counseling, 2013).

43 Allen and Robbins, "Effects of Interest-Major Congruence, Motivation, and Academic Performance."

44 Xianglei Chen, Joanna Wu, Shayna Tasoff, and Thomas Weko, *Getting Ready for College: Financial Concerns and Preparation Among the High School Senior Class of 2003–04,* NCES 2010-204 (Washington DC: US Department of Education National Center for Education Statistics, Institute of Education Sciences, 2010).

45 The Institute for College Access and Success, *Paving the Way: How Financial Aid Awareness Affects College Access and Success* (Oakland, CA: Institute for College Access and Success, 2008).

46 Five percent of students did not respond to the first college concern item in table 4, and 4% did not respond to the second item.

47 The one exception to this finding was higher-income students: 85% indicated they need to receive financial aid in order to go to college.

48 Five percent of students did not respond to the first and fourth financial issue items in table 5, 6% did not respond to the third item, and 9% to the second item.

49 Eric P. Bettinger, Bridget T. Long, Philip Oreopoulos, and Lisa Sanbonmatsu, *The Role of Simplification and Information in College Decisions: Results from the H&R Block FAFSA Experiment,* NBER Working Papers 15361 (Cambridge, MA: National Bureau of Economic Research Inc., 2009).

50 Donna J. Dockery, "School Counselors' Support for First-Generation College Students," *Ideas and Research You Can Use: VISTAS 2012*, Article 61 (2012): 1–11, http://www.counselingoutfitters.com/vistas/vistas12/Article_61.pdf; Adrianna Kezar, "Financial Literacy, A Key to Success for Low-Income Students," *The Chronicle of Higher Education*, May 9, 2010, http://sfmc.lsu.edu/sites/sfmc.lsu.edu/files/attachments/Financial%20Literacy,%20a%20Key%20to%20Success%20for%20Low%20Income%20Students.pdf; Institute for College Access and Success, *Paving the Way*.

51 Complete College America, *Time is the Enemy*, (Washington, DC: Complete College America, 2011).

52 Justine Radunzel, "Where Are 2003 High School Graduates Seven Years Later?" (Paper presented at the 8th Annual National Symposium on Student Retention, New Orleans, Louisiana, October 31, 2012), http://www.act.org/research/policymakers/pdf/WhereDidHighSchoolGraduatesGo.pdf; The National Center for Public Policy and Higher Education, *Affordability and Transfer: Critical to Increasing Baccalaureate Degree Completion* (San Jose, CA: National Center for Public Policy and Higher Education, 2011). Authors of the latter study provide recommendations to states for alleviating this problem and improving the transfer process.

53 Pedro de Araujo and James Murray, "Channels for Improved Performance from Living on Campus," *American Journal of Business Education* 3, no. 2 (2010): 57–64; Ernest T. Pascarella, Christopher T. Pierson, Gregory C. Wolniak, and Patrick T. Terenzini, "First-Generation College Students: Additional Evidence on College Experiences and Outcomes," *The Journal of Higher Education* 75, no. 3 (2004): 249–284.

54 One percent of the students did not respond to the first and fourth college intention items in table 6, 5% did not respond to the fifth item, 6% to the second and sixth item, and 14% to the third item.

55 There were other group differences in college intention percentages that were greater than 4 percentage points among higher-scoring students: (1) Lower-income students were less likely than higher-income students to plan to enroll in a four-year postsecondary institution (92% vs. 97%). (2) Lower-income students were more likely than higher-income students to plan to enroll in multiple institutions during their first term (9% vs. 4%).

56 Jennifer Engle, "Postsecondary Access and Success for First-Generation College Students," *American Academic* 3, no. 1 (2007): 25–48; Victor B. Saenz, Sylvia Hurtado, Doug Barrera, De'Sha Wolf, and Fanny Yeung, *First in My Family: A Profile of First-Generation College Students at Four-Year Institutions Since 1971* (Los Angeles, CA: Higher Education Research Institute, UCLA, 2007); Carmen Tym, Robin McMillion, Sandra Barone, and Jeff Webster, *First-Generation College Students: A Literature Review* (Austin, TX: TG Research and Analytical Services, 2004), http://www.tgslc.org/pdf/first_generation.pdf.

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58 Dale R. Tampke, "Developing, Implementing, and Assessing an Early Alert System," *Journal of College Student Retention: Research, Theory, and Practice* 14, no. 4 (2013): 523–532.

59 The National Postsecondary Education Cooperative, *Deciding on Postsecondary Education: Final Report*, NPEC 2008-850 (Washington, DC: National Postsecondary Education Cooperative, 2007).

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62 George D. Kuh, Jillian Kinzie, Jennifer A. Buckley, Brian K. Bridges, and John C. Hayek, *What Matters to Student Success: A Review of the Literature* (Washington, DC: National Postsecondary Education Cooperative, 2006).

63 Conley, *Redefining College Readiness*, Vol. 5; Veronica A. Lotkowski, Steven B. Robbins, and Richard J. Noeth, *The Role of Academic and Non-Academic Factors in Improving College Retention* (Iowa City, IA: ACT, 2004).

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65 Dockery, "School Counselors' Support for First-Generation College Students."

66 Engle and Tinto, *Moving Beyond Access*.

67 Supiano, "Giving Students More Information."

68 Westbrook and Scott, "Influence of Parents"; Jennifer Engle, Adolfo Bermeo, and Colleen O'Brien, *Straight from the Source: What Works for First-Generation College Students* (Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education, 2006); Wimberly and Noeth, *Schools Involving Parents*.

69 Charisse Cowan Pitre and Paul Pitre, "Increasing Underrepresented High School Students' College Transitions and Achievements: TRIO Educational Opportunity Programs," *NASSP Bulletin* 93, no. 2 (2009): 96–110.

70 Institute for Higher Education Policy, *Supporting First-Generation College Students Through Classroom-Based Practices* (Washington, DC: Institute for Higher Education Policy, 2012).

71 Engle, Bermeo, and O'Brien, *Straight from the Source*.

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