

# CHAPTER 6

## Student Persistence and Degree Attainment Beyond the First Year in College

The Need for Research

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### INTRODUCTION

Student persistence is the product of a longitudinal process of varied lengths in students' lives. While some students may reenroll for a second or third year in college, dropping out is still a consideration for many students. Factors that have been found to impact student retention among first-year students may carry over to subsequent years, culminating in a decision to withdraw from college. Moreover, it is reasonable to assume that the strength and direction of those factors influencing dropout behavior may change over time (Ishitani & DesJardins 2002). New factors must also be taken into consideration as students proceed from one year to the next. While much has been written on student persistence over the past thirty years regarding the impact of different variables such as the academic and social integration of students on campus (e.g., Pascarella & Terenzini 1979; Terenzini & Pascarella 1980; Bean 1980), different sources and forms of support systems (e.g., Nora & Cabrera 1996; Nora 2004), student finances (e.g., Olivas 1986; Cabrera, Nora, & Castaneda 1992; St. John, Cabrera, Nora & Asker 2001), and even discriminatory behaviors and gestures (e.g., Nora & Cabrera 1996; Cabrera & Nora 1994) on the adjustment of students to college, their academic achievement, their first-to-second-year persistence, and ultimately their undergraduate degree attainment, major gaps in the persistence literature exist on student retention past the first year in college. It has been suggested that because of the intense focus by researchers and practitioners

on the first year in college, problems with student attrition have shifted from the first year to subsequent years even when students successfully engage their initial collegiate experience.

The intent of this chapter is to provide an overview of findings in the literature on student persistence past the first year in college. Because very little has been investigated for the time period following a student's first year, this chapter will also attempt to provide a preliminary profile of student characteristics, academic performance, and attrition rates over a six-year period utilizing institutional records from a highly diverse student population enrolled at a major research university. To provide a context for comparison with what is known on the first-year experience, the conceptual framework for this chapter will be guided by current theoretical perspectives used in studying the persistence of first-time-in-college students.

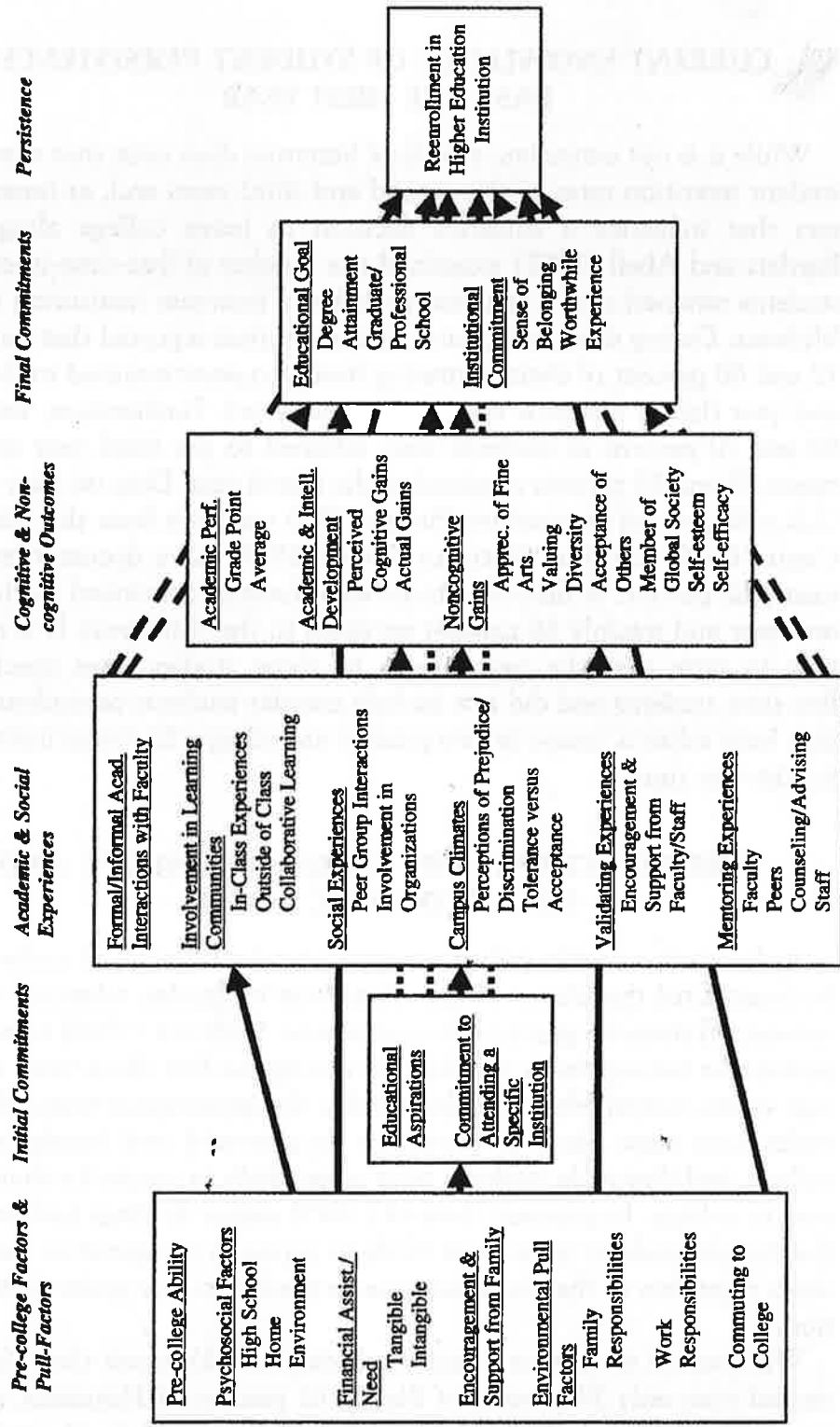
As previously mentioned, much of what we know regarding student persistence has been focused on students as they move from the end of their first year in college to the beginning of their second year (e.g., Nora & Cabrera 1996; Nora, Cabrera, Hagedorn, & Pascarella 1996; Braxton & Lien 2000; Nora 2004). Many of these studies have used different, yet overlapping, frameworks. Much of the early work relied on Tinto's (1975) model of student integration. Subsequent studies modified Tinto's original model and led to the use of such models as Bean's (1985) student attrition model, Pascarella and Terenzini's (1980) interpretation of Tinto's (1975) theoretical framework, and even Astin's (1984) student involvement perspective.

During the thirty-year period of the persistence literature, numerous quantitative and qualitative studies have contributed to the literature base on student persistence. Studies by Braxton and Brier (1989), Rendon (1994), Hurtado and Carter (1997), Pascarella and Terenzini (1990), and others have modified and added an array of factors all found to impact the decisions of college students to remain enrolled in college or to drop out, temporarily or permanently. Among those efforts is research by Nora and associates (e.g., Nora & Cabrera 1996; Cabrera & Nora 1994; Cabrera, Nora, & Castaneda 1992; Nora & Garcia undated; Nora & Lang undated; Nora 2002, 2004). The culmination of those efforts has led to the conceptualization of the student engagement model (Nora 2004). Figure 6.1 displays the theoretical framework used in examining similar factors impacting withdrawal and persistence decisions of undergraduates past the first year in college.

**Figure 6.1**  
Student/Institution Engagement Model Theoretical Framework

*Pre-college Factors & Initial Commitments*      *Academic & Social*      *Cognitive & Non-*      *Final Commitments*      *Persistence*

**Figure 6.1**  
**Student/Institution Engagement Model Theoretical Framework**



### **CURRENT KNOWLEDGE OF STUDENT PERSISTENCE PAST THE FIRST YEAR**

While it is not extensive, a body of literature does exist that examines student retention rates in the second and third years and, at times, factors that influence a student's decision to leave college altogether. Bartlett and Abell (1995) examined the number of first-time-in-college students retained over a ten-year period at a four-year institution in the Midwest. During that time period, the institution reported that between 72 and 80 percent of their beginning freshmen were retained to the second year (fall of first year to fall of second year). Furthermore, between 60 and 70 percent of students were retained to the third year and between 55 and 65 percent persisted to the fourth year. Data on sixty-seven U.S. colleges and universities (Smith 1995) and data from the National Center for Educational Statistics (NCES 1993) have documented that nearly 80 percent of first-time-in-college students continued to the second year and roughly 66 percent persisted to the third year. It is important to note that the percentages in those studies were specific to first-time students and did not include transfer students or students who may have taken a course or two prior to attending a four-year institution for the first time.

### **PERSISTENCE RATES BY GENDER, ETHNICITY, AND SOCIOECONOMIC STATUS**

A descriptive profile (albeit restricted by the number of studies) can be constructed that demonstrates differences by gender, ethnicity, and financial aid status in year-to-year persistence. DuBrock (1999) found that persistence among males and females during the first three years in college varies extensively. More specifically, the investigator found that females were more likely to return for their second and fourth years in college, and that male students were more likely to return for their third year in college. In contrast, Smith's (1995) earlier findings had revealed that female students were more likely to persist as compared to male students regardless of the academic-year-to-academic-year under consideration.

With regard to race or ethnicity, Smith (1995) found that after the second year, only 59 percent of Blacks, 62 percent of Hispanics, and 54 percent of American Indians were retained compared to 71 percent of other ethnic groups. More recently, however, DuBrock (1999) has noted that American Indians were significantly less likely to persist to the sec-

ond year as compared to all other ethnic groups and that Hispanic students were more likely to persist to the fourth year.

Ishitani and DesJardins (2002) found that for students who come from low-income families, a mother's educational attainment significantly impacts student persistence in second-to-third-year reenrollment and in third-to-fourth-year return of students. Not surprising, being raised in a low-income family was found to more negatively influence student persistence at the end of the second and third years than it was in the first year. It is to be expected that circumstances associated with a family living in a low-income situation would put undue pressure on the part of the student to withdraw and help with family expenses. For those students coming from a low-income family, however, a mother's educational attainment had the largest impact on reducing student attrition in second-to-third-year rates. Specifically, at the end of the second year, students whose mothers had attained an undergraduate degree were 57 percent more likely to reenroll for a third year than students whose mothers did not complete a college education.

## **PRE-COLLEGE FACTORS AND THEIR INFLUENCE ON SECOND- AND THIRD-YEAR ATTRITION RATES**

### **High School Curriculum**

Differences in year-to-year persistence among college students who completed an advanced high school curriculum versus students who completed only a basic core curriculum have also been documented. Horn and Kojaku (2001) found that the level of a high school curriculum that was undertaken by a student was strongly related to third-year persistence in college. Specifically, at the beginning of the third year, 87 percent of the students who had completed an advanced high school curriculum were still enrolled in an institution of higher education compared to only 62 percent who completed simply a core curriculum.

### **High School Academic Achievement**

High school grades have been found to positively influence subsequent college academic performance, as measured by cumulative grade point averages (GPAs). However, academic performance in high school was also found to have very little influence on student persistence (Nora & Cabrera 1996; Cabrera & Nora 1994; Cabrera, Nora, & Castaneda 1993). In contrast to those findings, DuBrock (1999) found that high school

GPA exerted a significant effect on student persistence into the second and third years. The study found that a student with a GPA of one-tenth of a point higher is 8 percent more likely to persist to the second year. Similarly, the increased odds of persisting with a higher high school GPA are 7 percent for the second to third year, 8 percent for the third to fourth year, and 6 percent for the fourth to fifth year.

### **Academic Ability**

Differences among students identified as high ability or low ability as measured by standardized test scores have been shown to influence the withdrawal decisions of students enrolled in college (Ishitani & DesJardins 2002; DuBrock 1999). Over time, high ability students (as measured by SAT scores in the highest quartile) had lower risks of attrition relative to students who scored in the lower three quartiles (Ishitani & DesJardins 2002). Furthermore, students with SAT scores of 1010 or less that persisted to the fourth year were significantly more likely to graduate or persist to the fifth year (DuBrock 1999).

### **INITIAL COURSE PERFORMANCE IN COLLEGE**

In addition to a student's academic performance in high school, the academic achievement of undergraduates, as measured by a college GPA, may be relevant to the decisions of undergraduates to remain enrolled in college well into the first three years. Research on first-to-second-year persistence has revealed that how a student performs academically will impact his or her academic and social experiences, his or her commitment to attaining a degree, and ultimately his or her decision to withdraw from college, specifically for minority students (Nora & Cabrera 1996; Cabrera & Nora 1994). Even though minority students may not be required to withdraw from college because of their GPA, earning low grades introduces a sense of doubt related to academic performance and belonging in college for students of color.

Studies point to a lingering effect of poor first-year performance for first-time-in-college students (Maack 2002; Ishitani & DesJardins 2002; Bradburn 2002). Specifically, students are at very high risk of dropping out of college in year two of their college experience if their first-year GPA is below 2.0 (Ishitani & DesJardins 2002).

### **FINANCIAL ASSISTANCE**

Research on student persistence has indicated that finances play a major role in student withdrawal decisions (Cabrera, Nora, & Castaneda

1992; Nora & Cabrera 1996; Nora, Cabrera, Hagedorn, & Pascarella 1996). The stress associated with financing one's education was found to negatively impact the decisions of students to remain in college. Financial pressures—the pressures to meet the costs of tuition, fees, books, and room and board—overly affected a student's ability to integrate fully into his or her academic and social environment, ability to engage in in-class and out-of-class experiences, and ability to maintain a high level of aspirations toward earning a degree, and ultimately led to a student's decision to withdraw from college.

The effects of financial aid on persistence beyond the first year have also been documented. Research has shown that students are nearly twice as likely to persist between the second and third years if they receive financial aid (DuBrock 1999; Ishitani & DesJardins 2002). Specifically, Ishitani and DesJardins (2002) found that receiving financial aid reduced the risk of attrition the most in the third year. In contrast, needy students (operationally defined as receiving Pell Grants) were less likely to continue to the second year and were even less likely to return for the third year (DuBrock 1999).

An overlapping factor with student finances is the residency status of the student as that residency relates to out-of-state tuition. Not being able to establish residency in a state and having to pay nonresident tuition have a significantly negative effect on student persistence in the first two years of college. Specifically, undergraduates classified as out-of-state students are 1.93 times less likely to return for a second year and 2.04 times less likely to return for a third year (DuBrock 1999). The exceptionally high cost of tuition may outweigh any perceived benefits to students attending college outside their home state.

### STUDENT COMMITMENT

In many of the early studies on student persistence (e.g., Pascarella & Terenzini 1979, 1980; Bean 1980; Bean & Metzner 1985), the focus of the findings centered on the student's social integration into his or her environment. Throughout the years, the influence of this factor on a student's persistence decision has been confirmed and substantiated among different student groups at a variety of higher education institutions (Braxton & Lien 2000; Nora 1993, 2004). Higher educational aspirations have also been found to positively impact student attrition beyond the first year. Specifically, low educational aspirations were found to have the strongest negative effect on student retention in the first year (Ishitani & DesJardins 2002). Moreover, students were less likely to persist at their



first institution if their educational goals did not include earning a bachelor's degree (Bradburn 2002).

### ENVIRONMENTAL PUSH FACTORS

Very early in the retention literature it was established that environmental influences in different forms negatively affected the student's ability to successfully engage in academic and social activities on campus, subsequently impacting academic performance and the student's desire to remain enrolled in college (e.g., Bean 1985; Nora 1987; Nora & Wedman 1993). Factors that pulled students away from college such as commuting, living off campus, and working off campus were found to push students into deciding not to return to college. DuBrock (1999) has noted that students with on-campus jobs, which permitted the students to remain in close proximity to faculty and an academic environment, were more likely to persist well beyond the first year. Similarly, those students who could afford to live on campus were much more likely to persist, even past the first year. Students living on campus were 1.73 times more likely to return the second year and 1.38 times more likely to persist to the third year.

### ACADEMIC AND SOCIAL EXPERIENCES

Among those factors that have been found to impact student persistence, two major components include formal and informal academic and social experiences of students (Braxton & Lien 2000; Cabrera, Nora, & Casteneda 1992; Cabrera, Nora, & Casteneda 1993; Nora 1987; Pascarella & Terenzini 1990). The engagement of the student in classroom discussion, collaborative learning experiences, student organizations, and contact with faculty are all part of an underlying process affecting the adjustment of students to college, their academic performance, and their decisions to remain enrolled to graduation.

Very little is known with regard to these aspects for students past the first year. A single institutional report found that the appropriate assessment of students as they entered college, seeking and receiving counseling (both academic and personal), and attending an official orientation session provided by the institution were significant factors associated with persistence to the second and third years (Maack 2002). While these factors are not fully representative of the academic and social experiences identified in the literature, they do represent valid proxies for those components.



## **UNDERGRADUATE TRENDS: FIRST TIME IN COLLEGE (FTIC) DEMOGRAPHICS, SECOND- TO THIRD-YEAR STUDENT PERFORMANCE, AND SUBSEQUENT SIXTH-YEAR GRADUATION RATES**

### **National Databases: The Need for In-Depth Longitudinal Data**

The lack of data on students past their first year in college is largely based on the shortcomings associated with large national databases. While those data sets are longitudinal in nature, the depth of information on individual students is limited. The next section of this chapter focuses on attrition rates, academic performance, specific course grades, and performance on core curricula, data that are available only at the institutional level and wanting in larger data sets. The profile that follows is based on first-time-in-college students at a large research university. The institution is the most highly diverse among research and comprehensive four-year institutions with regard to racial and ethnic student representation. It is believed that such a diverse student population can be used to begin to examine retention, academic performance, and graduation patterns past the first academic year, particularly since more and more students seeking higher education today reflect this diversity.

### **DEMOGRAPHIC PROFILE**

The population selected for examining the persistence rates of students past the first year in college consisted of the 2,906 "first-time-in-college students" (FTICs) entering in the fall 1997 semester at a major public, commuter, doctoral-granting institution. Students were considered as FTICs based on a record of no prior attendance at any other university or community college. Demographically, 46.5 percent of students were male and 53.5 percent were female. The ethnic breakdown of the cohort consisted of 35.3 percent White, 18.7 percent Black, 22.7 percent Hispanic, 21.1 percent Asian or Pacific Islander, less than 1 percent American Indian, and 1.8 percent international students.<sup>1</sup> The large majority of students were classified as full-time students. Only 11.8 percent of students were classified as part-time students, defined as students enrolled in fewer than twelve student credit hours for the semester.

Nearly a fourth (22.6 percent) of the FTIC cohort were classified as developmental students, defined as students who enrolled in at least one de-

developmental course<sup>2</sup> in the first year. The majority (63.3 percent) of developmental students were Black or Hispanic. Although 35.3 percent of the FTIC cohort were White, only 15.8 percent were classified as such. Developmental students performed slightly below nondevelopmental students academically. For instance, the cumulative GPA of developmental students was only 2.09 compared to 2.43 for nondevelopmental students. In addition, the six-year graduation rate for developmental students (32.0 percent) was lower than for nondevelopmental students (37.9 percent).

## **PROFILE OF ACADEMIC PERFORMANCE**

### **Pre-College Academic Performance**

The mean high school GPA for the entering cohort was 3.17 and did not seem to impact college retention or graduation rates in subsequent years. As can be seen in Table 6.1, students retained to the third year<sup>3</sup> had only slightly higher mean GPAs than students who dropped out during their second year in college or did not return for their third year, 3.26 and 3.06, respectively. Furthermore, the mean high school GPA for students who graduated within six years was 3.31 compared to a mean GPA of 3.08 for students who had not graduated during that six-year period.

### **Academic Ability**

As for performance on entering standardized test scores, the average score on the Scholastic Aptitude Test (SAT) test for the FTIC cohort was 1,047 (with a large variation in the scores,  $SD = 159$ ). The average SAT total score of students retained to the third year (1,054) was only slightly higher than those students not retained (1,036). However, the average SAT total score of students who graduated within six years (1,072) was much higher than the average total score of students who did not graduate (947). Furthermore, for those students who took at least one developmental course during their first academic year, the average SAT total score was only 922.

### **Semester Hours Completed**

In fall 1997, the entering cohort of students in college for their first time successfully completed an average of 91 percent of classes attempted at the beginning of their first academic semester in college. There is evidence to suggest that the ratio of student credit hours completed<sup>4</sup> may be associated

**Table 6.1**  
**Demographic Profile FTIC Fall 1997 Cohort**

	FTIC cohort (n = 2,906)	Retained to 2nd year (n = 2,101)	Retained to 3rd year (n = 1,614)	Graduated within six years (n = 1,063)
<i>Gender</i>				
Male	1,351	949	705	425
Female	1,555	1,152	909	638
<i>Ethnicity</i>				
White non-Hispanic	1,026	681	509	365
Black non-Hispanic	544	409	295	174
Hispanic	659	470	366	223
Asian or Pacific Islander	613	508	414	280
Am. Indian or Alaskan Native	13	8	6	3
International	51	25	24	18
<i>Tuition status</i>				
In-state tuition	2,703	1,970	1,504	984
Nonresident tuition	94	42	38	29
Tuition exempt	109	89	72	50
<i>High school quartile</i>				
Top 10%	471	383	315	220
10-24%	836	628	500	334
25-49%	721	503	384	231
50-74%	333	228	139	94
Bottom 25%	71	43	27	18
<i>High school GPA</i>				
Mean	3.17	3.22	3.26	3.31
25th percentile	2.80	2.85	2.92	3.00
50th percentile	3.21	3.27	3.32	3.37
75th percentile	3.58	3.62	3.66	3.70
Total N	2,675	1,959	1,503	986
<i>SAT scores</i>				
Mean total scores	1,047	1,050	1,054	1,072
Std. dev. total score	92	94	95	161
Total N	2,656	1,960	1,507	991

with student retention. Students who persisted to the second year completed a larger proportion of their classes during their first semester in college (87 percent) than students not retained by the institution (81 percent), and students persisting from their second year to their third year had completed a larger proportion of their classes during their first academic semester in college (89 percent) than those students dropping out (74 percent). The pattern indicates that those students completing a larger proportion of their courses (for numerous reasons) maintained that pattern throughout their first and second years in college.

### **Academic Performance in College**

The academic performance of students during their first semester in college has been thought to influence not only subsequent academic performance but also student persistence, specifically for minority students (Nora & Cabrera 1996). The average GPA at the end of their first semester in college (fall 1997) for students retained to the second year<sup>3</sup> was 2.52 compared to 1.66 for students not retained. Similarly, the fall 1997 GPA for students retained to the third year (2.68) was much higher than students not retained (2.02). As anticipated, students who graduated within six years had an average GPA of 2.82 at the end of their first semester compared to an average GPA of 1.98 for nongraduates. The evidence reveals that how students perform academically during their initial semester in college may influence subsequent withdrawal decisions, specifically those decisions by minority student populations.

The impact of the academic performance of students extends past their first semester in college. The cumulative GPA for students retained to the second year was 2.57. The students' academic performance was substantially higher than the average GPA (1.75) for students not retained. Similarly, the cumulative GPA for students returning to the third year was 2.76 compared to an average GPA of 1.97 for students not reenrolling after the first two years following their initial enrollment in fall 1997.

## **PROFILE OF ATTRITION RATES**

### **Racial or Ethnic Differences**

Nearly three quarters, 72.3 percent, of the FTIC cohort were retained to the fall of the second year. Of the original entering cohort, 55.5 percent of them had persisted to the third year. While approximately 28 percent of the entering cohort withdrew from college at the end of their first

year, an additional 16.8 percent of students were lost between the second and third year. Retention rates were higher for Asian students than for any other ethnic group, with 82.9 percent of Asian students retained to the second year and 67.5 percent persisting to the third year. Although 75.2 percent of Black students were retained to the second year, only 54.2 percent were still enrolled at the beginning of the third year. The attrition rate of Black students between the second and third year (21 percent) was higher than for any other ethnic group. Similarly, 71.3 percent of Hispanic students were retained to the second year, while only 55.5 percent were retained to the third year. Quite unexpected, the retention rate for White students was lower than for Black or Hispanic students. Only 66.4 percent of White students were retained to the second year, and 49.6 percent were retained to the third year.

### **Educational Costs**

Tuition and other college-related expenses have been found to affect both student academic performance and retention decisions (Nora & Cabrera 1996; Nora, Cabrera, Hagedorn, Pascarella, & Terenzini 1999; Nora & Lang 2000; St. John, Cabrera, Nora, & Asker 2002). In the current investigation, students who paid in-state tuition<sup>6</sup> were much more likely to reenroll in the following year when compared to students paying out-of-state or nonresident tuition. As expected, 72.9 percent of students paying in-state tuition returned to college for the second year compared to only 44.7 percent paying out-of-state or nonresident tuition. Of those FTICs in the original student cohort, 55.6 percent of students paying in-state tuition were retained to the third year compared to 40.4 percent of students paying out-of-state or nonresident tuition during that two-year period. Moreover, and more important, retention rates for students who were exempt from paying tuition<sup>7</sup> were higher than both of the above-mentioned groups, a finding that is consistent with previous research on persistence and financial assistance (e.g., Cabrera, Nora, & Castaneda 1993; Nora & Cabrera 1996; Nora 2004). The findings in the current study revealed that 81.7 percent of tuition-exempt students persisted to the second year and a total of 66.1 percent were retained to the third year.

### **Enrollment Status**

Part-time students or students enrolled with fewer than twelve student credit hours were less likely than full-time students to be retained to the

second and third years; 19.5 percent of the students not retained to the second year and an additional 3.7 percent of students not retained to the third year were classified as part-time students. Among those students who reenrolled for a second and third year, 13.7 percent and 15.1 percent attended college part time, respectively. Moreover, students from the original FTIC cohort who persisted to the second and third years attempted taking more student credit hours in both years ( $M = 13.2$ ) in fall 1998 and fall 1999 than students who dropped out of college ( $M = 12.1$ ).

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### PROFILE OF SIX-YEAR GRADUATION RATES

Of the 2,906 students who enrolled in college as first-time-in-college students, only 36.6 percent graduated within six years (fall 1997–spring 2003). Several interesting findings were associated with the population of graduating students. First, female graduation rates were 20 percentage points higher than males. A total of 60.0 percent of the graduates were female despite the fact that only 53.5 percent of the FTIC cohort were female. The evidence confirms that the overall performance of female students has surpassed that of males, from cumulative GPAs to persistence rates to graduation rates.

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A second finding of interest indicated that although a smaller percentage of White students were retained to the second and third years, the graduation rates six years later for Whites (35.6 percent) were higher than those for Blacks (32.0 percent) and Hispanics (33.8 percent). And while a sizeable percentage of Asian (22.5 percent) and Hispanic (18.4 percent) students were retained to the sixth year, these students had not graduated.

### COURSE-TAKING PATTERNS

#### Developmental Courses

Of the 656 developmental students who enrolled in the fall 1997 FTIC cohort, 60.8 percent enrolled in a developmental English course (ENGL 1300) during their first year. Successful completion of this course suggests a positive effect on graduation: 39.7 percent of the students who successfully completed the course during the first year graduated within six years. This figure compares to the overall FTIC cohort graduation rate of 36.6 percent. In contrast to those students who successfully completed a developmental English course during their first attempt, 8.5 percent of

students who enrolled in the course did not complete the course in one semester. These students were required to reenroll in the same course the following semester, a condition that appeared to negatively affect academic progress. Only 17.6 percent of those students needing to take a developmental English course that required more than one semester to successfully complete that requirement graduated within six years. Similar outcomes were found with 15.3 percent of the FTIC cohort that enrolled in a developmental math course (MATH 1300) in their first year. A total of 42.4 percent of students who successfully completed the course during the first year graduated within six years. Of those students who took more than one semester to complete a developmental math course (47.8 percent), only 18.3 percent graduated within six years.

### Core Courses

As in all four-year institutions, students are required to enroll and successfully complete a set of general education requirements (or courses). The majority of the FTIC cohort (73.7 percent) enrolled in a core English course (ENGL 1303) during their first year of which 50.7 percent earned a grade of A, B, or C for the course while only 5.6 percent failed or withdrew. A total of 36.8 percent of the students who graduated within six years took this course in the first year. Not surprisingly, students who withdrew from or failed the course were less likely to graduate than students who took the course and earned a C or better. Only 7.4 percent of students who failed and 5.6 percent of students who withdrew from the course in the first year graduated within six years. In contrast, 42.3 percent of students who took the course and earned a grade of C or better graduated within six years.

Less than half (45 percent) of the FTIC cohort enrolled in a second core English composition course (ENGL 1304) during their first year. Of those students who completed the sequence, 63.3 percent earned an A, B, or C for the course, 0.5 percent failed, and 10.8 percent withdrew from the course. Once more, 43.9 percent of those students who enrolled in both English required courses during their first year in college graduated within six years. Of those students enrolled in the second required course in English, 51.5 percent earned a grade of C or higher and graduated within six years. In sharp contrast, not one of the six students who failed the course and 19.1 percent of the 141 students who withdrew from the course, requiring them to retake the course, graduated within six years.

Regarding a core algebra requirement (MATH 1310) in the curriculum, 63.6 percent of the FTIC cohort were enrolled in that course in



their first year. Although nearly half (48.5 percent) of the students earned a grade of C or higher, 21.4 percent of those taking the course either failed or withdrew. Those FTIC students who enrolled in the course during their first year in college (38.6 percent) graduated within six years. Those students who earned a grade of C or better (50.1 percent) graduated within six years. In contrast, students who failed or withdrew from the course in the first year and were required to retake the course some time during their academic career were less likely to graduate within six years. Among that latter group of students, 17.1 percent took the course and failed and 29.1 percent of those students who withdrew from the class did not graduate.

Another required core course is an American history course. Nearly 68 percent (67.8 percent) of the FTIC cohort enrolled in the first core history course (HIST 1377) during their first year. Over half (54.0 percent) of those students enrolled in that course earned a grade of C or higher, while 19.8 percent of the students either failed or withdrew from the course. Once more, the link between completion of core courses during a student's first year in college and subsequent persistence and graduation were indicated in the data: 50.3 percent of students who took the course and earned a grade of C or better graduated within six years, while only 9.8 percent of students who took the course and failed and 19.2 percent who withdrew from the course graduated within six years.

As for those students who also enrolled in a second core history course (50.1 percent of the FTIC cohort in the first year), 39.3 percent of those students graduated within six years. In much the same fashion as with the other core courses previously mentioned, 51.0 percent of the students who took the class and earned a grade of C or better graduated within six years and students who failed or withdrew from this course in the first year were less likely to graduate. Only 15.3 percent of students who took the course in the first year and failed and 16.7 percent who withdrew graduated within six years.

### **SOME PRELIMINARY FINDINGS AND DIRECTIONS**

The literature on first-to-second-year persistence has provided a fairly robust picture of that portion of the persistence process taking place as students make the transition from home and high school to college. While each student is unique and each institution offers opportunities for a unique set of experiences, it has been informative to have an aggregate understanding of the transition and adjustment process and how the interconnectedness of different academic, social, and environmental factors in that longitudinal process points students toward persistence.

Beyond the first year, however, it may be especially important for institutions to gather and examine data on their individual students and their experiences. Factors pushing students forward or pulling students back become more localized in the experiences students have at a given institution, specifically as those experiences interact with personal circumstances (financial, familial, occupational, etc.). The longitudinal data previously discussed on students at one public, urban research university offer an opportunity to examine those issues that may drive research on persistence after the first year.

### **MALE VERSUS FEMALE RETENTION PATTERNS: A SHIFT IN TRENDS**

Prior research has shown different persistence rates among males and females depending on the year of progress. While this situation may reflect national trends, the persistence and graduation rates of females across six years were consistently higher in this preliminary investigation. One assertion that could be made regarding these specific patterns is that, within an institution, students are engaged in different academic and social experiences that impact females and males in different ways and result in quite different withdrawal and reenrollment decisions, as opposed to national trends. A different assertion may be that these specific patterns may reflect differences in the forces that drive students to enroll in higher education or attend a particular institution, forces such as financial status, and various support networks.

While institutions may find some satisfaction in knowing that their persistence and graduation rates among female and male students may reflect national trends or patterns at similar institutions, it is also just as important to examine the interaction between gender and institution-specific experiences and to determine whether such differences pose an improvement over national norms for some groups. If females experience greater success as reflected in the current data, does this mean that females bring characteristics with them that render them more likely to succeed, or is this pattern an indicator that the institution serves females more effectively than males?

### **DIVERSITY OF RATES AMONG DIFFERENT STUDENT GROUPS**

In line with existing research, the institutional data used for this chapter confirm that persistence and graduation rates are not consistent among different racial and ethnic groups, and that the pattern changes

from year to year (see Figure 6.2). Overall, the trend for each group follows roughly the same pattern, that is to say, the largest proportion (slightly over 25 percent) of the cohort is lost between initial enrollment and year two, another 17 percent from year two to year three, and an additional 9 percent from year three to year four. The figures from year five and year six represent only those students who had not successfully graduated at those points in time; the trend for those years must be interpreted accordingly but are consistent with the pattern established in prior years. One conclusion that could be made and substantiated in future research is that because each group tracks in rough parallel over time, it is possible to suggest that similar issues influence reenrollment decisions at each stage. It may be also reasonable to assert that the examination of the experiences students have in common—the experiences at the institution—may yield insight into the phenomenon.

While the persistence trends of ethnic groups are parallel, they are not in close proximity. Asian students, for example, reveal a much higher persistence rate (83 percent) in year two than White students (66 percent). While the year-to-year change is roughly the same proportionally for both groups, a significantly larger proportion of the Asian cohort persists to year three (68 percent) than the White (50 percent), Hispanic (57 percent), and African American (55 percent) cohorts. Upon closer examination, other differences among groups are apparent. African American students, for example, show a slightly larger drop from year two to year three than other groups, and Hispanic students a smaller change overall from year two to year three and beyond. These differences may suggest that common factors may be interacting with institutional experiences at different levels, influencing persistence rates differently among the groups. The relatively more precipitous drop in African American persistence from year two to year three is unmistakably an area in much need of investigation. An accurate picture of what may appear to be small differences among ethnic groups may require disaggregating broadly delineated groups such as "Hispanic" or "Asian" into subcategories that better isolate the variety of experiences and reference points that might influence persistence in higher education.

### ENTERING ABILITY AND SUBSEQUENT WITHDRAWAL FROM COLLEGE

Standardized test scores such as the SAT have traditionally been used as the best predictor of future success in college. Research has consistently shown that SAT scores have a strong predictive value relative to

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grades during the first year in college, but no research exists that points to any substantive validity of SAT scores in predicting overall student adjustment to college, academic engagement in the classroom, retention rates, or graduation rates (Nora 1993; Pascarella & Terenzini 1990). The data in the current investigation reveal only a small difference in mean total SAT score for students who did and did not persist over time. The mean total SAT score for students who persisted to years two, three, and four climbed only 3–4 points per year, a difference that cannot be considered truly significant.

Among the pre-college factors available for examination, high school GPA and high school quartile are somewhat more illuminating, although the precise nature of the role they play in the persistence process remains unclear. A comparison of the high school GPA of the entering FTIC cohort with only those students who persisted to year two reveals only a 0.05 point difference on a 4.0 scale. From year two to year three the mean high school GPA is 0.04 higher in comparison to the entering cohort and 0.03 higher from year three to year four. While it is true that, for those students who persisted longer, a higher high school GPA is evident than for those who did not return to college over the six-year period, the difference becomes smaller over time. If entering academic ability in the form of a high school GPA is that influential in subsequent student persistence, then a much larger difference would exist between those who remained enrolled over the years versus those who withdrew from college.

Interpreting high school GPA within the context of high school quartile only introduces greater complexity to the role of high school academic achievement. The data indicate that students with higher high school class ranks persisted at a higher rate than those from lower ranks, but the pattern changes over time. Those students from the highest quartile persisted to year two at the highest rate (75 percent), but students from the second and third quartiles persisted at rates only slightly more than 1 percent apart (69.8 percent, and 68.5 percent, respectively). From year two to year three, however, the pattern changes. While there is a drop in persistence rates of approximately fifteen percentage points among students who graduated from the top half of their high school class (75.1 percent to 59.8 percent among the top quartile, 69.8 percent to 53.3 percent among the second quartile), third quartile students fell at year three to only 41.7 percent of their original numbers, a drop of over 25 percent. It appears that students entering college who graduated in the third quartile from their high school class may keep up with their peers during their first year in college, but are less likely to continue during their second

year. That SAT scores are not associated with a similar pattern of second- to third-year persistence warrants further scrutiny. It may be that SAT scores reflect the knowledge students have stored over time, but class standing is more contextual in nature, reflecting the grades students earn in situ, in a real academic environment that provides subtle forms of motivation, inspiration, and self-assessment, and that the habits students developed in response to that context change over time for some students in the college environment. If this is the case, then what factors cause that change, and what can be done to assist students during later years making the same or better academic progress as in the first year?

## **FIRST-YEAR COLLEGIATE EXPERIENCES AND SUBSEQUENT PERSISTENCE DECISIONS**

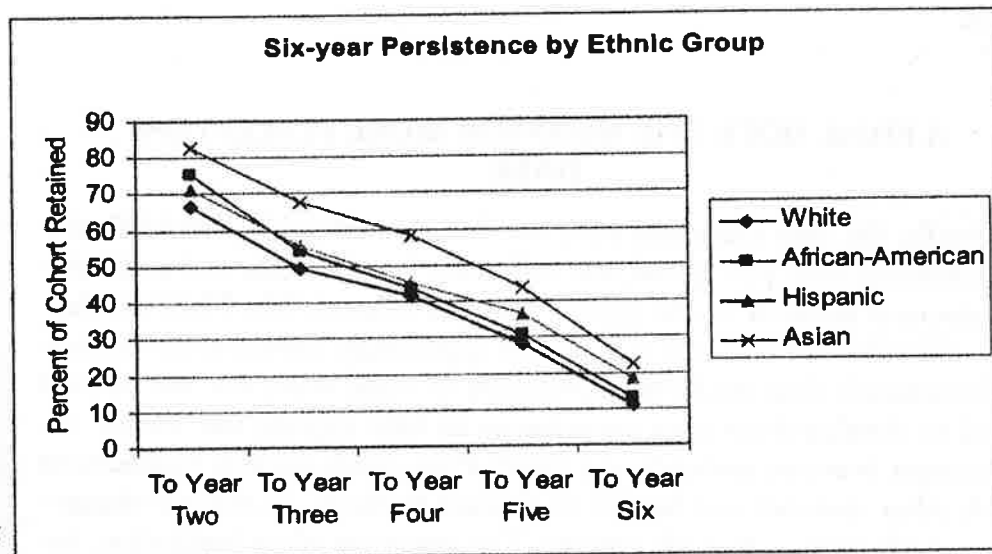
### **Initial Academic Performance**

It is especially important to examine the role that early academic experiences may have in persistence *beyond* the first year. Preliminary evidence suggests that academic success may indeed be pivotal to long-term persistence, but the data raise as many questions as those that they address. The mean GPA for those students who persist across the six-year time period rises steadily with each year of persistence. Six-year graduation figures support this trend; students who graduated within six years had earned a higher mean GPA during their first semester (2.79) than those who had not graduated (2.29). Clearly there is a connection between initial academic success and graduation, but further study is required to determine if academic success is a mediating variable, or if the same factors that result in good grades result in degree completion.

### **Course Withdrawals**

At the institution from which the data were gathered, academic policy allows students to drop courses without a grade as late as four weeks prior to the end of the semester, and there is no limit to the number of course withdrawals students may accumulate during their careers. An analysis of the ratio of credit hours students earned (complete the course with a passing grade) to the number of hours attempted (enrollment on the census date) indicated that unsuccessful course attempts may have played a significant role in persistence rates from year two to year three. Students who persisted to year two had successfully completed 92 per-

**Figure 6.2**  
**Attrition Rates across Time for FTIC Students**



cent of the credits they attempted during the fall semester in year one, compared to only 81 percent among students who did not persist to year two. More striking is that students who persisted from year two to year three successfully completed 96 percent of the credits they attempted the fall semester of year two, compared to 74 percent among students who did not persist to year three. These data strongly suggest the need to examine the impact of course withdrawals over time and raise several questions: Can students who withdraw from courses recover? What resources enable them to do so? What role do policies that limit the number of withdrawal options have on student success?

Because students who persist attempt, on average, only slightly more credit hours than students who do not persist (an average of thirteen rather than twelve), the implication of the findings point less toward rate of progress (number of credits earned per semester) than to withdrawal behavior and the factors that influence and result from the decision to withdraw from courses. It is likely that withdrawal behavior mediates a relationship between background characteristics and environmental pull factors on the one hand, and students' sense of progress and commitment to continuing on the other. These issues may take a unique shape at institutions where program variations and student characteristics generate specific policies regarding withdrawal from courses on the part of the in-



stitution or certain withdrawal patterns or behaviors on the part of students.

### **A FINAL NOTE: THE NEED FOR MORE PERCEPTUAL DATA**

Finally, the data examined from the current institution should ideally be combined with perceptual data reflecting the academic and social experiences of students in the second year and beyond. The National Survey of Student Experiences provides an opportunity for many institutions to benchmark their students' experiences in these areas, but institutions need to develop their own instruments to fully capture the unique interactions between students and institutions, from student interactions with other students and faculty, to student finances, to student engagement with campus support systems. The structure of an institution, including academic policies, presence of research opportunities, faculty types, class sizes, and student demographics, will generate classroom environments, academic cultures, habits of faculty, and student interactions that will not be the same at all higher education institutions. Institution-specific experiences play a larger role in student persistence as time passes, so that a more fruitful understanding of the nature of these experiences and how institutions may influence them must be drawn not from data sets that combine data from many types of institutions, but from single-institution and like-institution studies that are designed to capture the persistence process over time within the unique context of an institution.

### **NOTES**

1. Note that students self-report their ethnicities, and it is probable that the international student population was underreported and the Asian population overreported.
2. Includes MATH 1300, READ 1300, and ENGL 1300.
3. Students still enrolled in fall 1998 and fall 1999.
4. Calculated by dividing the number of student credit hours attempted by the number earned.
5. Students still enrolled in fall 1998.
6. Students who have been Texas residents for at least the past twelve months.
7. Tuition-exempt students may include students who are blind or deaf, students who rank in the highest percentage of graduating high schools in Texas, children of disabled firefighters and peace officers, children of prisoners of war



or persons missing in action, veterans, and children of members of armed forces who were killed in action.

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