This journal issue discusses student attrition and the major recurring themes regarding students withdrawing from college. It is revealed that less than 15 percent of student departures are as a result of academic dismissal, with the remaining students leaving voluntarily, even when their academic performance is clearly acceptable. The following recurrent themes of student attrition are examined: (1) uncertainty both about what to expect from college and its rewards; (2) transition/adjustment problems; (3) financial difficulties; and (4) academic underpreparation. The extremely high attrition rates during the freshman year underscore the difficulties students face in making the adjustment to college life. Careerism may contribute to the stress of adjustment by forcing an early decision about majors and careers. Integration into college life, particularly among minorities, is important for sustaining student commitment. However, minority students, particularly blacks, have difficulty with integration into a largely white environment; this may explain their lower persistence rates. Theories such as the college-fit model and Tinto's path analysis model help identify the factors that influence student persistence. These theories point to the selection process as one way to increase persistence, but such approaches may drive selection to a more homogeneous population rather than facilitating the adjustment of all students. (Contains 38 references.) A brief "Viewpoint" column (Carole Morning) addresses college attrition. (Contains 11 references.) (BLR)
Viewpoint

In the last several months, HEES has moved from Yale University to Teachers College, Columbia University. During the transition publication of REVIEW was suspended but we're resuming publication with the accompanying article on attrition. It represents the first in an ordered series of topics concerning the performance of students in college.

College attrition has been a concern for longer than most educators realize. In 1937, for example, McNeely (1938) found that the overall loss of students before graduation was 45 percent. In a survey of studies spanning 1950 to 1975, Pantages and Creedon (1978) concluded that for every ten students who entered college in the United States during that era, only four graduated from the same college four years later (although an additional 15 percent might be expected to graduate if transfers and stop-outs were considered). Finally, more recently, Porter found that only 41 percent of a High School and Beyond sample of 1980 high school seniors who began college had received a bachelor's degree after six years (again, with an additional 15 percent graduating if more time were allowed). Even among high ability students, the patterns of college completion have remained relatively stable: only half of the top high school seniors in both 1970 and 1980 received their college degrees within seven years after high school graduation (Dodge, 1991).

In short, despite substantial changes in the college population (continued on page 7)

Issues in College Student Retention

Despite the common belief that college students usually drop out because of academic failure, less than 15 percent of all student departures result from academic dismissal (Tinto, 1987). In fact, most students leave college voluntarily; often their level of academic performance is adequate and some have grade point averages that exceed those of persisters.

Instead, decisions to withdraw stem most often from personal, social, and financial problems. A review of the current literature on college attrition (Tinto, 1987; Noel, 1985; Hackman & Dysinger, 1970; Pantages & Creedon, 1978), reveals four recurring themes: 1) uncertainty both about what to expect from college and its rewards; 2) transition/adjustment problems; 3) financial difficulties; and 4) academic underpreparation.

Uncertainty about What to Expect from College and Its Rewards

Many students choose a college quite haphazardly and most of the information students use in deciding which college to attend comes from inaccurate sources (Tinto, 1987). A 1982 national study by Astin, Hemond, & Richardson indicates that students most often base their decisions on information from family and friends, while relatively few college choices are based on the advice of high school teachers and guidance counselors (cited in Tinto, 1987).

Not surprisingly, then, a poor choice of college is the primary cause of departure for at least 20 percent of those who transfer (Tinto, 1987).

Although more information about specific colleges may help students make better choices, some students simply are not clear about what they should gain from their college experience.

Increasing Influence of Careerism. Often students feel an implicit pressure to view college primarily as a place to obtain employment skills. Despite the importance of exploration in the college years, a dramatic shift in the personal values of college students since 1967 has paralleled the tightening economy (Astin, Green, & Korn, 1987). Over the past 15 years the personal value showing the greatest decline in student endorsement is "developing a meaningful philosophy of life." The value showing the strongest upward trend is "being very well off financially." Not surprisingly, this shift is also reflected in freshmen's reasons for attending college; about 70 percent of freshmen in 1985 (up from 50 percent in the early 1970s) indicated that a major reason for attending college was "to be able to make more money." The shift in personal values also explains the growing popularity of majors like business and computer science, which can facilitate employment in a bad economy, over the humanities and social sciences, which may appear less marketable (Astin, Green & Korn, 1987). Although men are still more likely than women to endorse the value of financial
prosperity, the survey indicated that this gap has diminished considerably since 1967.

**Lingering Uncertainty about Career Choice.** Three out of four entering freshmen experience some form of uncertainty about their career choice (Noel, 1985). Moreover, of those who enroll with a declared major, 75 percent will change their minds at least once during their college careers (Noel, 1985). In a 1979 survey, “What Works in Student Retention,” college deans, administrators and counselors who had worked closely with students ranked “indecision about major/career goals” among the top three causes of dropout (Beal & Noel, 1980). Furthermore, on the basis of numerous research studies, Gordon (1985) and Noel (1985) concluded that having a specific goal, either vocational or educational, can play an important role in maintaining an interest in the college curriculum, and is the motivating force for degree completion.

Indecision about college and career goals is highly appropriate for young adults, who are struggling to develop a sense of identity and an orientation towards the future (Levinson, 1978; Muuss, 1988). Although the identity crisis is most pronounced during pre-college adolescence, leaving home and adapting to college may activate “a redefinition of one’s ego identity” (Muuss, 1988, p. 55). The individual who does not permit himself or herself a period of exploration, and instead accepts commitments that are ready made or superimposed by others, may become “foreclosed” and vulnerable to an identity crisis later in life (Muuss, 1988). “Foreclosed” individuals never establish a true sense of personal identity; they merely assume roles created for them by others. In fact, true identity achievement cannot take place without a period of self-exploration—a time when options are kept open and commitments are temporary (Levinson, 1978; Marcia, 1966).

Tinto (1987) has argued that higher education has ignored this developmental task and has failed to become rigorously involved in helping students to make career and other important age appropriate decisions. Pointing out that students are drop-out prone unless they receive some kind of help with the decision making process involved in declaring a major, Tinto (1987) suggests that colleges should provide students with time for and help in thinking through the kinds of majors and careers that they are suited for. In this effort, career counseling and mentoring relationships should be initiated during the freshman year and should continue throughout the college experience.

In the 1970s, when Spady (1970) wrote about gender differences in college enrollment behavior, he contrasted the greater pressure men felt for occupational success with women’s concern for intellectual development. However, this distinction no longer seems satisfactory in the 1990s, when women also feel pressure to “make more money” (Astin, Green & Korn, 1987, p. 23). Nevertheless, a popular hypothesis remains that, while males are driven by the extrinsic rewards of college (i.e., grades), females are more concerned with having their emotional needs met (Tinto, 1987; Rogers, 1990).

In view of public concern arising over data suggesting that students are becoming singularly focused on vocational goals, Stark, Shaw, and Lowther (1989) caution that initial freshman goals often change as students reassess their abilities and are influenced both socially and psychologically to reexamine their values.

Furthermore, “professionally oriented” students do not necessarily possess an advantage over the “career undecided” student. While “professionally oriented” students may possess clear long range goals, the “career undecided” student is likely to have short-range goals (e.g., “to improve my self-confidence in math”) which serve as building blocks and are equally strong and self-motivating. More importantly, concern should be directed towards those students who have not even established short-term goals to help regulate learning behavior (Stark, Shaw & Lowther, 1989).

**Influences on Degree Completion.** However, the research does suggest that the higher one’s occupational or educational goals, the greater the likelihood of degree completion (Panos and Astin, 1968; Tinto, 1987). For example, students who aspire to professional occupations, such as law and medicine, are most likely to persist. This is probably because earning a college degree is a prerequisite for occupational entry and is part of a larger goal plan. However, one must interpret these results with caution: students with high scholastic aspirations may also be the most academically prepared and therefore least likely to experience academic difficulties.

Parental values and attitudes towards higher education also play an important role in students’ commitment to degree completion. The effects of parental values are particularly strong in determining which students will persevere during the first critical year of college (Hackman & Dysinger, 1970; Pantages & Creedon, 1978). Students expected to complete a college degree are more determined to persist even in the face of difficult circumstances.

Students from low socioeconomic backgrounds, whose parents are often unfamiliar with the higher education system, face special difficulties. Not only does their background provide little information on the benefits of a college education, but they may feel no peer pressure to attend college and have relatively fewer educated people with whom to identify. Students from low-income families may also experience conflict because college interferes with their ability to contribute financially to their families (Anderson, 1985).

**Transition/Adjustment Problems.** Persistence in college requires that a student adjust both socially and intellectually to a decidedly new environment. For many students, this involves leaving behind the support systems they developed in high school and making new friends all over again. Espe-
cially for those who are away from home for the first time, the separation from family may exacerbate adjustment difficulties.

The stress of college adjustment is strikingly borne out by persistence rates which indicate that almost half of student attrition takes place during the first year (Porter, 1990). Semester by semester persistence rates indicate that 17 percent of students are lost during their first semester of college, and 18.2 percent of students will not return for their second semester (Porter, 1990). These high freshman attrition figures suggest that many students may be dropping out of college without giving themselves a chance to adjust. If students do not have a commitment to college, the stress of adjustment may be sufficient to discourage them from sticking it out (Tinto, 1987). While some students may reenter after a brief period, a great many permanently withdraw or transfer in order to be close to home.

Students are especially vulnerable to social isolation at large institutions, where they often feel anonymous (Whitman, Spendlove, & Clark, 1984). Yet the number of large institutions has grown precipitously in the last 40 years. While in 1950 only 10 institutions of higher learning enrolled more than 20,000 students, by 1974 there were 95 such institutions (Whitman et al, 1984). A report by the Carnegie Commission on Higher Education indicates that accompanying an increase in institutional size is loss of personal attention to students, greater administrative complexity, fewer opportunities for students to participate in extracurricular activities; and less personal interaction with faculty (cited in Whitman et al, 1984).

Although most colleges and universities limit their freshmen orientations to a brief, two-or three-day event prior to the start of classes, comprehensive and ongoing orientation activities throughout the freshman year are particularly important in large colleges and universities. They help students separate themselves from past associations and form new, personal links to the college (Tinto, 1987; Noel, 1985). As a form of “stress inoculation,” Whitman et al. (1984, p. 27) recommend that students be helped to identify the “differences and similarities” between high school and college. These might include: the greater isolation of college life; a greater variety of class size and teaching styles in the college classroom; a decrease in feedback; and a greater variety of individuals from different social and economic backgrounds.

**Student Faculty Interaction.** A major part of the adjustment process involves establishing relationships with members of the college, both faculty and fellow students. Even if a student is unable to create a niche in his or her peer group, frequent student-faculty contact can promote persistence by helping to mitigate feelings of social isolation (Pascarella & Terenzini, 1977).

Student-faculty contact that focuses on intellectual or course related matters has been found to discriminate significantly between persisters and voluntary leavers (Pascarella & Terenzini, 1977). But the more personal aspects of such contacts are important too. In the “What Works in Student Retention” survey, a “caring attitude of faculty and staff” was ranked by institutions as the most important “positive factor” contributing to student retention. Student-faculty contact that goes beyond the classroom to include informal settings are important in facilitating acculturation, as are discussions that are not just limited to academic work, but extend to include social and intellectual issues as well as advice concerning career issues (Tinto, 1987; Pascarella & Terenzini, 1977).

**Participation in College Life.** Astin (1979) proposes that the quality or intensity of a student’s college experience can be measured in terms of a “continuum of involvement.” This involvement is defined as the time and effort expended by the student in college-related activities. Students at the low end of the continuum are those who “live off campus, who devote minimum effort to their academic activities, and whose lives are concerned primarily with persons and events outside the institution” (Astin, 1979, p.21). Unfortunately, low-income students, who live off campus out of necessity, are most likely to fall into this category — illustrating yet another impediment to their success. In contrast, students at the high end of the involvement continuum spend more time on campus, are actively involved in campus organizations, are committed to their studies, and interact frequently with faculty.

Astin’s “intensity of involvement” theory, helps demonstrate why living in a college residence or dormitory, as opposed to off campus, can significantly influence college persistence (1979). Even after background characteristics are controlled, living in a dormitory adds about 12 percent to a student’s chances of finishing college. Not surprisingly, students who live in residence halls have more contact with faculty, do better academically, and are more satisfied with their college experience than commuters (Astin, 1979).

**Inclusion of Minority Students.** A recent study of black college students indicates that these students find it particularly difficult to locate, and become a member of a supportive community in predominantly white Anglo colleges (Loo & Rolison, 1986). Black students are more likely to experience feelings of isolation and marginality. In a nationwide study by Allen (1988), 45 percent of black students felt themselves to be either “very little” or “not at all” part of their university’s general campus life (p.179). Many of these students reported problems of social adjustment, cultural alienation, racial discrimination, and strained interpersonal relations, as well as awkward relationships with the largely white faculty.

The phenomenon of “voluntary segregation by race” within white colleges often forces black college students to rely on their own cultural group for support. Interestingly, Loo and Rolison (1986) found that
while white students condemned racial clustering as “racial segregation,” minority students valued it as a “cultural support” within a “larger unsupportive system” (p.72). In contrast, black students attending black colleges report greater feelings of success and satisfaction with academic life as well as valuable, positive relationships with faculty (Fleming, 1985).

Asian American students experience similar problems in gaining access to mainstream campus life. Although they may be reproached by some whites for being “cliquish,” many Asians also complain of being perceived as “foreigners” and stereotyped as a “model minority.” They feel that non-Asian students often blame them for inflating the grading curve and view them as “opportunistic” and “narrowly ambitious” (Koyama & Lee, 1989). These stereotypes deny their individuality and hide the great diversity within the Asian American population. Although more positive than the stereotyping of their black and Chicano peers, the image of Asian American students as high achievers causes many of their needs to go unrecognized.

Special Problems of Adults Students. Older students may feel out of place in the youthful environment of the college campus, even though they now represent the fastest growing segment of the undergraduate college population: between 1970 and 1982, the number of adult college students doubled from 2.4 million to 4.8 million (Steltenpohl & Shipton, 1986).

Adult students face a particularly difficult transition, because “they must make the transition from citizen in-the-world to student when they enter college” (Steltenpohl & Shipton, 1986, p.638). For some, this involves a move from independence to dependence, with concomitant feelings of loss of control. Older students frequently describe feelings of inadequacy, anxiety, and marginality upon entry into college. They also experience considerable emotional and intellectual disorientation; often they are unfamiliar with the aims and purposes of a liberal arts education and lack information about the structure of colleges and of how knowledge is organized into disciplines (Steltenpohl & Shipton, 1986).

In addition, older students are usually constrained by external demands. Many are married and work full-time, and their involvement in extracurricular activities is thus, limited. Typically living off campus, they are only temporary visitors to the college. A recent study of non-traditional students, (their mean age was 32, and most were employed and attending college on a part-time basis) suggested a need for campus day care facilities, resources for personal and career counseling, and greater flexibility with respect to academic demands (i.e., deadlines, tuition payments) (Weidman, 1985).

Financial Difficulties

There is considerable debate among researchers on the role of financial difficulties in college attrition. While some argue that many students who experience financial difficulties manage to endure (Hackman and Dysinger, 1970; Tinto, 1987), others point out that financial difficulty is one of the most frequently cited reasons students give for dropping out of college (Pantages & Creedon, 1978; Martin, 1985). In the “What Works in Student Retention” survey, "inadequate financial resources" were ranked as the fourth most important characteristic of dropout prone students (Beal and Noel, 1980).

Particularly for low-income students, financial problems may be central to their decision regarding continuance. However, if students do not receive a grant dropped out (Porter, 1990).

Data suggest that black students, especially, may be hampered financially in their ability to enroll and persist in college. Despite a national increase in higher education enrollment, the percentage that is black has declined. A possible explanation for this decline is attributed to the decreased availability of financial aid, tuition increases, and the shift in emphasis from grants to loans as primary sources of financial aid (Carter, 1989).

Academic Underpreparedness/ Disorientation

Aside from the social adjustment, many students do not realize that the standards for academic success in college are considerably more demanding than those of high school. Even solid high school preparation cannot guarantee students an instant and trouble-free adjustment to college work (Tinto, 1987).

It would be misleading to assume that underprepared students are found only in open enrollment colleges. Underprepared students can be identified in the most prestigious Ivy League colleges, in small liberal arts colleges, and in junior and technical colleges (Moore & Carpenter, 1985). Furthermore, if one considers underpreparedness a "relative" matter, there will always be students in any class whose credentials put them in the lowest 10-15 percent of their class in terms of academic readiness (Noel & Levitz, 1983).

It also should be noted that academic underpreparedness is not a problem unique to college students of this era; underprepared students
have existed since the mid-1800's when such remedial programs were euphemistically labeled "college preparatory" (Tomlinson, 1989). Statistics indicate that 30 - 40 percent of students are currently entering college deficient in basic reading and writing skills (Noel & Levitz, 1982). However, the recent influx of a more diverse population into universities has made the problem of academic underpreparedness more complex (Moore and Carpenter, 1985).

Adult Students. In particular, adult students often lack confidence in their ability to learn, and are uncertain about expectations for college work. Their academic skills are rusty and may need brushing up. Also, while college students may have trouble with abstract theoretical concepts, research generally suggests that adults who have been out in the work place may have particular difficulty readjusting to the challenge of abstract textbook material. They often prefer experiential learning as a result of their work life where learning is drawn from concrete experiences (Camp, Blanchard, & Huszczko, 1986). Because adults have fairly well developed schema for interpreting the world, changing these schema is easier if learning is more personally based and self-directed. Stetlenpohl and Shipton (1986) have developed an innovative eight-week transitional course using experiential techniques to help adult freshmen move from concrete modes of learning back to more abstract learning. The course has been found to have a strong impact on the retention and academic development of adult students.

Female Students. Although there is no difference in the dropout rate between men and women, poor students act as a stronger force in women's decisions to leave. Data indicate that the mean grade point average of women (2.85) is higher than the grade point average of men (2.68) (Rogers, 1990). Yet, females are more likely to drop out voluntarily while males are more likely to stay in college until forced out for academic reasons (Tinto, 1975). One possible explanation is that female college students, who are not performing as well as they may have hoped, become more discouraged and leave before academic dismissal becomes imminent. Research on gender differences indicates that women are more likely to internalize failure and blame themselves, while men are more likely to externalize failure and blame others when things go wrong (Dweck and Licht, 1980).

Minority Students. Minority students, specifically African Americans, Hispanics and Native Americans, drop out of college in greater numbers than whites or Asians. Within six years following college entry, 63.3 percent of blacks and 54.4 percent of Hispanics have dropped out in contrast to 41.5 percent of whites (Porter, 1990). A popular contention is that departure among these students is simply a reflection of their greater academic difficulties, but the reality is more complex. Since blacks and Hispanics tend to be concentrated in the lower SES sectors, their college completion rates reflect their lower economic status. To illustrate, the dropout rate for white students of low socioeconomic status in public colleges is similar to that of African Americans; 52 percent and 58 percent respectively. Moreover, not only are students from minority or lower socioeconomic backgrounds more likely to have attended public rather than private high schools, but public schools in poorer neighborhoods are also generally of lower quality. It follows then that low SES students will be less well prepared for college than those students who emerge from private schools or public schools located in high SES districts.

Academic Preparedness. A linear relationship between entering compatibility with college demands and freshman year attrition (Noel, 1985) indicates that a student's level of academic preparedness plays an important role in predicting college persistence. Institutions admitting students with the highest test scores (ACT of 26 or above, SAT of 1100 or above) experience the smallest attrition rate after the freshman year — 10 percent. In contrast, those institutions admitting students with ACT scores below 15 and SAT's below 700 experience an average attrition rate of 41 percent (Noel, 1985).

While standardized test scores are not the only criteria for estimating ability, they may provide a means for detecting at-risk students since they measure skills which colleges reward. As a more comprehensive guideline, Noel and Levitz (1982) offer three definitions for identifying academically underprepared students: 1) any student who needs skill development; 2) any student who does not meet regular admissions standards, e.g., low admission test score, low high school GPA; 3) Any student whose placement test score is below the cutoff for assignment to regular courses.

The College-Fit Theory and Tinto’s Path Analyses Model

The college fit theory asserts that the greater the congruence between the values, goals, and attitudes of the students and those of the college, as well as between the students' capabilities and the colleges' demands, the more likely a student is to persist in college (Rootman, 1972). Essentially the college-fit model asserts that a student comes to college with certain background characteristics and initial commitments that influence how well he or she will "fit" into the academic and social milieu of the institution. A good fit between student and college has been credited with giving a college its unique characteristics. At the same time, the lack of a good institutional fit has been blamed for driving students away (Taylor & Whetstone, 1983; Noel, 1985).

Originally, this model was seen as potentially useful for college admissions. By identifying the personal characteristics of the student before admission, a university might more efficiently select those student who will best fit into the institution. However, using the model for this purpose has several weaknesses; first, it fails to consider the likelihood that a student will experience...
developmental changes during the college years which may subsequently improve or worsen the "fit." Second, the model seems applicable only to those colleges with a very distinct social and academic milieu. Rootman's (1972) theory was initially based on a study conducted within a military academy, an institution with a unique social structure. In contrast, many large universities (particularly public universities) lack a single and distinct campus culture, but provide many small environments within it. Third, used for admissions, the model may lead to a level of homogeneity that detracts from colleges' role of broadening students.

However, the model is useful in pinpointing causes of attrition. Tinto's path analysis model (1975), which is a more complex variation of the college fit model, acknowledges that a student's goals and commitments will undergo changes during the college experience. The model proposes that dropping out of college can be viewed as a longitudinal process of interactions between the individual and the social systems of the college. The better the student's integration into these systems, the more likely he or she is to persist until graduation. Explains Tinto (1975, p. 96), "Given individual characteristics, prior experiences, and commitments, the model argues that it is the individual's integration into the academic and social systems of the college that most directly relates to his continuance at college."

The model identifies four dynamic variables that may impact on successful college integration and, thus, persistence:
1) Family background, individual attributes, and precollege experiences (i.e., previous schooling).
2) Initial commitment to the goal of college completion and the institution.
3) Academic performance and intellectual development, as well as social peer groups and faculty interactions.
4) Subsequent goals and commitment.

Since Tinto first developed his model, a considerable amount of research has attempted to determine which of the model's variables are of greater importance in determining student persistence. Significantly, path analyses studies that focus on minority and nontraditional students identify different institutional variables as vehicles for enhancing persistence in college. For example, the studies on nontraditional students (i.e., over age 25 and part-time) indicate that their reasons for dropping out of college are relatively unrelated to social integration; but seem to focus instead on academic integration. For these students, the primary concern is with the college's academic offerings, the quality of the courses, and certificates and degrees (Metzner & Bean, 1987).

It has been argued that the social integration of black students into the general system of the college is not a necessary precondition for their academic success (Allen, 1988). Nor is acculturation to white culture said to be a precondition for academic success. However, these conclusions overlook the fact that social systems may not be accessible to blacks who may have to make do with fewer resources. In a study conducted by Kraft (1991), the majority of black students mentioned at least one of two factors as important to their academic success: discipline and at least some form of social support (i.e., a faculty member, peer or family member). The importance of a strong social support system for black students cannot be minimized. The fact that they either perceive or experience themselves as socially circumscribed may in part account for their lower rate of retention under Tinto's model.

Conclusion

Contrary to the common misconception that college students drop out due to academic failure, the decision to withdraw centers most often on the personal life of the students, their uncertainty about college goals, financial resources, and their degree of integration into the social and academic milieu of the college community.

The extremely high attrition rates during the freshman year underscore the difficulties students face in making the adjustment to college life. In addition, increasing careerism may contribute to the stress of adjustment by forcing an early decision about majors and careers. Successful integration is important for sustaining student commitment. Unfortunately, research on minority students, particularly black students who attend white colleges, indicates that their social integration into the mainstream of campus life continues to be limited—which may contribute to their lower persistence rates.

Financial difficulties also appear to play a central role in student persistence, particularly for minority and low-income students.

Theories such as the "college-fit" model and Tinto's "path analysis" model have helped to identify the complex factors that influence student persistence. They emphasize the importance of faculty-student contacts and social integration. These studies have also pointed to the selection process as one way in which colleges can increase persistence, although this approach may limit the institution to a homogeneous population instead of facilitating the adjustment of all students.

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References

...not been a strong determinant either. Thus, not only blacks, but Asians, Hispanics, and Native Americans as well, remain a small portion of the college enrollment. In 1989, blacks represented 9.2 percent of all college freshmen; Hispanics, 2.2 percent; Asians, 2.9 percent; and American Indians, 0.9 percent (Asin, Korn, & Berz, 1989), while their shares of the 18-24-year-old population at large were about 14, 2, and 2 percent, respectively.

According to Porter (1990), graduation rates among underrepresented groups lag whites' by as much as 50 percent. Only about 20 percent of Hispanic college freshmen and 23 percent of African Americans complete college in six years as compared to over 40 percent of whites and Asian-Americans.

Examination of semester-by-semester dropout rates for students by race/ethnicity make clear that problems stem both from institutional as well as student-related causes. For example, high attrition for blacks and Hispanics, *after eight semesters of attendance*, when a student proceeding at a normal pace would be approaching graduation, raises questions about the degree of academic progress being made toward graduation by these enrollees, as well as about inefficiencies of institutional guidance, advisement, and oversight.

Underperformance is also suggested by large-scale changes of major that occur within some populations. For example, comparing freshman intentions to study engineering (National Science Foundation, 1988) with engineering degrees awarded approximately four years later (NCES, October 1990), 74 percent of Hispanics, 43 percent of blacks, and 32 percent of Native Americans did not carry out their original plans, but only 24 percent of whites and Asians did not fulfill their original plans to enter the field.

The foregoing data may stimulate concern, but they do little to aid college administrators in designing more responsive environments or well-informed strategies and for students who need help in fulfilling their intellectual potential.
Persistence is a complex phenomenon, involving constellations of both student and institutional variables, and demanding syntheses of research drawn from many fields. Yet, studies of student variables are typically reported in terms of race/ethnicity and sex, which are both too few and too far removed from causation. Race and sex, for example, may be related to certain outcomes, but largely as stand-ins for other factors (e.g., socio-economic status, attendance at low-cost commuter colleges, campus climate, previous educational experiences, availability of appropriate institutional supports, etc.). Moreover, data on non-traditional populations, when available, are typically measured against a “norm” established by data on white males.

The reasons for the persistence of non-traditional students have been confounded further by the generally inadequate conceptualization and evaluation of remediation and other academic support efforts. For example, in recent study, 17 percent of institutions included were unable to provide even enrollment data for developmental courses; one-fourth were unable to determine students’ pass rates in developmental courses; and 47 percent were unable to provide retention rates to the second year for freshmen who had enrolled in such courses. Worse, institutions offering one or more developmental courses in reading, writing, or mathematics decreased from 82 percent in 1983-84 to 74 percent in 1989-90 (NCES, 1991).

The accompanying article on student persistence and those that will follow attempt to offer a wider and richer view of why some students remain in college, why others leave before obtaining their degrees, and how both groups might be helped to complete college with greater academic accomplishment and personal development.

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References
