Student Variables that Predict Retention: Recent Research and New Developments

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This article reviews recent research related to the study of college student retention, specifically examining research related to individual student demographic characteristics. The increasing diversity of undergraduate college students requires a new, thorough examination of those student variables previously understood to predict retention. The retention literature focuses on research conducted after 1990 and emphasizes the changing demographics in higher education. Research related to a relatively new variable—the merit-index—also is reviewed, revealing potentially promising, but currently mixed results.

Higher education research related to retention can be traced back over 70 years (Braxton, 2000) with much of the research predating 1970 (e.g., Astin, 1964; Bayer, 1968; Vaughan, 1968). Two seminal works were published in 1975: Astin's (1975) book, *Preventing Students from Dropping Out,* and Tinto's (1975) interactionalist theory serve as foundational knowledge related to retention in higher education. Astin studied individual student characteristics (such as gender, age, and place of residency) and institutional characteristics (such as type, location, and selectivity) to determine how such variables affected student retention. Tinto (1975) developed a theory that incorporated a stu-

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dent's commitment to an institution, aspirations for a degree, and integration into the academic and social life of a campus. According to Tinto's (1975, 1987) theory, high levels of integration into academic life of an institution led to a greater commitment to the institution. A greater commitment and integration led to a greater likelihood that the student would be retained (Braxton, 2000; Braxton & Lien, 2000; Tinto, 1975, 1987).

Braxton (2000) posited that scholarly inquiry into the reasons why students leave higher education stalled in the mid-1990s with the wholesale acceptance of Tinto's (1987) model. He called for new research that would "reinvigorate scholarly inquiry on the departure puzzle" (p. 3). Coupled with the rapidly changing demographics of college students (Keller, 2001; Pascarella & Terenzini, 1998), this stall may suggest a need to reconsider the effects of several variables that predict student retention.

This article reviews recent research into the effects of student characteristics on retention. While space limits this article to a review of student characteristics, other recent articles have reviewed the effects of institutional characteristics (Berger & Braxton, 1998; Tinto, 1998) or financial variables (Cabrera, Nora, & Castaneda, 1992; St. John, Hu, & Weber, 2000) on the retention of undergraduate college students. Still other articles address retention from an economics (Leppel, 2002) or anthropological (Tierney, 1992) perspective. These articles, taken together, highlight the increasing complexity of our understanding of, as well as the depth of our current inquiry into, retention.

This article reviews research in three broadly defined areas. First, studies related to the changing demographics of students in higher education are reviewed. Changing demographics of the college population, it is believed, will affect how higher education researchers and policy makers view retention in the future. A thorough understanding of the demographics of contemporary higher education is essential to a complete understanding of retention. Second, research specifically related to student-level variables that predict retention is reviewed. Finally, the last section focuses on two versions of the merit-index score as a predictor of retention, a recent development in retention research. Specifically, the final section focuses on the studies completed by St. John, Hu, and Musoba (2001) and Reason (in press, 2001).

Demographic Studies

The traditional view of undergraduate college students as 18- to 22-year-old White, full-time students attending residential colleges conforms to only a small part of the contemporary college population (Keller, 2001; Pascarella & Terenzini, 1998; Woodard, Love, & Komives, 2000). According to Pascarella and Terenzini, many of the studies that form the foundation of our knowledge about retention in higher education assumed the traditional view of students, rather than the reality of today's diverse student population. Further, the demographic characteristics of undergraduate students continue to change (National Center for Education Statistics (NCES), 2001a). Thus, regardless of whether the older studies included representative samples of their contemporary higher education populations, it is likely those samples no longer represent the current higher education landscape. The following section reviews the changing demographics characteristics of students in higher education and underscores the need to review the effects of variables on retention.

Increasing Diversity of Undergraduate Students

Researchers (Keller, 2001; Pascarella & Terenzini, 1998; Woodard et al., 2000) cite the increasing diversity of undergraduate college students in the United States. Most often cited is the increasing diversity among racial and ethnic identities of college students (Pascarella & Terenzini). Women became the majority of higher education students around 1980 (NCES, 2001b), but the number of women enrolling in postsecondary institutions continues to increase (Woodard et al., 2000). The increasing diversity of age (Keller; Murdock & Nazrul Hoque, 1999) and socioeconomic status (Murdock & Nazrul Hoque; Pascarella & Terenzini) deserve discussion as well. The following section discusses the growing diversity of undergraduate college students with regard to the categories cited.

Students of Color
The racial and ethnic composition of undergraduate college students shifted dramatically in the last quarter century (Pascarella & Terenzini, 1998). Pascarella and Terenzini reported that between 1984 and 1994 the number of undergraduate students of color rose 61%, compared to a 5.1% increase in Caucasian students attending college during the

same time period. Students of color accounted for approximately one-fourth of the undergraduate population in 1994, an increase of one-fifth from a decade earlier. According to the NCES (2001b), 21% of all undergraduate degrees in 2000 were conferred upon students of color.

Trends regarding the increasing racial and ethnic diversity within higher education are expected to continue through the first decade of the 21st century (Keller, 2001; Woodard et al., 2000). States along the west coast and in the southwest corner of the United States expect a 40% increase in the number of undergraduate students attending college during that time period (Keller). Much of the increase in undergraduate students will be accounted for in new immigrants to the United States and domestic people of color, especially students of Hispanic origin (NCES, 2002).

Women

While increases in the number of students of color may account for the majority of the growth in higher education in the near future, the percentage of women attending institutions of higher education increased during the previous two decades and likely will continue to increase (Woodard et al., 2000; NCES, 2001b, 2001c). In 1999, women accounted for 55% of the undergraduate population in the United States, up from 50% in 1980. The rate of attendance for women at higher education institutions continues to grow faster than the rate for men, with the NCES predicting that women will account for approximately 58% of the college population by 2011 (2001a).

Age and Class

Race, ethnicity, and gender are not the only demographic variables of higher education student composition that are currently changing. As the United States' population continues to grow older (Keller, 2001; Murdock & Nazrul Hoque, 1999), higher education must be ready to serve students who are diverse in age and socioeconomic status. Contrary to conventional wisdom and recent enrollment trends, however, the NCES (2001a, 2002) estimates the average age of college students may not increase during the next decade. Using a conservative projection of college attendance rates for the next decade, the NCES (2001a) estimates that while the number of students over the age of 25 may increase, the proportion compared to traditional-aged students will decrease slightly.

The NCES (2001a) estimates notwithstanding, the interaction of age and race will continue to move higher education toward a more diverse student population (Murdock & Nazrul Hoque, 1999). According to Murdock and Nazrul Hoque, races are aging in structurally different ways. The average age for people of color will grow at a faster rate than the average age for Caucasians. This likely will be reflected in the students served by higher education in the future.

Many of the demographic changes discussed thus far will also impact the average socioeconomic status of the United States' population and the college-going population (Murdock & Nazrul Hoque, 1999). Murdock and Nazrul Hoque predict that the average American household income will decrease in the future. People of color and older people have, on average, lower incomes than Caucasians and younger people. This, along with shrinking public financial support of higher education (Pascarella & Terenzini, 1998), will affect how and when students are retained, stop out, or drop out of college. The importance of socioeconomic status to our understanding of college retention likely will increase in the future (Howard, 2001).

Implications for Retention Research

The demographic changes occurring within higher education will force researchers to change how and why research is conducted (Pascarella & Terenzini, 1998). In turn, rapid changes in research can influence the practice of student affairs (Woodard et al., 2000). The breadth and depth of knowledge necessary for informed practice in an era of rapid changes in the demographics of higher education will require more of both scholars and practitioners. Research, thus, must be dynamic, responsive to change, and useful to practitioners in higher education settings.

According to Pascarella and Terenzini (1998), finding inclusive and representative samples of highly diverse populations is and will continue to be very difficult, but essential to thorough research studies. Researchers must include such variables as sexual orientation, student status (full- or part-time), commuter status, and work/family responsibility, along with the traditional age, gender, race, and ethnicity variables, for samples to be truly representative of the current student population.

Further, Pascarella and Terenzini (1998) posited that the increased student diversity will impact higher education research in three ways. First, researchers must study the conditional, or interactional, effects of demographic variables. Researchers must examine the interaction between variables (e.g., race and gender) to move our understanding of students further. Second, researchers must redefine college outcomes to match students' purposes of attending higher education institutions. Not all students enter institutions with the expressed desire to graduate with a degree. Graduation thus might be an inappropriate measure of a successful outcome for many students. Finally, researchers must set aside traditional approaches to inquiry. Isolating a small number of variables to examine their impacts will no longer suffice. Studies must be inclusive of as many variables and interactions as possible in order to fully understand retention issues in light of the increasingly diverse student population.

Retention Studies

Even with the increasing diversity of undergraduate students, higher education researchers and policy makers have a solid foundation of empirical research related to retention. Peltier, Laden, and Matranga (1999), in a review of research related to persistence, cited many student background variables that directly affect the probability that a student will persist in college. According to an analysis by Peltier et al., gender, race and ethnicity, socioeconomic status, high school grade point average, college grade point average, as well as the interaction between these variables, are related to persistence.

A review of literature revealed similar trends in retention studies, with some notable differences. Variables related to high school achievement and race/ethnicity were statistically significant in many retention studies (Astin, 1997; Tross, Harper, Osher, & Kneidinger, 2000). Results related to the influence of gender on retention were mixed (Reason, in press; St. John et al., 2001), although interactions between gender and race provided insight into retention (Murtaugh, Burns, & Schuster, 1999). Finally, in studies that examined retention beyond the first semester of college, college grade point average was significantly related to retention (Murtaugh et al.).

The following review addresses major variables separately. This should not be interpreted, however, to mean these variables are independent of each other. On the contrary, the reviewed studies indicate that the following variables interact with each other. They are presented separately here only for explanation and ease of understanding.

High School Achievement Variables

Variables that indicate the level of achievement in high school—high school grade point average (HS GPA) and college admissions test scores (SAT/ACT)—appeared to consistently be significant predictors of retention (Astin, Korn, & Green, 1987; Tross et al., 2000). These variables were included in nearly all retention studies and often were considered student background variables in models that included multiple other variables related to retention.

In an example of the predictive power of high school achievement variables, Astin and his colleagues (1987) reported the results in a follow-up study related to the Cooperative Institutional Research Program (CIRP) at the University of California-Los Angeles. Astin et al. surveyed approximately 8,000 students, matching CIRP follow-up data with student retention data from higher education institutions. The authors used three progressively more stringent definitions of retention and conducted a series of regression analyses to identify the strongest predictors of retention. A student's self-reported HS GPA and institution-reported SAT/ACT score were "the two strongest predictors of retention" for each of the three definitions of retention (p. 39). Students entering college with an "A" average from high school, for example, were seven times more likely to graduate with a degree in four years than were students entering with a "C" average from high school. Further, students with the highest SAT scores were six times more likely to graduate in four years than were students with the lowest SAT scores. Although high school achievement measures significantly predicted retention in this study, the effect size of these variables was relatively small. These measures predicted only 12% of the variance in retention.

A recent study by Tross et al. (2000) found a much stronger relationship between high school achievement variables and retention. Self-

reported HS GPA and SAT/ACT score accounted for 29% of the variance in retention. Tross et al. studied the between-year retention of 844 first-year students at one university in the southeastern United States. As part of a stepwise multiple regression analysis, college retention was regressed onto HS GPA, SAT/ACT, and three noncognitive variables: conscientiousness, resiliency, and achievement. Only HS GPA, SAT/ACT, and student conscientiousness remained significant predictors of retention in the final model. HS GPA accounted for 25% and SAT/ACT accounted for 4% of the variance in retention; student conscientiousness explained another 7%.

Similarly, Levitz, Noel, & Richter (1999) reported a linear relationship between SAT/ACT and retention. Institutions that report the highest averages of college entrance examination scores for their students had an average first- to second-year retention rate of greater than 91%. Institutions reporting the lowest average scores for their students, or open-door institutions, had retention rates closer to 56%—an attrition rate five times worse.

These studies highlight the importance of HS GPA and SAT/ACT as predictor variables; although, researchers may underestimate the predictive power of either variable. Wolfe and Johnson (1995) cited the high mulitcollinearity between HS GPA and SAT/ACT. Multicollinearity is the correlation between two or more predictor variables. "When trying to determine the importance of individual [independent variables], high multicollinearity causes difficulty because individual effects are confounded due to the overlapping information" (Mertler & Vannatta, 2001, p. 169). Multicollinearity of HS GPA and SAT/ACT could cause some of the predictive power of either variable to go undiscovered.

Gender

Research results have been mixed regarding the influence of a student's gender on retention. Astin (1975), Astin, Korn, and Green (1987), and Tinto (1987) found that gender was significantly related to whether a student was retained. Peltier and others (1999) reported relatively consistent findings that gender was predictive of persistence,

with women more likely to persist than men. Reason (2001), however, in a large retention study conducted using data from ACT, Inc., found that gender failed to reach significance. In two backward, stepwise regression analyses in a study of merit-indices (addressed later in this article), gender failed to reach significance in the multivariate models and was removed from the final fitted models. In a simple model, however, gender was a significant predictor. These results indicated that gender interacted with other variables in the models. These interactions masked the effects of gender and indicate more research must be conducted to determine what interactions were taking place in this dataset.

Gender also played a less important role in a recent study by St. John et al. (2001), which examined three progressively more inclusive regression models. Gender was not significant in the model that included only variables related to gender, age, race, financial dependency on parents, family income, and SAT/Merit-Index. Gender was significant in the second model, which added variables related to first-semester college GPA, but failed to remain significant when institutional variables were added. Since the institutional variables related to type of institution, degree program, and housing type were significantly related to retention, and gender failed to achieve significance when these variables were added, St. John et al. concluded that some interaction occurred among the variables, stating that "males have some advantage compared to females because of the type of college attended or the increased probability of living on campus. Clearly, gender differences in persistence is a topic that merits further investigation" (p. 144).

The type of interaction found by St. John et al. (2001) is similar to the findings of other studies. Murtaugh, Burns, & Schuster (1999) and Leppel (2002) found relationships between gender and race that influenced retention. Leppel, in a national study of 5,384 undergraduate students, also explicated the differential effects of such variables as marital status and age on the persistence of men and women. These findings support the assertion by Pascarella and Terenzini (1998) that the interaction effects of variables have increased in importance as the diversity within higher education grows.

Race and Ethnicity

Race and ethnicity variables are prevalent in the literature related to predicting retention (Peltier et al., 1999). In many places throughout the literature, race and ethnicity were conflated into one variable. Although this is not ideal, to avoid confusion and remain congruent with the literature, the term "race" will be used in this review to encompass both constructs.

Race has been found to be a significant predictor of the retention of undergraduate students (Astin, 1997; Murtaugh et al., 1999; Peltier et al., 1999). Further studies concluded that different variables significantly predict retention for different racial groups (Allen, 1999; Hall, 1999). Various racial groups likely have different experiences related to education, which affect how variables impact their retention rates. Therefore, race may be both a predictor and a mediator of other variables related to retention.

Race

A review of the literature related to race and retention revealed statistically significant relationships consistently throughout several decades of study (Peltier et al., 1999). In more recent studies of retention, however, the impact of race was less consistent, especially in multivariate models (Murtaugh et al., 1999; St. John et al., 2001). Practical and statistical differences do remain, however, in the retention rates of racially diverse students. Recent studies, for example, reveal that Asian American and/or White students were most likely to be retained in college, while other racial groups were less likely to be retained (Astin, 1997; Murtaugh et al., 1999; Peltier et al., 1999).

Murtaugh et al. (1999), in a study of almost 9,000 students at Oregon State University in the early 1990s, used stepwise univariate and multiple regression analysis to create hazard ratios for several racial categories. Hazard ratios were defined as "factors by which a student's hazard of withdrawal is multiplied by a unit increase in the predictor" (p. 361). Setting the retention rate of White students equal to one allowed the researchers to compare retention across racial categories. In a univariate model, only Asian American students in the Murtaugh et al. (1999) study achieved a hazard ratio less than one, meaning that Asian

American students were less likely than White students to drop out of college. African American, Hispanic, American Indian, and Pacific Islander students had hazard ratios greater than one, with African American, Hispanic, and American Indian hazard ratios statistically significantly greater. Students from these racial groups were more likely than White students to withdraw from the university.

The effects of race were mitigated when other demographic variables were included in the analysis (Murtaugh et al., 1999). When age, country of residence (domestic or international student), college major, high school GPA, first-quarter college GPA, and participation in a freshman orientation class were considered, much of the difference between racial groups disappeared or reversed. The difference between Asian American and White students remained relatively constant, although this relationship became statistically significant in the multivariate analysis. The hazard ratio for African American students remained statistically significant but moved below one. This result meant that African American students, holding all other variables constant, were more likely to be retained than White students. No other statistically significant hazard ratios were found.

Different Experiences

The experiences of students of color on predominantly White campuses are different from the experiences of White students (Gloria, Robinson Kurpius, Hamilton, & Willson, 1999). Retention, and the variables that predict retention, must be understood in the context of a student's race. Therefore, excluding variables from an equation and examining race independently of them is a statistical manipulation that bears little resemblance to reality.

Allen (1999) found that different variables were significant in predicting the retention of students of color than were significant in predicting the retention of White students. In a study of 581 first-year students at one university in the southwest United States, Allen found that the student's high school rank, first-year college GPA, and a self-reported measure of desire to finish college accounted for 68% of the variance in the retention of minority students from the first to second year of college. For nonminority students, however, high school rank,

first-year college GPA, and parental education were significant, accounting for 38% of the variance in retention.

Hall (1999) also reported differences in predictor variables of retention from the first to second year of college for students of color and White students. Studying 368 African American students and 1,880 White students at St. John's University, Hall found that first-semester college GPA and a desire to live near home predicted retention for both groups. The two groups had no other significant predictor variables in common. For White students, high school achievement variables (defined above), self-concept related to academics, and financial aid in the form of grants also predicted retention. For the African American students, the opportunity to get a job to assist with expenses and a belief that their college should prohibit racist/sexist speech predicted retention.

Summary
While race is a significant predictor, studies also indicate that different racial groups have different variables that affect retention. The findings support the assertion by Pascarella and Terenzini (1998) that researchers should examine the differential effects related to race and ethnicity in higher education research. Through the years, the effect of race in predicting retention has changed. While a study of retention should include race as a variable, the statistical analysis must be sophisticated enough to examine the interaction of race with other variables. It is likely, as studies suggest (Allen, 1999; Hall, 1999), that the experiences of students of color are different enough from the experiences of White students that the two should be examined separately.

First-year College GPA

Given the disproportionate number of students who leave college between the first and second year of college (Levitz et al., 1999), this time period appears to be an appropriate focus for retention studies. Tinto (1996) reported that approximately 57% of college dropouts leave before the start of the second year. Interventions to increase retention often focus on first-year students (Davidson & Muse, 1994;

Murtaugh et al., 1999), because "the greatest attrition tends to occur between the freshman and sophomore years" (Murtaugh et al., p. 356).

Intervening to retain students past the first year is the "most efficient way to boost graduation rates" (Levitz et al., 1999, p. 37). According to Levitz et al., attrition rates reduce by half for each year past the first that an institution can retain a student. Therefore, if an institution's first- to second-year attrition rate is 30%, it is likely the second- to third-year attrition rate will be 15%, and approximately 7.5% the subsequent year. Reducing the initial rate, then, may reduce the subsequent rates proportionally, and greatly impacts an institution's average retention rate over four years.

First-year college GPA, a measure of initial academic success, has been found to be a statistically significant predictor of retention in several studies (Allen, 1999; Mitchel, Goldman, & Smith; 1999; Murtaugh et al., 1999). Recall that Allen found that first-year college GPA was a statistically significant predictor of between-year retention for both minority and nonminority students in the study. For both minority and nonminority students, first-year college GPA exerted the largest direct effect on whether a student was retained.

In the analysis reported by Murtaugh et al. (1999), first-quarter GPA was used to predict retention between the first and second years of college. The probability of returning for a second year of college increased dramatically with higher GPAs. Students with the lowest GPA (0.0–2.0) had a 57% probability of being retained, while students with the highest GPAs (3.3–4.0) had a 91% probability of being retained. Further, in a multivariate model, Murtaugh et al. reported that the value of the hazard ratio for GPA was .49. Therefore, for each point increase in GPA the probability of withdrawal from the university decreases by 49%.

Summary

Astin (1997) indicated that four variables "account[ed] for the bulk of variance in retention" (p. 649). Those four variables included high school grades, admissions test scores (ACT or SAT), gender of the stu-

dent, and race of the student. Over time these four variables consistently have been found to be significant (Peltier et al., 1999), although the relationships have changed. A reexamination of the effects of these variables on the retention of contemporary college students is essential to understanding retention. A comprehensive examination of retention rates, thus, should include these four variables.

Studies also indicated that student attrition is most likely to occur between the first and second year of college (Davidson & Muse, 1994; Murtaugh et al., 1999). Empirical studies that examine significant variables related to between-year retention specific to the first- to second-year transition should be of particular interest to higher education researchers and policy makers. Further, when considering retention between the first and second year of college, student achievement in college, as measured by first-semester grade point average, proves to be a significant variable in retention.

The Merit-Index Score: A New Development

In an attempt to increase diversity within higher education, as well as to counter attacks on affirmative action policies, researchers and policy experts proposed the use of the merit-index as an admission criterion (Cooper, 1999; St. John et al., 2001). The merit-index quantifies the relationship between a student's score on an admissions exam, such as the ACT or SAT, and the average score for all college-bound students within the same school during the same test administration period. A merit-index score, therefore, "gives students credit for exceeding the average [score] of their high school classmates" (Cooper, 1999, p. 35). The merit-index score differentiates students from their peers who, presumably, have similar high school experiences, especially related to environmental factors that affect learning.

St. John and et al. (2001), in a study of 2,500 students at several Indiana colleges and universities, assigned each student a merit-index score that was the difference between his or her SAT score and the average SAT score of his or her graduation class. The study then compared the predictive value of the merit-index score to the predictive value of the raw SAT score for within-year retention. Logistic regression models were estimated using several traditional demographic

variables with the merit-index, then again with the same demographic variables but with the raw SAT Composite scores. The authors compared the results of the two regression equations and found that a student's merit-index score had similar predictive capabilities for within-year persistence as did the student's SAT score. In a logistic regression analysis, a 100-point increase in raw SAT score resulted in a corresponding 1.8% increase in the probability that a student would persist between the first and second semester ($p. < .001$). Similarly, a 100-point increase in the merit-index score resulted in a 1.6% increase in the probability of student persistence ($p. < .001$). Merit-index thus was equally predictive of within year persistence as the more traditional measure, SAT Composite score.

According to St. John et al. (2001), the results hold practical significance for the recruitment and retention of a diverse undergraduate student population. The merit-index score provides an equally predictive alternative measure upon which to recruit students whom the institution has an acceptable probability of retaining. Students who score equally better than their classmates, for example 20 points higher than the class average, seem to be equally likely to persist whether the students come from a lower-scoring, inner-city school or a higher-scoring, suburban school.

Reason (in press) studied an ACT-based merit-index, finding contradictory results. Although the ACT-based merit-index was a significant predictor of retention, the more traditional ACT Composite score was more efficient. These results call into question the efficacy of the ACT-based merit-index and highlight the importance of further study, especially regarding the predictive power of merit-indices for different racial groups. Reason studied approximately 39,000 students who completed the ACT Assessment in 1999. He defined the ACT-based merit-index as the individual's ACT Composite score expressed as a percentage of the average score of his or her classmates. Using stepwise logistic regression, both the ACT Composite and the ACT-based merit-index score proved to be statistically significant predictors of retention, although the predictive power of each variable differed. A one-point increase in ACT Composite translated into approximately a 1.6% increase in the likelihood a student would be retained, while a similar one-point increase in the ACT-based merit-index score translated into only a .4% increase in likelihood.

When racial/ethnic categories were examined independently, Reason (2001) found that the ACT-based merit-index was predictive of retention only for Caucasian and African American students. Higher education policy makers and researchers must, therefore, exercise caution when discussing the theoretical advantages of using merit-indices to predict retention and maintain diverse student populations—the two advantages posited by Cooper (1999) and St. John et al. (2001). On the other hand, the ACT-based merit-index predicted the retention of African American students as well as the ACT Composite score. This finding holds promise for college admission's decision makers and researchers, encouraging more research into merit-indices as predictors of retention for specific racial/ethnic populations. Research should, therefore, proceed with cautious optimism as to the potential of merit-indices.

Conclusion

The literature reviewed in this article supports two major points. First, the rapidly changing demographics of the undergraduate student population suggest that we update our understanding of variables that predict undergraduate student retention. As an increasing number of students from formerly underrepresented groups come to campus, the effects of race, gender, ethnicity, age, and other demographic variables will change. New studies must reexamine our understanding of these variables and their relationships to retention. Sophisticated studies must examine the interaction of these variables to fully understand the differential experiences of various populations.

Second, the literature review identifies several traditionally studied variables for inclusion in the current retention study and one new variable. Variables such as high school grade point average, college entrance examination sores, first-year college GPA, socioeconomic status, race/ethnicity, and gender should be included as predictor variables in all retention studies. The newly identified variable, merit-index score, shows promise to serve as a significant predictor of retention as well (Reason, in press; St. John et al., 2001). The efficacy of the merit-index score should continue to be studied as an alternative to, and in addition to, the traditional predictor variables.

If we believe Braxton's (2000) contention that the study of retention stalled in the mid-1990s, the literature reviewed in this article seconds his call to action for higher education researchers and policy makers. While our foundation of knowledge is solid, the increasing diversity of today's college students and the need to increase the successful retention of all students underscore the importance of reevaluating our understanding of individual student variables that predict retention.

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