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RESEARCH STUDIES IN HIGHER EDUCATION: EDUCATING MULTICULTURAL COLLEGE STUDENTS- Ch 9

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Chapter Nine

An Analysis on Retention Among Traditional and Non-traditional Students in Select North Carolina Community Colleges

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Introduction

While there is growing literature on the topic of retention for baccalaureate institutions, few researchers have attempted to address the issue for community colleges. Since this line of research is relatively new, a comprehensive and shared understanding of the role of the community college and the degree to which it successfully meets the needs of its students and its communities has been ambiguous because of limited applicable research. This identity crisis has existed since the inception of the community colleges and it has been exacerbated through the years as enrollment levels increased at the same time as community colleges attempted to become increasingly responsive to community and even national needs.

The purpose of this study was to analyze retention and persistence rates among traditional and non-traditional students categorized by demographic and academic performance factors. This study was conducted using a cohort of degree-seeking traditional and non-traditional students enrolled in North Carolina Community Colleges from the fall 2006 to the spring 2008 semesters. The factors that were selected were based on previous findings of traditional and non-traditional students.

Review of Literature

Nearly half of all undergraduates in this country and more than half of all new college entrants begin their post-secondary education at the community college. The importance of community college retention becomes greater as more students choose these institutions as their pathway into higher education. Many higher education institutions report record enrollments as nearly 75 percent of high school graduates receive post-secondary education within two years of receiving their diplomas (Ramaley, et al., 2002). Over the past thirty years, community college credit enrollment has more than doubled and continues to expand at a rapid pace. For example, according to the Planning, Accountability, Research, and Evaluation section in the NCCCS (2006), a study was conducted to ascertain the number of students enrolled in curriculum or occupational extension courses in North Carolina community colleges. The results of the data indicated that the enrollment of 2005-2006 high school graduates in community colleges in the academic year of 2006-2007 was 25,804, representing a 7.3 percent increase from the previous years of enrollment.

While these institutions have experienced phenomenal growth, especially over the last forty years, they have also been plagued with questions about effectiveness, quality and purpose. According to McCabe (2000) study, community colleges serve every type of student from the well prepared high school graduate to the under-prepared high school graduate, from the academically gifted to the academically at-risk, from the high school student taking a few courses, to the senior citizen interested in personal enrichment. This makes the student body at any given community college remarkably complex.

Neutzling's (2003) research revealed that many students plan to take a small number of courses and then transfer to a four-year school. Other students may intend to graduate but either transfer out or, for a variety of reasons, fail to complete a program of study. Neutzling observed that these circumstances increase time to degree completion and potentially increase dropout rates. This is reinforced by Smith (2002) who notes that community college students are often adults who are employed on a part- or full-time basis and who are reentering or nontraditional students. In fact, according to research by Smith just 17 percent of today's college students are considered "traditional." For example, students who begin with a full-time load, the community college three-year retention to graduation rate stands at 28.9 percent (ACT, 2006). This rate has dropped 3.5 percentage points since 2000, when the rate was 32.4 percent (ACT, 2000). The first to second year retention rate of students at two-year public institutions was 52.5 percent in 2006 (ACT, 2006). These low rates of retention and graduation attainment have fostered a dubious image of the community college. Thus, the "open door admissions" policy that allows all students the opportunity to participate in higher education now is questioned as to where that open door leads.

There is a comparative paucity of research pertaining to community colleges despite the large numbers of students who attend. In the 1997 article, *It's Time We Started Paying Attention to Community College Students*, prominent researcher Ernest Pascarella chides himself for his lack of attention to the community college student. Speaking about his initial research on the topic, *How College Affects Students*, which synthesized the results of over 2,600 research project participants, Pascarella noted that it would be a liberal estimate to say that even 5 percent of the studies reviewed focused on community college students (1997, p.15). In a second edition of the same title, the authors put considerably more focus on the community college, with highlights that illustrate attainment and persistence levels as they compare to four-year schools, as well as transfer success of community college attendees. Pascarella determined that as a result of limited research, a comprehensive and shared understanding of the role or identity of community colleges and the degree to which it successfully meets the needs of its students and its communities, has been elusive.

Exactly why community college retention rates are low is constantly debated in the academic community. Due to the nature of their student populations, most two-year colleges have higher rates of student withdrawal than four-year institutions. According to Schmid and Abell, (2003) it is not unexpected that these institutions enroll a greater number of students who are: academically underprepared, ethnic minorities, financially independent, low socioeconomic status, and/or single parents of low socioeconomic status. Many studies tend to simply describe the differences between those students who leave and those who stay, while the best studies predict future behavior by explaining how these differences arise within the context of a specific institution.

Retention research has grown increasingly complex as the student population at these institutions has continued to diversify. Much of the research that led to previous models of student retention was built upon the characteristics of traditional college students and not germane to students at community colleges. Few of the students in community colleges match those characteristics. According to Choy (2001) while previous research is helpful for understanding retention in general, it does not necessarily benefit individual institutions trying to improve the retention efforts with their own students. Students' campus experiences are unique, and so are their reasons for leaving. An example would be the previous research of Bean and Metzner (1985) that found that the most important (retention) variables were likely to differ for subgroups such as older students, part-time students, ethnic minorities, women, or academically underprepared students at different types of institutions. In fact, Pascarella's and Terenzini's (2005) research correlated with Bean and Metzner's prior research suggesting that the academic and social correlates of attrition may be different for different kinds of students. Accordingly, Tinto (2004) indicated concerns about the applicability of his model to non-traditional students and institutions. Tinto's assertion was that "it [the model] fails to highlight the important differences in education careers that mark the experiences of students of different gender, race, and social status backgrounds" (p. 689).

Non-Traditional Students

While retention issues associated with a changing student population are relevant to most colleges and universities, they are of particular concern to institutions that have high percentages of non-traditional students. The term “non-traditional” is used to cover a wide range of individual student characteristics, including age, ethnicity, residence, disability, status, and gender. The NCCCS categorizes these students as the *adult population* and assesses the percentage of this adult population in each college’s service area enrolled in either curriculum or continuing education classes (NCCCS, 2006).

The Bean and Metzner (1985) model of non-traditional student attrition proposed four sets of variables affecting dropout: academic performance, intent, defining variables (e.g., age, ethnicity, gender), and environmental variables not controlled by the institution (e.g., finances, outside encouragement). They found non-traditional student attrition was affected more by the environment than social interaction variables which tended to influence traditional student attrition. Later research by Bean and Metzner found that grade point average and institutional commitment directly affected dropout through the perceived usefulness of higher education in gaining employment, satisfaction and transfer opportunities.

Even though Tinto's model has provided a basis for much of the research on student retention and attrition, there are some that think that this type of model has the propensity to produce ambiguous results. According to Byun (2000) Tinto’s model has become the most widely recognized theory of student retention; yet its applicability to nontraditional student populations has not been validated. The research of Nitzke and Wacker (2001) address this concern in that the research used to develop the model was conducted on traditional student populations attending four-year, residential institutions. Fewer students can now be classified as traditional. Yet, some research has confirmed Tinto’s argument that institutional fit is a good predictor of persistence or dropout (Nora and Rendon, 1990; Pascarella and Terenzini, 1980). In other studies, social integration has been found to be negatively associated with persistence. Bean’s (1985) research found that student's peers are more important agents of socialization than the informal faculty contacts presented by Pascarella and Terenzini (1980). Bean argues that students play a more active role in their socialization than once thought, and college grades are more a product of selection than socialization.

Conflicting findings exist among many of these studies as to whether gender, student goals, the need for remedial education, student grade point averages, contact with faculty, or hours studied can be related to student retention. Pascarella and Terenzini (2005) found that academic integration, measured by grade point average, intellectual development and faculty interaction, is the most influential for retention of non-traditional students. Unlike traditional students, adult learners usually do not live on campus, many are married with children, and most work full time. Most

adult learners have very little social interaction at college; instead, they have social links to organizations outside of the college community.

Degree completion is the goal for some but not all adult students. Students are generally more concerned with the “hands-on” applicability of a degree, have a greater sense of responsibility than younger students, and have more varied experiences to draw upon. According to research by Kerka (2003), the idea of having a career culture at college may be a key factor in retaining adult students. Usually, career advancement is a more motivating factor for adult students than the need for growth or self-development. According to Kerka (2003), there are three important strategies for retaining adult students. First, it should be recognized that diverse groups of students are retained by different methods. Second, either before or after enrollment, adult students should be encouraged to clarify career and academic goals. Third, institutions should recognize that not all students’ objectives include obtaining a degree and that measuring retention success should take that into account.

Students often juggle many roles in addition to being a student, such as employee, spouse, and parent. Work and family responsibilities, commuting distance to campus, and finances may all have an impact on students’ persistence. Seidman (2005a) contends that often students may be forced to leave school for reasons out of their control and beyond the control of the institution. Because commuting and non-traditional students are more likely to balance multiple roles and responsibilities, the environment external to the institution plays a significant role in their persistence (Seidman, 2005a). Furthermore, students with multiple roles off-campus are at an increased risk for attrition. Studies have found that family obligations have been among the top reasons for student departure at commuter institutions like most community colleges (Bean and Metzner, 1985). These additional responsibilities compete with the academic and social realms of the college, thereby lessening a students’ integration, which has the result of decreased persistence (Seidman, 2005a). Having a spouse and children to support increases the need to complete college and obtain a higher paying job, but attempting to support that family while in school leaves less time for studying (Leppel, 2002). Specifically, women have been shown to be more sensitive to these responsibilities and have higher rates of withdrawal due to family issues (Tinto, 1993).

Bradburn (2002) examined the characteristics associated with departure at two- and four-year colleges. The results showed that 62 percent of the married students withdrew within three years, compared with 15 percent of the students who had never been married. Other studies have reported a negative correlation between marriage and persistence for women, but found a positive correlation for men (Johnson, 1996). Women may be more likely to leave school because a spouse relocates or due to lack of spousal support. Jacobs and King (2002) studied the relationship between marital status and time to graduation. Single students with no children graduated at a higher rate than married students. Divorce has also been found to decrease an individual’s chances for persistence; however, this may be

because it forces the student to attend part-time while they pursue full-time employment (Jacobs and King, 2002).

Community colleges face even more difficult challenges as they serve as the gateway to higher education for traditional students without the academic background to enter most four-year colleges and universities. A collaborative study was conducted by Brown, Brown and Yang (2008) from the University of North Carolina General Administration and the North Carolina Community College System Office (2006). These researchers' analyzed the enrollment patterns of students from the UNC colleges and universities and the N.C. community colleges that encompassed ten years of cohort data from 1997-1998 to 2006-2007. The researchers concluded that the traditional first-time freshmen enrollment in N.C. community colleges increased 81.2 percent from 12,891 in 1997-98 to 23,364 in 2006-07. For the past ten years, the proportion of females enrolled in NCCCS has been steady at 54 percent, with male enrollment at about 46 percent. American Indian enrollment, between 1 and 1.5 percent, was slightly higher than that in UNC system. Asian students increased about 2.5 percent from 1.6 percent in 1997-98 to 4.1 percent in 2006-07. Blacks gained about 1 percent increase over the ten years. Hispanic enrollment kept about the same, 2 percent, over the years. The "other" category increased about 3 percent. Similarly, white students' enrollment decreased 7 percent from 75 percent to 68 percent in the past ten years.

Institutions have been grappling with how to enhance student achievement, satisfaction, and graduation rates for decades. Yet, according to Brahm (2006) despite programs and services designed to help first-year students make the transition to college, graduation and retention rates have not measurably improved for many institutions. All community colleges face the difficult challenge of finding solutions to attract, retain and graduate students and the problems associated with attrition. Every year, a substantial number of college students join the growing ranks of students who fail to complete their college education. According to St. John (2000), attrition is believed to be caused by an extremely complex interaction of a multitude of variables, not just academics. Yet Jones (2002) findings affirm that students at community colleges are four times more likely to leave school due to non-academic reasons than for academic reasons.

Ethnicity

Of the 557,000 degrees conferred at two-year colleges in the United States in 2006, the vast majority were awarded to Caucasian students. Only 11 percent were awarded to African American students, 10 percent to Hispanic students, 5 percent to Asian students, and a mere 1 percent to Native American/Alaska Native students (National Center for Education Statistics, 2005). Community colleges currently enroll the highest proportion of minority students, yet their graduation rates are not proportional to rates of enrollment (Bailey, Jenkins, and Leinbach, 2005).

There are several reasons for this disparity. Tinto (2006) indicated that commonly identified retention variables had different effects on minority students than on white students. Nettles, Thoeny, and Gosman's (1986) previous research noted that black students typically have "significantly lower levels of pre-college preparation than white students, are less academically integrated, have less satisfaction with their universities, experience more interfering problems, and have less well-developed study habits" than their white peers (p. 309).

Levin and Levin (1991) reported that (a) academic preparedness, high school grade point average and class rank, (b) enrollment in college preparatory courses, (c) adaptability, and (d) commitment to educational goals are student characteristics that have the largest impact on at-risk minority student persistence. Nettles, Thoeny, and Gosman (1986) noted that SAT scores, student satisfaction, peer relationships, and other intrusive problems had different predictive validity for the retention status of black and white students. SAT scores, in particular, were not as strong predictors for black students. However, Eimers and Pike (1997) reported the academic performance of minority students did not help predict intentions to stay at the institution. More recent research by Opp (2002) insisted that many minority students experience a variety of personal, environmental, and institutional barriers in college. The research by Opp found that students of color also may find it more difficult to transition into the college setting. Factors such as cultural values and upbringing define the way in which students experience college (Szelenyi, 2001). They enter college with different value and belief systems, which may result in feelings of alienation and social isolation (Larimore and McClellan, 2005; Shield, 2005). Additionally, without a strong peer group or mentoring relationship, students of color may struggle with the pressures to assimilate, experience racism and harassment, and the incongruence between the campus culture and their own (Opp, 2002).

There are studies that have found that many ethnic groups have a much higher dropout rate than average (Bailey, Jenkins, and Leinbach, 2005; Clark, 2004; Cofer and Somers, 2000; Hawley and Harris, 2005; Scoggin, 2005; Zhai and Monzon, 2004). The research of Zhai and Monzon (2004) studied the community college student retention and discovered that students of African American or Hispanic descent had a much lower persistence rate than the general student population.

Scoggin (2005) did another study investigating the factors related to withdrawal from community colleges, and observed that African American students had the highest rates of attrition among any group. The study by Clark (2004) of within-year retention at a community college also revealed lower persistence rates among minority students. Bailey, Jenkins, and Leinbach (2005) reported similar results. In their research on minority community college students in the United States, these researchers found that African American students had the lowest completion rates at 37 percent, followed by Hispanic students, who graduated at a rate of 42 percent. In comparison, over half of all white students persist until degree completion at these institutions.

Gender

Researchers have explored the role of gender in retention and persistence. Colleges throughout the United States have experienced an increase in female enrollment. Concerned that women have been historically marginalized within the academy, researcher Hayes (2000) examined how the educational environment and, in particular, faculty interactions, institutional culture, and the curriculum can affect the manner in which women learn. Hayes noted that the use of certain textbooks and teaching styles reinforce gender stereotypes and ultimately affect the success of female students. Due to rising costs, more women have chosen to return to work to contribute to their family income. A rise in divorce rates has also forced women into the world of work. Due to the increasing need for higher level of skills necessary for the workforce, many of these women are attending postsecondary education.

Results of studies conducted on the gender differences in persistence have been mixed. Hagedorn (2005) analyzed the withdrawal patterns of 2,906 students at a large research university. The results of the study found that graduation rates for female students were 20 percent higher than that of male students. Nippert's (2001) study of community college students also found gender to be significant, with females persisting at higher rates. Chen and Thomas (2001) looked specifically at the gender differences in persistence for vocational and technical school students. Again, females were found to persist at higher rates. Thus, higher persistence rates in women can be attributed to the finding that they interact more with peers while on campus, which increases their level of social integration.

However, there is also sufficient evidence to propose that men persist at higher rates. Bradburn (2002) conducted a study that examined the student background characteristics associated with departure at two- and four-year colleges and found that women were more likely than men to leave their institutions. Zhai and Monzon (2004) conducted a study in which over half of all female students withdrew during their first semester of college, a much higher rate than for males. Yet, there are other studies that have examined the impact that gender has on attrition and have discovered no significant difference between the retention rates of males and females (Cambiano, Denny, and Devore, 2000; Leppel, 2002; McGrath and Braunstein, 1997). According to the National Center for Education Statistics, males and females were equally likely to have attained a college degree (National Center for Education Statistics, 2005). Bailey, Jenkins, and Leinbach (2005) researched data from postsecondary institutions in the United States and also found no difference in the completion rates of males and females.

Program of Study

A limited amount of research has been conducted on the influence of the student's chosen academic major on persistence. In several studies, a student's college major

has been shown to impact student retention (Astin and Oseguera, 2005), but the evidence has not yielded consistent patterns. Majors that are more in demand by the labor market and programs leading to careers with higher occupational status and greater economic potential have also been shown to promote persistence (St. John, Hu, Simmons, Carter, and Weber, 2004).

Students who choose programs of study that are underrepresented for their gender may also have lower persistence rates due to social forces such as stereotyping and lack of emotional support from friends and family members. Leppel (2002) found this to be true in her research on the relationship between program of study and persistence. The results of the study confirmed that students in non-traditional fields of study for their gender had lower persistence rates. Females in education and health related programs had higher persistence rates than females enrolled in business programs. For men, the opposite was true. Male business majors had one of the highest overall persistence rates, while male education majors had the lowest. In Leppel's research, retention rates were found to vary by major, even when other factors were held constant.

St. John et al. (2004) discovered a relationship between the economic potential of the major and retention. For programs that yield lower-paying careers, students are more likely to see less benefit in completing college. These students may be less committed to their education, and therefore more prone to withdrawal (Leppel, 2002). St. John et al. (2004) found that students enrolled in majors associated with high-demand, better paying careers, such as business, healthcare, engineering, and computer science, exhibited the highest rates of retention.

St. John, Carter, Chun, and Musoba (2006) found that minority students persisted less in health, business, education, and computer science majors, while the study by Johnson (1999) established that females had lower persistence rates in art, education, or science programs, and males were more likely to withdraw from science and engineering programs of study. Program of study also has been shown to be a significant predictor of persistence (Bailey, Jenkins, and Leinbach, 2005; Chen and Thomas, 2001). Bailey, Jenkins, and Leinbach (2005) found that nationwide, students enrolled in certificate or diploma programs had persistence rates of 41 percent, compared to a 51 percent completion rate among students in associate degree programs.

Many of those enrolling on these campuses did not plan to attend college but requirements of today's workforce changed those plans. The American Association of College and Universities reports that 53 percent of students entering these colleges and universities are academically underprepared, *i.e.*, lacking basic skills in at least one of the three basic areas of reading, writing or mathematics" (Tritelli, 2003). This is a 33 percent increase in the number of academically prepared students since 2001 (National Center for Educational Statistics, 2005).

Even so, McCabe (2000) found that "each year more than half a million (academically underprepared) college students successfully complete remediation" and go on to "do as well in standard college courses as those students who begin fully prepared." Boylan (2001) maintains that this success can be attributed to the

use of a developmental approach when working with underprepared students. Boylan further supports King's (2004) assumptions when he says that students fail to do well in college for a variety of reasons and only one of them is lack of academic preparedness. Factors such as personal autonomy, self-confidence, ability to cope with racism, study behaviors, or social competence have as much or more to do with grades than how well a student writes or how competent a student is in mathematics.

Based upon the work of Tinto (2004) and Boylan (2001), those academicians who sought to improve success rates for academically underprepared students lobby for a developmental education program that encompassed a three pronged approach that laid the groundwork for success with effective academic advising; provided content and structure (e.g., pre-college basic skills courses, tutoring, and topical workshops); and developed resilient students who, despite sometimes improbable circumstances, can succeed. Tinto (2004) maintained that campuses support the development of underprepared students and enhance retention and graduation when they provide effective academic advisement.

First-Semester Grade Point Average

Research from various studies has found that college grade point averages to be the single most important predictor in student persistence. Specifically, first-term grade point average has been found to be positively associated with persistence. First-semester grade point average can serve as an early gauge of college success, and is also indicative of academic intent (Hyers and Zimmerman, 2002). Grades can be likened to a reward system for students. The more rewarding their academic accomplishments are, the more likely the student is to persist. In earlier research, Bean and Metzner (1985) tested their own model concerning this factor and found grade point average to be the strongest predictor of dropout. Chen and Thomas (2001) looked at vocational and technical college student persistence and found that first-semester grade point averages were also significant for this population. Research examining the persistence of commuter students found the same results (Tharp, 1998; Weissberg, Owen, Jenkins, and Harburg, 2003).

Bradburn (2002) examined the student background characteristics associated with departure at two- and four-year colleges. She found that first-year grade point average was a significant predictor of retention at all of the institutions in the study. Byun (2000) found that grade point average had a large impact on the semester-to-semester persistence of associate degree students. Zhai and Monzon (2004) also revealed that community college students who withdrew from college had lower grade point averages than persisters. Similar results were discovered by Somers (1995) who found that for each one-point increase in grade point average, the odds of persisting increased by 45.9 percent.

A study by Murtaugh, Burns, and Schuster (1999) on first- to second-year persistence rates also revealed that students with higher first-term grade point

averages experienced increased odds of persisting. Ninety-one percent of the students achieving grade point averages ranging from 3.3 to 4.0 persisted compared to only 57 percent of the students with grade point averages below 2.0. These results corroborated with Cofer and Somers' (2000) study pertaining to the within-year persistence of two-year college students. They found that students with lower grade point averages were almost ten percent less likely to persist than students with a grade point average of at least 2.5. Hyers and Zimmerman (2002) also found that graduation rates for students with first-semester grade point averages of 3.0 and higher were 5.6 times more likely to graduate than students with less than 3.0 averages.

Research Questions

Quantitative methodology was used to analyze data on the random sample of community college students from the fall of 2006 to the spring 2008 semesters to examine the association between identified first-time full-time traditional and non-traditional student's attributes with their fall-to-fall retention rates. To achieve this the following research questions were used:

1. What is the association between the retention rates of traditional and non-traditional community college students as related to selected demographic characteristics?
2. What is the association between the retention rates and the academic performance of traditional and non-traditional community college students?
3. What factors are related to the semester-to-semester and overall persistence of traditional and non-traditional community college students?

Sample Population

The sample population was 1,000 first-year, degree-seeking (traditional and non-traditional) students who were admitted in the fall 2006 cohort in North Carolina community colleges. This study analyzed the nature of the relationship pertaining to retention patterns over a two-year period of first-semester students enrolled in associate, certificate and diploma programs starting in the fall 2006 semester and tracked to the spring 2008 semester. By analyzing two years, the study was able to capture degree completion data for the cohort if applicable. Only degree-seeking students were used in this study, as students without long-term educational goals are not comparable to those students who discontinue their progress towards a specific degree (NCCCS, 2006). The population set was classified into two categories: persisters and non-persisters. Individuals were classified as persisters if they re-enrolled at the institution the subsequent fall semester. Conversely, individuals were classified as non-persisters if they did not re-enroll at the institution the subsequent fall semester.

Descriptive Data on the Sample

The sample cohort consisted of 533 (57 percent) traditional students and 467 (43 percent) nontraditional students. In addition, there were 644 (60.3 percent) students enrolled in an academic program of study, 114 (16.5 percent) students enrolled in a technical program, and 160 (23.2 percent) students enrolled in a vocational program. Based on the available data for the degree-seeking students that entered in the fall semester of 2006, the majority of the population was female (51.1 percent) and white (70.4 percent). The data also revealed that 647 (79.3 percent) students were the recipients of some form of student financial aid and 143 (20.7 percent) students were no recipients. The mean age of the traditional students was 22.687 years of age and the mean age of the non-traditional students was 34.882 years. The mean age for the entire sample was 29.655 years.

Of the 1,000 subjects, 558 or 62.1 percent of the traditional students listed their race as White, while 70 or 21.4 percent listed their race as Black; 55 or 6.7 percent listed their race as Hispanic/Latino, whereas 51 or 1.1 percent American Indian was the selected race; 14 or 1.8 percent listed their race as Asian/Pacific Islander, while 8 or .02 percent listed themselves as Other. In contrast, of the non-traditional students 505 or 69.4 percent listed their race as White, 105 or 25.4 percent listed Black as their race, 27 or 3.1 percent listed Hispanic/Latino as their race, while Asian, and Other showed 21 students or 1.0 percent.

Data Analysis

All data was analyzed using techniques of stepwise logistical regression, utilizing a .05 level for statistical significance. Logistical regression was considered to be the most effective method for this study given the possible outcomes for these questions to be dichotomous. The dependent variable of this study was student retention which was premised upon the student's graduation rates. The predictive factors used in the model are shown in Table 9.1.

Findings

This study sought to determine the extent to which certain student demographic and academic factors could be used to enhance the understanding of how they are related to persistence. This study was also designed to begin to fill the void on scholarly research on the dynamics of student persistence and retention in the community college environment.

Table 9.1. Logistical Regression Variable Values

Variable Name	Description of Variable
Age	0 = > 25 or younger; 1 = < 25 or older
Gender	1 = Female; 0 = Male
Ethnicity	1 = White; 2 = Black; 3 = Hispanic/Latino; 4 = Asian/Pacific Islander; 5 = American Indian; 6 = Other
Application Date	1 = Submitted application 61 days or more prior to start of fall semester; 0 = 60 days or less
AAS Major	1 = AAS major; 0 = Otherwise
Certificate	1 = Certificate; 0 = Otherwise
Diploma	3 = Diploma; 0 = Otherwise
No Financial Aid	1 = Did not receive financial aid; 0 = Otherwise
Pell Grant Recipient	2 = Received Pell Grant as the only form of financial aid; 0 = Otherwise
Lottery Grant Recipient	3 = Received the Lottery Grant as the only form of financial aid; 0 = Otherwise
Other Single Forms of Financial Aid	4 = Received other single form of financial aid; 0 = Otherwise
Multiple Forms	5 = Received multiple forms of financial aid; 0 = Otherwise
First Semester GPA	1 = 4.0 – 3.0; 0 = Otherwise 2 = 3.0 – 2.0; 0 = Otherwise 3 = 2.0 – 1.0; 0 = Otherwise 4 = 1.0 – 0.0; 0 = Otherwise
Persisters/Non-Persisters	1 = Persist to Spring 2008; 0 = Did not persist

Demographic Factors and Retention

The first question addressed in this study was whether or not certain student demographic characteristics- age, gender, and race were related to retention for traditional and non-traditional students. The cohort’s ages were calculated as of the first day of class for their initial semester enrolled. The mean age of the traditional students was 22.687 years and the mean age of the non-traditional students was 34.882 years. Clearly non-traditional students who are older imply that these students have a significantly different set of prior experiences and potentially possess different career paths compared to younger students. The mean age of persisters was 20.21 years, while the mean age for non-persisters was 20.38. While this difference was small; it indicated that persistence was not influenced by the age of the student and other factors that were related to whether a student remained in college or left.

An interesting find was that the gender of the student was significantly related to retention such that male students were 1.9 times more likely to persist as

compared to females. Combining this with the small age difference for persisters and non-persisters may imply that females, while focused on the importance of education, face other life related demands which could cause them to leave. The analysis of the cohort data pertaining to race indicates that black students are less likely to enroll in associate degree programs and/or persist than the white students. However, the additional categories of *other* race positively correlated to program of study which means that these students were inclined to enroll in associate degree programs at almost twice the rate of white students in the cohort. These findings are aligned with previous research regarding an association between race and persistence.

While seemingly contradictory, this implies that certain ethnic categories included in this study were less likely to persist than other students. It appears that this contention depends upon the type of institution of higher education the student attends. For example, Black students who began at public four-year colleges or universities were more likely than their Hispanic peers to leave within three years (21.4 percent versus 13.4 percent). This may imply that black students emphasized the short-term goal of quick entry into the job market more than their white and other counterparts and, therefore, enrollment in the community college was the portal to facilitate this initiative.

Academic Factors and Retention

The second question addressed in this study was whether or not academic enrollment behaviors (i.e., first-semester grade point average, financial aid status, application submission date and program of study) were factors related to retention. Descriptive statistics indicated the mean grade point average for persisters in this study was 2.39, while the mean grade point average for non persisters was 1.45. It was interesting to note the effect of grade point average (GPA) on attrition in this study. The research findings consistently indicated that the first-semester cumulative grade point average was a reliable predictor of retention. Students with a lower cumulative GPA were less likely to be retained than were students with higher GPA's. Students with GPAs under 2.50 in their first year were more likely to leave than students with GPAs of 2.50 or higher (25.8 percent versus 11.3 percent at four-year institutions and 47.9 percent versus 37.8 percent at two-year colleges).

The correlation between grades and retention was supported by earlier research by Murtaugh, Burns, and Schuster, (1999) and from recent research from Reason (2003) that found that grade point averages achieved during the first semester of college, had a stronger association with retention and persistence-to-graduation than many other variables researched. Moreover, this research indicated that the combined effects of an individual's gender, ethnicity, and socio-economic status are less a predictor of persistence than the individual's first-semester grade point average. This research may imply that students falter in college due to the gap

between their high school experience and college expectations. Many students may find that their college courses are fundamentally different than their high school courses. Thus, a consistent yet troubling situation is made prevalent when making the transition to college for some of these students.

The findings in this study related to the significance of obtaining financial aid as a predictor of retention appear to be in accord with most research. The results of this study revealed that students who received financial aid were almost 2.5 times more likely to be retained than students who did not receive financial aid. Earlier research from Tinto (1987) found that students with a financial aid need tended to be unfamiliar with the financial aid process, tended to have other financial obligations, and often juggled school, work and family. Consequently, the student often became overwhelmed and withdrew.

However, when comparing individuals who received financial aid in any amount with those individuals who did not receive aid, Bradburn (2002) did not find any significant differences in retention. He did note that community college students who left the institution were more likely to indicate the need to work as the reason for withdrawing than were dropouts attending four-year colleges and universities. Therefore, it was interesting to note the inference concerning financial aid and persistence in this study. College students who have less financial worries are more likely to return the following semester than those students who receive little or no financial aid. These overall results suggest that attending to students' financial concerns is pivotal to enable students to be retained and persist to graduation at these institutions.

The data pertaining to the relationship regarding the persistence rate at community colleges to the cohort's major program of study is inconclusive due to the lack of definitive research that relates this factor to retention. A review of literature revealed that students with higher career or degree aspirations were more likely to persist than those with lower degree aspirations (Feldman, 1993; Horn and Nevill, 2006). This contention is aligned with Tinto (2006) who claimed that the higher the educational goal, the more likely the student will be retained which challenges the findings of this study. It was interesting to note that the researcher found that nearly one-third (31.7 percent) of 2006-07 cohort beginning post-secondary students left without a degree or credential and did not return by spring 2008. According to the American Association of Community Colleges (2006) these students in the two-year institutions were much more likely than those in the public four-year colleges or universities to leave without completing a degree or credential (43.6 percent versus 18.8 percent).

This study revealed that a significant number of students enroll in community colleges for personal enrichment and to upgrade job skills training which embodies the purpose of these institutions. It was interesting to note that students who considered themselves to be primarily employment-related students were more likely to leave without a credential than those who described themselves as primarily or exclusively students (25.6 percent versus 18.3 percent). For some of these individuals attending a community college, degree completion of any type was

never a goal. This poses as an imminent problem for community college faculty and staff as they are indoctrinated to encourage degree or certificate completion as compared to their peers at four-year institutions. This is due to the nature of these institutions enrolling students who are considered a demographic risk factor and are not prepared for the rigor of college-level work. Because of the limited research, however, additional research is recommended.

In Research Question 3, significant association between the student's date of application relative to his or her first semester of college and fall-to-fall persistence was interesting to note. The study indicated that students who submitted their applications for admission 121 days or more before the start of the fall semester were likely to persist more so than students who submitted their admission application 60 days or fewer before the start of the fall semester.

In contrast to this study, research conducted by Goodman (2000) at Walters State Community College found that students who applied to the institution more than two months prior to the first day of classes were more likely to persist. The population in Goodman's study, however, only included all students who attended WSCC from fall 1992 through fall 1997, with the exception of those students who were listed as *special*. No other studies regarding the association of the student's application date and persistence were located. The results of this study could imply that these students are more likely than those who attend 4-year colleges and universities to delay submission of an application to enter college due to reservations associated with the lack of college preparatory skills to meet the academic requirements of the institution. Another reason could be due to full-time working and other peripheral commitments that would prohibit full-time enrollment, thus making part-time enrollment the only option. Therefore, additional research is warranted.

Conclusion

Special retention initiatives should be directed toward first-year students, as the majority of these students depart during their first two semesters at the institutions. Demographic factors were found to have a significant impact on student persistence, indicating that institutions can use this background information to predict which students are most at-risk for attrition before the students even begin classes.

The majority of the most significant predictors of persistence were among the academic factors, indicating that students' level of academic success and integration is a major determinant in whether a student persists or leaves the institution. The best predictors of student persistence were first-semester grade point average, application submission dates, enrollment status, and ethnicity.

Recommendations for Practice

It is clear from this research that the relationship between select student academic and demographic factors and persistence and retention is inconsistent and multifaceted. This presents difficulty for educators who are charged with improving the educational outcomes of students by simply examining student characteristic prior to enrollment. It is clearer for students who have a history at the college; however this may be too late for interventions for some students. Therefore, given the complexity associated with student retention and persistence the following recommendations are cautiously provided.

1. Because first-semester grade point average has such a strong impact on student persistence, the academic support systems within the institution should be improved to assist students in earning higher grade point averages. The use of a well-advertised tutoring program, arranged early in the semester, and supplemental instruction for difficult classes, can aid in retention.
2. Retention data should be generated at the academic unit level as well as the institutional level. This will create a system of accountability and force programs with low retention to create plans and activities designed to reduce student attrition.
3. A thorough exit interview process should be implemented and utilized for leavers, to shed light on students' reasons for departure, in an effort to develop strategies to increase student persistence. Re-entry programs should be conducted, involving communication with the student after they have withdrawn, these programs are designed to encourage leavers to return to the institution the next semester.
4. Because student's goals and objectives for attending community colleges are very diverse, these reasons should be taken into consideration when assessing student retention. Non-persistence to graduation may not always be a negative; therefore, persistence rates must not be looked at in a vacuum. Information on student goal attainment may provide additional useful information to the institution. More specific research should attempt to link goal attainment to specific outcomes experienced by the student.

Recommendations for Further Study

Based upon the findings of this study, the researcher recommends the following initiatives for further research:

1. More research is necessary to determine which retention program initiatives are most successful with two-year community colleges. Research should be conducted on students who participate in intervention services, to assess the effectiveness of such programs.
2. A qualitative study should be conducted on subgroups of students attending two-year institutions such as younger students, students of ethnic minority,

students with disabilities, and lower-achieving students, to increase the understanding of why these various subgroups of students choose to persist or leave.

3. More research is necessary to investigate additional factors influencing student retention, including social factors that may have an indirect effect on persistence). It is critical that institutions conduct research on these factors, and additional ones, in an effort to predict the likelihood that the student will persist or leave. For at-risk students, early, intensive, and continuous interventions should be employed to assist the student in persisting to graduation.

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