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Undergraduate Academic Success During the Semester of Reinstatement Following Academic Dismissal

Michael F. Cogan

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UNDERGRADUATE ACADEMIC SUCCESS DURING THE SEMESTER OF
REINSTATEMENT FOLLOWING ACADEMIC DISMISSAL

by

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Bachelor of Academic Studies, Western New Mexico University, 1995

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A Dissertation

Submitted to the Graduate Faculty

of the

University of North Dakota

In partial fulfillment of the requirements

For the degree of

Doctor of Philosophy

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2004

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This dissertation, submitted by Michael F. Cogan in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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This dissertation meets the standards for appearance, conforms to the style and format requirements of the Graduate School of the University of North Dakota and is hereby approved.

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PERMISSION

Title Undergraduate Academic Success During the Semester of Reinstatement
Following Academic Dismissal

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ABSTRACT

This study explored the success patterns of academically dismissed undergraduate students who were subsequently reinstated at a mid-sized research university the following semester. The academic dismissals in this study occurred between the fall of 1999 and the spring of 2003. The university reinstatement policies provided the researcher with a unique opportunity to measure a relatively large sample (N=973).

Two regression techniques were utilized to identify significant predictor variables that could be utilized to make administrative decisions regarding future reinstatement activities. Linear regression results indicated that honor point deficiency accrual during the semester of dismissal was a significant predictor of term grade point average upon completion of the semester of reinstatement. In addition, logistic regression was employed to ascertain the viability of a predictive model in which students were deemed to be successful (institutional GPA of 2.0 or higher) or unsuccessful (institutional GPA of less than 2.0) upon completion of the term of reinstatement.

Results indicated that males were more likely to be successful than females. In addition, a low term honor point deficiency during the semester of dismissal, a higher number of term credits earned during the term of dismissal, and a higher institutional GPA prior to the term of dismissal served as positive predictors of student success. Those students assigned to the College of Arts & Sciences were more likely to be unsuccessful than students assigned to any other college at the university. The logistic regression model successfully predicted 74% of the cases in the study.

CHAPTER I

INTRODUCTION

College campuses throughout the United States welcome tens of thousands of new freshmen and transfer students each year. Each new class carries the hopes and dreams of attaining a college degree that has come to mean so much in American society (McGregor, 1994; Pascarella & Terenzini, 1991; Tinto, 1997). Higher education has responded by providing programs designed to keep students engaged in the college experience. Despite these programs, 49% of the students who began college in 1995-96 had not earned a degree at their original school by 2001 (National Center for Education Statistics, 2003). The literature is replete with information regarding retention efforts conducted at postsecondary institutions. In addition, recruitment efforts are becoming more refined and the drive for increased enrollment permeates many American colleges (Mazzarol & Soutar, 2001).

Higher education in the United States has experienced unparalleled growth in the past two decades. In 1980, there were approximately 12.2 million students attending college. That number increased by nearly 27% to 15.3 million in the year 2000. The decade prior to this witnessed an enrollment increase that included a disproportionate number of full-time (15%) students when compared to part-time (5%) students. During this same period, females increased by 14% while males increased by 7% (National Center for Education Statistics, 2002). Enrollment at the University of North Dakota increased 27% between 1980 and 2000. Over a five-year period, the number of students

enrolling at the University of North Dakota increased from 10,392 in 1998 to 13,034 in 2003. This was an increase of 25.4% (University of North Dakota Third Week Report, 2004b). The National Center for Education statistics predicts an additional 12% increase in higher education enrollment by 2010 (National Center for Education Statistics, 2002).

The North Dakota University System has stated that “the mission of the North Dakota University System is to enhance the quality of life of all those we serve and the economic and social vitality of North Dakota through the discovery, sharing and application of knowledge and that this growth bolsters the economies of North Dakota and Western Minnesota” (North Dakota University System, 2003, ¶1). In contrast, the mission statement of the University of North Dakota states that “the University shares a distinctive responsibility for the discovery, development, preservation, and dissemination of knowledge. Through its sponsorship and encouragement of basic and applied research, scholarship, and creative endeavor, the University contributes to the public well-being” (University of North Dakota Mission Statement, 2004a, ¶1). Although not obvious, the contrasting missions revolve around the economic responsibility of higher education. The North Dakota University System board proclaims that higher education is a key to economic growth while the University argues that the mission is to contribute to the public well-being. The competing philosophies have existed during record enrollments at the University.

Current University of North Dakota President, Charles Kupchella, published a Strategic Plan in May of 2001. He stated: “Strategic planning is essential to the continuous improvement of an institution. Its main purposes are to identify and address major concerns; establish priorities in order to focus attention on the most important and

urgent issues, and to make the wisest possible use of institutional resources”(University of North Dakota Strategic Plan, 2001, ¶ 1). The President went on to state, “the University reaches a total fall headcount of 14,000 students, including distance education students, by the fall of 2005” (University of North Dakota Strategic Plan, 2001, ¶ 1). The rapid growth has an affect on the student population, with crowded classrooms and less accessibility to support services on campus. During this same period of student and economic growth, the University of North Dakota has academically dismissed a large number of undergraduate students. The number of undergraduate students academically dismissed during 2003 was 717 compared to 607 in 1998. (University of North Dakota Senate, 2004c). The increase in the percentage of undergraduate students academically dismissed (18.1%) is similar to the increase in undergraduate enrollment during this same period (20.9%). Along with a rise in the number of academic dismissals, the University is experiencing an increase in the number of students placed on academic probation, continued on academic probation, and reinstated after academic dismissal.

Undergraduate students gain admittance to the University in one of four categories: Regular Admission (full-time or part-time); Transient Admission; Undergraduate Non-Degree Admission; or Audit Admission (University of North Dakota Academic Catalog, 2003). Regular full-time and part-time students have satisfied the admission requirements and are considered to be degree seeking. A transient student is one who is in good standing at another college or university and enrolls at the University for a Summer Session or one semester only and plans to transfer the credits earned to apply toward a degree at the other institution. Students who graduated from high school prior to 1993 and are deferring regular admission while they enroll in coursework for

purposes other than the completion of a degree may enroll as undergraduate non-degree students. Students enrolling with this status may not exceed 12 semester hours of credit as undergraduate non-degree students. Enrollment in courses beyond 12 semester credits will be contingent upon regular admission after satisfying all entrance requirements. Students planning to enroll in university classes as auditors have a status and responsibility in class distinctly different from those taking the course for credit. An auditor is not required to participate in the oral or written work of the class. Auditors take no examinations and receive no credit for the course. While a student cannot fail an audit, an instructor may file a "W" (withdrawn) for non-attendance (University of North Dakota Academic Catalog, 2003).

The University of North Dakota is not an open enrollment university. The University is considered selective in that minimum requirements must be met prior to regular admission. The Admissions Office admits undergraduate students based on minimum requirements set forth by the University Senate (University of North Dakota Senate, 1990). At the time of this study, these requirements included a high school core curriculum consisting of four years of English, three years of mathematics (Algebra I and above), three years of laboratory science and three years of social studies. Each student must also have earned a high school grade point average of 2.25 or above and achieved a minimum composite ACT score of 17 or higher.

Transfer student admission requirements depend on the number of transferable credits earned at other institutions. A transfer student with fewer than 24 transferable credits must present a cumulative transfer grade point average of 2.00 or higher. In addition, a student who graduated from high school in 1996 or later must also complete

the freshmen admission requirements previously listed. A transfer student with 24 transferable credits or more must present a transfer grade point average of 2.00 or document graduation from high school or successful completion of the GED. A transfer student with 60 or more transferable credits need only present a transfer grade point average of 2.00 or higher.

An applicant denied admission does have the ability to appeal the decision through the University Senate Student Academic Standards Committee. This committee is responsible for resolving undergraduate appeals or academic grievances not resolved at the level of the academic unit. This committee consists of the Vice President for Academic Affairs, six faculty, two students and the Registrar (University Senate Committee Manual, 1999). The Office of the Registrar reports to the Office of the Vice President for Academic Affairs. The Registrar is responsible for the enforcement of policies set forth by the University Senate. This office has the task of determining and notifying the students of their academic dismissal from the University. In addition, the Registrar is also responsible for reinstating the students who have sought and received permission for reinstatement.

The Student Academic Standards Committee is responsible for the development of minimum academic standards for undergraduate students enrolled at the University. There are three academic standing categories maintained by the Student Academic Standards Committee. These categories include good academic standing, academic probation, and academic dismissal. Students who have earned fewer than 90 total semester hours are considered to be in good academic standing if they have maintained an institutional grade point average (IGPA) of C (2.00) or higher for all courses

completed at the University of North Dakota. A student who has earned 90 or more total hours will be in good academic standing only with a 2.00 or higher GPA in both institutional and cumulative hours. The academic probation policy affecting undergraduate students at the University of North Dakota requires that any student who does not maintain minimum academic requirements will, at the end of the term in which he or she fails to meet minimum standards, be placed on academic probation. Should the student fail to achieve good academic standing at the close of the subsequent semester of enrollment, academic dismissal will occur (University of North Dakota Academic Catalog, 2003).

Academic dismissal is the status assigned to those students who have achieved an institutional grade point average below 2.00 for a second consecutive term. This applies to students who have earned less than 90 cumulative semester hours. Any student with 90 or more cumulative semester hours must have both institutional and cumulative grade point averages of at least 2.00 to maintain good academic standing. A student will normally complete one academic term on academic probation prior to consideration for academic dismissal from the University.

Students academically dismissed from the University have the opportunity to appeal their dismissal. This process differs from the appeal procedure for admissions in that the decision to reinstate the student rests solely with the dean of the academic college or a designated representative. Bellandese (1990) found that this arrangement is quite common, especially regarding doctoral granting institutions. The University of North Dakota consists of seven academic colleges responsible for undergraduate students. These colleges include the John D. Odegard School of Aerospace Sciences (JDO), the

College of Arts and Sciences (A&S), the College of Business and Public Administration (BPA), the School of Engineering and Mines (SEM), the College of Education and Human Development (EHD), the School of Medicine and Health Sciences (MED), and the College of Nursing (NUR). The Student Academic Services (SAS) department is responsible for all undergraduate students who have yet to declare a major. This department is not an academic college; however, the director has the authority to reinstate academically-dismissed students.

An academically-dismissed student receives one of four letters from the Office of the Registrar (Appendix A), dependent on the individual's situation. In the last four years, hundreds of letters have been mailed to students notifying them of their dismissal from the University. This letter is a follow up to the probation letter that the students should have received the prior semester informing them of the requirement to maintain a grade point average of 2.0 or higher. This is the only mandatory communication between the University and students regarding their situation. The letter of dismissal explains the appeal process and provides students with contact information of the individual who would be responsible for reinstating them to the University. Once students are academically dismissed, they have the option to apply for reinstatement.

Ultimately, the Office of the Registrar is responsible for the administrative portion of the reinstatement. The student applying for reinstatement must provide the Registrar with a signed reinstatement application approved by the student's advisor, department chair, and, ultimately, the Dean of the College. During the last four years, nearly 50% of the undergraduate students dismissed from the University applied for and received reinstatement the following semester. Data are not available to determine how many

students actually apply for reinstatement. A student may gain reinstatement with or without stipulations. The first category includes stipulations that the student must meet during their semester of reinstatement. These stipulations can range from maintaining a 2.00 term grade point average, successfully completing a specific course that the student had failed in the past, or enrolling in no more than six semester credits. There does not appear to be a pattern for the stipulation requirements and many variations exist. Each college delivers stipulation memoranda to the Office of the Registrar. The stipulations are entered into a database and matched up with the student term record after the semester of reinstatement. If the student has achieved good academic standing, the stipulations become void. If the student has appeared on the dismissal list, the stipulations are reviewed and if successfully completed, the student will continue on probation and maintain their eligibility to continue at the University without further action. Stipulations that are not met result in dismissal of the student. The procedure of seeking reinstatement is again available to the student. During the study period, there were no restrictions on the number of times a student could apply for reinstatement.

The second category, and most prevalent, are the students who are reinstated without stipulations. These students, once reinstated, are required to achieve good academic standing at the end of the semester in which they are reinstated. Failure to do so results in academic dismissal. The number of students reinstated and subsequently dismissed following the semester of reinstatement was not known prior to this study. This study identified the number of students reinstated as well as determined their status at the end of the term. This study also identified variables useful in predicting the likelihood of success for students dismissed and subsequently reinstated.

Statement of the Problem

The dismissal and reinstatement policies at the University of North Dakota provide the academically dismissed student with the opportunity to re-enter the University during the semester immediately following the dismissal. There is much speculation concerning what happens to these students once they have completed the semester following their dismissal. This process provides a perception that many of the same students experience academic dismissal each semester. Historically, nearly 50% of academically dismissed students attend the University during the following semester (University of North Dakota Senate, 2004). The reinstatement process for students dismissed from the University occurs during a very brief timeframe. Once term grades are processed, a list is created containing students qualified for academic dismissal. This list is reviewed for accuracy and a letter is sent to the students informing them of their status. A student must apply for reinstatement prior to the beginning of the following term or be withdrawn from all future classes. This short timeframe can cause stress for the students and administrators who need to make quick decisions.

Purpose of the Study

This study served two purposes. The first purpose attempted to identify a factor, or group of factors, that related to term grade point average during the term of reinstatement. The second purpose attempted to determine if a single factor or group of factors could be used to predict a student's potential for success during their term of reinstatement. Cobble and Hohengarten (1998) indicated that "College administrators who suspend or dismiss students who do not meet the institution's minimum academic performance standards must identify and develop sound reinstatement policies based on

clearly defined criteria which measure an individual's ability to succeed" (p. 3). The University of North Dakota reinstatement policy during this period provided a unique opportunity to measure multiple variables for a relatively large number of reinstatement cases. This research utilized a sample of students dismissed and reinstated at the University of North Dakota over a four-year period (1999-2003). This study attempted to identify the number of students reinstated as well as determine their status at the end of the term of reinstatement. This study investigated variables that served as predictors of success for students reinstated immediately after academic dismissal. Success in this study was determined by the academic status of the student at the end of the term of reinstatement. Students who had achieved good academic standing following the semester of reinstatement were considered to be successful. Students who did not achieve good academic standing were considered to be unsuccessful.

Research Questions

There is much discussion among student services personnel regarding the wisdom of allowing students to continue at the university after two consecutive semesters of failure. Ethical considerations such as student responsibility, course availability, administrative obligations, and public financial support are but a few of the issues that should be addressed. The crux of the question lies within the American belief that all citizens have a right to pursue an education at the post-secondary level. The repercussions of permanently dismissing a student are far reaching and decisions regarding dismissal are a challenging and stressful duty of the academic administrator charged with this daunting responsibility. Sound research is necessary to assist academic administrators in making these decisions. One of the factors considered most certainly

involves the empirical data available on the student information system accessible by all academic departments. There is a plethora of information that may be utilized to assist administrators in making the decision to reinstate or to not reinstate a student who has been academically dismissed. This study attempted to isolate the empirical factors most affecting academic success for students reinstated after academic dismissal. Therefore, the questions asked were:

1. Was there a significant relationship between academic success for students when changing college affiliation between the semester of dismissal and the semester of reinstatement when compared to those who remained affiliated with the same college?
2. Was there a significant relationship in the academic success of upper division students (senior and junior) reinstated for the semester immediately following academic dismissal when compared to lower division students (sophomore and freshman)?
3. Was there a significant relationship between those students without a declared major when compared to those students with a declared major when reinstated for the semester immediately following academic dismissal?
4. How well do selected independent variables predict term grade point average of students reinstated immediately following academic dismissal when employing linear regression?
5. How well do selected independent variables predict the academic status of students reinstated immediately following academic dismissal when employing binary logistic regression?

Definition of Terms

Academic Success: The status assigned to a student who has achieved good academic standing during the term of reinstatement by attaining an institutional grade point average of 2.00 or higher. A student with 90+ cumulative semester credits must also maintain a cumulative grade point average of 2.00 to avoid academic dismissal.

Academic Dismissal: The process of removing the registration eligibility of a student who has completed two consecutive semesters with an institutional grade point average below 2.00. A student with 90+ cumulative semester credits must also maintain a cumulative grade point average of 2.00 to avoid academic dismissal.

Academic Probation: The status of a student who has completed a single semester at the University of North Dakota with a grade point average below 2.00.

Academic Aptitude: Measurement used in the admissions process at the University of North Dakota to determine adequate potential for success. The University currently factors in high school grade point average, high school core curriculum, and standardized tests such as ACT or SAT.

Academic Withdrawal: The process of withdrawing from the University prior to the last day to drop. A student withdrawing from the University during the term of reinstatement is considered academically dismissed at the end of the term.

Cumulative Grade Point Average: Grade point average for all courses completed at the University in combination of those classes that were completed at another institution and recognized by the University through the transfer process.

Good Academic Standing: The status of a student whose institutional grade point average is at least 2.00.

Honor Point Deficiency: the number of honor points needed to achieve a 2.00 grade point average. This number is derived by subtracting the number of honor points necessary for a 2.00 grade point average by the number of honor points earned to that point. The reader should keep in mind that an honor point deficiency can be positive or negative. A negative honor point deficiency indicates that the person has a grade point average above 2.00. A positive honor point deficiency indicates that a person has a grade point average below 2.00.

Honor Points: a number derived by multiplying the number of credits in which a student earned a letter grade by the value of the grade received.

Institutional Credit Hours Attempted: The number of credits a student has attempted at the University of North Dakota. Only those credits on the student's academic record after the last day to drop are counted as attempted.

Institutional Credit Hours Earned: The total number of credits in which a student earns a grade of A, B, C, D, or S.

Institutional Grade Point Average: Grade point average for all courses completed at the University of North Dakota.

Retention Rate: The completion of a term, and subsequent re-enrollment of students who have yet to complete a degree at the University of North Dakota.

Term Grade Point Average: Grade point average for all courses completed during a particular semester.

Term of Dismissal: The semester in which a student was academically dismissed from the University.

Term of Probation: The semester prior to the term of dismissal.

Term of Reinstatement: The semester in which a student is reinstated following academic dismissal.

Third Week Report: Official enrollment count of the North Dakota University System.

These data are considered a “snap shot” in time and are used to report variables such as classifications, gender, credits hours enrolled, course enrollments, and FTE.

CHAPTER II

REVIEW OF THE LITERATURE

A review of the literature revealed relatively few studies directly related to predicting the success of students who had been academically dismissed and subsequently reinstated the following semester. The search of the literature revealed many models related to the prediction of academic persistence. However, there is currently a paucity of data related to those students who have proven to be academically deficient. In order to develop a thorough understanding of academic persistence, this review of the literature has been divided into three main categories. The first category focused on the traits possessed by students with historically low persistence rates. The second category focused on selected student development models used to predict persistence of students in American higher education. The third category focused on predictive models and programs developed for academically-dismissed students.

Traits Possessed by Students with Historically Low Persistence Rates

Key stakeholders outside of academia have taken an interest in retention as it pertains to higher education. Ryan (2004) suggested that institutions should seek ways to shift financial resources toward retention efforts in order to improve graduation rates. He went on to suggest that financial expenditures should be integrated into retention models in order to create a more fiscally-based approach to retention. The enrollment focus in higher education continues to be recruitment of new students. Despite the large amount of research in retention, the shift toward increasing persistence through retention efforts

has yet to become a priority in many institutions. Much of the current research on student persistence focuses on non-academic traits such as transfer from community college, first-year programs, race, major selection, gender, and family background.

The number of students attending community colleges has grown considerably over the past decade. Many students attending community colleges do so with the intention of transferring to a four-year college in pursuit of a baccalaureate degree. It is well documented that community college students intending to earn a baccalaureate degree are 15% less likely to do so than students attending a four-year institution. Alba and Lavin (1981), Dougherty (1987, 1992, 1994), Kinnick and Kempner (1988), Lavin and Crook (1990), Nunley and Breneman (1988), Pascarella and Terenzini (1991), Valez (1985), and Dougherty (1992) found that this percentage remained constant when comparing students with similar academic and family backgrounds. The authors argued that the institutional characteristics may be the cause of difference between baccalaureate attainments. They also pointed out that this is a major problem as the community college is the entry point for many lower and middle-income students. Whitaker and Pascarella (1994) found that degree attainment was negatively affected by factors such as race, gender, socioeconomic origins, high school academic accomplishments, self-esteem, educational and occupational aspirations and college grades for students who first enrolled in a community college. The same study found that the socioeconomic attainment of those students earning a degree after first enrolling in a community college did not differ from those students enrolling in a four-year college 14 years after their first term of enrollment.

Pike, Kuh, and Gonyea (2003) found that students attending two-year and four-year colleges did not differ in their academic gains when controlling for student backgrounds (high school attended, socioeconomic status, and high school grade point average) prior to attending college. In addition, Strauss and Volkwein (2004) found that high school grade point average and classroom experience served as significant predictors of cumulative grade point average. The authors went on to state that the best predictor of cumulative grade point average at the community college level was related to student effort rather than background. This effort did not necessarily translate to success at the four-year institutions, as high school GPA and standardized test scores were more accurate predictors of success when comparing transfer students to non-transfer students. One could posit that success at the community college level does not necessarily guarantee success at a baccalaureate college.

First year programs are designed to provide students with an opportunity to succeed, thus, theoretically, remaining at the college until they receive a degree. Astin (1977) stated "Given the considerable investment of time and energy that most students make in attending college, the student's perception of value should be given substantial weight" (p. 174). This would indicate that students tend to value the college experience, as it provides them with an avenue to improve their individual and family status. In other words, students tend to approach college as a positive step in their career path rather than becoming educated for the sake of "being educated." Knox, Lindsay, and Kolb (1992) went on to discuss the effect credentialing has on the experience of successful students. The authors found that students who receive a degree are much more likely to describe their experiences as positive. Positive student perception of their individual learning

experience, academic performance, socialization, and extracurricular experiences all increased for the successful student. A student who graduates from a college understands early on that the degree is a lifetime achievement. This particular research indicated that students who received a degree began to believe that their institution is unique and their positive college experience is more closely related to the institution rather than themselves.

Those who research retention have discovered that integration has a positive effect on student persistence. Brower (1992) defines integration “as a function of the interaction between students’ ability to agree with the expectations of the university and their ability to shape their own expectations. Students will be more integrated into college life, and consequently achieve greater success when they find what they are looking for” (p. 456). He went on to suggest that students who decrease their own identity development during the first semester and subsequently increase their identity development during the second semester tend to persist in school longer than those who focus on identity development during the first semester. Using this model, Brower also determined that females who successfully integrate tend to persist at a greater rate than males.

As stated earlier, Tinto (1975, 1982, 1987, 1997) posited that students decided on whether to stay or leave a college based on two fundamental commitments: 1) personal commitment and/or 2) institutional commitment. Once the student reaches a phase referred to as “separation,” they are able to make their decision on whether to remain or not. Elkins, Braxton, and James (2000) found that students who are not able to pass through the stage of separation are more likely to depart from college and not return for

the second semester. Kahn and Nauta (2001) showed support for these findings when they found that first semester grade point average was the strongest predictor for determining persistence of first semester students. They also found that high school rank and academic self-efficacy were important predictors. The focus on academics during the first semester enabled a student to build a strong foundation, thus, providing them with the confidence and academic skills necessary to succeed in college.

With the influence of affirmative action, an attempt has been made to provide opportunity for historically underrepresented minorities in regard to higher education. Davis et al. (2004) found that graduation rates for African Americans at predominantly white institutions were less over a four-year period (16.8% to 19.6%) and even more so over a five-year period (36.1% to 50.7%) when compared to their white peers. The phenomenological study indicated that African American students at predominantly white colleges tended to feel that faculty made racist comments and deliberately sabotaged their attempts to succeed. It was reported in the study that many African American students experienced racism on a daily basis while on campus. The students also reported that they felt out of place on campus because of the color of their skin. This was an important issue because staff apathy or faculty indifference may be perceived as a racist act when, in fact, it may simply be a misunderstanding. Antonio (2004) found that friendship group diversity had a profoundly positive effect on intellectual self-confidence and educational aspirations for those non-white students only. This would seem to indicate that students of color tended to persist at higher rates when there is diversity in their friendship groups. The same could not be said for white students.

St. John, Hu, Simmons, Carter, and Weber (2004) indicated that African Americans who enrolled in social science majors, unlike whites, did not persist at a lower rate when compared to African Americans in different majors. They did find that African Americans with higher grade point averages were less likely to persist to the third year when compared to white students with similar grade point averages. A recent study compared admission practices with graduation rates for students seeking a degree in science, math or engineering. The authors controlled for differences in standardized test scores and high school GPA. Smyth and McCardle (2004) found that relatively higher Math SAT scores can be expected, on average, to be associated with higher likelihood of science persistence, regardless of ethnicity or gender. This information suggests that students with low academic ability upon entry into the institution are at a disadvantage when compared to students with high academic ability.

Thompson and Fretz (1991) utilized bicultural adaptive variables to refer to strategies adapted by African American students who succeed in predominantly white higher education institutions. Regression analysis suggested that higher levels of communalism, cognitive cultural schema, cognitive social schema, and attitudes toward cooperative learning situations related positively to success. The authors found that grade point average and class level did not have a direct positive relationship on the persistence of African American students in predominantly white colleges. Flowers and Pascarella (2003, p. 44) found that, "During the first three years of college, Caucasian students scored higher than their African American counterparts on seven standardized tests measuring critical thinking skills, knowledge of mathematics, reading comprehension, science reasoning, and writing skills."

Lin, LaCounte, and Edre (1988) found that Native American (40%) students at a mid-sized university experienced a greater sense of perceived hostility from their professors than white (15%) students in the same classes. The authors also suggested that non-white grade point averages experienced greater fluctuations than white student grade point averages. It was suggested that this was a result of the environment that a non-white student must confront on predominantly white campuses. Goenner and Snaith (2004) found that five variables negatively affected graduation rates in higher education. These variables included Native American ethnicity, increased age, low SAT score, male, and urban residence. Kraemer (1997) conducted a study at a community college measuring the academic integration of Hispanic students. Her results indicated that formal and informal interaction between students and faculty had a positive effect on the persistence of primarily off-campus Hispanic students. The author suggested that good study behavior (use of the library) also had a positive effect on student persistence.

Chang, Astin, and Kim (2004) found that cross-racial interaction between white students and non-white students had a positive effect on the intellectual, social, and civic development of white students. The findings of this particular study found that students exposed to multiple cultures tend to re-evaluate their perceptions and gain a deeper understanding of those ethnic groups they may not have had an association with in the past. This may have an effect not only on race, but with people from different regions as well. The authors suggested that higher education institutions should incorporate admissions policies that encourage a diverse student body.

There is a growing body of literature pertaining to major selection. In the past, the focus has been directed toward the university or college. Umbach and Porter (2002)

found that high grade point average was a good predictor of satisfaction for students with an education major. The authors suggested that the department's racial diversity does not have a significant effect on student satisfaction. However, departments with a high proportion of females experienced greater student satisfaction than those departments with a high proportion of males. St. John et al. (2004) found that choice of major has an effect on new students. Their research indicated that whites who chose a social science major or were undecided were less likely to persist than whites who had declared majors not related to the social sciences. These findings differed from previous research by Pascarella and Terrenzini (1991) which indicated that students in the social sciences had an enhanced persistence rate when compared to those in other majors.

Gender is another variable that has been well studied over the years in higher education. Young and Fisler (2000) found that males tended to score higher on SAT scores than females. In a study measuring SAT scores of nearly 70,000 high school seniors, they found that in all comparisons, the mean was higher for men than for women. On the verbal section, the adjusted mean was 9.87 points higher while the math section differed by 33.76 points higher for males. Using logit analysis, Leppel (2002) found that having children had a significantly negative impact on the persistence of men, but a significantly positive impact on persistence of women. She also found that older students, marriage and long hours worked had a significantly negative impact on men and women. In addition, increased family income, high grade point average and being Asian had a significantly positive impact on persistence. Kim (2002) found that women attending women-only colleges did not vary in educational attainment or intellectual development from those attending coeducational colleges. However, this particular

research indicated that students attending women-only colleges did have higher self-esteem when compared to students attending coeducational institutions. Zhao and Kuh (2004) found that learning communities were positively associated with student gains in academic performance, student engagement and perception of campus environment and learning outcomes. According to Gumport and Bastedo (2001), SUNY has created an admissions' situation in which students with less academic preparation will be admitted into top-tier colleges based on historical under-representation. In order to address this problem they have implemented a remedial course work program to be delivered in a community-learning environment. The idea is to provide a nurturing environment for those with academic deficiencies to improve their skills and eventually integrate them into the student body.

Finally, major selection is another variable that has been explored by researchers both in the past and present. Ishitani (2003) utilized event history modeling to determine that students classified as first generation (neither parent has earned a college degree) were 79% more likely to discontinue school than their peers who were not first generation. He also found that students whose household income was over \$45,000 were significantly more likely to persist to year three when compared to students coming from households earning less than \$25,000. Brower (1992) found that the higher the socioeconomic status of the family, the more likely the student would persist. In her groundbreaking report on community college transfer, Wellman (2002) suggested that the two-year institution becomes a fulcrum for ensuring not just access, but also success in baccalaureate degree attainment for poor and minority students. Fenske, Porter, and DuBrock (2000) conducted a study that attempted to identify persistence rates of women,

minority, and financially-needy students majoring in science, engineering, and mathematics. They found that underrepresented minorities and those students who exhibited financial need were more likely to depart from the college. The results further suggested that whites, Asians, and females in science, engineering, and mathematics graduated at a faster rate than underrepresented minorities or males.

The future of the study of student retention is as diverse as the student body in American higher education. Retention has been measured using both elaborate (e.g. Tinto's Student Integration Model) and simpler models, suggesting that high school grade point average and SAT scores serve as accurate predictors of persistence. Pascarella and Terenzini (1998) pointed out that studies concerning retention have relied on three particular assumptions. The first area related to the homogeneity of students and faculty. It is readily apparent that homogeneity does not exist across individual student or faculty bodies in American higher education. Over time, each institution develops a culture that suits its needs and serves the faculty, staff, student body, and community as it sees fit. Secondly, it had been assumed that the education process has been the same throughout higher education. Higher education entities are heterogeneous in many ways. General education requirements, academic calendars, credits needed for graduation, and delivery methods are just a few of the unique attributes shared by institutions. Lastly, higher education researchers have conducted their studies with the belief that public support would be continuous and without question. This has changed dramatically over the past 20 years. Decreased budgets, staff cuts, and increased services to students have created a situation that has made some of the more complicated models inaccessible to those in higher education. A shift is occurring in which more recent studies have focused on the

need to utilize data that is readily available and easily analyzed. This paradigm shift is moving toward the study of an institution as an individual rather than as a generalizable entity with all of the answers for all of the people. Pascarella, Wolniak, and Pierson (2003) found that this particular body of research tended to group colleges together rather than exploring them as individual entities and attempting to ascertain their effect on the students they serve. This new outlook on retention research may create a simpler, more efficient method of increasing retention at the grass roots level rather than a national level. Institutions would be well-served to staff their own "expert" to increase the efficiency of their admissions, retention, and graduation efforts.

Selected Student Development Models Used to Predict Persistence of Students in American Higher Education

The literature is replete with information concerning the persistence of students attending post-secondary institutions; however, the models commonly accepted by practitioners of higher education are primarily focused on the student body as a whole rather than segments within the student body. Therefore, this section provides a brief overview of the more commonly cited models within the literature. The concept of retention has been explored for many years with a variety of models developed to explain persistence in American higher education (Pascarella & Terenzini, 1991). Chickering (1969) was the first known behavioral scientist to develop a model of student persistence. His work identified three student characteristics to be considered when predicting persistence: 1) student background prior to attending college, 2) structure and organization of the college, and 3) interaction with peers, faculty, and staff on campus. The author found that these factors could be used to improve retention in higher education. Sixteen years later, Pascarella (1985) contradicted a portion of this model

when he found that the structure and organization of a college may not be directly related to student persistence. He also found that students who attended the most populous institutions might be the most isolated in terms of academic and social involvement. The sheer number of students and the high student to teacher ratios at large universities tended to alienate students from staff and faculty, thus increasing their drop out rates.

Tinto's Student Integration Model (Tinto, 1975, 1982, 1987, 1997), frequently used in numerous studies, hypothesizes that persistence is a function among an individual's motivation and academic ability and the institution's academic and social characteristics. Tinto posited that the characteristics of the student and the institution shape two types of commitments by the student. These include a commitment to complete college and a commitment to the institution. A student who does not have a strong commitment in both areas will succeed at a lower rate than one who is fully committed to both completion of the degree and to the institution that they are attending.

An alternative model to the Student Integrated Model is the Student Attrition Model (Bean, 1980, 1982a, 1983, 1985, 1982b). This model recognizes that commitment to completion and the institution are important factors; however, Bean also recognized that external factors such as family support, course selection, and friends play a major role. The application of this model suggested that family is a major factor regarding persistence. Cabrera, Castaneda, Nora, and Hengstler (1992) merged these two models and found that their effectiveness in predicting persistence increased when used in tandem. They went on to suggest that the most influential factors in each model be combined in order to develop a more accurate model for researching student persistence.

Predictive Models and Programs Developed for Academically Dismissed Students

The literature concerning students appears to be congregated in two specific periods. There were several journal articles directly related to the topic available in the mid-1960s. The late 1980s and early 1990s bore witness to a second wave of articles addressing the issue of reinstated students following academic dismissal. Giesecke and Hancock (1950) were the first authors to address the success of those students being dismissed for academic reasons. They indicated that the question of whether to readmit or not to readmit is of such consequence to the student and society that it merits the best attention the institution can command. They personalized the process of readmitting previously dismissed students by implementing a counseling program and personality inventories. Fifty percent of those admitted under this program failed their first semester and 75% failed after two semesters.

A study conducted at Ohio State University followed 234 reinstated students for a period of three semesters. Warman (1956) found that 50% of those readmitted had failed once again. He emphasized that students with clear academic ability were given too much credit in the reinstatement process. He went on to suggest that more subjective factors should be given equal merit, as relying too heavily on objective factors was ineffective for the reinstatement process. A study conducted at Purdue University followed 925 reinstated students over a ten-year period. Yoder (1962) found that 60% of these students graduated from Purdue. She identified four objective characteristics of the successful student readmitted after academic dismissal. Successful students tended to have completed more semesters prior to being dismissed, they were more likely to change

their major, they withdrew from college less often and they typically scored higher on the mathematics entrance exam.

Dole (1963) was the first to incorporate objective and subjective criteria into the reinstatement process. He used four readily available objective variables to include the score on a state administered exam, a dismissal term grade point average of 1.00 or higher, a cumulative grade point average of 1.00 or higher, and a positive high school recommendation. In addition, he used questionnaires to develop personality profiles for both successful and unsuccessful students reinstated to the university. He found that unsuccessful students were more confident in their academic abilities and less likely to point out deficiencies in their own character. The students who were unsuccessful were more likely to place blame on others and take less responsibility for their own actions. The successful students were more likely to admit weaknesses and take steps to correct them. They were also more likely to admit that they abhorred certain aspects of attending college.

A study conducted at Michigan State University (Hansmeier, 1965) analyzed readily available objective factors to determine success or failure for those reinstated after academic dismissal. The author found that entrance exams, gender, military experience, age, high school rank, father's occupation, and education level of both parents were not significant predictors of success. However, he did find that cumulative grade point average and first-term grade point average were positive significant factors and should be considered when reinstating students after academic dismissal. A study conducted at the University of Illinois (Dye, 1965) found that a combination of the high school rank, transfer grade point average and institutional grade point average was the best predictor

of success. However, of these three variables, high school rank was the best single predictor. This finding contradicted that of Hansmeier as high school rank was not found to be a significant predictor in the aforementioned study.

Himmelreich (1967) found that high school rank, intelligence test scores, and cumulative grade point averages did not relate with success or failure when studying 153 students who were reinstated after academic dismissal. He went on to conduct a stepwise multiple regression using his grade point average, college change, and the results of an attitudinal questionnaire to find a correlation of .52. The researcher also found that those students who changed majors from the College of Engineering and Architecture were significantly more successful than those who remained in the college. Langer (1968) conducted a correlational study that focused on both academic and questionnaire variables of reinstated students. His findings were as follows:

1. After receiving notice of failure and being placed on probation, the successful student did not change major, seek counseling, or carry a lighter academic load in the following semester to an extent that was different from that of the unsuccessful student
2. Scores on the ACT and its subtests and the student's first semester grades did not differentiate between the successful and non-successful student.
3. The likelihood of having a job and the number of hours spent on this job did not distinguish between those who succeeded or those who failed.
4. There was no apparent age difference, nor did it appear to matter whether the interval between dismissal and reinstatement was brief or lengthy, or that the presence of an interval had any effect at all.

5. During the probationary semester, successfully readmitted students could not be distinguished from their counterparts in their tendency to improve their grade point average or to drop courses in which they might be performing poorly. The students however, tended to make significantly fewer grades of "F."

In this case, the author was unsuccessful in identifying any significant differences between students who succeeded and failed. The author noted that the correlation statistic used may have lost predictive validity as the group tested was grouped together by virtue of a low grade point average (<2.00).

A study conducted at the University of Iowa involved 51 students reinstated following academic dismissal. Schuster (1971) was able to predict the grade point average using multiple correlation ($r=.32$). His analysis included time away from school, high school rank, number of math courses completed in high school, health, number of terms enrolled in college, math scores, and goals set. He did a better job of predicting the readmission committee's decision by finding a cross validated multiple regression of .61. The variables used in this prediction included realistic goals, math score, honor point deficiency, and self analysis.

One of the larger studies conducted on reinstated students occurred at Oklahoma State University between 1976 and 1980 (Caldwell, 1980). The study focused on 732 students reinstated to the College of Arts & Sciences. He found that:

1. The first dismissal was likely to occur during the sophomore year.
2. About 12% of reinstated seniors failed and tried again two or more times.
3. Students who were out of school five or more semesters were more likely to succeed than those reinstated immediately or within a period of five semesters.

4. Students who changed majors were slightly more likely to succeed than those who did not change majors.
5. Upon reinstatement, white students had a slightly higher success rate than non-whites.
6. Reinstated males were slightly more likely than females to earn a grade point average of 2.00 or greater and 3.00 or greater.
7. Systematic treatment seemed to contribute to success in both the reinstated and subsequent semester.
8. Students who dropped four or more hours after being reinstated tended to have lower success rates than those who drop three or less.
9. Higher numbers of enrolled credit hours increased the likelihood of success.

These results covered a period in which multiple interventions were utilized for reinstated students.

Russell (1984) conducted a study in which 76 students were reinstated to the College of Professional Studies at Northern Illinois University. Of these 76 students, 60 enrolled for the reinstatement semester. The sole requirement of their reinstatement was dependent on having an honor point deficiency of 24 or less. No other factors were considered. There were 27 variables measured in the analysis with success (grade point average ≥ 2.00) or failure (grade point average < 2.00) being measured at the end of the semester of reinstatement. Of the 60 students enrolled in the program, 29 (48.3%) succeeded. Had the honor point deficiency requirements been set at six or fewer, 23 (67.6%) of the 34 enrolled students would have been successful. The results also indicated that the students with an honor point deficiency of 13 or higher all failed. It

was discovered through stepwise discriminant analysis that five variables were significant at the .05 level. These variables included term of dismissal grade point average, term of dismissal honor point deficiency, number of honor points lost during the term of dismissal, cumulative grade point average and usual Academic Policy Committee decision.

Best (1986) utilized discriminant analysis using a sample of 203 reverse transfer students that had been academically dismissed from a nearby state college. All of these students transferred from a community college to a four-year college and were subsequently academically dismissed. These students then re-enrolled at their previous community college after the academic dismissal. The author found that:

1. The discriminant function applied to readily accessible student data can be used to classify previously dismissed reverse transfers in community colleges into categories "successful" and "unsuccessful."
2. An analysis of selected variables among reverse transfers entry data, using the discriminant function, led to an increased ability to predict the academic success of reverse transfers in community colleges.
3. Although a relatively small percentage (27%) of reverse transfer students in this study were predicted to be successful in a community college, assumptions concerning reverse transfers' capacity for academic rehabilitation in the community colleges, as described in the literature, were supported.

Of the original 203 students in this study, 51 reenrolled at the same nearby state college.

Of those that reenrolled, 31 had either graduated or continued at the college.

Kinloch, Frost, and MacKay (1993) conducted a study at a large state university which examined the success rate of approximately 500 social science majors that had been academically dismissed and subsequently reinstated between 1989 and 1992. This study was broken into two parts. The first part focused on the entire College of Social Science student body. Information was gathered for all students attending during this time period. The variables analyzed included race, gender, age, citizenship, major, classification, high school grade point average, and transfer status. The students who maintained a 2.00 grade point average were then compared against those who did not maintain a 2.00 grade point average. The researchers found that students who failed were more likely to be non-Asian, males, juniors, and transfer students, those in their mid-20s, those with interdisciplinary and limited access majors, and those with low high school grade point averages. The second part of the study measured those students who had maintained a grade point average of less than 2.00 during the period in question. The same variables were measured. In addition, honor point deficiency and reinstatement guidelines were taken into account. The results indicated that the only variables to predict success included gender, honor point deficiency, and reinstatement requirements. The authors suggested that it was very difficult to differentiate among students once they were considered to be in academic distress (Kinloch et al., 1993).

A study using multiple regression analysis was conducted at the University of Kansas between 1988 and 1991 (Hall & Gahn, 1994). The sample consisted of students who had been academically dismissed from the College of Liberal Arts and Sciences and subsequently reinstated either immediately or after a period of time. Overall, 520 students had been dismissed from the college with 160 of them being reinstated and

enrolling in at least one more semester. Six independent variables were used to include term of dismissal grade point average, classification upon completion of the term of dismissal, ACT composite, transfer grade point average accrued during the period following academic dismissal, number of semesters between term of dismissal and term of reinstatement, and semester credits earned elsewhere between the term of dismissal and term of reinstatement. As in the case of previous studies, success was measured by the acquisition of a 2.00 grade point average upon completion of the term of reinstatement. The authors found that exactly half of the students readmitted were successful. ACT scores and transfer grade point average and credits were not available for all members of the sample group; therefore, only 96 of the original participants were included in the final analysis. It was found that grade point average following the term of dismissal and transfer grade point averages were significant in predicting success. When the grade point average variables were taken away from the equation, it was found that classification was a significant predictor in measuring success.

Boyd, Hunt, Hunt, Magoon, and Van Brunt (1996) compared academically dismissed students who had attended an academic success summer program with those who were academically dismissed and did not participate in a program. They found that 64% of the students attending the program remained enrolled at the university compared to 49% of those who did not complete the program. Those attending the program also had significantly higher grade point averages in three of the four semesters when compared to the group that did not attend a program. The authors suggested that intervention strategies be implemented in order to assist those in academic distress.

A study conducted at the University of Akron Community and Technical College also compared students who had been academically dismissed with those who maintained a 2.00 grade point average. Jones (2000) analyzed multiple variables from 1994 and 1998 finding:

1. The percentage of students classified as being in good standing fell from 85% in 1994 to 74% in 1998.
2. Significant differences in academic standing were found by race, with African Americans making up the greatest percentage of students in poor standing, followed by Hispanic students.
3. Successful students had a higher mean age (28-29 years) for both academic years than students in poor standing (25-26 years).
4. Only 9% of part time students were in poor standing, compared with 13% of full-time students in 1998.
5. While DFW's (Failure to complete successfully) increased between 1994 and 1998, some courses with the highest DFW's were remedial or developmental.

The author went on to recommend that faculty and staff should become more familiar with the issues of a growing minority student population that is often economically disadvantaged.

Summary

This literature review provides a sense of the research that has been conducted regarding students who have been academically dismissed and subsequently reinstated at institutions of higher education. The results focused on the possible links among factors such as age, gender, race, high school rank, high school grade point average, military

status, major, classification, college, grade point average during the term of dismissal, honor point deficiency, transfer status, number of semesters between dismissal and reinstatement, number of semesters attending college, and standardized test results. The results have been inconsistent and oftentimes conflicting. The review of the literature suggests that the decision to dismiss or reinstate students cannot be confidently determined without further investigation.

This investigation was concerned with improving the prediction of which students should be reinstated and which students should remain dismissed. Previous studies have not taken into account the honor point deficiency in a detailed manner. Russell (1984) indicated that cumulative honor point deficiency could be an accurate predictive variable and further research would be necessary. The current study factored in variables that were measured at the term and cumulative level. Several of the independent variables were measured before and after the term of dismissal and were included in the model. It is the hope of the researcher that the predictive model developed in this study may be utilized by academic administrators when making the critical decision to allow or prevent an individual to continue pursuing their education.

CHAPTER III

METHODOLOGY

The purpose of this study was to examine the success patterns of students during the semester of reinstatement following academic dismissal. There were two dependent variables utilized in the study. The first dependent variable was term grade point average at the close of the term of reinstatement. This continuous variable was employed in a simple linear regression with multiple independent variables. The term grade point average had a range of 0.00 to 4.00. The second dependent variable was academic status (success or failure) at the close of the term of reinstatement. This dichotomous variable was employed using binary logistic regression with multiple independent variables. Academic status was determined by the student's institutional grade point average at the close of the semester of reinstatement. A student with an institutional grade point average of 2.00 or higher was considered successful (success). A student with an institutional grade point average of less than 2.00 was considered unsuccessful (failure). The key independent variables focused on demographic information, term of dismissal academic record, institutional academic record prior to the term of dismissal, and institutional classifications.

Sample

This study was based on a sample of 973 occurrences of undergraduate students being immediately reinstated following academic dismissal from the University of North Dakota during a four-year period between fall 1999 and spring 2003. The university

maintains a Carnegie classification of research intensive and enrolls approximately 14,000 undergraduate and graduate students. The University of North Dakota requires that undergraduate students maintain an institutional grade point average of 2.00 or higher to be considered in good academic standing. A student who fails to maintain a 2.00 grade point average at the close of a semester is placed on academic probation. The student receives a letter from the Office of the Registrar warning of the potential for academic dismissal should he not complete the following semester with an institutional grade point average of 2.00 or higher. During the study period, a student who failed to maintain a 2.00 or higher institutional grade point average during the term of academic probation was academically dismissed from the university. During the study period, the Office of the Registrar reported that 2,181 academic dismissals occurred. The Office of the Registrar also reported that 1,073 (49.2%) of these dismissed students were reinstated and subsequently reenrolled for the following academic term.

Procedure

The criteria for inclusion in the study required that the student had been academically dismissed from the university and subsequently reenrolled for the semester immediately following the academic dismissal. Although each student was required to apply for reinstatement after the term of dismissal, the decision was made by the student's college dean who reserves the right to make these decisions based on unique criteria rather than adhering to a university-wide policy. The University of North Dakota houses student information on a mainframe server accessed by a student information system (CICS). This student information system contains all academic information occurring at the University since 1983. This information is not readily available for

analyses. The University provides a method of extracting data through a product called TSO. This product is utilized to extract the data from CICS and create an electronic file that is capable of converting the data to an ASCII file for download into Excel or SPSS.

There are seven files available for each term containing many variables. Three of the files represent the data that were available on the third Tuesday of the academic term. This is the third week file used for official reporting purposes. It provides a “snapshot” in time and serves as the primary file for historical analyses. These files primarily provide demographic and academic information for students considered in the official headcount. The additional four files contain changes that occur during the semester and are updated nightly during the academic term. The daily updates are discontinued after the grades have been recorded for that particular term. The purpose of these files is to store the most current information for students enrolled during this particular academic term. These files contain many of the variables used in this study.

In order to develop a working database, the researcher requested and received data from the University of North Dakota Institutional Research Office. The file included information on all students who had been academically dismissed and immediately reinstated for the following semester between fall 1999 and spring 2003. The data were delivered as a series of Excel files separated by the term of dismissal.

Research Design

Two separate regression techniques were employed for this study. The first technique used simple linear regression to determine if a factor, or group of factors, had a significant influence on the term grade point average at the close of the term of reinstatement. The second technique utilized binary logistic regression using academic

status as the dependent variable and multiple independent variables. The dependent variable in the logistic regression was academic status upon conclusion of the semester of reinstatement. The intention of this study was to examine the factors influencing the outcome of students attempting to achieve good academic standing upon completion of the semester immediately proceeding academic dismissal. This study was not intended to describe the underlying issues regarding students who are academically dismissed.

Kerlinger and Lee (2000) described multivariate methods as a means of studying multiple influences of independent variables on one or more dependent variables. Mertler and Vanatta (2002) go on to state that, "logistic regression specifies the probabilities of the particular outcomes e.g., pass and fail, for each subject or case involved" (p. 313). The alpha level was set at .05 for all analyses in this study. Descriptive tables contain univariate frequencies and percentages of the independent variables. Chi-square tests for independence were conducted to determine relationships between categorical independent variable and the dependent variable. A table is provided indicating the Chi-square value, degrees of freedom, and significance levels. Independent samples *t* tests were conducted measuring continuous independent variable and academic status. The means, standard deviations, and significance levels are provided. The R^2 tables and coefficient tables are provided for the two linear regression analyses. The model summary and classification tables are provided for each step of the binary logistic regression (Field, 2002). It is the hope of the researcher that readily available student information can be used to assist university administrators in making informed decisions regarding students experiencing academic difficulty

CHAPTER IV

RESULTS

The purpose of this study was to determine if the selected variables could be used to differentiate between successful and unsuccessful students retained immediately after being academically dismissed from the university. During the study period, 973 students were academically dismissed and immediately reinstated for the following semester. A preliminary comparison of the data indicated that just over one third (35.4%) were successful in achieving "good academic standing." This chapter contains the following sections: organization of the data, a description of the sample in terms of demographics, term of dismissal academic record, institutional academic record prior to dismissal, and institutional classifications as well as responses to the five research questions presented in chapter one. For the purpose of this study, statistical significance was set at the .05 level.

Organization of the Data

The University of North Dakota is a medium-sized Midwestern university with a Carnegie Classification of Research Intensive. The students involved in the study had been academically dismissed from the university at least one time during the period between fall 1999 and spring 2003. In addition, the students applied for and received academic reinstatement for the semester immediately following the term of academic dismissal. The students then enrolled in at least one semester credit as reported by the university during the official enrollment reporting period. The original data indicated

that there were 1,073 occurrences in which a student met these requirements during the four-year period being studied.

The data were provided by the Office of Institutional Research in eight separate files based on the term in which the student was dismissed. The files were then merged into one Excel table with each case being assigned a unique identifier. The Excel file was then exported into SPSS 12.0 for analyses. The dependent variable, academic status, was then created by identifying the institutional grade point average upon completion of the term of reinstatement. At this point, it was found that four cases were missing institutional grade point average information for the semester of reinstatement. As a result, these four cases were deleted from the file leaving 1,069 cases. Students who earned a 2.00 institutional grade point average or higher were coded as successful (1) and those who earned less than a 2.00 institutional grade point average were considered unsuccessful (0). Several variables were created from information contained in the dataset and added to the original variables as defined in Appendix B. This resulted in the use of 31 variables in the study (Appendix C).

The study was exploratory in nature and attempted to identify factors affecting institutional grade point average upon completion of the term of reinstatement and student academic status upon completion of the term of reinstatement. It was decided that those students who had otherwise met all the requirements for inclusion in the study would be deleted if they officially withdrew from the university prior to completing either the term of dismissal or the term of reinstatement. The reason for their removal centered on the fact that there were no records indicating the academic progress of the student prior to withdrawal. Because of this, it would be impossible to ascertain whether

they were successful or not. This factor led to the removal of 96 cases with 40 occurring during the semester of dismissal and 63 during the semester of reinstatement. There were seven cases in which a student withdrew from both semesters. Therefore, 973 of the original 1,073 cases were utilized in the analyses for this study.

Variables

There were 31 variables utilized in the study (Appendix C). There were two dependent variables and 29 independent variables. The dependent variables were term grade point average at the close of the semester of reinstatement and academic status at the close of the semester of reinstatement. At this point it is important to note that a student's academic status was based on their institutional grade point average. The study showed that there were multiple occurrences of a student earning a term grade point average of 2.00 or higher and academically dismissed because their institutional grade point average remained below a 2.00. The university has recently changed this policy to allow students who had achieved a 2.00 term grade point average or higher to remain in a probationary status rather than face academic dismissal (Office of the Registrar, 2004).

Demographic Variables

Table 1 provided the demographic information of the sample. The majority of the sample was male (59.6%). The 21-22 year old (43.7%) group had the largest representation within the sample followed by the 18-19 (24.7%) and 22-24 (18.5%) year old groups. The number of cases 25 years old or older comprised 13.1% of the sample. The ethnic background included white (88.5%) followed by Native Americans (7.0%) and other (4.5%).

Table 1. Number and Percentage by Gender, Age, and Race (N=973)

| Characteristics | N | % |
|-----------------|-----|------|
| Gender | | |
| Male | 580 | 59.6 |
| Female | 393 | 40.4 |
| Age | | |
| 18-19 | 240 | 24.7 |
| 20-21 | 425 | 43.7 |
| 22-24 | 180 | 18.5 |
| 25-27 | 59 | 6.0 |
| 28 or older | 69 | 7.1 |
| Race | | |
| White | 861 | 88.5 |
| Native American | 68 | 7.0 |
| Other | 44 | 4.5 |

Term of Dismissal Academic Record Variables

There were seven independent variables pertaining to the academic record of the student during the term of dismissal or reinstatement. The variables included term of dismissal grade point average, honor point deficiency, credits failed, honor points earned, term credits earned, credits enrolled, and credits enrolled during the term of reinstatement. Table 2 shows the mean, standard deviation, and minimum and maximum values found within the sample.

Table 2. Mean, SD, Minimum, and Maximum Values for Term of Dismissal Grade Point Average, Honor Point Deficiency, Credits Earned, Credits Enrolled, Honor Points Earned, Credits Failed, and Term of Reinstatement Credits Enrolled (N=973)

| Variable | Mean | SD | Min. | Max. |
|------------------------|-------|------|------|------|
| Term of dismissal | | | | |
| Grade point average | 1.57 | .75 | 0 | 4.00 |
| Honor point deficiency | 4.87 | 7.70 | -17 | 34 |
| Credits earned | 8.32 | 4.16 | 0 | 19 |
| Credits enrolled | 13.51 | 2.60 | 1 | 21 |
| Honor points earned | 17.27 | 3.31 | 0 | 49 |
| Credits failed | 2.75 | 3.31 | 0 | 17 |
| Term of reinstatement | | | | |
| Credits enrolled | 13.26 | 2.68 | 1 | 22 |

Institutional Academic Record Prior to the Term of Dismissal

There were four independent variables that focused on the academic record of the student prior to the term of dismissal. Variables assigned to this category included institutional grade point average, institutional honor point deficiency, institutional honor points earned, and institutional credits failed. Table 3 shows the mean, standard deviation, and minimum and maximum values found in the sample.

Table 3. Mean, SD, Minimum, and Maximum Values for Institutional Grade Point Average, Honor Point Deficiency, Credits Failed and Honor Points Earned Prior to the Term of Dismissal (N=973)

| Variable | Mean | SD | Min. | Max. |
|------------------------|-------|-------|------|------|
| Grade point average | 1.37 | .54 | 0 | 2.27 |
| Honor point deficiency | 12.45 | 9.80 | -23 | 69 |
| Credits failed | 6.81 | 5.81 | 0 | 41 |
| Honor points earned | 40.10 | 38.81 | 0 | 260 |

Institutional Classifications

There were 13 independent variables that focused on the classification of students assigned by the university. The variables included:

- Class level during the term of dismissal
- Classification during the term of reinstatement
- College during the term of dismissal
- College during the term of reinstatement
- Major during the term of dismissal
- Major during the term of reinstatement
- Class change between the term of dismissal and the term of reinstatement (yes or no)
- College change between the term of dismissal and the term of (yes or no) reinstatement,
- Major change between the term of dismissal and the term of reinstatement (yes or no)
- Major (declared or not declared)
- Application origin
- Admissions status
- Transfer of academic work from another institution (yes or no).

Table 4 indicates that more than half of the subjects in the study were classified as freshmen during the term of dismissal. Table 5 provides the number and percentage of students enrolled in the various colleges on campus.

Table 4. Number and Percentage of Cases by Class Level (N=973)

| Class | Term of Dismissal | | Term of Reinstatement | |
|-----------|-------------------|------|-----------------------|------|
| | N | % | N | % |
| Freshman | 506 | 52.0 | 325 | 33.4 |
| Sophomore | 304 | 31.2 | 450 | 46.2 |
| Junior | 103 | 10.6 | 113 | 11.7 |
| Senior | 60 | 6.2 | 85 | 8.7 |

Table 5. Number and Percentage of Cases by College Affiliation

| College | Term of Dismissal | | Term of Reinstatement | |
|---------|-------------------|------|-----------------------|------|
| | N | % | N | % |
| A&S | 325 | 43.9 | 359 | 48.4 |
| SEM | 61 | 8.2 | 44 | 5.9 |
| NUR | 34 | 4.6 | 25 | 3.4 |
| BPA | 137 | 18.6 | 137 | 18.5 |
| MED | 29 | 3.9 | 16 | 2.2 |
| JDO | 79 | 10.7 | 67 | 9.0 |
| EHD | 75 | 10.1 | 93 | 12.6 |

Table 6 indicates that more than one quarter of the observations were undecided in their selection of major. This percentage increased slightly during the term of reinstatement as reported in Table 7. Pre-business, pre-aviation, computer science and psychology students represented nearly 30% of the study population during the term of dismissal and term of reinstatement.

Table 6. Number and Percentage of Cases by Major during Term of Dismissal (N=973)

| Major | N | % |
|----------------------|-----|------|
| Undecided | 269 | 27.5 |
| Biology | 23 | 2.4 |
| Pre-Business | 118 | 12.1 |
| Civil Engineering | 20 | 2.1 |
| Pre-Communication | 40 | 4.1 |
| Computer Science | 50 | 5.1 |
| Criminal Justice | 25 | 2.6 |
| Elementary Education | 30 | 3.1 |
| Pre-Aviation | 68 | 7.0 |
| Pre-Nursing | 27 | 2.8 |
| Psychology | 45 | 4.6 |
| Social Work | 20 | 2.1 |
| Other | 238 | 24.5 |

Table 7. Number and Percentage of Cases by Major during Term of Reinstatement (N=973)

| Major | N | % |
|-----------------------|-----|------|
| Undecided | 281 | 28.9 |
| Biology | 21 | 2.2 |
| Pre-Business | 109 | 11.2 |
| Pre-Communication | 22 | 2.3 |
| Computer Science | 50 | 5.1 |
| Criminal Justice | 46 | 4.7 |
| Elementary Education | 23 | 2.4 |
| Industrial Technology | 39 | 4.0 |
| Pre-Aviation | 53 | 5.4 |
| Pre-Nursing | 20 | 2.1 |
| Psychology | 51 | 5.2 |
| Social Work | 22 | 2.3 |
| Other | 236 | 24.2 |

Table 8 indicates that nearly one quarter of the subjects in the study changed classification after the semester of dismissal. Less than one fifth changed college affiliation and 35.4% changed their major during this same period.

Table 8. Number and Percentage of Cases by Change Status in Class Level, College Affiliation and Major between the Term of Dismissal and the Term of Reinstatement (N=973)

| Characteristics | N | % |
|-----------------------|-----|------|
| Change of Class Level | | |
| No | 731 | 75.3 |
| Yes | 242 | 24.7 |
| Change of College | | |
| No | 791 | 81.3 |
| Yes | 182 | 18.7 |
| Change of Major | | |
| No | 629 | 64.6 |
| Yes | 344 | 35.4 |

Table 9 indicates that nearly 60% of the sample was classified as beginning freshmen while more than 20% were transfer students. More than one fifth of the students in the sample had temporarily discontinued their enrollment at the university for at least one semester prior to the term in which they were academically dismissed. Slightly more than 42% of the sample had transferred college credit from another postsecondary institution.

Table 9. Number and Percentage of Cases by Application Origin, Admission Status, and the Presence of Transfer Credit (N=973)

| Characteristics | N | % |
|-----------------------------|-----|------|
| Application Origin | | |
| Beginning Freshman | 563 | 57.9 |
| Transfer | 208 | 21.4 |
| Readmit w/o transfer credit | 162 | 16.6 |
| Readmit w/ transfer credit | 40 | 4.1 |
| Admission Status | | |
| Probation | 233 | 23.9 |
| Regular | 740 | 76.1 |
| Transfer Credit | | |
| No | 562 | 57.8 |
| Yes | 411 | 42.2 |

Response to Research Questions

This study examined five specific questions pertaining to student progress toward academic success. Questions one through three investigated the relationship between the dependent variable (academic status) and selected independent variables addressed in the review of the literature and commonly recognized as important aspects of academic success. The analyses for questions one through three was conducted using the Chi-square Test of Independence. The results for questions one through three follow:

Question one: Was there a significant relationship between academic success for students when changing college affiliation between the semester of dismissal and the semester of reinstatement when compared to those who remained affiliated with the same college?

A Chi-square Test of Independence was calculated comparing the frequency of success for students changing college affiliation after the term of dismissal and those maintaining the same affiliation after the term of dismissal. No significant relationship was found ($\chi^2(1) = .054, p = .817$). Table 10 indicates those students changing colleges between the term of dismissal and the term of reinstatement (35.5%) were not significantly more likely to succeed than those students who remained affiliated with the same college (34.6%).

Table 10. Number and Percentage of Cases by Success Rate for Students Changing College Affiliation between the Term of Dismissal and Term of Reinstatement (N=973)

| Success | No | Changed College | | % |
|---------|-----|-----------------|-----|------|
| | | % | Yes | |
| No | 510 | 64.5 | 119 | 65.4 |
| Yes | 281 | 35.5 | 63 | 34.6 |

Question two: Was there a significant relationship in the academic success of upper division students (senior and junior) reinstated for the semester immediately following academic dismissal when compared to lower division (sophomore and freshman)?

A Chi-square Test of Independence was calculated comparing lower division students (freshman and sophomore) academic success to upper division students (junior and senior) academic status. No significant relationship was found ($\chi^2(1) = .998, p = .318$). Table 11 indicates those students classified as junior or senior were not significantly more likely to be successful (38.4%) than students classified as freshman or sophomore (34.6%).

Table 11. Number and Percentage of Cases by Success Rate for Students Changing Class Level between the Term of Dismissal and Term of Reinstatement (N=973)

| Success | Lower Division | Changed Class | | |
|---------|----------------|---------------|----------------|------|
| | | % | Upper Division | % |
| No | 507 | 65.4 | 122 | 61.6 |
| Yes | 268 | 34.6 | 76 | 38.4 |

Question three: Was there a significant relationship between those students without a declared major when compared to those students with a declared major when reinstated for the semester immediately following academic dismissal?

A Chi-square Test of Independence was calculated comparing the academic status of students with a declared major and those students who are considered to be undecided. No significant relationship was found ($\chi^2(1) = .882, p = .348$). Table 12 indicates those students who had declared a major (36.3%) were not significantly more likely to succeed than those who had yet to declare a major (33.1%).

Table 12. Number and Percentage of Cases by Success Rates for Students with or without a Declared Major during the Term of Reinstatement (N=973)

| Success | No Major | % | Declared Major | % |
|---------|----------|------|----------------|------|
| | | | | |
| No | 188 | 66.9 | 441 | 63.7 |
| Yes | 93 | 33.1 | 251 | 36.3 |

Questions four and five were investigated using two separate regression techniques. Linear regression was utilized to address question four as the dependent variable was continuous. Binary logistic regression was utilized to address question five

as the dependent variable was dichotomous categorical. The results of the analyses for questions four and five follows.

Question four: How well do selected independent variables predict term grade point average of students reinstated immediately following academic dismissal when employing linear regression?

Forward multiple regression was conducted to determine which independent variables were predictors of term grade point average. The data were entered in four groupings: demographics, term of dismissal academic record, institutional academic record prior to the term of dismissal, and classification variables assigned by the university. Categorical variables were transformed using 0 (not present) and 1 (present) in order to meet multiple regression assumptions (Mertler & Vannatta, 2002; Field, 2002; Munro, 2001). The data were entered using the block entry method. Regression results indicate an overall model of ten predictors that significantly predicted term grade point average at the close of the term of reinstatement, $R^2=.138$, $F(10, 960) = 15.344$, $p<.001$.

- Native American (-)
- Term of dismissal honor point deficiency (-)
- Term of dismissal credits earned (+)
- Credits enrolled during the term of dismissal (-)
- Institutional credits failed prior to the term of dismissal (-)
- Institutional honor points earned prior to term of dismissal (-)
- Affiliation with the College of Education and Human Development during the term of dismissal (+)
- Affiliation with the College of Business and Public Administration during the term of reinstatement (-)
- Affiliation with the School of Engineering and Mines during the term of reinstatement (-)
- Freshman classification during the term of reinstatement (+)

Table 13 indicates the model accounted for 13.8% of variance in term grade point average at the close of the semester of reinstatement.

Table 13. Summary of Stepwise Regression Analysis for Predicting Term Grade Point Average

| Model | R ² | R ² change | Sig. F Change |
|--|----------------|-----------------------|---------------|
| Native American | .005 | .005 | .026 |
| Honor point deficiency (dismissal) | .087 | .082 | .001 |
| Term credits earned (dismissal) | .100 | .012 | .001 |
| Credits enrolled (dismissal) | .104 | .004 | .031 |
| Credits failed (institutional) | .113 | .008 | .003 |
| Honor points (institutional) | .117 | .004 | .038 |
| Education and Human Dev. (dismissal) | .124 | .007 | .004 |
| Engineering and Mines (reinstatement) | .129 | .005 | .023 |
| Freshman status (reinstatement) | .133 | .005 | .022 |
| Business and Pub Admin (reinstatement) | .138 | .004 | .028 |

The standardized beta weights in Table 14 indicate term honor point deficiency (-.186), term credits earned (.139), and institutional credits failed (-.131) are those variables that have the most predictive value on academic status.

Table 14. Beta Coefficients Table with Term GPA as the Dependent Variable

| Model | Beta | <i>t</i> | Sig. | Zero Order Correlation |
|---|-------|----------|------|------------------------|
| Native American | -.073 | -2.41 | .016 | -.071 |
| Term honor point deficiency (dismissal) | -.186 | -4.88 | .001 | -.288 |
| Term credits earned (dismissal) | .139 | 3.39 | .001 | .253 |
| Credits enrolled (dismissal) | -.071 | -2.08 | .037 | -.031 |
| Credits failed (institutional) | -.131 | -3.71 | .001 | -.121 |
| Honor points (institutional) | .040 | 1.03 | .301 | -.007 |
| Education and Human Dev (dismissal) | .071 | 2.34 | .019 | .098 |
| Freshman status (reinstatement) | -.082 | -2.35 | .019 | .112 |
| Engineering and Mines (reinstatement) | -.077 | -2.52 | .012 | -.073 |
| Business and Pub Admin (reinstatement) | -.067 | -2.20 | .028 | -.062 |

The results of the preceding analyses raised a question with the researcher. Would the amount of explained variance increase if term grade point average were replaced by institutional grade point average? The reason for this focused on the fact that institutional grade point average includes multiple terms rather than one specific term. Therefore, a supplemental analysis was conducted using the previous independent variables with institutional grade point average in place of term grade point average. Regression results indicate an overall model of nine predictors that significantly predicted institutional grade point average at the close of the term of reinstatement, $R^2=.433$, $F(9, 961) = 81.477$, $p<.001$.

- Term grade point average (+)
- Term point deficiency (+)

- Term credits enrolled during term of reinstatement (+)
- Term credits enrolled during the term of dismissal (-)
- Institutional grade point average prior to the term of dismissal (+)
- Institutional honor point deficiency prior to the term of dismissal (-)
- Institutional honor points earned prior to term of dismissal (+)
- Freshman classification during the term of reinstatement (-)
- Arts and Sciences during term of reinstatement (-)

Table 15 indicates the model accounted for 43.3% of variance in term grade point average at the close of the semester of reinstatement.

Table 15. Summary of Stepwise Regression Analysis for Predicting Institutional Grade Point Average

| Model | R ² | R ² change | Sig. F Change |
|--|----------------|-----------------------|---------------|
| Term grade point average (dismissal) | .239 | .239 | .001 |
| Term honor points (dismissal) | .267 | .027 | .001 |
| Term credits enrolled (reinstatement) | .275 | .008 | .001 |
| Term credits enrolled (dismissal) | .278 | .003 | .031 |
| Institutional grade point avg. (dismissal) | .388 | .110 | .001 |
| Institutional honor point def. (dismissal) | .410 | .022 | .001 |
| Institutional honor points (dismissal) | .421 | .011 | .001 |
| Freshman status (reinstatement) | .428 | .007 | .001 |
| Arts and Sciences (reinstatement) | .433 | .005 | .004 |

The standardized beta weights in Table 16 indicate term grade point average (.279), term honor points (.260), and reinstatement to the College of Arts and Sciences (-.197) are the variables that have the greatest predictive value on institutional grade point average.

Table 16. Beta Coefficients Table with Institutional GPA as the Dependent Variable

| Model | Beta | <i>t</i> | Sig. | Zero Order Correlation |
|--|-------|----------|------|------------------------|
| Term grade point average (dismissal) | .279 | 6.52 | .001 | .489 |
| Term honor points (dismissal) | .260 | 5.73 | .001 | .483 |
| Term credits enrolled (reinstatement) | .103 | 3.93 | .001 | .141 |
| Term credits enrolled (dismissal) | -.081 | -2.75 | .006 | .045 |
| Institutional grade point avg. (dismissal) | .151 | 4.31 | .001 | .328 |
| Institutional honor point def. (dismissal) | -.073 | -2.93 | .004 | -.096 |
| Institutional honor points (dismissal) | .118 | 3.52 | .001 | .219 |
| Freshman status (reinstatement) | -.099 | -3.53 | .001 | -.266 |
| Arts and Sciences (reinstatement) | -.197 | -7.09 | .001 | -.258 |

Question five: How well do selected independent variables predict the academic status of students reinstated immediately following academic dismissal when employing binary logistic regression?

The first step in conducting logistic regression involved the selection of the variables to be applied to the model. Academic status was measured against all of the independent variables with significance set at the .05 level. The Chi-square test of independence was utilized to measure the dependent variable (academic status) against 15 nominal independent variables. Table 17 indicated six variables (gender, college at time of dismissal, college at time of reinstatement, major at time of reinstatement, and class level at time of reinstatement) were significantly related to academic status. These variables were included in the logistic regression model (Appendix D).

Table 17. Chi-square Test of Independence Results for Categorical Variables (N=973)

| Variable | Value | df | Sig. |
|----------------------------------|-------|----|------|
| Gender | 8.31 | 1 | .004 |
| Race | 4.76 | 2 | .092 |
| Application Origin | 3.44 | 3 | .327 |
| Admit Status | 1.21 | 1 | .271 |
| College at time of dismissal | 19.44 | 7 | .007 |
| College at time of reinstatement | 30.56 | 7 | .001 |
| Change of college between terms | .00 | 1 | .923 |
| Change of major between terms | .00 | 1 | .950 |
| Major at time of dismissal | 12.62 | 12 | .397 |
| Major at time of reinstatement | 24.73 | 12 | .016 |
| Declared major | .91 | 1 | .338 |
| Class at time of dismissal | 4.48 | 3 | .214 |
| Class at time of reinstatement | 14.68 | 3 | .002 |
| Change of class between terms | 8.71 | 1 | .003 |
| Class level | .22 | 1 | .638 |

The Independent Samples *t* Test was employed to explore the differences of the dependent variable (academic status) and the 12 continuous independent variables. Table 18 indicates that ten variables (grade point average, honor point deficiency, credits earned, credits failed, and honor points during the term of dismissal; credits enrolled during the term of reinstatement; and institutional grade point average, honor point deficiency, honor points, and credits failed prior to the term of dismissal) were

significantly related to academic status. These variables were included in the logistic regression model (Appendix D).

Table 18. Independent Samples *t* Test Results for Interval Variables (N=973)

| Variable | Success | | Failure | | Sig. |
|----------------------------------|---------|-------|---------|-------|------|
| | M | SD | M | SD | |
| Term Record | | | | | |
| Age | 21.63 | 4.74 | 21.79 | 4.20 | .607 |
| Grade point average | 1.93 | .59 | 1.37 | .76 | .001 |
| Honor point deficiency | 1.08 | 5.96 | 6.94 | 7.75 | .001 |
| Credits earned | 9.96 | 3.38 | 7.44 | 4.28 | .001 |
| Credits enrolled (dismissal) | 13.58 | 2.65 | 13.46 | 2.58 | .492 |
| Credits enrolled (reinstatement) | 13.63 | 2.60 | 13.05 | 2.70 | .001 |
| Dismissal honor points | 21.81 | 8.25 | 14.79 | 9.00 | .001 |
| Credits failed | 1.49 | 2.20 | 3.43 | 3.60 | .001 |
| Institutional Record | | | | | |
| Grade point average | 1.49 | .50 | 1.30 | .55 | .001 |
| Honor point deficiency | 9.66 | 7.53 | 13.97 | 10.54 | .001 |
| Credits failed | 5.78 | 5.17 | 7.37 | 6.06 | .001 |
| Honor points | 44.30 | 41.48 | 37.81 | 37.11 | .012 |

Logistic regression was conducted to determine which of these independent variables predicted academic status. Since the research was exploratory in nature, forward stepwise method was used so that only independent variables that significantly predicted the dependent variable were kept in the model. Prior to running the regression, a check for collinearity was performed in order to eliminate variables that exhibited collinearity

within the data. For the purpose of this study, variables were removed if their tolerance levels were < 0.2 (Menard, 1995) or if Variation Inflation Factors (VIF) were greater than 10 (Myers, 1990; Bowerman and O'Connell, 1990). The test for collinearity revealed that one variable (term grade point average during term of dismissal) reported tolerance levels < 0.2 . As a result, the variable was removed from the analysis. Logistic regression was then utilized using the block entry method (Field, 2003). Four blocks (Appendix D) were created by grouping the data related to demographic information, term of dismissal academic record, institutional academic record prior to the term of dismissal and classification data assigned to each student by the university. Data screening led to the elimination of 21 outliers that were subsequently removed from the analysis.

Step one entered the demographic information using a forward stepwise method. The lone variable to remain in the equation was gender. The effects of gender on the model were minimal (Goodness-of-Fit=0.0; $\chi^2(1) = 8.854, p = .003$). Term academic record information was entered into the model using a forward stepwise method. Term honor point deficiency and term honor points earned during the term of dismissal were retained in the model. The variables had a significant effect on the model (Goodness-of-Fit=6.379, $p = .605$; $\chi^2(3) = 173.819, p < .001$). At this point, 22.9% of the variance within academic status was accounted for by the two variables.

Institutional academic record information was entered in the third step. The step revealed that institutional grade point average and institutional honor point deficiency prior to the term of dismissal had a significant effect on the model (Goodness-of-Fit=5.898, $p = .659$; $\chi^2(5) = 238.874, p < .001$). Table 19 indicates that 30.5% of the variance was accounted for in academic status when adding the two variables to the

model. Classification data were entered in the final block. The college during the semester of reinstatement was added to the model. The overall regression results indicated the model of six predictors (gender, term of dismissal honor point deficiency, term of dismissal honor points earned, institutional grade point average prior to the term of dismissal, institutional honor point deficiency prior to the term of dismissal, and college during the term of reinstatement, were statistically reliable in distinguishing between successful and unsuccessful students (Goodness-of-Fit=14.615, $p=.067$; $X^2(12)=262.788$, $p<.001$). Table 19 shows the model summary indicating that 33.2% of the variance was accounted for by the model.

Table 19. Logistic Regression Step Summary for Gender, Term of Dismissal Honor Point Deficiency, Term of Dismissal Credits Earned, Institutional Grade Point Average Prior to the Term of Dismissal, Institutional Honor Point Deficiency Prior to the Term of Dismissal and College Affiliation During the Term of Reinstatement.

| Step | -2 Log Likelihood | Model X^2 | R^2 |
|--|-------------------|-------------|-------|
| Gender | 1228.185 | 8.854 | .013 |
| Term of dismissal honor point deficiency | 1091.665 | 145.374 | .195 |
| Term credits earned | 1063.220 | 173.819 | .229 |
| Institutional grade point average* | 1010.664 | 226.375 | .291 |
| Institutional honor point deficiency* | 998.164 | 238.874 | .305 |
| College during term of reinstatement | 974.251 | 262.788 | .332 |

**Prior to term of dismissal*

Table 20 indicates the overall model correctly classified 74.0% of the subjects. Further breakdown of the model indicates the prediction of 84.9% of the unsuccessful cases and 53.9% of the successful cases.

Table 20. Logistic Regression Prediction Model

| Observed | Predicted | | Percentage Correct |
|----------------------------|-----------|-----|--------------------|
| | No | Yes | |
| No | 524 | 93 | 84.9 |
| Yes | 155 | 181 | 53.9 |
| Overall Percentage Correct | | | 74.0 |

Regression coefficients are presented in table 21. The first step of the model indicated that there was no significant difference between males and females when accounting for academic status. The second step added term of dismissal honor point deficiency and term of dismissal credits earned. A student with a low honor point deficiency was significantly more likely to succeed than a student with a high honor point deficiency. The third variable added to the model was term honor points earned during the term of dismissal. Those students successfully earning a greater number of honor points were significantly more likely to succeed than those earning a lower number of honor points. The fourth variable added to the model was institutional grade point average prior to the term of dismissal. A student with a higher institutional grade point average prior to the term of dismissal was 1.8 times more likely to succeed than a student who had a lower institutional grade point average prior to the term of dismissal. The fifth variable added to the model was institutional honor point deficiency. Those students with a low institutional honor point deficiency prior to the term of dismissal are significantly more likely to succeed than those who had a high honor point deficiency. The last variable added to the model was college during term of reinstatement. Students

reinstated to the College of Nursing (4.4 times), College of Aerospace Sciences (2.6 times), College of Business and Public Administration (2.3 times), and the College of Education and Human Development (1.9 times) were significantly more likely to succeed than those reinstated to the College of Arts & Sciences.

Table 21. Logistic Regression Coefficients for Gender, Term of Dismissal Honor Point Deficiency, Term of Dismissal Credits Earned, Institutional Grade Point Average Prior to Term of Dismissal, Institutional Honor Point Deficiency Prior to Term of Dismissal and College Affiliation During the Term of Reinstatement.

| Variable | B | Wald | Sig. | Exp (B) |
|---|-------|-------|------|---------|
| Gender* | -.422 | 5.87 | .015 | .656 |
| Term honor point deficiency (dismissal) | -.101 | 34.72 | .001 | .904 |
| Term credits earned(dismissal) | .053 | 18.07 | .001 | 1.055 |
| Institutional GPA** | .601 | 12.07 | | 1.824 |
| Institutional honor point deficiency** | -.049 | 19.46 | .001 | .953 |
| Arts & Sciences | | 23.45 | .001 | |
| School of Engineering & Mines | .439 | 1.32 | .251 | 1.551 |
| College of Nursing | 1.475 | 9.65 | .002 | 4.373 |
| College of Business and Public Admin. | .827 | 10.97 | .001 | 2.286 |
| Student Academic Services | .356 | 2.82 | .093 | 1.427 |
| School of Medicine and Health Sciences | -.063 | .01 | .918 | .939 |
| College of Aerospace Sciences | .944 | 8.38 | .004 | 2.570 |
| College of Education & Human Dev. | .649 | 5.31 | .021 | 1.914 |

*Male=0, Female=1 **Prior to term of dismissal

Summary

Questions one through three attempted to test for relationships between academic status and three variables that indicated a change in the status of a student. The three

variables included change of college between the semester of dismissal and reinstatement, upper or lower division status, and declared or undeclared major. These changes in status are often viewed as positive, as the student is showing progress or has displayed a renewed commitment to their academic endeavors. As stated earlier, there were no significant relationships between these variables and academic status.

Question four attempted to isolate variables that possessed a significant relationship with term grade point average. Ten predictor variables were significant in predicting term grade point average; however, one variable (term of dismissal honor point deficiency) accounted for 8.2% of the total variance of 13.8%. The remaining nine variables accounted for a little more than 5% of the variance. The utilization of institutional grade point average as the dependent variable was quite successful as 43.3% of the variance was accounted for by nine variables; however, 34.9% of the variance was accounted for by two variables (term grade point average during the term of dismissal and institutional grade point average prior to the term of dismissal).

Question five utilized logistic regression to predict academic status upon completion of the semester of reinstatement. This model correctly predicted 74% of the cases in the sample. The model was able to account for 33.2% of the total variance in academic status; however, 24.4% of the variance was accounted for by two variables (term of dismissal honor point deficiency and institutional grade point average prior to the term of dismissal).

CHAPTER V

DISCUSSION

This study was based on the academic record of 973 occurrences of undergraduate students experiencing academic dismissal and subsequent reinstatement for the following semester at a medium sized Midwestern university. The primary purpose of this study was to gather key data from the student's academic record and construct a linear regression model useful in identifying variables that influence grade point average upon completion of the term of reinstatement. A secondary purpose for this study was to demonstrate the utility of logistic regression analysis in correctly classifying successful and unsuccessful students having been reinstated immediately following academic dismissal.

From the researcher's perspective, this study has revealed three implications for academic administrators and advisors to consider when working with academically dismissed students applying for reinstatement the following semester. First, the results of this study indicate that research conducted on the "average" college student does not readily apply to those students most likely to fail. This special population needs to be researched in detail in order to improve their ability to succeed in an environment where nearly two-thirds fail. Second, the models utilized in this study have shown (to varying degree) the ability to interpret readily available empirical data in a manner that could be helpful in assisting at-risk students. This fact should lead to the appropriate allocation of resources to enable those students who are at greatest risk to fail by providing proper

intervention techniques as determined by university administrators. The models indicated that there is much to explore when regarding this population of students. The three regression models in the study accounted for as much as 43.3% and as little as 13.8% of the variance within the dependent variables. Lastly, the logistic regression model provided correct classification for 84.9% of the non-successful cases. Predicting successful cases was more challenging as 53.9% of the cases were correctly predicted. Overall, the model predicted 74.0% of the cases correctly. This result clearly indicates that the model is capable of identifying those students who are most at risk. This information could, and should be, used to develop and allocate appropriate intervention strategies designed to improve the success rate of students who are currently in academic distress.

Limitations of the Study

The study was limited in the following areas. At the time of the study, university policy did not limit the number of times a student could be academically dismissed and immediately reinstated. In addition, the Office of the Registrar does not have the capacity to monitor the number of times this event has occurred for each case in the study. Therefore, the data provided did not differentiate between students who had been academically dismissed from the university more than once. Thus, cases in which a student completed the semester of reinstatement for the first time were included with cases in which a student may have completed several semesters of reinstatement. Although there may be no difference between those students who have been academically dismissed more than once, it would be interesting to apply the same model to students who are experiencing their first academic dismissal to see if there are any differences.

The study excluded those students who withdrew prior to the end of their term of dismissal, or term of reinstatement. The study did not exclude those students who may have simply stopped attending classes. A student who fails to attend classes and does not officially withdraw from university courses is subject to the same grading procedures as a student who does attend college. Therefore, some cases with high honor point deficiencies and low grade point averages may reflect the failure of a student to officially withdraw from the university rather than academic ability. Further research could be undertaken to identify those students who did not complete the semester and remove them from the model.

At the time of the study, the university did not have a comprehensive reinstatement policy for academically dismissed students. As stated in the introduction, each college is responsible for deciding which students will continue on academic dismissal and which students are to be reinstated. Therefore, the screening and application measures must certainly vary depending on the academic administrators responsible for the reinstatement process. It would be interesting to research the various components utilized in the reinstatement process at the college level in order to identify differences among the various entities.

The students in this sample have failed a minimum of two consecutive semesters. It could be argued that the students in danger of being academically dismissed from the university should be identified at an earlier stage (e.g., once a student is assigned to academic probation). An excellent opportunity exists to develop a model that measures the success of students placed on academic probation rather than waiting for them to be academically dismissed. It is the hope of this researcher that the opportunity will occur in

the future when a model may be developed to assist those students placed on academic probation.

Suggestions for Future Study

Based on the results of this study, the following recommendations for future research are suggested:

1. Additional studies are needed to validate the predictions of success for students academically dismissed and subsequently reinstated the following semester.
2. This research should be utilized as a benchmark for measuring academic rehabilitation through retention programs designed to assist academically troubled students in a university setting.
3. A similar model should be explored to measure the success of students who are placed on academic probation and identify empirical data that may be utilized by academic administrators and advisors whose purpose is to help students achieve their academic and personal goals.
4. Each college located within the University of North Dakota is a unique entity with a student body that has chosen to become a member of that college through the selection of a major. This creates a situation in which it becomes difficult to generalize research results across a university. I would recommend following up this study with similar research being conducted with the student body assigned to particular colleges such as the School of Business and Public Administration or the College of Education and Human Development. The results of this particular model may be much different when isolating students by college affiliation.

16.1% and 5.6% respectively. It is clear that this information should be disseminated amongst college administrators so that aggressive intervention strategies such as supplemental instruction, mandatory advisement, and tutoring services are provided to this at-risk group.

The second issue to be addressed should involve an evaluation of the reinstatement policies implemented by colleges at the university. More specifically, the College of Arts & Sciences should conduct a thorough investigation into their reinstatement practices. The logistic regression model indicated that students not affiliated with the College of Arts & Sciences were more likely to succeed than those affiliated with the College. In fact, a student reinstated to the College of Nursing was more than four times likely to succeed than a student reinstated to the College of Arts & Sciences. Students reinstated to the College of Nursing had a success rate of 52.0% compared to the College of Arts & Sciences success rate of 26.5%. It would be my recommendation for college administrators on campus to form a network that enables them to share successful retention strategies and programs that will enable this at-risk group to succeed.

The third issue to be addressed involves the new academic dismissal policy recently adapted by the University Senate. It is reasonable to expect that each student admitted to the university should be provided with every opportunity to succeed. In my opinion, the new academic dismissal policy provides the student with ample opportunity to adjust to university studies and achieve good academic standing prior to being permanently dismissed. However, I would posit that more needs to be done to assure that students most at risk are identified early so that aggressive academic rehabilitation

techniques may be applied in order to provide maximum opportunity for success. This research shows the value in identifying students who are most likely to fail. The next step requires that the university place a high priority on actively identifying students most at risk and applying rehabilitation measures appropriate for their individual situation.

It is not my intention to prevent any student from pursuing a degree at the University of North Dakota; however, it is my intention to shed light on a problem that should be addressed with sound reinstatement policies that include support for those students most likely to experience permanent academic dismissal. It is critical that University policy provide the tools necessary to succeed once these at-risk students are reinstated to the university. It is my hope that this research will build a foundation for a comprehensive retention program designed to meet the needs of all students at the university regardless of academic standing.

APPENDICES

Appendix A

Dismissed with Stipulations Letter

May 21, 2004

«name»

«address»

«city», «state» «zip»

Dear «firstname»:

I regret to inform you that, according to University policy, you have been dismissed from the University because you did not meet the stipulations imposed for your spring enrollment. You are not eligible to re-enroll at the University of North Dakota.

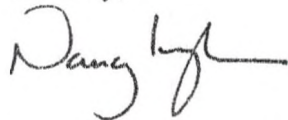
Students may apply for reinstatement only if highly extenuating circumstances have led to the academic deficiencies. Applications for reinstatement are processed through the office of your academic dean of the college in which you intend to enroll.

Please contact your academic dean at the «college» or by calling 1-800-CALLUND.

Please note that effective fall semester 2004 the University's policy for academic standing will change. If you are reinstated into the University and enroll in courses in the fall 2004 semester, you must earn a 2.0 term GPA or you will be suspended. Suspended students may apply to return to the University on academic probation only after one semester's absence. Please see our website www.und.nodak.edu/dept/registrar for a complete explanation of the University's academic standing policy.

If you have registered for the fall semester and have not been reinstated by June 18, 2004, your registration will be cancelled after 4:00 p.m. on that date. SUMMER SCHOOL ENROLLMENTS WILL NOT BE CANCELLED. If you have made on-campus housing arrangements or are living in on-campus housing, please contact the housing office at P.O. Box 9029 or call (701) 777-4251 or 1-800-CALLUND.

Sincerely,



Nancy Krogh
University Registrar

Enclosure
NK/cg

Placed on Academic Probation Letter

May 21, 2004

«name»

«address»

«city», «state» «zip»

Dear «firstname»:

This is official notification that you have been placed on "Academic Probation" following your spring enrollment. University regulations state that the following undergraduate students will be placed on probation:

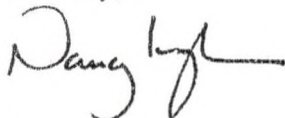
1. Students with less than 90 earned hours who have a UND grade point average of less than 2.00.
2. Students with 90 or more earned hours who have less than a 2.00 grade point average on either UND earned hours or all earned hours (including transfer credits).

You may remove the probationary status by meeting these standards during your next term of attendance.

Please note that effective fall semester 2004 our policy for academic standing will change. You will be continued on Academic Probation if you earn at least a 2.00 term GPA at the end of your next term of attendance. If you do not earn a 2.00 term GPA at the end of your next term of attendance, you will be suspended from the University. Suspended students may apply to return to the University on academic probation after one semester's absence.

If you have questions about your academic status, please see your academic dean, at the «college» or 1-800-CALLUND. Please see our website www.und.nodak.edu/dept/registrar for a complete explanation of the University's academic standing policy.

Sincerely,



Nancy Krogh
University Registrar

Enclosure

NK/cfg

Continued on Academic Probation Letter

May 21, 2004

«name»

«address»

«city», «state» «zip»

Dear «firstname»:

This is official notification that you will be continued on "Academic Probation" after your spring enrollment. University regulations state that the following undergraduate students will be placed on probation:

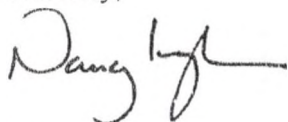
1. Students with less than 90 earned hours who have a UND grade point average of less than 2.00.
2. Students with 90 or more earned hours who have less than a 2.00 grade point average on either UND earned hours or all earned hours (including transfer credits).

You may remove the probationary status by meeting these standards during your next term of attendance. If any stipulations have been placed on your enrollment by your academic dean you also must meet these stipulations.

Please note that effective fall semester 2004 our policy for academic standing will change. You will be continued on Academic Probation if you earn at least a 2.00 term GPA at the end of your next term of attendance. If you do not earn a 2.00 term GPA at the end of your next term of attendance, you will be suspended from the University. Suspended students may apply to return to the University on academic probation after one semester's absence.

If you have questions about your academic status, please see your academic dean, at the «college» or 1-800-CALLUND. Please see our website www.und.nodak.edu/dept/registrar for a complete explanation of the University's academic standing policy.

Sincerely,



Nancy Krogh
University Registrar

Enclosure

NK/cfg

Academic Dismissal Letter

May 21, 2004

«name»
«address»
«city», «state» «zip»

Dear «firstname»:

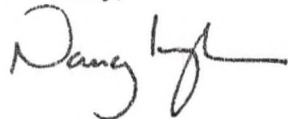
I regret to inform you that, according to University policy, you have been dismissed from the University because you are not in good academic standing after your spring enrollment. You are not eligible to re-enroll at the University of North Dakota.

Students may apply for reinstatement only if highly extenuating circumstances have led to the academic deficiencies. Applications for reinstatement are processed through the office of your academic dean of the college in which you intend to enroll. Please contact your academic dean at the «college» or by calling 1-800-CALLUND.

Please note that effective fall semester 2004 the University's policy for academic standing will change. If you are reinstated into the University and enroll in courses in the fall 2004 semester, you must earn a 2.0 term GPA or you will be suspended. Suspended students may apply to return to the University on academic probation only after one semester's absence. Please see our website www.und.nodak.edu/dept/registrar for a complete explanation of the University's academic standing policy.

If you have registered for the fall semester and have not been reinstated by June 18, 2004, your registration will be cancelled after 4:00 p.m. on that date. SUMMER SCHOOL ENROLLMENTS WILL NOT BE CANCELLED. If you have made on-campus housing arrangements or are living in on-campus housing, please contact the housing office at P.O. Box 9029 or call (701) 777-4251 or 1-800-CALLUND.

Sincerely,



Nancy Krogh
University Registrar

Enclosure

NK/cfg

Appendix B

Variables Provided by the Office of Institutional Research

| Variable Name | Variable Description | Measure | Scale |
|---------------|--|----------|---|
| | | | |
| admitst | Admission status | Nominal | A=Admitted, R=Probation |
| age | Age during term of dismissal | Interval | |
| applorg | Application origin at time of dismissal | Nominal | 0=Beginning Freshman, 1=Transfer, 2=Readmit UG, 3=Readmit UG w/ transfer credit |
| dclass | Classification during term of dismissal | Nominal | 1=Freshman, 2=Sophomore, 3=Junior, 4=Senior |
| dcollege | College at time of dismissal | Nominal | 1=A&S, 3=Engineering, 5=Nursing, 6=BPA, 9=Medicine, 14=Aerospace, 15=Education |
| dcred | Credits enrolled for during term of dismissal | Interval | |
| dmajor | Major at time of dismissal | Nominal | Many |
| dwithdrew | Withdrawal status during term of dismissal | Nominal | Y=Yes, N=No |
| gender | Gender | Nominal | 0=Female, 1=Male |
| ifail | Institutional credits failed prior to term of dismissal | Interval | |
| igpa | Institutional grade point average prior to term of dismissal | Interval | Based on a 4 point scale (0.00 to 4.00) |
| ihp | Institutional honor points earned prior to term of dismissal | Interval | |
| race | Race | Nominal | 0 & 6=Not reported, 1=White, 2=Native American, 3=African American, 4=Asian, 5=Hispanic, 7=Non-resident Alien |
| reclass | Classification during term of reinstatement | Nominal | 0=Beginning Freshman, 1=Transfer, 2=Readmit UG, 3=Readmit UG w/ transfer credit |
| rcollege | College at time of reinstatement | Nominal | 1=A&S, 3=Engineering, 5=Nursing, 6=BPA, 9=Medicine, 14=Aerospace, 15=Education |

| Variable Name | Variable Description | Measure | Scale |
|---------------|--|----------|-------------|
| rcred | Credits enrolled for during term of reinstatement | Interval | |
| rigpa | Institutional grade point average upon completion of term of reinstatement | Interval | |
| rmajor | Major at time of reinstatement | Nominal | Many |
| rwithdrew | Withdrawal status during term of reinstatement | Nominal | Y=Yes, N=No |
| tcred | Term credits earned during term of dismissal | Interval | |
| terment | Term student entered the university | Nominal | Many |
| tfail | Term credits failed during term of dismissal | Interval | |
| thp | Term honor points earned during term of dismissal | Interval | |
| tgpa | Term grade point average for term of dismissal | Interval | |

Appendix C

Variables Utilized in the Study*

| Variable | Variable Label | Measure | Scale |
|----------|--|------------|--|
| admitst | Admission status | Nominal | A=Admitted, R=Probation |
| applorg | Application origin at time of dismissal | Nominal | 0=Beginning Freshman, 1=Transfer, 2=Readmit UG, 3=Readmit UG w/ transfer credit |
| cclass | Change of classification between semester of dismissal and semester of reinstatement | Nominal | 0=No, 1=Yes |
| ccollege | Change of college between semester of dismissal and semester of reinstatement | Nominal | 0=No, 1=Yes |
| cmajor | Change of major between semester of dismissal and semester of reinstatement | Nominal | 0=No, 1=Yes |
| age | Age during term of dismissal | Continuous | |
| dclass | Classification during term of dismissal | Nominal | 1=Freshman, 2=Sophomore, 3=Junior, 4=Senior |
| dcollege | College at time of dismissal | Nominal | 1=A&S, 3=Engineering, 5=Nursing, 6=BPA, 9=Medicine, 14=Aerospace, 15=Education |
| dcredcat | Credits enrolled for during term of dismissal | Nominal | 1=0, 2=1-3, 3=4-6, 4=7-9, 5=10-12, 6=13-15, 7=16-18, 8=19 or higher |
| dmajcat | Major at time of dismissal | Nominal | 1=Undecided, 2=Biology, 3=Pre-business, 4=Pre-communication, 5=Computer Science, 6=Criminal Justice, 7=Elementary Education, 8=Industrial Technology, 9=Pre-aviation, 10=Pre-nursing, 11=Psychology, 12=Social Work Other |

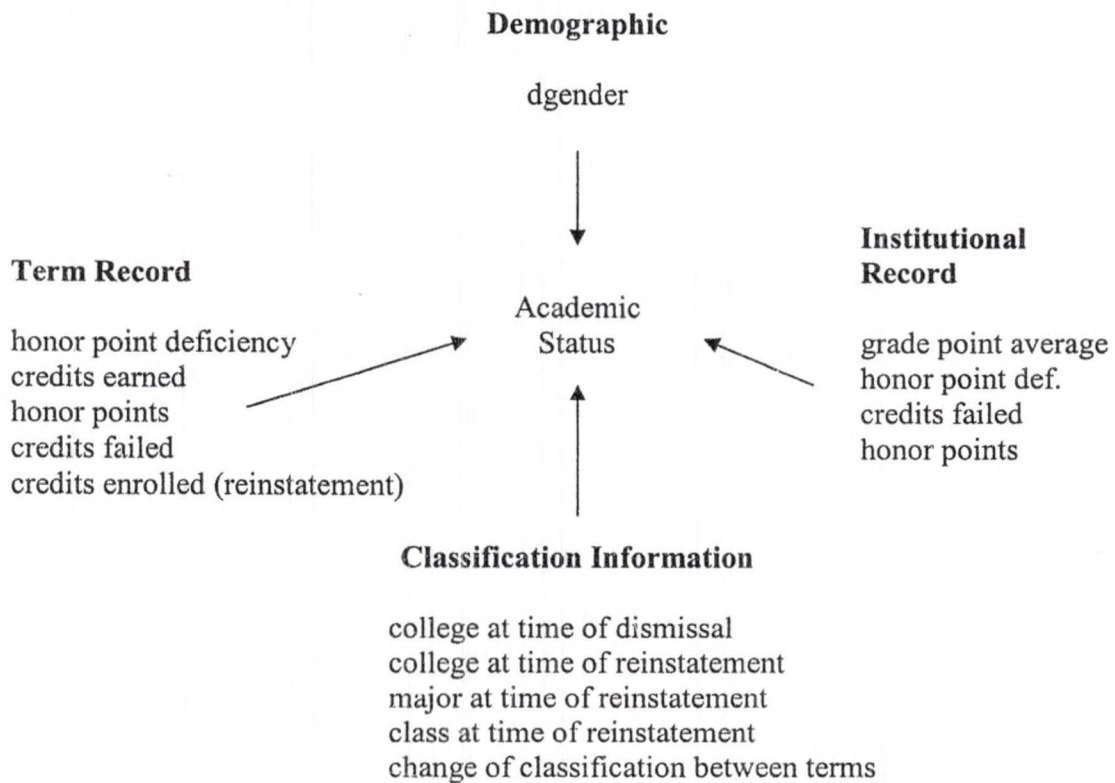
| Variable | Variable Label | Measure | Scale |
|------------|---|------------|--|
| dracecat | Race | Nominal | 1=White, 2=Native American, 3=Other |
| dwithdrew | Withdrawal status during term of dismissal | Nominal | Y=Yes, N=No |
| gender | Gender | Nominal | 0=Female, 1=Male |
| identifier | A unique number assigned to each case in the study | Interval | 1 thru 1,073 |
| ifailcat | Institutional credits failed prior to term of dismissal | Continuous | |
| igpacat | Institutional grade point average prior to term of dismissal | Continuous | |
| ihpcat | Institutional honor points earned prior to term of dismissal | Continuous | |
| ihpdefcat | Institutional honor point deficiency prior to term of dismissal | Continuous | |
| nomajor | Students categorized by declared major | Nominal | 0=undecided, 1=declared major |
| rclass | Classification during term of reinstatement | Nominal | 0=Beginning Freshman, 1=Transfer, 2=Readmit UG, 3=Readmit UG w/ transfer credit |
| rclasslev | Students categorized by upper and lower class level | Nominal | 0=freshmen & sophomore, 1=junior & senior |
| rcollege | College at time of reinstatement | Nominal | 1=A&S, 3=Engineering, 5=Nursing, 6=BPA, 9=Medicine, 14=Aerospace, 15=Education |
| rcredcat | Credits enrolled for during term of reinstatement | Continuous | |
| rmajcat | Major at time of reinstatement | Nominal | 1-Undecided, 2=Biology, 3=Pre-business, 4=Pre-communication, 5=Computer Science, 6=Criminal Justice, 7=Elementary Education, 8=Industrial Technology, 9=Pre-aviation, 10=Pre-nursing, 11=Psychology, 12=Social Work, |

| Variable | Variable Label | Measure | 13=Other Scale |
|-----------------|---|------------|-------------------|
| rwithdrew | Withdrawal status during term of reinstatement | Nominal | 0=No, 1=Yes |
| academic status | Achievement of good academic standing following the term of reinstatement | Nominal | 0=No, 1=Yes |
| tcredcat | Term credits earned during term of dismissal | Continuous | |
| tfailcat | Term credits failed during term of dismissal | Continuous | |
| tgpacat | Term grade point average for term of dismissal | Continuous | |
| thpcat | Term honor points earned during term of dismissal | Continuous | |
| thpdefcat | Term honor point deficiency during term of dismissal | Continuous | |

*Includes those variables created or modified by the researcher

Appendix D

Logistic Regression Block Entry Diagram*



* Includes only those variables that were independent ($p < .05$) of the dependent variable as tested using Chi-square test of independence and independent samples t Test.

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