

USING NONCOGNITIVE ASSESSMENT TO PREDICT
ACADEMIC SUCCESS FOR AT-RISK STUDENTS

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ACADEMIC SUCCESS FOR AT-RISK STUDENTS

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CHAPTER ONE

INTRODUCTION

Background

Traditionally, high school grade point average and standardized test scores from the SAT and ACT have been the primary indicators colleges and universities have used to predict academic success for new college freshmen. While this may be useful when evaluating male, regularly admitted Caucasian students, much research exists that indicates using standardized test scores alone to measure success may not be as effective when evaluating other student populations (Sedlacek, 2004, 2005). According to Tinto (1975), factors such as a student's background characteristics, along with their ability to fit within the learning environment, are also conducive to predicting academic success. The ability to assess these types of attributes, along with psychosocial variables (Tracey & Sedlacek, 1984; Sedlacek, 2004), are critical to understanding the student from a holistic perspective, not just what they may look like from a test score or high school grade point average alone.

With the creation of instruments such as the Noncognitive Questionnaire (Sedlacek & Brooks, 1976), a more reliable and valid method of assessing attributes supplemented with the normal measures could now be employed, especially with non-traditional populations. Studies using holistic assessment with women (Ancis & Sedlacek, 1997), African Americans (Tracey & Sedlacek, 1984, 1985, 1987, 1989), Asian Americans (Fuentes, Sedlacek et. al., 1994), first generation and low income students (Ting & Robinson, 1998), international students (Boyer & Sedlacek, 1988), and student-athletes (Sedlacek & Adams-Gaston, 1992) have shown to be effective in predicting

academic success in these populations. Conditional admits, also referred to as special admits or at-risk students for the purpose of this study, have also been a population of concern. As with other non-traditional student populations, there have been numerous studies showing that combining noncognitive with cognitive variables is a better predictor than using cognitive attributes alone (Montgomery et. al., 2004; Ting, 1997; White & Sedlacek, 1986). These findings served as the basis for this present study that utilized the Insight Resume[®], one of the more recently developed tools for noncognitive assessment in college admissions.

Statement of the Problem

Colleges and universities have traditionally relied upon academic input variables such as standardized test scores and high school grade point averages to predict the likelihood of student success (Sedlacek, 2004). However, with the increasing pressure to diversify the student body and sustain or grow enrollment, noncognitive attributes have been explored to provide a more complete representation of a student's background, experiences and, ultimately, their potential for being successful in college. Additionally, with the cost of attending higher education institutions rising exponentially, college personnel are constantly under pressure not only to recruit more students, but to retain them as well. The challenge is determining why some succeed and some fail, given comparable academic attributes. Since at-risk students are entering institutions already academically deficient compared to the rest of the student body, mechanisms must be in place to help them be as successful as possible. Using noncognitive variables is one method proven to assist in addressing this dilemma. Providing academic and social support for these students is also critical in their potential to be successful.

For this investigation, the focus will be on students attending a comprehensive, regional public university. Institutions such as these have a mission grounded in providing access to students with a wide array of academic and socioeconomic backgrounds by keeping tuition costs low and academic standards generally moderately selective (Henderson, 2009). Because of this mission, these institutions sometimes struggle with reputation, making it difficult to attract the most prepared students. Hence, regional publics often battle with both recruitment and retention problems.

To continue to meet enrollment goals, many regional public institutions have looked to admitting more and more high-risk students. This student population has been described in many ways. Jones & Watson (1990) defined this student population as follows:

The term 'high risk' is a theoretical concept based on an Implicit assessment of the degree of negative risk associated with the educational experience. High- risk students are minorities, the academically disadvantaged, the disabled, and those of low socioeconomic status. (paragraph 5)

Reyes and Capsel (1996) also identified this population as being academically underprepared and White and Sedlacek (1986) included being admitted with conditions as part of their at-risk student definition. All of these descriptions fit the student population evaluated for this study.

For the purposes of this investigation, high-risk students will be referred to as conditionally admitted students. These students were offered admission despite not meeting university admission standards. As part of their admission, they were required to complete the Insight Resume' and participate in a week-long Conditional Admissions Program (CAP) prior to the beginning of the Fall 2007 semester.

Purpose of the Study

The purpose of this study was to determine if noncognitive variables, alone or in combination with standardized test score (ACT or SAT) and/or high school grade point average, can predict student success (first-semester grade point average, first to second year retention and five-year graduation rate) for academically at-risk college freshmen admitted into the university's Conditional Admissions Program. In this investigation, student success is defined as a first semester GPA of 2.0 or higher, retaining to the second year and graduating within a five year time frame.

Research Questions

The following research questions were used to guide the study:

1. Is there a relationship between earning a first semester college GPA of 2.0 or higher and scores on the Insight Resume'?
2. Is there a relationship between first to second year retention and scores on the Insight Resume'?
3. Is there a relationship between five-year graduation and scores on the Insight Resume'?
4. What is the predictive value of the combination of the Insight Resume' scores, high school GPA and composite ACT scores and predicting first semester GPA of 2.0 or higher, retention, or five-year graduation rate?

Research Hypotheses

The following hypotheses were developed based on the research questions:

1. There is a positive correlation between earning a first semester college GPA of 2.0 or higher and scores on the Insight Resume'.

2. There is a positive correlation between first to second year retention and scores on the Insight Resume´.
3. There is a positive correlation between five-year graduation and scores on the Insight Resume´.
4. There is a positive correlation between a combination of variables (Insight Resume´ scores, HSGPA and composite ACT scores) and predicting a first semester GPA of 2.0 or higher.
5. There is a positive correlation between a combination of variables (Insight Resume´ scores, HSGPA and composite ACT scores) and predicting retention.
6. There is a positive correlation between a combination of variables (Insight Resume´ scores, HSGPA and composite ACT scores) and predicting five-year graduation.

Conceptual Framework

This study draws upon two theoretical sources: Chickering’s Seven Vectors and Schlossberg’s Transition Theory. These theories provided the context for examining the relationship of these constructs to noncognitive assessment of an at-risk student cohort in a regional public university setting.

In his identity development theory, Chickering designed the seven vectors of development that contribute to identity, or as he stated, “major highways for journeying toward individuation” (Chickering & Reisser, 1993, p. 35). The seven vectors include: (1) developing competence, (2) managing emotions, (3) moving through autonomy towards independence, (4) developing mature interpersonal relationships, (5) establishing identity, (6) developing purpose, and (7) developing integrity. There is a definite congruence when

correlating the seven vectors and the tasks within each vector with the eight noncognitive variables, especially as measured by the Insight Resume'. Therefore, when predicting student success with the noncognitive variables, it can be concluded that a high success determination within this type of assessment could also determine how effective a student will be moving through Chickering's Vectors.

A second development theory that correlates well with the use of noncognitive variables in determining student success is Nancy K. Schlossberg's Transition Theory. Schlossberg's theory offers a framework of three phases of a particular transition, and four factors that influence a student's ability to navigate through the three phases. Evans et al. (1998) defined transition as "any event, or non-event, that results in changed relationships, routines, assumptions, and roles" (p. 111). The three transitional phases Schlossberg et al. (1995) outlined are, "moving in, moving through and moving out" of a transition. For the purposes of this study, these phases are captured via the variables being measured in this study: first semester GPA, retention and five-year graduation rate.

Design of the Study

A quantitative research method is most conducive because the focus of this study involves predicting the likelihood of success for college freshmen by attempting to correlate results on the Insight Resume' to first semester college grade point averages, first to second year retention rates and five-year graduation rates. According to Krathwohl (1998), quantitative research can often be completed quickly, can more easily ensure anonymity, and can be used to determine correlations between variables. Although qualitative research would allow for greater insight into the experiences of the students in the study, results could not be used to generalize the characteristics of the CAP

population, therefore making it difficult to effectively predict success of future freshmen admitted into the program.

Researchers have been using quantitative research methods, primarily multiple and logistic regression, to assess noncognitive variables in an attempt to predict success for college freshmen (Sedlacek, 2004). Through completion of instruments such as the Noncognitive Questionnaire (NCQ) and Insight Resume', subjects provide their answers regarding noncognitive variables addressing psychological, cultural, and social characteristics (Sedlacek). Significant evidence suggests these tools can help predict first semester grades and retention rates for conditionally admitted students. Past researchers have preferred using the NCQ because it has shown both construct and congruent validity as well as high test-retest reliability (Sedlacek; Ting, 1997; White & Sedlacek, 1986).

Using noncognitive assessment as part of traditional college admissions practices represents a dramatic paradigm shift for most seasoned college administrators. Very few institutions nationwide are currently using noncognitive assessment as part of their general admission requirements, and tremendous resistance is expected from the numerous individuals on campus who still believe standardized test scores alone are the best way to predict student success. Sentence deleted

Design Controls

To address the first three research questions, a Spearman rho correlation coefficient was calculated to determine if any relationship or association existed between the two variables. This statistical method was utilized due to the ordinal nature of the dependent variables as defined in this study. The data for this study meet the two conditions to determine a relationship using the Spearman rho correlation coefficient: (1)

the two variables are paired observations and (2) at least one of the variables is ordinal (Hinkle et al., 1998).

Logistical regression was chosen as the statistical method to address the final research question. According to Burns and Burns (2008), there are two main uses of logistic regression: (1) prediction of group membership, and (2) knowledge of the relationships and strengths among the variables. Burns and Burns also highlight five assumptions, or controls, that must be met to appropriately use logistic regression analysis. Violation of one or more of the controls results in inaccurate tests of statistical significance. The first control is that logistic regression does not assume a linear relationship between the dependent and independent variables. The second control states that the dependent variable must be a dichotomy. The third control indicates that there is no need for the independent variables to be interval, normally distributed, linearly related, or of equal variance within each group. The fourth control indicates that the groups must be mutually exclusive and exhaustive. Finally, the fifth control states that the sample size must be a minimum of 50 cases per predictor.

In this investigation, the controls noted above were addressed to ensure the relevance of the statistical method employed. The dependent variables (first semester GPA of 2.0, retention, and five-year graduation) will be noted as yes/no for the purposes of this study, which represents a dichotomous relationship with the independent variable. Each student represents a single case within a single cohort, with a sample size of 154 subjects.

Limitations of the Study

While the present study has provided relevant information regarding the use of noncognitive assessment in college admissions, it has several limitations that must be acknowledged. They are outlined as follows:

1. The subjects in the current study are only those students entering the Conditional Admissions Program at the University of Central Missouri in the Fall 2007 semester.
2. Due to the relative newness of the instrument used in this investigation, there are limited studies currently existing utilizing the Insight Resume'.
3. The evaluation mechanism applied to reviewing the Insight Resume' relied upon proper training and understanding of the desired outcome of the evaluation.
4. The socioeconomic background of the students was not taken into account for the analysis.
5. The strength of each student's high school curriculum, as well as the specific courses they completed, was unknown to the researcher.
6. Although each subject had unique academic attributes and high school experiences, they were generalized to meet the needs of the study.

Definition of Key Terms

For the purposes of this study, the following terms will be defined.

ACT: Standardized college entrance exam with an overall possible maximum score of 36.

Conditional admission: Admission offered to high-risk students contingent upon completion of a specific pre-college preparedness program.

First semester college GPA: The grade point average a student earns in her first semester of college. For purposes of this study, student success is considered as a GPA of 2.0 or higher.

Five-year graduation: The indicator of a student completing all required coursework to attain a baccalaureate degree within five years of beginning his college career. For purposes of this study, student success is considered as degree attainment within five years.

High school grade point average (HSGPA): Cumulative average of grades earned in high school.

High-risk students/at risk-students: Students who are entering the institution academically underprepared, as defined by not meeting the institution's established admissions criteria.

Insight Resume': Noncognitive assessment tool comprised of six essay questions designed for students to provide personal insight by talking about their own life experiences (Sandlin, 2008).

Noncognitive assessment: Evaluation mechanism designed to measure variables related to motivation, adjustment and student perceptions instead of only looking at traditional methods of evaluation such as standardized test scores. The eight variables most commonly investigated are positive self-concept, realistic self-appraisal, successfully handling the system, preference for long-term goals, availability of a strong support person, leadership experience, community involvement and knowledge acquired in a field (Sedlacek, 2004).

Noncognitive Questionnaire: An instrument designed to assess the eight noncognitive variables mentioned in the definition of noncognitive assessment.

Regional public institution/state comprehensive university (SCU): A college or university whose mission is access, generally specific to a geographic region, that varies by size and serves a wide range of student populations, from moderately selective to not selective at all (Henderson, 2009).

Retention: Persistence of a student from the fall semester of their first year of college to the fall semester of their second year. For purposes of this study, student success is considered as retention from first to second year.

Standardized tests: In this study, refers specifically to the SAT and ACT, which are the traditional measures of predicting academic success for entering college students.

State Comprehensive University: A college or university whose mission is access, generally specific to a geographic region, that varies by size and serves a wide range of student populations, from moderately selective to not selective at all (Henderson, 2009).

Student success: Achieving a 2.0 GPA after the first semester, retaining from the freshman to sophomore year and graduating within a five year time frame.

Summary

As state budgets continue to tighten, regional public universities are moving towards performance-based, or outcomes-based, funding directly tied to achieving certain student success norms such as credits earned, retention rates and graduation rates. In almost direct contrast, these same institutions are looking to sustain or build enrollment and grow net tuition revenue by digging deeper into their applicant pools to admit students who are considered “high-risk” by most definitions. If these institutions are to

meet student success goals set before them, they must investigate new ways to evaluate these students. In addition, students who are already defined as at risk academically before even taking a class must have services available to them to help with transition issues and overcome deficiencies to achieve their academic goals.

With the availability of tools such as the Noncognitive Questionnaire (Sedlacek & Brooks, 1976) and the Insight Resume' (Sandlin, 2008), colleges and universities now have psycho-social information available in addition to the traditional cognitive attributes collected from test score reports and high school transcripts. Merging these two data sets gives institutions the most complete view of the student when making admissions decisions, especially for high-risk students. This type of information can be used well beyond the admissions office, helping advisors and other student service professionals in assisting their students in making good academic and social choices.

With state budget shortfalls, the privatization of public higher education is already prevalent with the growing dependence on net tuition revenue. Research regarding noncognitive assessment strongly suggests that predicting academic success increases when using noncognitive assessment in combination with academic input variables such as standardized test scores and high school credentials (Ancis & Sedlacek, 1997; Boyer & Sedlacek, 1988; Fuertes & Sedlacek, 1995; Fuertes, Sedlacek & Liu, 1994; O'Callaghan & Bryant, 1990; Sedlacek & Adams-Gaston, 1992; Tracey & Sedlacek, 1984; Tracey & Sedlacek, 1985; Tracey & Sedlacek, 1987; Washington, 1996; White & Sedlacek, 1986). If access is going to be the mission and institutions are going to be held accountable for the success of their students, every effort should be made to determine who has the capacity to be academically successful. This study will hopefully enrich the existing

research regarding noncognitive assessment and, more importantly, open the door for other institutions to start using a holistic approach in their admissions process.

CHAPTER TWO

REVIEW OF LITERATURE

The purpose of this chapter is to provide a review of the relevant literature on the evolution of college admission evaluation. The chapter is divided into four sections. First is an exploration of the history of college admission practices, specifically related to the use of the SAT, ACT, high school achievement metrics such as grade point average, class rank, and noncognitive assessment methods. The second part of the chapter contains a review of the history of regional public universities, their mission and student population and the enrollment challenges they face today. The third section includes information on two student development theories, Chickering's Seven Vectors and Schlossberg's Transition Theory, and how each relates to the use of noncognitive variables in predicting student success. Finally, in the fourth section relevant research findings regarding the use of noncognitive assessment in predicting academic success in various student populations are addressed.

The purpose of this investigation was to determine if a relationship exists between the academic success (first semester grade point average, retention and five-year graduation rate) of conditionally admitted at-risk students, and their scores on the Insight Resume'. Also considered in this study were the students' high school grade point averages and standardized test scores. The students in this study were enrolled at the University of Central Missouri, a comprehensive public Midwestern institution, during the years 2007-2012.

History of the College Admissions Process

Establishment of Admissions Criteria

As the American population was experiencing significant growth in the early 20th century, the demand for a college education also grew. No longer seen as a privilege, the need for an educated workforce was driving more and more individuals into higher education. After the first World War, colleges across the country were receiving applications from more prospective students than they could serve and had to develop ways to identify those who were most capable of succeeding in their institutions (Beatty, Greenwood, & Linn; 1999). This created a need to find a more reliable way of predicting a student's academic potential, which led to the establishment of the two primary standardized tests we see today: the SAT and the ACT.

Traditional Methods of Evaluation

Standardized tests. The use of traditional standardized tests in the college admissions process dates back to the early 1900s. Initially designed as an IQ test for the Army, the early version of the SAT was administered to freshmen at Princeton, as well as applicants to Cooper Union (PBS, 2009). The test was then revamped so it could be offered to a wider variety of schools, and in 1926 it was administered to high school students for the first time (Linn, 1993). The SAT was first designed to provide a standard way to help competitive institutions select students with the highest capacity to do college-level work (Wightman & Jaeger, 1998).

The ACT was established in the late 1950s and initially served a different purpose than its testing counterpart. According to Beatty, Greenwood and Linn (1999), the ACT was originally used by colleges that served all applicants who were admissible to help

with course placement and academic planning, in addition to traditional admission and recruitment purposes. In contrast to the highly-selective intentions of the SAT, the ACT was intended to serve two purposes: “ to help students make better decisions about which college to attend and which programs to study; and to provide information to colleges both in the process of admitting students and in ensuring success after enrollment” (ACT, 2009, paragraph 3). Although both tests were designed with different purposes in mind, they each contend to serve as indicators of future college success. However, the majority of research in the field indicates that using test scores alone is not the most reliable method for predicting academic achievement at the post-secondary level.

High school grade point average and class rank. Assessing a high school student’s performance in the classroom has always been relevant to the college admissions process. The use of high school grade point average and/or class rank in making admissions decisions is standard among most institutions of higher education across the country. The strength of using high school grades in predicting success in college has been proven time and time again (Camara & Echternacht, 2000; Pascarella & Terenzini, 2005). Mouw and Khanna (1983) indicated that Harvard was using high school grades to predict student success dating back to 1917. In addition, using high school grade point average in specific academic courses as opposed to overall grade point average has shown to be an even stronger predictor (Linn, 2005). Other studies have shown that coupling high school performance with standardized test scores have been effective in predicting student success (Bridgeman, Burton et al, 2008; Noble, 2003; Noble & Sawyer, 2002; The College Board 2008).

Challenges with traditional methods. As previously mentioned, there are numerous studies indicating how traditional methods of evaluating students for admission purposes have been successful in predicting academic success; however, there are limitations to these methods. Score gaps in standardized tests have historically existed between Caucasians and other ethnic groups, raising the concern as to whether these types of tests are racially biased (Beatty et al., 1999). In addition, Sedlacek (2004) contended that traditional methods of evaluation lack validity and reliability, especially with women and ethnically diverse populations. Exacerbating this concern, he also pointed out the common standardized tests used by colleges across the country have not evolved to meet the needs of the current student population mix and delivery modalities seen in today's higher education landscape. Sedlacek (2005) summarized his concerns in the following statement:

If different groups have different experiences and different ways of presenting their attributes and abilities, it is unlikely that one could develop a single measure, test item, and so on, that could yield equally valid scores for all. If we concentrate on results rather than intentions, we could conclude that it is important to do an equally good job of selection for each group, not that we need to use the same measures for all to accomplish the goal. Equality of results, not process, is most important. (p. 178)

This is not to say that the SAT and ACT have no relevance when it comes to predicting academic success. According to Sedlacek (2004), these tests are formidable when being used for the population they were designed for: white, upper-middle to upper-class males. Furthermore, standardized tests alone are not good predictors for grades after the first year or retention and graduation for all student populations.

These concerns have led to the need to establish a more comprehensive method for predicting the potential for academic success of new college students. Although test scores and high school performance are strong indicators, these alone provide only a partial view of the student. A more holistic evaluation approach that includes tapping into what motivates students, adjustment issues and what their perceptions are may be necessary to understand the full range of experiences prospective students bring with them to the college environment (Sedlacek, 2005).

Noncognitive Assessment Practices

Noncognitive questionnaire. Although there are several instruments in the field that can measure noncognitive factors for prospective college students, the primary instrument used to assess these variables has been the Noncognitive Questionnaire (NCQ), developed by Sedlacek and Brooks (1976). This tool was designed to measure the following factors thought to be helpful in predicting college success: (1) positive self-concept, (2) realistic self-appraisal, (3) understands and knows how to handle racism, (4) prefers long-range to short-term or immediate goals, (5) availability of strong support person, (6) successful leadership experience, (7) demonstrated community service, and (8) knowledge in or about a field. There is ample evidence to suggest that this instrument, when added to current measures such as SAT, ACT and/or high school performance, is a valuable tool when attempting to predict grades and retention for traditional students, as well as special populations such as students of color, student athletes, women, international students, and special admits (Ancis & Sedlacek, 1997; Boyer & Sedlacek, 1988; Fuertes & Sedlacek, 1995; Fuertes, Sedlacek & Liu, 1994; O'Callaghan & Bryant,

1990; Sedlacek & Adams-Gaston, 1992; Tracey & Sedlacek, 1984; Tracey & Sedlacek, 1985; Tracey & Sedlacek, 1987; Washington, 1996; White & Sedlacek, 1986).

There have been several studies refuting the effectiveness of the NCQ. Bryson, Smith and Vineyard (2002) suggested that predictive validity of the instrument has produced inconclusive results. According to Thomas, Kuncle and Crede (2007), NCQ scores did not impact the predictability of college performance when measured by GPA, persistence and the number of credits earned by students. Furthermore, Boldt (2000) found that NCQ variables were not as strong at predicting academic performance as SAT scores for high-risk students, and Boham (1997) concluded that the NCQ failed to show any relevance in predicting academic success for ethnic minorities.

Insight Resume'. In the mid 2000s another noncognitive assessment tool was introduced in an effort to allow students to demonstrate their knowledge and experiences more robustly to university admissions officers. Developed at Oregon State University and based upon the research of William Sedlacek and his Noncognitive Questionnaire, the *Insight Resume'* asks students to respond to six questions in 100 words or less covering the following topics: (1) leadership/group contributions, (2) knowledge in a field/creativity, (3) dealing with adversity, (4) community service, (5) handling systemic challenges, and (6) goals/task commitment (Sandlin, 2008). Each *Insight Resume'* is scored by at least two trained evaluators and the results are used in combination with traditional methods to evaluate applicants to the university.

Although the research is limited regarding the effectiveness of the *Insight Resume'* due to its relative infancy, Oregon State University has experienced positive impacts from its use. The most profound impact has been seen with first to second year

retention. After accounting for GPA, gender ethnicity and socioeconomic status, odds of retaining students were increased over 10% with a one-unit increase on the Insight Resume' (Sandlin, 2008). Additionally, average GPAs are increasing and other factors that relate to college success such as hard work and reward determination are now being evaluated (Jaschik, 2007). Information obtained within Insight Resume' answers has shown to offer other benefits as well, such as providing another tool to evaluate admission appeals and scholarship selections. Students have also disclosed disabilities and/or special needs, as well as criminal activities, which has allowed for an early referral to student services in an effort to provide support for these students (Sandlin & Sedlacek, 2006). The potential impact of the Insight Resume' and its future use was summarized in the following statement by Sandlin (2008):

The purpose of OSU's Insight Resume', and our move to holistic admissions assessment generally, is to promote student success through more accurate assessment of student preparedness and academic potential. In addition to making more accurate admissions decisions, this holistic assessment has provided OSU with more information on applicants earlier in the process than we ever had before. The IR is allowing us to be better prepared for students before they come to campus, helping us connect them to support services at an earlier stage. We want them to learn, as early as possible, how to be successful and how to make the best use of needed services once they get to campus. (p. 108)

Regional Public Colleges and Universities

Mission and Student Population

Regional public universities, or state comprehensive universities (SCU), have been in existence since the late nineteenth and early twentieth centuries (Henderson, 2009). The mission of the SCUs over the years has been somewhat vocational, focused on teaching, research and public service in an effort to prepare students for jobs

immediately following graduation (Bardo, 1990). Another distinguishing factor is the wide variety of sizes, locations and selectivity ranges of institutions they encompass (Henderson, 2009).

The SCUs started seeing tremendous growth in the 1960s and 1970s as the baby boomers, even at the lower-class level, began to expect access to higher education (Henderson, 2007). Going to college was no longer for the elite. Given their mission of access, the SCUs have traditionally attracted a mix of students ranging from valedictorians to those with low academic credentials.

Enrollment Challenges at Regional Public Universities

According to Linn (2005), “The basis on which colleges and universities make admissions decisions is indicative of the values of the institution and has implications, not only for the make-up of their student bodies, but for the prestige of the institutions” (p. 152). This holds true for the SCUs as well, but one significant challenge they face is trying to manage enrollment by providing access to a wide array of students while still maintaining academic quality. Given the relatively reasonable cost and the goal of providing access, obtaining an education from an SCU was made a reality for most high school graduates (Henderson, 2009). However, admitting weak students requires institutions to provide support mechanism, which brings an added cost with it.

Another challenge facing the SCUs is the onset of the privatization of public higher education. Privatization refers to the increased reliance on private funding (Levine, 1993). This has been a disturbing trend in higher education since the 1980s. As the economy continues to decline, state governments have been forced to make choices regarding disbursement of their limited dollars. Since colleges and universities are

capable of producing revenue, they have been charged with carrying the burden of state funding reductions while elementary and secondary education, health care, and corrections have remained virtually untouched (Dennison, 2003).

Profit seeking entities are also infiltrating the higher education market. Levine (2001) stated the following:

The enrollment in higher education is countercyclical, which is very unusual in a business. This means that college and university enrollments, translated as dollars, actually grow when the economy is bad because people are more likely to go to college when they cannot find work and to drop out at a greater rate when there are more jobs. (p. 259)

Causing another threat to the SCUs, companies such as Sylvan and Kaplan have created their own colleges while the University of Phoenix has revolutionized higher education by offering entire degrees online (Levine, 2001). The convenience and flexibility of these for profit educational providers has made it difficult for traditional residential campuses to compete for students not capable or unwilling to physically come to campus for classes. The shift in course offering mediums has caused colleges and universities to reevaluate their own delivery methods to best meet the expectations of today's students. To remain competitive and attractive in today's higher education market, colleges and universities must strive to offer a combination of convenient online courses with the physical presence and traditional college experience of campus life (Levine).

In response to limited state allocations, SCUs are forced to look to alternative funding mechanisms for survival. Students are usually pegged as the primary source for this funding. A common justification for increasing tuition to pay for budget shortfalls contends that those reaping the rewards of a college education should also be the

individuals fitting the bill. According to Zemesky and Wegner (1997), since students receive the primary benefits from a college degree with the potential for higher lifetime earnings and a better quality of life, they should be responsible for more of the cost. Higher education has essentially transformed from a public to a private benefit.

More creative forms of alternative revenue generation have also been investigated. The state of Colorado explored distributing state funds directly to students rather than to the institutions, while South Carolina expressed a desire to break away from the state's coordinating board for higher education so they could take advantage of public-private partnerships (Selingo, 2003). Miami University of Ohio has become the first major public institution to standardize tuition rates for both in state and out of state students, implementing a pricing model generally used only by elite private colleges (Symonds, 2004). In addition, many large, research based universities have considered utilizing alternative pricing strategies for the more specialized, high demand programs such as medicine, business, or law by placing the additional cost on the student or securing corporate sponsorship for such programs (Altbach, Berdahl, & Gumport, 1999).

Reducing operating expenditures in response to diminishing state dollars must also be considered by public colleges and universities. Outsourcing institutional functions such as residence life, developmental education, and bookstore services is one common strategy. Other approaches include sharing facilities with private entities and utilizing more adjunct faculty in the classroom. However, these tactics bring with them a risk of undermining institutional coherence and accountability (Altbach, Berdahl, & Gumport, 1999). To stay consistent with the mission of SCUs to remain accessible and affordable, these types of strategies must be considered.

Student Development Theories and Noncognitive Assessment

As a student encounters a university setting for the first time, issues involving transition and establishing one's identity must be recognized to fully understand the developmental processes these students experience. To shed light on these issues, student development theories established by Arthur Chickering and Nancy Schlossberg will be discussed.

Chickering's Seven Vectors

One glaring similarity between the noncognitive variables and student development theory is that they each view the student as an individual, realizing that no one set of established criteria will work for all. This distinction is important in determining student success, as each student's journey is unique prior to and once enrolled in college. One of the most widely utilized traditional psychosocial student development theories is Arthur Chickering's Seven Vectors. In his identity development theory, Chickering designed the seven vectors of development that contribute to identity, or as he stated, "major highways for journeying toward individuation" (Chickering & Reisser, 1993, p. 35). The seven vectors include: (1) developing competence, (2) managing emotions, (3) moving through autonomy towards independence, (4) developing mature interpersonal relationships, (5) establishing identity, (6) developing purpose, and (7) developing integrity. The environmental factors that were examined as influential in the establishment of a student's identity were institutional objectives, institutional size, student-faculty relationships, curriculum, teaching, friendships and student communities and student services (Evans et al., 1998).

Viewing the establishment of identity as the key developmental issue faced by college students, Chickering examined environmental conditions that influence a student's development (Evans et al., 1998). Resolution of issues surrounding identity throughout a student's college experience creates groundwork for a person to address issues as they arise throughout one's developmental journey. Originally developed in 1969, Chickering expanded his theory in 1993 to be more inclusive of race, gender and non-traditional college students. Each vector builds upon the previous one, with students moving towards individuation and greater complexity through their varied experiences. Chickering was clear that students may reexamine issues throughout their lifetime; his work takes into consideration the emotional, interpersonal, ethical and intellectual development of identity (Evans et al., 1998). It is effortless to correlate the seven vectors and the tasks within each vector with the eight noncognitive variables, especially as measured by the Insight Resume'. Therefore, when predicting student success with the noncognitive variables, it can be concluded that a high success determination within this type of assessment could also determine how effective a student will be moving through Chickering's Vectors.

The first vector, developing competence, outlined three distinct areas of skill acquisition: physical/manual, intellectual and interpersonal. Physical competence refers to attention to wellness and basic navigation of the environment, such as "how do I get to class or do laundry?" Intellectual development is how students view their ability to acquire knowledge, develop critical reasoning and thinking skills and succeed in their new academic arena. All competence types assist the student in developing confidence that they are able to achieve the goals they have set while attending college.

In the second vector, managing emotions, students learn to recognize emotions, and appropriately express and control emotions, with the goal of knowing where they will know and recognize how to handle varying emotional situations (Evans et al., 1998). During this vector, students learn whom to share and trust with what type of emotions. A student who reacts by lashing out to others as a result of a poor grade would not be handling his disappointment and fear of failure (intellectual competence) well.

In the third vector, Chickering established three components to move through autonomy toward interdependence: emotional independence, instrumental independence and interdependence. Emotional intelligence refers to the “freedom from continual and pressing needs for reassurance, affections, or approval from others” (Chickering & Reisser, 1993, p 117). Instrumental independence establishes that a student can complete assignments and other tasks without seeking assistance from others, commonly peers or parents/guardians. Both of these lead to a recognition of a student being a part of something larger, becoming interconnected or interdependent.

In his revision, Chickering placed developing mature interpersonal relationships earlier, as it was recognized that relations and experiences tied to relationships are significant in developing one’s identity (Evans et al., 1998). Developing tolerance and respect for those of different backgrounds, habits, values, and appearance are associated with this vector. It is also about a significant shift in the quality of relationships to include the ability to sustain lasting relationships and work through disagreements and differences in a productive fashion. This concept aligns well with one of Sedlacek’s primary noncognitive variables: successfully handling the system (2004). This variable

addresses a student's experience with racism and his ability to handle a discriminatory system.

Establishing identity is the fifth vector and clearly builds upon those that came prior. In his revised theory, Chickering added the complexity of gender, ethnic background and sexual orientation. Establishing identity includes comfort and acceptance of the aforementioned, in addition to comfort with body, appearance, social background, and the establishment of a clear and strong self-concept, self-esteem or sense of self, despite feedback from others (Evans et al., 1998). This vector directly correlates with two of Sedlacek's primary noncognitive attributes, positive self-concept and realistic self-appraisal (2004).

Developing purpose is often the primary concern of new freshmen prior to entering college and is frequently directly associated with the question, "What is your major?" The selection of a major for a student, prior to or while attending college, does not automatically develop one's sense of purpose. Beyond the discovery of vocational goals or professional and other interest areas, establishing one's lifestyle and general life direction is inclusive of developing a committed purpose. Preference for long-term goals would be the noncognitive variable that this vector would most closely address (Sedlacek, 2004).

Chickering concluded with developing integrity and established three "sequential but overlapping stages" (Chickering & Reisser, 1993, p. 51). These three are humanizing values, personalizing values and developing value congruence. This vector is about forming a personal set of values and beliefs that guide behavior consistently.

Schlossberg's Transition Theory

A second development theory that correlates well with the use of noncognitive variables in determining student success is Nancy K. Schlossberg's Transition Theory. One obvious parallel is that students who are entering institutions of higher education are going to be transitioning, as many would say, "into official adulthood," away from the environment in which they have become familiar. While Schlossberg's theory is classified as a theory of adult development, as transition occurs repeatedly throughout one's life, it proves extremely relevant to traditionally aged college students (Evans et al., 1998). College students entering into institutions of higher education and away from the environment in which they are familiar have a variety of transitions to navigate. A student's ability to successfully navigate transition on a macro and micro level will clearly determine his success.

Schlossberg's theory offers a framework of three phases of a particular transition and four factors that influence a student's ability to navigate through the three phases. Again, there are many small/micro transitions any one student will encounter (how to do laundry, establishing new friends, academic goals, etc.) while also navigating the larger transition to the institution, its environment and how a student sees himself 'fitting' in the environment. Schlossberg believed the need to establish a framework that would enable understanding of transition and help those in transition more effectively cope (Evans et al., 1998).

Schlossberg et al. (1995) defined transition as "any event, or non-event, that results in changed relationships, routines, assumptions, and roles" (p. 27). However, a transition is only defined as a transition if the individual experiencing it recognizes it as

such. We are able to relate type, context and impact to a new student entering an institution of higher education for the first time. Transition types are described as anticipated, as with getting married or enrolling in college; unanticipated, such as an unexpected death or job changes; and non-events, such as a result of an event or an aspiration one has (Evans et al., 1998). The framework in which transition occurs, and one's relationship to the transition, is referred to as context. For a new freshman, the context could be viewed as personal as when new relationships are established, and/or work or educational related as new skills are introduced and mastered. The individual experiencing the transition and the impact solely determines the meaning it may or may not have on one's life (Evans et al., 1998).

The three phases Schlossberg et al. (1995) outlined are, "moving in, moving through and moving out" of a transition. As one works through these stages, there are four factors that influence the successful passage from one stage to the next. These factors are known as the four S's: situation, self, support, and strategies. One's resources, or lack thereof, in each of these four areas illustrates why people, in this study new college students, react differently to the seemingly same transition. Schlossberg described the uses of resources as the ratio of assets to liabilities, which helps explain how an individual copes with a given transition (Evans et al., 1998). An example of a traditional aged college student beginning his freshman year will help illustrate Schlossberg's theory.

A student who is attending college for the first time may have anticipated the first 'S', or situation, for a number of months or years. Schlossberg et al. (1995) lists the following factors as important in determining a situation: "trigger, timing, control, role

change, duration, previous experience, concurrent stress and assessment” (p. 113). For a student entering college, the trigger was the completion of high school. The role change from high school student to college student may be viewed as a positive or elevated role, or negatively if the student did not want to attend college right after high school. The duration of the transition will be determined as the student continues to adapt and successfully persist from one semester to the next. A student who has experienced a similar transition, such as moving schools prior to completion of high school, will also need to develop coping strategies and learn to manage existing stress factors. Last, as it relates to the transition situation, the student’s assessment of who is responsible for the transition will in large part determine how the student behaves as a new student on campus. If a student perceives his parents as responsible for the transition, and not himself, this could have a grave impact on his academic success.

The second ‘S’, self, is classified into two areas: personal and demographic characteristics and psychological resources (Evans et al., 1998). The first represents the gender, socioeconomic status, stage of life, health, and ethnicity of a person, and the second represents the ability one has to cope, such as outlook, commitment, and values (Evans et al., 1998). In relating these to a student entering college, first generation students may have a vastly different view of himself to successfully navigate college than one whose parents attended a four-year institution. Similarly, a student who has a chronic illness may view his relationship to the role of student as differing from that of a student who does not face health issues.

The third ‘S’, support, refers to the types of support a student may have such as parents, peers, extended family, or institutional. Affirmations and honest feedback are the

primary functions of support (Evans et al., 1998). A student who seeks support from a parent would seek affirmation and feedback from them and likely measure them as a stable supports who are fulfilling their “role” as parent. Another example can be used with the student beginning college in a new residential community. In using the community as support, the new student would seek affirmation from the community for behavior such as going to class, and measure the community as a support that will change over time. This concept directly aligns another one of Seldacek’s (2004) predictive noncognitive variables, the availability of a strong support person.

Finally, the fourth ‘S’, strategies, relates to the coping responses or modes a student employs during transition and how he manages meaning of the transition (Evans et al., 1998). A student who becomes discouraged by his first weeks on campus academically could fall into the “I can’t do it” mindset and not persist, whereas a student who seeks out resources, support and a positive outlook may be more successful in turning the first challenging weeks into successful persistence to subsequent semesters. Over time, students can utilize Schlossberg’s framework to move in, through and out of transitions, altering their responses and support networks as they move through their collegiate experience. How well they manage the multiple transitions of university life, both academically and socially, will largely depend on their ability to persist.

Use of Noncognitive Variables to Predict Academic Success

With the cost of attending higher education institutions rising exponentially, college personnel are constantly under pressure to not only recruit more students, but to retain them as well. Colleges and universities have traditionally relied upon academic input variables such as standardized test scores and high school grade point averages to

predict the likelihood of student success (Sedlacek, 2004). However, with the increasing pressure to diversify the student body and sustain or grow enrollment, noncognitive attributes have been explored to provide a more complete representation of a student's background, experiences and, ultimately, their potential for being successful in college.

Noncognitive Variables and Student Success

Tracey and Sedlacek (1984) identified eight noncognitive variables essential for student success and developed the Noncognitive Questionnaire (NCQ) to be administered as part of the standard admission process at colleges and universities. The eight noncognitive variables include: (a) a positive self-concept; (b) a realistic self-appraisal; (c) successfully handling racism; (d) availability of a strong support person; (e) leadership experience; (f) community involvement; and (g) knowledge acquired in a field. Measuring these variables along with standardized test scores and high school grade point averages (GPA) have provided the strongest prediction of a student's likelihood to succeed if admitted (Sedlacek, 2004). In the following studies success rates are defined as first year college GPA and persistence from the first to second year of college. This analysis is focused on the results of studies conducted with five different college student populations: African Americans, Caucasians, Asian Americans, women, and specially admitted students.

African Americans and Caucasians

Having a much different background than their Caucasian, middle-class counterparts, the African American population has been of much interest in the assessment of noncognitive variables. Tracey and Sedlacek (1985) and O'Callaghan and Bryant (1990) used the NCQ to compare the significance of noncognitive variables on

GPA and persistence of Caucasian and African American students. In both studies, the strongest predictor of GPA for African American students was having a positive self-concept. In predicting persistence, both O'Callaghan and Bryant (1990) and Tracey and Sedlacek (1985) reported successfully handling racism as a strong predictor. Tracey and Sedlacek also indicated having a realistic self-appraisal and availability of a strong support person as good predictors. Caucasian students shared only two noncognitive attributes with African American students for predicting GPA: having a positive self-concept and having a realistic self-appraisal. Tracey and Sedlacek reported having a positive self-concept as a significant predictor for persistence of Caucasian students.

Asian Americans

Fuertes, Sedlacek, and Liu (1994) used the NCQ to predict first year grade point average and persistence of Asian American students. Asian Americans have generally persisted at a fairly high rate but have been dissatisfied with their overall experience in higher education. Over a 10 year period, 431 Asian Americans took the NCQ during freshman orientation. In predicting GPA, the NCQ revealed having a positive self-concept, having a realistic self-appraisal, community involvement, and knowledge acquired in a field to be significant contributors to success. With the exception of successfully handling racism, all other noncognitive variables were statistically significant when predicting persistence.

Women

Ancis and Sedlacek (1997) administered the NCQ to 1,930 women over a 10 year period and recorded each student's cumulative grade point average over a seven semester period. Three of the NCQ variables, demonstrated community service, realistic self-

appraisal and nontraditional knowledge, showed as significant predictors of cumulative GPA in semesters 1, 3, 5 and 7. In semester 5, successful leadership experience emerged as a strong predictor. It was also found that SAT scores were strong predictors in all semesters.

Special Admits

To build and sustain enrollment in an effort to generate tuition revenue in a time of limited state subsidies, many colleges and universities offer special admission to students who fall short of regular admission criteria (Sedlacek, 2004). Students admitted under special conditions have become another population of interest in noncognitive assessment as their risk of being unsuccessful is much higher than that of those who meet regular admission standards. White and Sedlacek (1986) and Ting (1997) administered the NCQ to specially admitted students. In both studies, leadership experience was a strong predictor of first semester grade point average and persistence. White and Sedlacek further indicated that a positive self-concept was also significant when predicting grade point average and persistence, while Ting reported community involvement as a strong predictor of both grade point average and persistence.

Noncognitive Variables and Graduation Rates

First year success for college students is an important metric to evaluate, but persistence through graduation is the ultimate goal for both the students and administration. Tracey and Sedlacek (1987) administered the NCQ at the time of matriculation to predict college graduation by race. For African Americans, self-assessed academic motivation, support for academic plans, and community service were most predictive of graduation rates. For Caucasians, only academic self-concept and expected

difficulty were predictive of graduation rates. In addition, SAT scores for both student populations were found to have no significant prediction of graduation.

Summary

In analyzing the combined results of the studies in this literature review, a pattern for predicting GPA and persistence using noncognitive variables has become evident. Having a positive self-concept was a significant GPA predictor in all four student groups while having a realistic self-appraisal was mentioned in every group except special admits. Community involvement was also found to be a significant predictor in each student population with the exception of African Americans. In predicting persistence, having a positive self-concept was mentioned as a significant predictor in each population except African Americans (Fuertes et al., 1994; O'Callaghan and Bryant, 1990; Ting, 1997; Tracey and Sedlacek, 1985; White and Sedlacek, 1986). There were no shared noncognitive variables between African Americans and Caucasians when predicting graduation. However, SAT scores were found to yield no significant prediction of graduation for both populations (Tracey & Sedlacek, 1987).

With tuition revenue providing the primary source of funding in a hyper-competitive market, recruiting and retaining more students has become the focus of higher education. Standardized tests were designed to predict first year grades for Caucasian, upper middle class and upper class males (Sedlacek, 2004). As colleges and universities continue to emphasize the need for diverse study bodies, finding a method that accurately predicts success for every student population is essential for survival. Institutions must identify the needs of their students as early as possible so they can provide the necessary support services to ensure student success (White & Sedlacek,

1986). HSGPA , class rank, and standardized entrance exams offer a glimpse of student potential, but the addition of noncognitive data will allow colleges and universities to complete the picture and provide an environment in which all students can thrive.

CHAPTER THREE

METHODOLOGY

Since the early 1900s, colleges and universities across the nation have been using standardized test scores as the primary variable in determining the admissibility of prospective students (Sedlacek, 2004). Although these tests provided a common way to evaluate candidates of varied backgrounds and experiences, are they truly the best way to predict whether or not college freshmen will be successful? Integrating noncognitive assessment into current admissions practices allows admissions personnel to go beyond traditional academic criteria by examining students using a more holistic view. Through noncognitive assessment, variables such as adjustment issues, motivation, perceptions, and life experiences can be considered, rather than relying solely on traditional verbal and quantitative areas typically measured by standardized tests (Sedlacek).

Purpose

The purpose of this study was to determine if noncognitive variables, alone or in combination with standardized test score (ACT or SAT) and/or high school grade point average, can predict student success (first-semester grade point average, first to second year retention and five-year graduation rate) for academically at-risk college freshmen admitted into the university's Conditional Admissions Program (CAP). In this investigation, student success is defined as a first semester GPA of 2.0 or higher, retaining to the second year and graduating within a five year time frame.

Research Questions

The following research questions were used to guide the study:

1. Is there a relationship between earning a first semester college GPA of 2.0 or higher and scores on the Insight Resume'?

2. Is there a relationship between first to second year retention and scores on the Insight Resume'?
3. Is there a relationship between five-year graduation and scores on the Insight Resume'?
4. What is the predictive value of the combination of the Insight Resume' scores, HSGPA and composite ACT scores and predicting a first semester GPA of 2.0 or higher, retention or five-year graduation?

Research Hypotheses

The following hypotheses were developed based on the research questions:

1. There is a positive correlation between earning a first semester college GPA of 2.0 or higher and scores on the Insight Resume'.
2. There is a positive correlation between first to second year retention and scores on the Insight Resume'.
3. There is a positive correlation between five-year graduation and scores on the Insight Resume'.
4. There is a positive correlation between a combination of variables (Insight Resume' scores, HSGPA and composite ACT scores) and predicting a first semester GPA of 2.0 or higher.
5. There is a positive correlation between a combination of variables (Insight Resume' scores, HSGPA and composite ACT scores) and predicting retention.
6. There is a positive correlation between a combination of variables (Insight Resume' scores, HSGPA and composite ACT scores) and predicting five-year graduation.

Design of the Study

The design of the study was grounded in a positivist paradigm, where reality is single and tangible, the researcher and the research are independent of each other, and generalization of results are possible (Lincoln & Guba, 1985). In addition, the values of the researcher are inconsequential and the general approach to research design is to predict behavior through cause and effect relationships. Therefore the research purpose is likely to be causal or predictive rather than exploratory (Krathwohl, 1998).

A positivist paradigm is often considered parallel with quantitative research (Mertens, 2005). Because the focus of this study involves predicting the likelihood of success for college freshmen by attempting to correlate results on the Insight Resume' to first semester college grade point averages, first to second year retention rates, and five-year graduation rates, a quantitative research method is most conducive to the study. According to Krathwohl (1998), quantitative research can often be completed quickly, can more easily ensure anonymity, and can be used to determine correlations between variables. Although qualitative research would allow for greater insight into the experiences of the students in the study, results could not be used to generalize the characteristics of the CAP population, therefore making it difficult to effectively predict success of future freshmen admitted into the program.

Researchers have been using quantitative research methods to assess noncognitive variables in an attempt to predict success for college freshmen for over 20 years (Sedlacek, 2004). Through completion of instruments such as the Noncognitive Questionnaire (NCQ) and Insight Resume', subjects provide their answers regarding noncognitive variables addressing psychological, cultural, and social characteristics

(Sedlacek). Significant evidence suggests these tools can help predict first semester grades and retention rates for conditionally admitted students. Past researchers have preferred using the NCQ because it has shown both construct and congruent validity as well as high test-retest reliability (Sedlacek; Ting, 1997; White & Sedlacek, 1986).

Results from past studies involving noncognitive assessment have been used to establish college admission criteria for select populations of students. According to Fink (2006), surveys should be used when a policy needs to be set or a program must be planned. In contrast, Fink warned against using qualitative methods for these purposes, indicating that interpreting answers to open ended questions can be difficult unless the answers are coded appropriately and the researcher is trained to effectively classify the data.

Methods of data analysis used in previous studies regarding noncognitive assessment have been almost exclusively quantitative. When attempting to predict a dependent variable, such as first semester grade point average, from a combination of two or more predictor variables, such as the eight noncognitive variables, stepwise multiple regression has been a common method to employ (O'Callaghan & Bryant, 1990; Ting, 1997; Tracey & Sedlacek, 1985; White & Sedlacek, 1986). Results from this type of analysis could eventually be generalized to future students entering the CAP.

Using noncognitive assessment as part of traditional college admissions practices represents a dramatic paradigm shift for most seasoned college administrators. Very few institutions nationwide are currently using noncognitive assessment as part of their general admission requirements, and tremendous resistance is expected from the numerous individuals on campus who still believe standardized test scores alone are the

best way to predict student success. Using a quantitative research approach will hopefully provide the statistical evidence necessary to successfully implement this form of assessment in the future.

Methods

The following section will discuss the methods employed in executing this study. The setting for the research will be addressed, along with participant characteristics and the specific variables being studied. In addition, the sources of data and data collection methods will be outlined.

Setting

This study was conducted at the University of Central Missouri (UCM). UCM is a moderately selective, comprehensive, mid-size regional public university located in Warrensburg, Missouri. UCM enrolls approximately 11,000 undergraduate and graduate students each year and offers 150 academic programs of study. UCM is considered a residential campus, with over 3,000 students living on campus in 17 residence halls. Traditional aged freshmen are required to live on campus unless their home resides 50 miles or less from the Warrensburg campus. UCM has a student to faculty ratio of 16:1 and an average class size of 25 (UCM Fact Book, 2006).

Demographically, 57% of UCM students are female while 43% are male and 90% are from the state of Missouri. UCM students predominantly come from metropolitan Kansas City, with a strong contingent also enrolling from the St. Louis area along with the rural communities surrounding Warrensburg. Approximately 13% of the student population is considered to be of ethnic minority, including international students (UCM Fact Book, 2006).

Participants

The population for this study included 154 participants in the CAP during the fall 2007 semester. The Insight Resume[™] was required as part of the admissions process for the CAP, therefore all 154 participants were included in the study. The participants were first-time freshmen conditionally admitted to the university. They had an average ACT composite score of 18.4 and an average HSGPA of 2.70. The average ACT and GPA for the entire freshman class were 22.2 and 3.30, respectively. Participants came primarily from public high schools located within the state of Missouri. Graduating class sizes ranged from five students to 750 students. Of the 154 students, 117 were Caucasian and 30 were of ethnic minority, with seven not reporting an ethnicity. The participants ranged in age from 17 to 19, which represents a traditional age for first-time freshmen. Eighty-one of the participants were male and 73 were female.

Variables

Cognitive variables under consideration in this study included ACT scores, HSGPAs, and first semester college GPAs of first-time freshmen admitted into the CAP. Through the six question, short answer-style Insight Resume[™], the following noncognitive attributes were being evaluated as well: how were students participating in activities, meeting challenges and managing communications over time; what did they learn; and how did they grow from the experience (Sandlin, 2008). To determine correlations, first semester college GPA was analyzed after each CAP student completed the fall term, retention from first year to second year was measured after the start of the fall term of the second year, and whether the student graduated or not was identified after the spring semester of the fifth year (2012).

Variables out of the control of the researcher also impacted the study. These variables primarily involve both the positive and negative experiences of the participants throughout the course of their first semester. Transition issues, social interactions, quality of instruction in the classrooms, and effective advising are just a few of the challenges first-time college students encounter during their first semester. Any of these issues could have had an impact on how the students performed academically.

Sources of Data

Data for this study were obtained through a variety of sources. ACT scores and HSGPAs were recorded from each student's high school transcript, which was required as part of the admissions process. Demographic information was taken from the student's application. Noncognitive scores were taken from each scored Insight Resume' for each student. University records, through cooperation and permission from the Registrar's Office, were accessed to determine first-semester GPA, retention and graduation rate for each student.

Previous studies involving the assessment of noncognitive variables in college admissions also provided valuable data as the researcher attempted to design an effective study. Although conducted at institutions other than UCM, these previous studies offered baseline data from which to compare results of the study. Furthermore, norms from previous studies using instruments such as the Insight Resume' and NCQ had been developed, allowing the researcher to compare and contrast research results.

Data Collection Methods

Participation in this study did not impose any apparent physical, psychological, social, or legal risks, as all data were archived and the identity of participants was

unknown to the researcher. Completion of the Insight Resume' was required for students to be considered for the CAP. Questions were not meant to deceive and no attempt was made to conceal the purpose of the study. Archival data regarding first semester grade point average, retention, and five-year graduation for each student was retrieved with approval from the university's Registrar's Office. This information was obtained using university-assigned student identification numbers to keep the identity of each student anonymous.

Prospective CAP students were identified at the time of their initial application for admission using ACT composite scores and HSGPAs. Once identified, prospects were mailed the Insight Resume' and provided with a business reply envelope to enhance the chances for return. They were given two weeks to return the Insight Resume' to the Office of Admissions. Once it was returned, it was coded with a random student identification number and results were recorded by Admissions personnel into SPSS, along with the student's ACT score and HSGPA. After completion of the first semester, the personnel in the Admissions office used university records to identify first semester GPAs for students in the CAP. The GPAs were recorded in SPSS along with the student's previously recorded cognitive and noncognitive input variables. Whether or not the student returned for their second year and/or graduated after five years was also recorded.

Applying the quantitative data collection and analysis techniques utilized in previous research, the researcher correlated the relationship of the Insight Resume' scores, coupled with ACT scores and HSGPAs, in an attempt to predict academic success of each student.

Procedures

The following section will discuss the procedures used to carry out the study. The timeline followed by the researcher will be outlined along with the instrumentation utilized to collect and analyze pertinent participant data.

Timeline

In 2004, University of Central Missouri administrative officials expressed a desire to improve freshman to sophomore retention rates for incoming students. At-risk students had traditionally been admitted fully to the university but had been retaining at a rate below university expectations. The CAP was established to provide these students with extra resources in an effort to help them succeed. When it was realized the program was not solely enough to boost retention, alternative evaluation methods were investigated to help better predict the likelihood for student success. In the spring of 2006, the Office of Admissions administered the Noncognitive Questionnaire to each potential CAP student as part of the admissions process. After reviewing a presentation regarding the Insight Resume' from a professional conference in November of 2006, it was determined the NCQ would be replaced by the Insight Resume' which would be administered to the fall 2007 cohort of the CAP. The Insight Resume' allowed for a more in-depth view of student experiences. Given the relative newness of the Insight Resume', there was limited research in the field regarding its use.

Students in the present study were identified in February of their senior year in high school using information provided to the university through the regular freshman application process. Information regarding the CAP and the Insight Resume' was sent to them with a deadline of two weeks for return. No students were invited to complete the

Insight Resume' after June 1, 2007. Upon completion and submission of the Insight Resume', students were admitted conditionally to the university and invited to enroll for the fall semester. For admission record-keeping purposes, each Insight Resume' was recorded in an Excel spreadsheet as it was received by the Office of Admissions, along with the student's ACT score and HSGPA. Advisors for the CAP could then use these data in their interactions with the students.

Data had already been collected as part of the admissions process for each student regarding ACT score, HSGPA, and Insight Resume' score. During the Fall 2007 semester, these metrics were entered into SPSS by each student's university-assigned identification number, keeping the identity of each student confidential. When the fall 2007 semester was complete and final grades were submitted, each student's first semester GPA was recorded in SPSS.

A Spearman rho correlation coefficient was used to determine correlations between first semester college GPA and Insight Resume'. The same process held true when making correlations between student retention and graduation rates. A logistical regression model was used when ACT score and HSGPA were combined with the Insight Resume' score to measure predictability. Results were then used to seek answers to the research questions and test hypotheses.

Instrument

Tracey and Sedlacek (1984) identified eight noncognitive variables essential for student success and developed the Noncognitive Questionnaire (NCQ) to be administered as part of the standard admission process at colleges and universities. The NCQ contains eight psychosocial scales derived from 29 items including five demographic questions, 19

Likert-format items, two multiple choice items on educational aspirations, and three open-ended items pertaining to current goals, past accomplishments, and other activities. The eight noncognitive variables included: (a) positive self concept, (b) realistic self appraisal, (c) successfully handling racism, (d) preference for long term goals, (e) availability of a strong support person, (f) leadership experience, (g) community involvement, and (h) knowledge acquired in a field.

Test-retest reliability coefficients ranging from .70 to .94 for each item were reported for the NCQ (Tracey & Sedlacek). Construct validity on the eight scales was demonstrated by means of factor analysis (Tracey & Sedlacek, 1989). The possible score ranges for each variable were as follows: (a) positive self concept, 7-27; (b) realistic self appraisal, 4-14; (c) successfully handling racism, 5-25; (d) preference for long term goals, 3-13; (e) availability of a strong support person, 3-15; (f) leadership experience, 3-13; (g) community involvement, 2-8; and (h) knowledge acquired in a field, 2-8. Other predictors used in the study included ACT composite scores (ranging from 1-36) and HSGPAs (ranging for 0.00 to 4.00).

Based upon previous research conducted with the NCQ and to provide an even more in-depth method for evaluation of noncognitive attributes, the Insight Resume' was established (Sandlin, 2008). This instrument consists of the following six short-answer topics: (1) leadership/group contributions; (2) knowledge in a field/creativity; (3) dealing with adversity; (4) community service; (5) handling systemic challenges; and (6) goals/task commitment. Students were limited to 75-100 words for each answer. Readers were required to attend a two-day training session on how to evaluate the Insight Resume'. Each Insight Resume' was read by two readers, with each answer being

assigned a score of one to three; six being the minimum and 18 being the maximum scores students could achieve. If there were a score difference of three or more between the two readers, the Insight Resume' was then evaluated by a third reader.

Data Analysis

The data were analyzed using the Statistical Program for the Social Sciences (SPSS). The research design used in this study is a quantitative approach to analyze the predictive nature of a noncognitive assessment tool, the Insight Resume', in its use in the admissions process to facilitate student success. The dependent variables used to determine student success were operationalized as dichotomous (ordinal) variables.

The first three research questions examine possible relationships between two variables: 1) Is there a relationship between earning a first semester college GPA of 2.0 or higher and scores on the Insight Resume'?; 2) Is there a relationship between first to second year retention and scores on the Insight Resume'?; and 3) Is there a relationship between five-year graduation and scores on the Insight Resume'? Thus, a Spearman rho correlation coefficient was calculated to determine if any relationship or association exists between the two variables. The Spearman rho correlation coefficient was utilized as the statistic due to the ordinal nature of the dependent variables as defined in this study. The data for this study meet the two conditions to determine a relationship using the Spearman rho correlation coefficient: (1) the two variables are paired observations and (2) at least one of the variables is ordinal (Hinkle et al, 1998).

The final research question considers relationships and associations between multiple continuous independent variables and a dichotomous dependent variable. It

reads as follows: What is the predictive value of the combination of the Insight Resume scores, HSGPA and composite ACT scores) and predicting first semester GPA of 2.0 or higher, retention, or five-year graduation rate? As noted by Hosmer and Lemeshow (1989), the logistic regression model is used when the outcome variable is dichotomous. Thus, logistic regression analysis is an appropriate method to assess the effectiveness of the independent variables to predict student success as defined by the dependent variables. A description of the variables used in the study are shown in Table 1.

Table 1

Description of Variables

| Variable | Research Question(s) | Coding |
|-----------------------------------|----------------------|---------------------------------------|
| Predictor (Independent) Variables | | |
| HSGPA | 4 | Continuous |
| Composite ACT | 4 | Continuous |
| Insight Resume | 1, 2, 3, 4 | Continuous |
| Criterion (Dependent) Variables | | |
| First Semester College GPA | 1, 4 | 1 = $GPA \geq 2.0$ 0 = $GPA < 2.0$ |
| First to Second Year Retention | 2, 4 | 1 = Yes 0 = No |
| Five-Year Graduation | 3, 4 | 1 = Yes 0 = No |

Quality Standards

The method of assessment presented in this study was conducive to the overall quality of the research. It was critical that the methods chosen for this particular study aligned with the research questions. According to Seidman (2006), using a quantitative research method has often been considered more credible than other research methods because validity and reliability can more easily be ensured.

The potential for researcher bias was also taken into consideration when conducting the study. To more effectively produce the desired results, the study was carried out using archived data, with the researcher being independent from the research. There is a greater risk for researcher bias when the researcher serves as the primary data collection tool, such as in qualitative research (Sevier, 1998). Furthermore, it was understood by the researcher that the results could only be generalized to other conditionally admitted students at UCM. There should not be an attempt to generalize results to fully admitted students or to students at another institution (Krathwohl, 1998).

In addressing confidentiality, all participant identities were protected so that data, discussions, and conclusions would not impact them in a negative way. For these reasons, a computer generated student identification number was used to identify each student in the study. Data were recorded in SPSS by this student identification number.

Summary

A quantitative research method was employed in this study to establish statistically significant correlations between first semester college GPA, first to second year retention, and five-year graduation rate with both cognitive and noncognitive variables. Data from 154 students were used. This included standardized test scores and

high school transcripts, as well as the Insight Resume'. Also included were GPA, retention data, and graduation information obtained from the UCM Registrar's Office. A Spearman rho correlation coefficient, as well as logistic regression analysis, was used to determine correlations and identify the strongest predictors for student success.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

This chapter provides an overview of the purpose of the study as well as the research questions, the hypotheses and the descriptive statistics for all of the independent variables. The results from the data analysis for each research question are then discussed and significant findings are explained.

The purpose of this study was to determine if noncognitive variables, alone or in combination with a standardized test score (ACT or SAT) and/or high school grade point average, can predict student success (first-semester grade point average, first to second year retention and five-year graduation rate) for academically at-risk college freshmen admitted into the university's Conditional Admissions Program. In this investigation, student success is defined as a first semester GPA of 2.0 or higher, retaining to the second year and graduating within a five year time frame.

The following research questions were used to guide the study:

1. Is there a relationship between earning a first semester college GPA of 2.0 or higher and scores on the Insight Resume'?
2. Is there a relationship between first to second year retention and scores on the Insight Resume'?
3. Is there a relationship between five-year graduation and scores on the Insight Resume'?
4. What is the predictive value of the combination of the Insight Resume' scores, HSGPA and composite ACT scores and predicting first semester GPA of 2.0 or higher, retention, or five-year graduation rate?

The following hypotheses were developed based on the research questions:

1. There is a positive correlation between earning a first semester college GPA of 2.0 or higher and scores on the Insight Resume´.
2. There is a positive correlation between first to second year retention and scores on the Insight Resume´.
3. There is a positive correlation between five-year graduation and scores on the Insight Resume´.
4. There is a positive correlation between a combination of variables (Insight Resume´ scores, HSGPA and composite ACT scores) and predicting a first semester GPA of 2.0 or higher.
5. There is a positive correlation between a combination of variables (Insight Resume´ scores, HSGPA and composite ACT scores) and predicting retention.
6. There is a positive correlation between a combination of variables (Insight Resume´ scores, HSGPA and composite ACT scores) and predicting five-year graduation.

Data Analysis

The following section will describe the results of the various data analysis scenarios answering each of the research questions and their respective hypotheses. Descriptive statistics for the population of the study will be reported followed by the correlation and logistic regression analysis.

Descriptive Statistics

The data for this research were gathered from the University of Central Missouri, a mid-sized regional public university in the Midwest. The students included for the study

were considered academically at-risk and were selected into the university’s Conditional Admissions Program. Presented in Table 2 are the characteristics of the independent variables for the study including mean, mode, standard deviation and range for ACT score, HSGPA and score achieved on the Insight Resume’. The average ACT score was 18.38 with a standard deviation of 1.84. The HSGPA ranged from 1.47 to 3.60 and the mean score on the Insight Resume’ was 13.039.

Table 2

Descriptive Statistics of the Independent Variable

| | N | Mean | Mode | Std. Deviation | Minimum | Maximum |
|----------|-----|--------|------|----------------|---------|---------|
| ACT | 154 | 18.38 | 17 | 1.84 | 15 | 27 |
| HSGPA | 154 | 2.6967 | 2.67 | .41333 | 1.47 | 3.60 |
| IR Score | 154 | 13.039 | 14 | 1.4329 | 8.5 | 16.5 |

Correlation Analysis

Posed in Research Question One is the question, “Is there a relationship between earning a first semester college GPA of 2.0 or higher and scores on the Insight Resume’?” Using a Spearman’s Rho analysis, the correlation between the Insight Resume’ and earning a first semester GPA of 2.0 or higher was found to be small at -.054. Research Question Two asked, “Is there a relationship between first to second year retention and scores on the Insight Resume’?” A correlation coefficient of -.037 was found in this analysis, indicating a relatively weak relationship between the two. The third research question asked, “Is there a relationship between five-year graduation and

scores on the Insight Resume’? The correlation coefficient between Insight Resume’ score and graduating in five years was .130. Although this would still be defined as a small correlation, it represents a slightly greater relationship with the Insight Resume’ score than earning a first semester GPA of at least 2.0 and retaining from the first to second year. Depicted in Table 3 are the results of the correlation analysis, which reflects that none of the correlation coefficients were statistically significant.

Table 3

Correlation between Insight Resume’ Score and Earning a First Semester GPA of 2.0, Retaining from Year One to Year Two, Graduating in Five Years

| | N | Correlation Coefficient | Sig. (2-tailed) |
|----------------------|-----|-------------------------|-----------------|
| GPA 2.0> | 154 | -.054 | .503 |
| Retained | 154 | -.037 | .644 |
| Graduated in 5 years | 154 | .130 | .107 |

* $p < .05$

Logistic Regression Analysis

The fourth research question was answered using logistic regression and posed the question, “What is the predictive value of the combination of the Insight Resume’ scores, HSGPA and composite ACT scores and predicting first semester GPA of 2.0 or higher, retention or five-year graduation rate?” When examining the analysis of the baseline model measuring cases that could be predicted without including any of the predictors, 81.8% of those earning a first semester GPA of 2.0 could be correctly predicted. In evaluating retention from first to second year, 63.6% of the cases were predicted correctly. Only 26% of those graduating in five years were correctly predicted.

This analysis indicates that for earning a GPA of 2.0 or higher in the first semester and retaining from the first to second year scenarios, the majority of cases can be predicted without any of the predictive variables included. Results are found in Table 4.

Table 4

Percent Predicted Without Including Predictor Variables

| | Yes | No | Percentage Correct |
|----------------------|-----|-----|--------------------|
| GPA 2.0> | 126 | 28 | 81.8 |
| Retained | 98 | 56 | 63.6 |
| Graduated in 5 years | 40 | 114 | 26 |

Chi-square Analysis

After all three predictive variables were entered into the logistic regression equation (ACT score, HSGPA and Insight Resume' score), the following Chi-square values were analyzed to determine if the predictive ability were significantly improved by adding the variables. For predicting whether a student's first semester GPA would be greater than 2.0, the Chi-square was reported to be 4.68 with a level of significance of .197. A Chi-square of 1.152 with a significance level of .765 was reported when evaluating retention from year one to year two. Finally, a Chi-square of 2.83 with a level of significance of .418 was reported for predicting graduation in five years. Since the significance level for all three is greater than a .05 level of significance, the ability to predict whether a student's first semester GPA will be greater than 2.0, whether they will retain from the first year to the second year, and whether they will graduate in five years is not significantly improved when adding ACT score, HSGPA and Insight Resume'

score to the logistic regression model. Chi-square analyses and significance measures for all three outcome variables are depicted in Table 5.

Table 5

Chi-square Analysis when Adding ACT Score, HSGPA and Insight Resume' score to Predictive Model

| | Chi-square | Df | Sig. |
|----------------------|------------|----|------|
| GPA 2.0> | 4.68 | 3 | .197 |
| Retained | 1.152 | 3 | .765 |
| Graduated in 5 years | 2.833 | 3 | .418 |

$p < .05$

Significance Level of Predictor Variables

The analysis of whether or not each predictor variable, taken independently, will significantly improve the accuracy in predicting a first semester GPA of 2.0 or higher, retaining from year one to year two and graduating in five years will be analyzed in the following section. When attempting to predict a first semester GPA of 2.0 or higher, ACT score had a level of significance of .968. For HSGPA, the significance level was .125 and for the Insight Resume' score the significance level was .419. Since the significance levels all exceed .05, there is no indication that any of the predictor variables significantly improve the ability to predict a student earning a GPA of 2.0 or higher. Full results are presented in Table 6.

Table 6

Predicting First Semester GPA Using ACT Score, HSGPA and Insight Resume' Score

| | B | S.E. | Wald | Df | Sig. | Exp(B) |
|--------------|-------|------|-------|----|------|--------|
| ACT | .006 | .141 | .002 | 1 | .968 | 1.006 |
| HSGPA | 1.041 | .679 | 2.351 | 1 | .125 | 2.833 |
| IR Score Avg | -.121 | .149 | .653 | 1 | .419 | .886 |

$p < .05$

Evaluating the predictive capabilities of ACT score, HSGPA and Insight Resume' score on retaining from year one to year two yielded similar results to predicting first semester GPA. The level of significance was .337 for ACT score, .488 for HSGPA and .579 for Insight Resume' score. Again, significance values all exceed .05; therefore, there is no indication that any of the predictor variables significantly improve the ability to predict whether or not a student will retain from year one to year two. Results of this analysis are found in Table 7.

Table 7

Predicting First to Second Year Retention Using ACT Score, HSGPA and Insight Resume' Score

| | B | S.E. | Wald | Df | Sig. | Exp(B) |
|--------------|-------|------|------|----|------|--------|
| ACT | -.117 | .122 | .922 | 1 | .337 | .890 |
| HSGP | -.375 | .541 | .481 | 1 | .488 | .687 |
| IR Score Avg | -.066 | .119 | .308 | 1 | .579 | .936 |

$p < .05$

An examination of Table 8 reveals the results of the significance level each predictive variable has on graduating in five years. The level of significance for ACT score was .410. HSGPA yielded a significance level of .645, while the significance level of Insight Resume' score measured at .179. As with attempting to predict first semester GPA of 2.0 or higher and retention, none of these significance levels are less than .05. There is no indication that any of the predictor variables will significantly improve the ability to predict whether or not a student will graduate in five years.

Table 8

Predicting Five-Year Graduation Using ACT Score, HSGPA and Insight Resume' Score

| | B | S.E. | Wald | Df | Sig. | Exp(B) |
|-----------------|-------|------|-------|----|------|--------|
| ACT | -.112 | .136 | .678 | 1 | .410 | .894 |
| HSGP | -.272 | .590 | .212 | 1 | .645 | .762 |
| IR Score Avg | .181 | .135 | 1.805 | 1 | .179 | 1.199 |

$p < .05$

Summary

This study was based on 154 at-risk students admitted into the Conditional Admissions program at the University of Central Missouri in the Fall 2007 semester. The first three research questions investigated the correlation between scores on the Insight Resume' and earning a first semester college GPA of 2.0 or higher, retaining from the first to the second year, and graduating in five years. Results of this analysis demonstrated that there was no significant relationship between the Insight Resume' score and student performance during the first semester or whether or not they retained or

graduated. Although still statistically insignificant at .130, graduating in five years was found to have the strongest correlation of the three to scores on the Insight Resume'.

The fourth research question attempted to measure the predictive value of the combination of the Insight Resume' scores, HSGPA and composite ACT scores and predicting first semester GPA of 2.0 or higher, retention, or five-year graduation rate. Using a .05 level of significance, results revealed that there was no indication any of the predictor variables significantly improved the ability to predict earning a first semester GPA of 2.0 or higher or whether a student would retain or graduate. When looking at which variable was closest to being statistically significant for predicting results for each dependent variable, HSGPA measured highest for earning a GPA of 2.0 or higher (.125), ACT score was closest to being statistically significant for retaining from the first to second year (.337) and Insight Resume' score was closest for predicting graduation in five years (.179). Conclusions and implications regarding these results will be discussed in the subsequent chapter, as well as recommendations for further research.

CHAPTER FIVE

DISCUSSION OF THE FINDINGS

The primary responsibility of college admissions professionals is to admit students who will be successful at the institution. Most regional public universities, such as the University of Central Missouri in the present study, have a mission of access, which attracts a mix of students ranging from valedictorians to those with low academic credentials (Henderson, 2007). With declining state subsidies and limited university endowments, the reliance on student tuition dollars is critical. Additionally, the desire for universities to grow the quality, quantity and diversity of the student body, as well as increase retention and graduation rates, have also become priorities to improve rankings and institutional reputation. How can admissions officers ensure all of these competing desires are accomplished without compromising one need for another? The challenge will be coupling access with success. Access without success is access to nothing, and the dialogue and debate must shift from focusing on access to focusing on degree completion.

To address this issue, the University of Central Missouri began using the Insight Resume' in 2007 to evaluate at-risk applicants and provide a more holistic view of the students. Historically there had been a group of students admitted to the university who did not meet the university's admissions requirements, but showed some potential for success through standardized test scores and high school grades. Implementing the Insight Resume' as an additional evaluation mechanism was an attempt to continue to provide access to this group of students while collecting more in-depth information about

each individual to assist the university in properly guiding these students toward academic success.

Purpose of the Study

The purpose of this study was to determine if noncognitive variables, alone or in combination with standardized test score (ACT or SAT) and/or high school grade point average, can predict student success (first-semester grade point average, first to second year retention and five-year graduation rate) for academically at-risk college freshmen admitted into the university's Conditional Admissions Program. In this investigation, student success is defined as a first semester GPA of 2.0 or higher, retaining to the second year and graduating within a five year time frame.

Discussion of the Findings

Although the Insight Resume' was the evaluation method of choice in the present study, the vast majority of the literature addressing the effectiveness of noncognitive variables in predicting student success revolves around the use of the Noncognitive Questionnaire (NCQ). The NCQ uses a multifaceted approach to measuring the relationship between student success and eight different noncognitive variables. The eight noncognitive variables include (a) positive self-concept, (b) realistic self-appraisal, (c) successfully handling racism, (d) availability of a strong support person; (e) leadership experience, (f) community involvement, and (g) knowledge acquired in a field (Tracey & Sedlacek, 1984). Each variable can be evaluated independently from the other variables to measure relationships to student success.

Results from virtually all studies outlined in the review of literature found relationships between at least one of the noncognitive variables and student success

metrics, especially when combined with traditional evaluation methods such as standardized test scores and high school grades. These results crossed a variety of non-traditional student populations, including women (Ancis & Sedlacek, 1997), African Americans (Tracey & Sedlacek, 1984, 1985, 1987, 1989), Asian Americans (Fuentes, Sedlacek et. al., 1994), first generation and low income students (Ting & Robinson, 1998), international students (Boyer & Sedlacek, 1988), and student-athletes (Sedlacek & Adams-Gaston, 1992). Conditional admits, also referred to as special admits or at-risk students for the purpose of this study, have also been a population yielding positive results. As with other non-traditional student populations, there have been numerous studies showing that combining noncognitive with cognitive variables has proven to be a strong predictor of student success (Montgomery et. al., 2004; Ting, 1997; White & Sedlacek, 1986).

Based on the literature review, results of this study were expected to mirror that of previous studies, even though the Insight Resume' was chosen as the evaluation method instead of the NCQ. Although grounded in the same theoretical framework used to develop the NCQ, the Insight Resume' produces only a single output that is utilized as the predictive value to measure relationships to student success. Only one documented study using the Insight Resume' was found in the literature. Insight Resume' scores in Sandlin's study were reported to have a significant impact on retention (Sandlin, 2008). Results from the present study yielded a much different outcome. As noted in the previous chapter, there was no relationship found between scores on the Insight Resume' and earning a first semester GPA of 2.0 or higher, retaining from the first to second year or

graduating in five years. There was also no predictive value found in measuring student success when adding ACT score and HSGPA to the logistic regression analysis.

Differences in the findings between the previous study using the Insight Resume' and the current research could be related to a variety of variables. The sample size in the present study was much smaller (154 vs. 2,783), the selected population was limited to those who were academically at risk and there were differences in institutional type and location. The current study took place at a mid-sized, moderately selective regional public institution located in the midwest. The Sandlin (2008) study was located at a larger, researched-based land-grant institution in the pacific northwest. The Sandlin study also took into account gender, race, ethnicity and socioeconomic status; the current study did not.

The two student development theories outlined in Chapter 2 dealt with the importance of establishing one's identity and recognizing the transition issues students experience as they navigate their way into and through the college environment. Both Chickering's Seven Vectors (Evans et al., 1998) and Schlossberg's Transition Theory (Schlossberg et al., 1995) focus on the student as an individual, realizing that no one set of established criteria will work for all. This distinction is important in determining student success, as each student's journey is unique prior to and once enrolled in college. The practical application of the Insight Resume' is designed to account for these individual student experiences in the holistic review used to determine admissibility.

Grounded in Chickering's (Evans et al., 1998) and Schlossberg's (Schlossberg et al., 1995) student development theories, the hypotheses for this study were developed suggesting there would be positive relationships between scores on the Insight Resume'

and first semester GPA, retention from the first to second year and graduation within five years. Furthermore, assumptions were made regarding the predictive value of the combination of the Insight Resume' scores, HSGPA, and composite ACT scores when predicting first semester GPA of 2.0 or higher, retention, or five-year graduation rate. As the results of the study indicated, there was no significant relationship found between Insight Resume' scores and the student success outcomes. There was also no indication that any of the predictor variables significantly improved the ability to predict earning a first semester GPA of 2.0 or higher or whether a student would retain or graduate. Although the findings of this study provided little evidence of the use of the Insight Resume' in predicting student success, many other studies using noncognitive assessment have shown the noncognitive assessments to be effective when predicting student success. Since the research using the Insight Resume' is limited, further investigation using a variety of student populations is necessary to draw conclusions regarding its effectiveness.

Results of the Correlation Analysis

Research Question 1 asked if there was a relationship between earning a first semester college GPA of 2.0 or higher and scores on the Insight Resume. With a correlation coefficient of $-.054$, the results showed that there was no significant relationship between the two. Research Question 2 attempted to measure the correlation between scores on the Insight Resume' and retaining from the first year to the second year. The results indicated a small relationship with a significance level of $-.037$. The third research question asked if there was a relationship between graduating in five years and scores on the Insight Resume'. Although measuring closest to being

statistically significant of three correlation analyses, the results still yielded only a slight relationship of .130. Due to finding no significant relationships with any of the correlation analyses, the three hypotheses related to the first three research questions were rejected.

Results of Logistic Regression Analysis

The fourth research question measured the predictive value of the combination of the Insight Resume' scores, HSGPA and composite ACT scores and predicting first semester GPA of 2.0 or higher, retention or five-year graduation rate. Analysis related to Question 4 most closely related to the methodology used in previous studies using noncognitive assessment. Using a .05 level of significance, results revealed that there was no indication any of the predictor variables significantly improved the ability to predict earning a first semester GPA of 2.0 or higher or whether a student would retain or graduate. When examining which variable was closest to being statistically significant for predicting results for each dependent variable, HSGPA measured closest for earning a GPA of 2.0 or higher (.125), ACT score was closest for retaining from the first to second year (.337) and Insight Resume' score was closest for predicting graduation in five years (.179). Since none of the results were found to be statistically significant, the three null hypotheses associated with the final research question were rejected.

Several conclusions can be drawn from the results of both the correlation and logistic regression analyses. The sample size was relatively small with only 154 subjects. The population was also narrowly focused as it consisted of only at-risk students participating in the Conditional Admissions Program (CAP). Furthermore, these students

were already academically deficient upon entering the university threatening their chances for being successful from the time they enrolled.

Although the research yielded no statistically significant results, assumptions should not be made based on this single study regarding the effectiveness of Insight Resume´ in measuring student success outcomes. The research should be expanded to future cohorts in the CAP, providing a longitudinal perspective to help gauge whether or not future use of the Insight Resume´ would be beneficial. Other populations should also be evaluated to determine if the Insight Resume´ could be useful in predicting student success for a broader group of students.

Limitations of the Study

Several limitations of the study exist that impact the generalizability and usability of the results beyond the selected participants of this study. These results are limited due to the unique characteristics of the academically at-risk selected sample of students in this research as compared to the population in the other study using the Insight Resume´. In addition, the at-risk population makes up only 10 percent of the entire freshman population at the university. Results of the study could vary greatly if evaluating the entire freshman class. The overall sample size in the present study was relatively small as well, limiting generalization of results to other larger student populations.

Another limitation of the present research was the lack of literature related to the use of the Insight Resume´, which provides limited insight into its predictive capabilities. Limitations could also be applied to the training needed to review each Insight Resume´. Competency in this evaluation was critical to ensure accurate calculation of scores for each student.

Finally, the academic background and strength of each student's high school curriculum, as well as the specific courses they completed, was unknown to the researcher. Students in the Conditional Admissions Program come from a variety of high schools and geographic areas of the state, bringing with them a different level of academic preparedness. Although each subject had unique academic attributes and high school experiences, they were generalized to meet the needs of the study.

Implications for Future Practice

Based upon the research outlined in the review of literature, there appears to be a solid foundation of evidence for the benefit of including noncognitive assessment in the college admissions process, especially when using the Noncognitive Questionnaire. Although the results of this study produced no significant findings for the use of the Insight Resume' in predicting success for the at-risk population, conclusions should not be drawn for its future use based upon this single study. Many variables not measured in the study could have impacted student success. The influence of academic advising and course schedules, quality of instructors and their teaching practices, personal experiences that occurred after classes began, overall engagement in the campus culture, and the overall effectiveness of the Conditional Admissions Program could have had either a positive or negative influence on each student's ability to be successful.

Using the Insight Resume' as the noncognitive assessment tool of choice could potentially have positive impacts across the entire academic enterprise. Engaging faculty and staff outside of the admissions office in the admissions process by training them to read and score the Insight Resume' could help create a better understanding university-wide of the challenges faced when evaluating applications. Involving the campus

community in this type of evaluation could generate more interest and ownership from the academic community in who is being offered admissions to the university. The content of the student responses could also provide a glimpse of the life challenges and experiences students are bringing with them into the college environment. Because it can be time consuming, this method of application review may be seen as inefficient and a drain on resources. However, consideration must be given to the positive impact this could have on the university budget as student support needs can be identified early in the student's career, allowing services to be pushed to students in a more timely fashion. Providing help before students dig themselves into an academic hole has the potential to lead to increased retention and graduation rates.

Given the breadth of research findings supporting the use of noncognitive assessment in college admissions, policy decisions regarding admissions requirements should be investigated further. Does including this type of evaluation in conjunction with traditional measures such as standardized test scores and HSGPAs give institutions the best opportunity to admit and enroll students who have the greatest propensity for success? Additionally, collecting this type of comprehensive information on new students could help frame student discussions with advisors, allowing personal and transition issues to be identified early in the student's academic career. Advisors could then provide necessary interventions to encourage students to seek the appropriate academic and social support services needed to promote success.

Although significant research exists showing the effectiveness of noncognitive assessment in predicting student success, this approach to application review must be carried out with extreme care. A tremendous amount of personal information is collected

when using this type of holistic approach and it can be risky to expect prospective college students to divulge highly personal information in the college admissions process, especially when they are not generally asked to do so when applying to most colleges. Many of the questions could potentially dredge up negative past experiences the student would rather forget. Requiring students to recount these experiences could be emotionally damaging, potentially inhibiting their likelihood of being successful.

If noncognitive assessment is used to make admissions decisions, admission's officers may feel the need to call into question the validity of the student's response. Are students getting help by having someone else answer the questions for them in an effort to enhance the probability of acceptance? Clear communication to the student as to what is being gained from the holistic review and how the results will be used is essential in preventing this occurrence. Students must be reassured that providing these highly personal responses will only be used to help them succeed.

Noncognitive assessment also challenges normal paradigms of common admissions practices. Is it ethical for two applicants from the same high school with identical standardized test scores and grade point averages to conceivably yield two different admissions decisions? Would an applicant with a high standardized test score and grade point average not be admitted because of his noncognitive assessment results? The essence of college admissions is to admit students who have the potential to be successful.

ACT and SAT scores of the entering freshmen are often used to define the quality of an institution, instead of degrees produced and employability of graduates. Additionally, standardized test scores are often used by colleges and universities as the

primary indicators to predict academic success for new college freshmen. While this may be useful when evaluating male, regularly admitted Caucasian students, there is plenty of existing research that indicates using standardized test scores alone to predict success for other student populations may not be as effective (Sedlacek, 2004, 2005). In an era where diversifying the student body is often an institutional priority, using noncognitive assessment can help broaden the strategies needed to attract individuals from different ethnicities and geographic locations who will enrich the entire campus experience for students. Noncognitive assessment would permit institutions to look beyond test scores and focus on evaluating the student as a whole, hopefully allowing for a more comprehensive approach to ensuring student success. Furthermore, consideration should be given to employing a more qualitative assessment in an attempt to better understand the students' experiences throughout their first semester of college. College personnel could then call upon their interactions with prior students to help them interact with and assist future students.

Recommendations for Future Research

Further investigation is needed regarding using the Insight Resume' to predict student success. While there are significant research findings regarding the relationship between results on the Noncognitive Questionnaire and student success, there is limited research using Insight Resume', and none that could be identified studying the at-risk student population. The present study can add to the existing literature and help frame possible research efforts in the future. Additional studies could also include giving both instruments to the same group of students so results regarding the effectiveness of predicting student success could be compared.

The present study used only the Insight Resume' score and traditional cognitive measures including the ACT score and HSGPA. The population was also limited to at-risk students, representing only a small portion of the freshman class. Other student characteristics that could impact a student's ability to succeed in college need to be included in future studies using the Insight Resume'. Socioeconomic status, ethnicity and gender should be included to strengthen predictive capabilities of the statistics. Other student populations should also be analyzed to determine the effectiveness of the Insight Resume', such as first-generation students, international students and athletes. Students attending different types of institutions should also be investigated, including those in urban and rural settings, graduate schools and community colleges. As the review of literature indicated, many of these populations have been previously investigated by the Noncognitive Questionnaire. Similar studies using the Insight Resume' need to be conducted to build the research base for noncognitive assessment and strengthen the argument for including holistic review in the college admissions process. Analyzing subsequent cohorts in the Conditional Admissions Program who completed the Insight Resume' would be an ideal place to start adding to the body of research. Additionally, comparing results of the at-risk students to the students who actually met the admission requirements could provide a clearer picture of which population is impacted most by the Insight Resume'.

Another student group that should be considered for future investigation is the transfer student population. Often forgotten when reporting traditional federal and state student success metrics such as retention rates and graduation rates, these students comprise a significant portion of the student body on most college campuses. Like their

freshman counterparts, transfer students face a variety of transition issues when they move from one college campus to another. If transferring from a community college, issues such as increased academic rigor, larger class sizes and becoming actively engaged in a new campus could impact their chances for success. Other populations that should be investigated using noncognitive assessment include adult learners, part-time students and student veterans.

Summary of the Study

This study examined the effectiveness of noncognitive assessment on student success, as measured by the following dependent variables: earning a first semester GPA of 2.0 or higher, retaining from year one to year two and graduating in five years. The Insight Resume[®] was the noncognitive assessment tool used in the study. Correlations were calculated measuring the relationship between the Insight Resume[®] and the dependent variables. In addition, a statistical analysis using logistic regression was used to measure the predictive value of the combination of the Insight Resume[®] scores, HSGPA and composite ACT scores on predicting first semester GPA of 2.0 or higher, retention from year one to year two, or five-year graduation rate.

The study included 154 at-risk students who were admitted Fall 2007 into the Conditional Admissions Program at the University of Central Missouri. The researcher used multiple methods of data analysis, employing both a Spearman Rho correlation coefficient as well as logistic regression. Findings revealed there were only slight correlations between Insight Resume[®] score and earning a first semester GPA of 2.0 or greater, retaining from the first to the second year, and graduating in five years. Although still statistically insignificant at .130, graduating in five years was found to be closest to

being statistically significant of the three to scores on the Insight Resume'. The logistic regression analysis attempted to measure the predictive value of the combination of the Insight Resume' scores, HSGPA and composite ACT scores on predicting first semester GPA of 2.0 or higher, retention, or five-year graduation rate. Using a .05 level of significance, results revealed that there was no indication any of the predictor variables significantly improved the ability to predict earning a first semester GPA of 2.0 or higher or whether a student would retain or graduate. When looking at which variable was closest to being statistically significant, HSGPA measured highest for earning a GPA of 2.0 or higher (.125.), ACT score was most significant for retaining from the first to second year (.337) and Insight Resume' score was best for predicting graduation in five years (.179).

Although the findings of this research were relatively insignificant when attempting to predict student success, previous studies using alternative noncognitive assessment methods creates potential implications for the college admissions practice. Determining the best methods to evaluate prospective student applications with the goal of admitting students who have the potential to be successful will continue to be the core of the profession. Previous research has shown the benefits of utilizing a holistic approach to application review, combining noncognitive assessment with traditional methods such as standardized test scores and high school grade point averages.

While this research included both noncognitive and traditional measures in attempting to predict academic success across three different student success categories, it was certainly not a complete review. Given the limited research using the Insight Resume' currently existing in the field, there is ample need for more studies to be

conducted. The researcher recommends more research regarding different student populations and inclusive of more variables to create a more comprehensive view. Specifically, socioeconomic background and ethnicity should be analyzed, as well as including other non-traditional populations such as first-generation students. Expanding the research will help build the knowledge base for noncognitive assessment and hopefully strengthen the argument to include a more holistic review of admissions applications in an effort to ensure student success.

Appendix

Insight Resumé

UCM would like to better understand your perspectives, contributions, qualifications, and diverse talents. This Insight Resumé allows us to take a more comprehensive look at what a student brings to the University – not just ACT/SAT scores and high school GPAs. Please address your experience in each category keeping in mind how you could contribute to the future community of excellence at UCM. **Respond to the six questions and limit answers to 100 words per question.** Use a separate sheet of paper and include your name and social security number. **Please return your Insight Resumé to the University of Central Missouri Office of Admissions in the enclosed business reply envelope.**

1. **Leadership/Group Contributions:** Describe examples of your leadership experience in which you have significantly influenced others, helped resolve disputes, or contributed to group efforts over time. Consider responsibilities to initiatives taken in or out of school.
2. **Knowledge in a field/creativity:** Describe any of your special interests and how you have developed knowledge in these areas. Give examples of your creativity: the ability to see alternatives; take diverse perspectives; come up with many, varied, or original ideas; or willingness to try new things.
3. **Dealing with adversity:** Describe the most significant challenge you have faced and the steps you have taken to address this challenge. Include whether you turned to anyone in facing that challenge, the role that person played, and what you learned about yourself.
4. **Community Service:** Explain what you have done to make your community a better place to live. Give examples of specific projects in which you have been involved over time.
5. **Handling systemic challenges:** Describe your experiences facing or witnessing discrimination. Tell us how you responded and what you learned from these experiences and how they have prepared you to contribute to the UCM community.
6. **Goals/task commitment:** Articulate the goals you have established for yourself and your efforts to accomplish these. Give at least one specific example that demonstrates your work ethic/diligence.

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