EFFECTS OF INSTITUTIONAL INTEGRATION AND CAREER DECISION MAKING SELF EFFICACY ON ACADEMIC PERSISTENCE AMONG COLLEGE FRESHMEN

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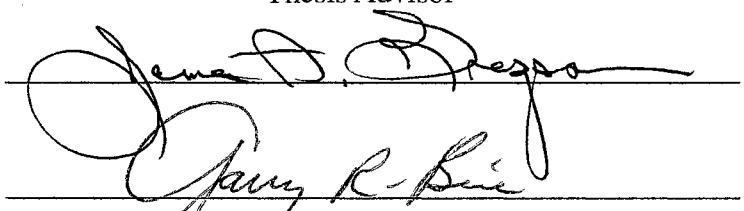

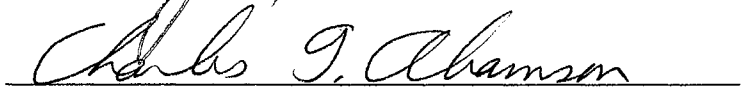

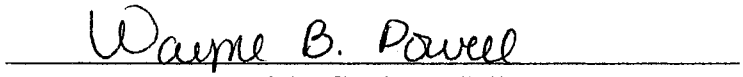

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TABLE OF CONTENTS

Chapter Page

LIST OF TABLES

Table Page

LIST OF FIGURES

Figure Page

CHAPTER I

INTRODUCTION

This study examined the effects level of career decision-making self-efficacy and levels of overall, academic, and social integration had on persistence and withdraw decisions of new college freshmen. It had five questions in its design. The first question examined relationships between students perceived career decision-making self-efficacy, overall integration, social integration, academic integration, and initial goals and commitments. A second question investigated if levels of career decision-making self-efficacy discriminated persistence or withdraw. The third question investigated if levels of overall integration discriminated persistence or withdraw. A fourth question examined if levels of social and academic integration equally discriminated persistence or withdraw. Finally, the fifth question examined if new freshmen's level of career self-efficacy, initial goals and commitments, overall integration, social integration, and academic integration differed by background characteristics. This chapter reviews background information, the statement of the problem, research questions, limitations of the study, and definitions of terms.

Background

The pursuit of education is the most demanding cognitive and motivational challenge that young adults face (Zimmerman, 1995). It is public, competitive, and self-defining in that academic records can define occupational paths (Zimmerman, 1995).

The completion of a college degree is an important step toward occupational security as well as economic mobility (Pascarella & Terenzini, 1991). Vocational and financial motivations are often cited by students as reasons for pursuing higher education (Tinto, 1993). For example, in a survey of 27 research universities freshmen at listed reasons why they chose to attending college (Bowers, 1998). Of their top three most cited reasons, the first was to learn things of interest to them, second was to make more money, and the third was to get a better job. Completing a college education to reach these goals, however, is a formidable task.

Forty percent of students who begin a four year degree will fail to earn it (Tinto, 1996). Nearly 57 percent of college dropouts leave prior to the start of their sophomore year (Tinto, 1996). If students view college as a gateway to better jobs and salaries, why do they leave with those goals seemingly unmet? Factors contributing to departure decisions may reside in a student's subjective appraisal of whether college meets his or her expectations of the college experience (Tinto, 1993). Such an assessment maybe based on whether or not the student wishes to establish membership in the academic and social communities a university provides (Braxton, Vesper, & Hossler, 1995).

Tinto (1975, 1987, 1993) theorized that students who are socially and academically integrated are more likely to stay in school. Tinto (1975, 1987, 1993) developed a longitudinal model to explain students' persistence or departure decisions. This model explains college student attrition through interactions between the student and the academic and social systems of an institution (Tinto, 1993). Research using this model is generally supportive of its predictive validly and the importance of its two core concepts: academic and social integration (Pascarella, Smart, and Ethington, 1986).

Research (Pascarella, Duby, & Iverson, 1983; Wolfe, 1993; Braxton, Vesper, & Hossler, 1995) has found that students with higher measures of academic integration and social integration were more likely to persist in college. While the Tinto model of student departure has become one of the most widely accepted views of institutional departure (Christie & Dinham, 1991), there may be a neglected dimension to departure decisions.

In recent years, self-efficacy has received substantial attention from researchers. Self-efficacy is the belief in one's ability to organize and execute the course of action required to produce a given goal (Bandura, 1997). Bandura (1977) hypothesized that self-efficacy beliefs influence level of effort, persistence, and choice of activities. Students with a high sense of efficacy for accomplishing an educational task will participate more readily, work harder, and persist longer when they encounter difficulties than those who doubt their capabilities (Zimmerman, 1995). Researchers (Betz & Hackett, 1983; Lent, Brown, & Larkin, 1984, 1986; Lent, Larkin & Brown, 1989; Taylor & Betz, 1983) have found that students with higher levels of self-efficacy had lower levels of career indecision, perceived a greater range of career options, and were more persistent in their major field of study than students with lower levels of self-efficacy.

Aspects of student's self-efficacy can serve as a major influence in the pursuit of education (Zimmerman, 1995). Perceived career self-efficacy may influence students' career decision-making beliefs (Peterson, 1993a). The degree of confidence students express in their competency to embark on informational, educational, and occupational goal planning is called career self-efficacy (Taylor & Betz, 1983). Research using college students has shown support for the relationship between career self-efficacy beliefs and persistence in educational and career decisions (Lent, Brown, & Larkin, 1987;

Multon, Brown, & Lent, 1991). Low career beliefs may reflect an overall lack of commitment of being in higher education which can lead to students deciding not to continue with their education (Peterson, 1993a). Peterson (1993a) found that college integration was enhanced by strong career decision-making beliefs. Other studies corroborate this finding (Sandler, 1998; Betz & Hackett, 1986; Lent, Brown, & Larkin, 1984).

Statement of the Problem

There are numerous reports of career self-efficacy's effects in occupational choice (Hackett and Betz, 1981; Betz & Hackett, 1983; Hackett & Betz, 1989), in career planning (Lent & Hackett, 1987; Robbins, 1985), and in retention in technical majors (Lent, Brown, & Larkin, 1984, 1986; Lent, Brown, & Larkin, 1987, Lent, Larkin, & Brown, 1989). Studies on student persistence (Terenzini & Pascarella, 1977; Pascarella & Chapman, 1983; Wolfe, 1993) have established the predictive validly that integration levels have on persistence. However few studies (Peterson, 1993a; Sandler, 1998) establish a relationship between career self-efficacy, integration, and their effects on students' decisions to persist with or depart from higher education. The purpose of this study was to determine if the level of career self-efficacy and levels of overall, social, and academic integration affects retention of new freshmen.

Research Questions

The study addressed five related questions:

1. Is there a relationship between students perceived career self-efficacy, overall integration, social integration, academic integration, and initial goals and commitment?

2. Do scores of career decision-making self-efficacy discriminate persistence and withdraw?

3. Do scores of overall integration discriminate persistence and withdraw?

4. Do social and academic integration equally discriminate persistence and withdraw?

5. Do students' perceived career self-efficacy, initial goals and commitments, overall integration, social integration, and academic integration differ by background characteristics.

Significance of the Study

Approximately 1.1 million students will leave higher education altogether without ever completing either a two- or four-year degree program (Tinto, 1993). Student retention, the degree to which students persist with or depart from their educational institution, is a concern given the high attrition rates in many educational systems (Tinto, 1996). Measures related to retention and graduation rates have become barometers of institutional effectiveness (Borden & Dalphin, 1998). The Federal Student Right to Know Act and commercial college rankings such as those by U. S. News & World Report contribute to the attention institutions give to their retention rates (Borden & Dalphin, 1998).

Self-efficacy beliefs have been studied in relation to student persistence and academic success in pursuing a major in college. Researchers (Lent, Brown, & Larkin, 1984,1986, 1987; Brown, Lent & Larkin, 1989; Lent, Larkin, & Brown, 1989) investigated self-efficacy beliefs in scientific and technical college majors. They found that students with strong beliefs in their academic ability displayed greater persistence

and achieved significantly higher grades in science and engineering courses than students with low confidence. This suggests a relationship between career self-efficacy and persistence. However, this relationship has not been fully established within a theoretical model explaining the variables attributed to attrition such as the Tinto model (Peterson, 1993a). There has been one study (Peterson, 1992) which looked at career decision-making self-efficacy and institutional integration as it related to the underprepared freshman student population of non-degree granting unit of a university. Peterson concluded that the relationship between perceived career decision-making self-efficacy and integration needed to be explored with other populations from both public and private universities. If a relationship between career decision-making self-efficacy and persistence can be established, interventions could be instituted to increase career self-efficacy and potentially decrease attrition (Peterson, 1993a).

Limitations of the Study

This study represents students from Oklahoma State University (OSU) which is a large, residential, public university. Data from similar institutions of higher learning may yield different results.

The population used for this study was students enrolled in 35 sections of Arts and Sciences Freshman Orientation (A&S 1111). Data from other classes or other colleges within this institution may yield different results.

This study used data reported from the OSU Registrar's Office. As with any data, there is the possibility of incorrect or incomplete information being reported.

The study used all students from A&S 1111 who consented to being part of the study. Any student who declined to participate was not considered. Possible biases in the research might have resulted from the exclusion of such students.

Definitions of Terms

Self-efficacy

Self-efficacy is the " belief in one's capabilities to organize and execute the courses of action required to produce a given goal " (Bandura, 1997, p. 3).

Career self-efficacy

Career self-efficacy is the "extent to which students have confidence (self-efficacy) in their ability to engage in educational and occupational information-gathering, goal planning, and decision-making" (Peterson, 1993b, p. 5).

Integration

Integration is " the extent to which the individual shares the normative attitudes and values of peers and faculty in the institution and abides by the formal and informal structure requirements for membership in that community or in the subgroups of which the individual is a part" (Pascarella & Terenzini, 1991, p. 51-53).

New Freshman

A new freshman is "a student who has earned no more than six hours of college level credit after graduation from high school excluding credits earned concurrently with high school enrollment or by credit by examination" (OSU Catalog, 1999, p. 11)

Persisters

Students were labeled as persisters if they have registered for courses from fall semester of 1998 into the fall semester of 1999.

Withdrawals

For the purpose of this study, students were labeled as withdrawals if they were registered for courses in the fall semester of 1998 and spring semester of 1999 but were not enrolled the following fall semester.

Goals and Commitments$_1$

The second level in the Tinto (1993) Model. Together with the student's background or pre-entry attributes, this stage influences not only the extent to which the student will perform in college, but also how they will interact and integrate into the institution's social and academic systems (Pascarella & Terenzini, 1980).

Goals and Commitments$_2$

The fifth level in the Tinto (1993) Model. At this level students are reassessing their intentions and commitments to the college setting which ultimately leads to a decision to stay in or depart from college (Tinto, 1993).

CHAPTER II

REVIEW OF THE LITERATURE

Purpose of the Chapter

This chapter reviews literature on integration and self-efficacy in higher education environments. It starts with a brief review of retention issues in higher education then moves to a discussion on the conceptual framework of retention as proposed by the "Tinto Model" (Tinto, 1975, 1989, 1993). Literature on student persistence, particularly those studies focusing on the Tinto model, will be explored. A review of self-efficacy theory, research on self-efficacy in career planning, and research on self-efficacy in persistence will conclude the chapter.

Retention in Higher Education

The perennial problem of the college student dropout has long been a subject of concern and analysis (Deever & Hendrics, 1970; Christie & Dinham, 1991). College attrition has been identified as affected by such individual factors as financial aid receipt (St. John, 1998), residential living (Pike, Schroeder, & Berry, 1997) parental educational background (Hellman & Harbeck, 1997) or health service utilization (Cavendish, 1996). Most researchers conclude that students must adjust to the different environment encountered in college as compared to that of high school. Of students unable to adjust to their college environment, most leave early in their college career (Blanc, Debuhr, & Marting, 1983). A study for the United States Department of Education found that 70

percent of full-time new freshmen enrolling in the fall of 1988 continued to be enrolled at the same institution in fall of 1989 (Chaney & Farris, 1991). In examining long term characteristics, attrition was the heaviest between the freshman and sophomore years (Chaney & Farris, 1991).

The unavoidable fact is that college completion requires some effort on the part of the student (Tinto, 1993). College demands a willingness to commit oneself to the investment of the often scarce resources of time and energy to meet the academic and social demands that college imposes upon students (Tinto, 1993). Not all entering students possess that commitment. Some entering students are unable or unwilling to expend the effort required to complete a degree program (Tinto, 1993). Their departure, whether from academic dismissal or voluntary withdrawal, is a reflection of that lack of commitment (Tinto, 1993).

Concern among some university officials has encouraged research on methods to impede the attrition rate among entering students (Deever & Hendrics, 1970). Literature on student persistence and attrition prior to the 1970's was largely descriptive about the characteristics of withdrawers with few systematic investigations performed utilizing conceptual models of student persistence to guide the inquiry (Sandler, 1998; Tinto, 1987; Pascarella & Terenzini, 1980). One of the first models of college student persistence by Spady (1970, 1971) used sociological theories incorporating concepts of interaction, socialization, and integration to explain student departure decisions. In that model, persistence was viewed as the student's ability to become socially integrated which contributed to the decision to persist in or withdraw from college. Spady

formulated his model of student attrition using analogies from Durkheim's (1951) theory of suicide.

In Durkheim's (1951) theory of suicide, the possibility of egoistic suicide increases for individuals unable to integrate into a society. Two types of integration are necessary to reduce the likelihood of egoistic suicide: social and intellectual. Social integration involves personal affiliations and regular interactions with other members of the community (Durkheim, 1951). Intellectual integration results when an individual shares common values with members of a community (Durkheim, 1951). Feelings of alienation develop when an individual is seen as different from the larger group and does not hold shared values or morals. If an individual is not able to interact with peers who hold similar values, then suicide is more likely to occur. Spady (1970, 1971) advocated that voluntarily leaving college is analogous to egoistic suicide in that failure to integrate into the social and intellectual settings of college impacts the students' departure decisions.

Spady (1970, 1971) proposed an integration model based on interactions between personal attributes (such as dispositions, interests, attitudes, and skills) and environmental influences (such as courses, faculty members, administrators, and peers). These interactions encourage students' assimilation into the social and academic systems of an institution. The students' decision to persist or depart was heavily influenced by the rewards received from the two systems.

The Tinto Model

Drawing from Spady's (1970, 1971) model, Tinto (1975, 1987, 1993) refined the model of integration to explain students' decisions to persist with or depart from educational endeavors. It is one of the most widely accepted views of institutional

departure (Christie & Dinham, 1991) and has been the prevalent model in empirical research on college student departure (Baker & Velez, 1996; Braxton, Vesper, & Hossler, 1995). Tinto's (1993) model views the process of voluntary student departure as a longitudinal decision. This longitudinal model of student attrition (Figure 1) has a number of complex interactions between the student and the environment that serve as contributors to his or her dropping out of college.

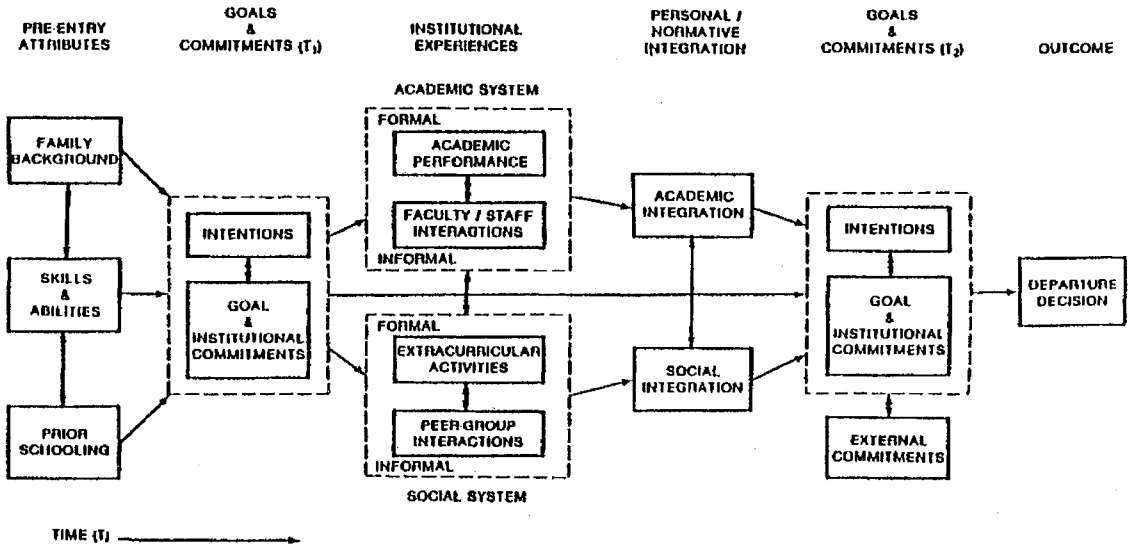

Figure 1. The Tinto Model of Institutional Departure

In the model, the student arrives at college with "pre-entry attributes" that have three forms: predetermined family background characteristics (e.g., social status, parental education, and size of community), skills and abilities (e.g., intellectual, social, handicaps, and motivations), and pre-college academic experiences (e.g., high school

grade-point average). Each affects departure indirectly through its effect upon the continuing formulation of the Goals and Commitments$_1$ stage.

Goals and Commitments$_1$ stage has two major forms. The first form is intentions. Intentions are indicated by the level and type of education sought by individuals and the occupation desired. The second form is goal and institutional commitments. Goal commitments indicate the amount of commitment individuals have to attain their goals. Institutional commitments indicate the level of commitment to the institution where the knowledge will be learned. Together with the pre-entry attributes, the Goals and Commitments$_1$ level influences not only the extent to which the student will perform in college, but also how they will interact and integrate into the institution's social and academic systems (Pascarella & Terenzini, 1980).

The next level, Institutional Experiences, explains the student's interactions with academic and social systems. This level has distinct academic and social components each with its own formal and informal structure of staff, faculty, and student communities (Tinto, 1993). The academic system concerns itself with the formal education components of classroom activities and interactions with faculty and staff (Tinto, 1993). The social system centers on the students' daily life and personal needs (Tinto, 1993). The interactions at this level affect the next level, the Personal/Normative Integration level.

The student's fit within the academic system is determined by their academic performance and interactions with faculty and staff which leads to the student becoming or not becoming academically integrated. To become academically integrated, a student must be able to identify with the academic norms and values of the institution. The

student's fit with the social system is determined by his or her interactions with peers and his or her involvement in extracurricular activities which leads to social integration. Students who are socially and academically integrated are likely to persist longer in the institution. The amount of social and academic integration that takes place, along with the student's previous commitments, leads to a reassessment of intentions and commitments of the Goals and Commitments$_2$ level and his or her subsequent decision to stay in college. Students with strong intentions and commitments will be the most likely to persist in college (Tinto, 1993). Those with weak intentions and commitments will be the most likely to withdraw (Tinto, 1993).

According to Tinto (1993) there is little evidence to support the assertion that, beyond the issues of commitment or motivation, withdrawers have a unique personality profile. In a review of the studies looking at personality traits and dropout rate, Tinto concluded that the impact of personality upon an individual's responses is situational in character and therefore a function of the setting. Personality may play a part in student departure, but research has been unable to describe how elements of personality affect departure decision (Tinto, 1993).

Applications of Tinto's Model to Student Attrition

Several researchers have demonstrated the utility of the Tinto model in predicting college student attrition. This section reviews studies from other researchers using the Tinto model of integration.

In a study by Terenzini and Pascarella (1977), the researchers examined the degree that a freshman's integration into the social and academic systems related to attrition. The authors hypothesized that students who were fully integrated in the social and

academic systems of an institution would have more positive perceptions of the social and academic systems. This would be evidenced in more participation in social activities and performing at a higher level of academic achievement. Less fully integrated students would show less social involvement and lower academic achievement. To test this theory, a random sample of 500 freshmen (54 percent male and 46 percent female) from a private university was drawn at the beginning of a spring semester. Students were mailed two self-reports and an Adjective Rating Scale (ARS). The first self-report assessed level of integration into the academic system by asking subjects their perceptions of their academic program. The second self-report assessed social integration by asking subjects their perceptions of their non-academic lives, participation in extracurricular activities, and the number of times they interacted informally with faculty outside of the class for ten minutes or more. The ARS scale asked students their reaction to the statements "I have found my non-academic life to be:" and "I have found my academic program to be:" by responding to 24 adjectives (e.g., good enjoyable, demanding, boring, useless) using a four point scale (1=extremely to 4=not at all). There was a response rate of 75.8 percent, but no breakdown of gender in the final sample was given.

The results of the study found that persisters were more positive in their perceptions of academic programs and nonacademic lives than leavers. Persisters reported significantly more informal contacts with faculty members and also found their non-academic lives to be significantly more demanding and challenging than did leavers. Cumulative grade point averages (GPA) and the number of extracurricular activities were not found to be a significant factor with the voluntary withdrawal group. There were no

differences between persisters and leavers in respect to gender, academic aptitude, or pre-registration expectations of the institutional environment.

In a follow-up paper, Pascarella and Terenzini (1977) investigated the relationship between persistence and freshman year interactions with faculty. Students were mailed a survey that asked them to indicate the number of times during the semester they met informally with a faculty member. The faculty interaction questionnaire identified six types of faculty-student interactions: 1) get basic information about an academic program, 2) discuss career concerns, 3) help resolve a disturbing personal problem, 4) discuss intellectual or course-related matters, 5) discuss a campus issue or problem, 6) socialize informally. Only contacts of 10 to 15 minutes or more were to be counted.

The findings of the study suggested that frequency of interactions with faculty is a predictor of withdrawal from school at the end of the freshman year and persistence into the sophomore year. Not all types of student-faculty interaction were of equal importance in encouraging academic and social integration and college persistence. Contacts focusing on intellectual or course related matters contributed most to the discrimination between persisters and voluntary leavers. The second most effective variable involved discussions related to students' career concerns. None of the other categories contributed significantly. The authors suggest that students with certain personality needs and orientations may be somewhat more likely to seek out and develop close relationships with faculty. The result of the relationships may lead to higher levels of academic and social integration and in turn the greater likelihood of persistence in college.

Terenzini and Pascarella (1978) next examined how attrition was affected by students' pre-college characteristics (e g. gender, high school achievement, parents education) and features of the freshman year experience that could be associated with attrition (e g. cumulative grade point average, perceptions of the academic program, contacts with faculty). The study found that such pre-college traits including gender, academic aptitude, personality dispositions, and high-school achievement explained less than 4 percent of the variation in attrition. The best predictors of attrition were associated with students' perceptions of their academic programs and their integration into the academic systems. The results supported that what happens in students' academic lives may be more influential than their social experiences in attrition decisions. Based on these results, the authors suggested that there is "little future in trying to predict attrition **solely** [sic] on the basis of students' prematriculation characteristics" (Terenzini & Pascarella, 1978, p. 363). They further suggested that efforts to reduce attrition levels should focus on what happens to students after their arrival on campus.

Pascarella and Terenzini (1980) faulted their previous studies (Pascarella & Terenzini, 1977; Terenzini & Pascarella, 1977; Terenzini & Pascarella, 1978) stating their studies used an indirect, surface assessment of Tinto's concepts of academic and social integration and did not operationalize the constructs of social and academic integration and institutional and goal commitments. This study used a multidimensional measure of social and academic integration that provided a more definitive construct of social integration, academic integration, and institutional goals and commitment. It was hoped that such a measure would be predictive of freshman persisters and voluntary dropouts. The study controlled for pre-college characteristics such as gender,

racial/ethnic origin, parents' income, parents' formal educational level, and students' degree expectations. The study also controlled for freshman year cumulative GPA and extent of involvement in extracurricular activities during the freshman year (of two hours or more per week on average). The items used to operationalize and distinguish between academic and social integration are those adapted by later researchers (Terenzini, Lorang, & Pascarella, 1981; Fox, 1984, 1986; Peterson, 1993a, 1993b).

This study used the Institutional Integration Scale (IIS) a multidimensional questionnaire with 34 questions divided into five scales: Peer-Group Interactions, Interactions with Faculty, Faculty Concerns for Student Development and Teaching, Academic and Intellectual Development, and Institutional and Goal Commitments. The questionnaire was judged by Terenzini and Pascarella to be adequate for assessing the academic integration, social integration, and institutional and goal commitments dimensions from Tinto's (1975) model. Setwise discriminant analysis found that each of the five scales significantly differentiated freshman persisters from voluntary dropouts. The scores of the five scales correctly identified 79 percent of the persisters and 75 percent of the students who later dropped out. Persisters tended to have higher scores on all five scales than the voluntary dropouts group. This study also found that student-faculty interaction continues to be important to persisters. Persisters' average scores on the two faculty scales were approximately one standard deviation higher than dropouts' scores were.

The Pascarella and Terenzini (1980) study looked at one large private university. Terenzini, Lorang, and Pascarella (1981) looked at a student population at a large public university to investigate if the results were generalizable to other populations. Similar

results were found using the IIS scale at the public institution as found at the private institution. In both studies, such covariates as precollege student characteristics, freshman-year cumulative GPA, and level of involvement in extracurricular activities made non-significant contributions to the explanation of variance between persisters and withdrawers. In both studies the five integration scales made statistically reliable and unique contributions to group differentiations. The two faculty interaction scales (Interactions with Faculty and Faculty Concerns for Student Development and Teaching) were significant in the first study (Pascarella & Terenzini, 1980), but those results were not supported in the present study. The authors suggest that this may be related to fewer withdrawers in the present study. They also suggest that this may reflect real institutional differences in faculty members' influence on students' freshman-to-sophomore year attendance patterns. At the private institution, freshmen received course and program advice from faculty members. At the public institution students are advised by a group of professional academic counselors. The largest contributor to persister or withdrawer discrimination in both studies was the Institutional and Goal Commitment scale.

Pascarella and Chapman (1983) attempted to extend the explanatory power of college persistence/withdrawal through a multi-institutional study. This study looked at three different groupings of post-secondary institutions: 4-year predominately residential; 4-year predominantly commuter; and 2-year predominantly commuter. A limitation to the study, as the authors cautioned, was that while the 11 institutions in the sample were geographically distributed across the United States, they should not be viewed as a representative national sample. Further the sample had a response rate of 35 percent of the total population and slightly underrepresented older freshmen of 21 years and older.

The data support that there are differences in persistence and withdraw patterns in different institution types. In the residential institution sample, social integration had a significant direct effect on persistence and an indirect effect on institutional and goal commitments. Institutional commitment in residential universities was defined as being largely a function of the student's interactions with the social system of the institution. In the 2- and 4-year commuter institutions commitment to the institution was influenced by the degree of academic integration. Living on campus was the only other variable for the residential university that had a direct positive effect on persistence. This study concluded with the observation that while correct classification of persisters and withdrawer groups was statistically significant, there was still between 25 percent and 30 percent of the population incorrectly classified. This suggested to the researchers that the explanatory power of the model may be inadequate operational definitions of the model's variables. It could also show evidence that persistence/withdraw behavior is idiosyncratic and composed of more external circumstances and personal propensities than what this or any model can explain.

Continuing to look at the validity of Tinto's model in different institutional settings, Pascarella, Duby, and Iverson (1983) looked at the explanatory power of the Tinto model in an urban, commuter university setting. This study used an adapted IIS instrument employed by Pascarella and Terenzini (1980) to gather information about the freshman year experience.

The findings from this study found that background characteristics of commuter students are of equal if not greater importance in subsequent persistence and withdrawal decisions than actual experiences of college once enrolled. Previous studies (Terenzini &

Pascarella, 1977; Pascarella & Terenzini, 1980; Terenzini, Lorang, & Pascarella, 1981) did not find significant contributions of background characteristics. This study found that background characteristics alone correctly identified 69.1 percent of subsequent persisters and withdrawers. Consistent with past studies, academic integration was a positive influence. Social integration, however, was a negative influence. The authors wrote that in non-residential institutions commitment to the institution is defined largely by personally satisfying interactions with the academic, rather than, the social systems of the institution. The authors explain that this might be a result of the highly socially integrated student being more likely to transfer to a residential institution where the opportunities for social involvement are more consistent with his or her personality orientations.

Pascarella and Terenzini (1983) examined characteristics of students from an independent residential university. This study attempted to provide a comprehensive test of the validity of Tinto's model of voluntary withdrawal that the authors suggest was largely ignored in prior research. This study sought to operationalize and measure each of the five constructs from Tinto's model (background characteristics, initial commitments, academic and social integration, subsequent goal and institutional commitments, and withdrawal decisions). Discriminate analysis and path analyses were used as the statistical procedures.

In contrast to the Pascarella, Duby, and Iverson (1983) study, Pascarella and Terenzini (1983) found that background characteristics and initial commitments explain relatively little variance in persistence. They restate their conclusion from a previous study (Terenzini & Pascarella, 1978) that what happens to a student after arrival on

campus has a greater impact on persistence than either the background characteristics or personal commitments to the institution and the goal of graduation brought to the college. Academic integration directly influenced goal commitment that had a direct effect on persistence. Social integration directly influenced institutional commitment and directly affected persistence. The effect of institutional commitment was nearly three times that of goal commitment. This stepwise discriminant analyses correctly identified approximately 70 percent of the persisters and voluntary withdrawals when looking at only the academic and social integration scores.

Fox (1984) used the Pascarella and Terenzini (1980) scale to study underprepared students enrolled at a large, urban, commuter university. He found that some wording in the original scales caused reading comprehension problems with underprepared students. He suggested that 14 of the 30 original items needed to be revised to improve reading comprehension among general college populations. In a later study, Fox (1986) used the revised scale with underprepared students from an urban population within a commuter university. For the revision, some wordings were changed. For example, items containing the word "interactions" was replaced by "contacts". Also some negatively worded questions were rewritten. The results showed an increase in comprehension. Of the five sets of predictors used in the study, only two, academic and social integration, and intention to persist or withdraw, provided statistically significant results.

Christie and Dinham (1991) used open-ended interviews of 25 new freshmen to investigate student perceptions of the social process leading to persistence decisions and person growth. Also the interviews were used to identify variables and processes not

explicitly addressed by Tinto's model. This study was performed at a large, public, research university.

Two types of institutional experiences were identified as affecting social integration: living on campus in residence halls, and participating in extracurricular activities. Students who lived on campus spoke of the increased opportunity to interact with other students while off-campus students spoke about lost opportunities and described the difficulties of meeting students in classes. Students on-campus also had more opportunities to gain information about campus social activities.

Wolfe (1993) used the IIS scale to examine persistence differences between new freshmen who were commuting or residents of a predominately nonresidential university. Results showed that social integration was stronger in residential groups than commuting groups. She wrote that living in residential halls appeared to support increased social integration. However a greater number of residential students were not enrolled the following year. Wolfe writes that this may be attributed to more socially integrated students withdrawing to find a campus environment allowing for greater social involvement than a commuter institution provides. Pascarella, Duby, and Iverson (1983) made a similar proposal.

Braxton, Vesper, and Hossler (1995) used a longitudinal approach to evaluate how expectations of college influenced student integration. These researchers followed students from their ninth grade year to their freshmen year in college to study the college choice process. They found that the more committed students were to the institution attended and the goal of college graduation, the greater the degree of importance they attached to the fulfillment of their expectations for college. Academic and social

integration was affected by college expectations being met. The greater the extent of academic and intellectual development fulfilled, the greater the degree of academic and social integration. Expectations for career development also had a positive influence on both academic and social integration. The expectations of a collegiate atmosphere did not have a direct effect on academic or social integration. It did, however, exert a positive effect on institutional commitment and commitment to the goal of graduating from college. A limitation of this study was that persistence was not measured. Students were asked in the spring of their freshman year if they intended to return, but there was no verification by the researchers of a student's return.

Summary of Applications of Tinto's Model and Student Attrition

Research has been conducted at a variety of institutions from 4-year residential (public and private), 4-year commuter, to 2-year commuter. The results of the research have generally supported the predictive validity of Tinto's model on student persistence as measured by the Institutional Integration Survey (Pascarella and Terenzini, 1980). High goals or strong commitments, or both, will lead individuals becoming integrated and to persist under difficult circumstances. Conversely, modest goals or weak commitments may lead to individuals not integrating and a withdrawal decision. Most studies concluded that background characteristics (gender, academic aptitude, high-school rank/achievement) were not factors in attrition and that efforts to predict attrition should focus on what happens to students after their arrival on campus. Level of academic and social integration was the best predictor of persistence.

Literature Review on Self-Efficacy

Another variable that could affect college student persistence is self-efficacy. Self-efficacy is defined by Bandura (1997) as "the belief in one's capabilities to organize and execute the courses of action required to produce a given goal" (p. 3). Self-efficacy beliefs play an influential role in academic attainment (Bandura, 1997). The findings of longitudinal and experimental studies are consistent in showing that self-efficacy enhances effort and persistence in academic activities (Zimmerman, 1995). The next section will review literature on self-efficacy. It is presented in four parts. First is a brief overview of self-efficacy constructs. Second is a review of literature on self-efficacy applications to the concepts of career choice and decision making. Third is a review of literature related to college student self-efficacy, persistence, and career choice. Finally, a study is reviewed that combined career self-efficacy and using Tinto's model of student persistence.

The Concept of Self-Efficacy and its Applications

Self-efficacy theory, as postulated by Bandura (1977), suggests that a person's behavior and behavior change is mediated by beliefs concerning his or her ability to perform certain tasks or behaviors. Self-efficacy expectations can be used to examining whether behavior will be initiated, the effort expended on the behavior and how long the effort will be maintained in the face of obstacles or negative experiences (Lent & Hackett, 1987; Bandura, 1995, 1997). Bandura (1986) suggested that individual assessment of self-efficacy could be influenced by four information sources: 1) personal performance accomplishments, 2) vicarious learning, 3) verbal persuasion, and 4) emotional arousal.

With personal performance accomplishments, a successful personal performance of a given behavior will raise efficacy while an unsuccessful performance lower it. Actual performances are the most powerful source of self-efficacy information (Bandura, 1997; Lent, Lopez, and Bieschke, 1991; Bandura, 1986). Individuals with high levels of self-efficacy will not be adversely affected by an occasional failure (Bandura, 1986).

Vicarious learning or modeling is less influential than actual performance. Models who display effort and perform tasks successfully will be more influential than models effortlessly completing tasks. Perceptions of efficacy will be further enhanced if models are similar to the individual in background and ability (Bandura, 1986).

Forms of persuasion include positive verbal feedback from peers, teachers, and family. Positive verbal feedback should be given judiciously and honestly if it is to have a positive impact.

Emotional arousal is indicated by elevated pulse rate and feelings of anxiety or fear. Conscious awareness of personal anxiety about a particular task may lower efficacy beliefs.

To generate and sustain interest in an activity, at least moderate self-efficacy levels may be required (Bandura, 1997). Individuals with a higher sense of self-efficacy should work harder and persist longer, especially when facing obstacles, than those who doubt their capabilities (Bandura, 1977). Additional increases in self-efficacy above the threshold do not produce further gains in interests. Supreme self-assurance may render activities unchallenging and thus uninteresting (Bandura, 1997). Self-efficacy is influential in academic attainment (Bandura, 1997). Large overestimates of academic ability may cause students to attempt activities that are beyond their potential and result

in failure or discouragement (Bandura, 1986). Students with a low sense of self-efficacy for accomplish a task may attempt to avoid of learning activities (Bandura, 1977). Those with a high sense of self-efficacy should participate more eagerly (Bandura, 1977).

Self-Efficacy related to Career Development

Hackett and Betz (1981) first proposed that self-efficacy might be an important variable to include in models of career development, influences on achievement behavior, and academic and career decisions of men and women (Lent & Hackett, 1987). Hackett and Betz (1981) suggested that there were measurable gender differences in self-efficacy expectations that determined both the range of perceived career and academic options and the persistence and success in chosen options. They suggest that this may be an explanation for women's under-representation in scientific and technical fields (Betz & Hackett, 1983). To support this model, Betz and Hackett (1981) examined the relationship between occupational self-efficacy and differences in perceived career options of male and female college students.

Subjects were given a survey with 20 occupations that represented occupations traditionally chosen by males and those traditionally chosen by females. The presented occupations were based on the percentage of women employed in the occupation according to the U.S. Women's Bureau. Only occupations the employed 70% or more women or 30% or less women were selected. Subjects were asked to indicate their degree of interest in each of the 20 occupations (like, indifferent, or dislike). They were also to indicate whether they had considered pursing each occupation and if so to indicate the seriousness of that consideration.

Betz and Hackett (1981) found no gender differences in overall self-efficacy when looking at both traditional and nontraditional occupations for men and women. However, gender differences were found when examining traditional verses non-traditional occupations considered by male and female college students. In the study, women reported greater self-efficacy than men for traditionally female occupations and lower self-efficacy than men for traditionally male occupations. Men reported greater self-efficacy towards traditionally male occupations. Men also indicated they would consider more traditionally female occupations than did females for traditional male dominated occupations. Betz and Hackett suggested that this pattern might reflect different socialization experiences that result in women limiting their range of career choices to traditionally female dominated careers.

Taylor and Betz (1983) wrote that if low self-efficacy expectations lead to an reduction of some behaviors, then students with low career decision-making self-efficacy should have high levels of career indecision. They devised a standardized measure to examine career behavior from a self-efficacy perspective. This was the first study to use a standardized measure of career self-efficacy (Luzzo, 1996). The study used the Career Decision-Making Self-Efficacy (CDMSE) scale that measured self-efficacy beliefs of 50 questions considered to be associated with career decision-making. The 50 questions were broken down to 5 scales of 10 questions each. There were five scales: accurate self-appraisal, gathering occupational information, goal selection, making plans for the future, and problem solving. Students were asked to respond to how likely they could successfully complete a task. The responses were measured on 10-point scales ranging from Complete Confidence (9) to No Confidence (0). Scores from the CDMSE were

compared to level of career indecision as measured by the Career Decision Scale (CDS) (Osipow, Carney, Winer, Yanico, & Koschier, 1980). The hypothesis was that students with higher CDMSE scores should have lower CDS scores. The CDS measures education/vocation indecision in college students and consists of 18 items related to vocational decision-making (Taylor & Betz, 1983).

Results from the study found that students who were more confident in their ability to perform career decision-making tasks had less career indecision. No differences in gender in self-efficacy expectations in regard to career decision-making. Students with less confidence in their ability to complete decisions-making tasks were more undecided about their vocational future. There was little to no relationship between ability level (as measured by SAT or ACT scores) and career decision-making self-efficacy. The authors wrote that most students had the ability to perform career decision-making tasks yet there were measurable differences between students. This led them to conclude that there were measurable differences in self-efficacy expectations that mediated career decision-making behavior, and that the CDMSE measured levels of career indecision. There was a high interscale correlation between the five subscales. The authors cautioned that the instrument's subscales might not measure individual components of career decision-making but that it might be an overall index of career choice readiness.

Other studies (Luzzo, 1993; Luzzo, 1996; Osipow & Gati, 1998) support that CDMSE measured generalized career self-efficacy rather than five distinct factors of self-efficacy expectations of career decision-making skills. These studies support the CDMSE's use as a measure of college students' self-efficacy. Studies by Robbins (1985) and Niles and Sowa (1992) suggest that CDMSE scale is a measure of generalize self-

efficacy and not a measure of specific career decision-making self-efficacy. Taylor and Popma (1990), however, concluded that the CDMSE scale was a global measure of career decision-making self-efficacy and stated that the results of their study "confirm our confidence in the use of efficacy expectations as a viable predictor of career and academic indecision" (Taylor and Popma, 1990, p. 30).

Bandura (1986) hypothesized that personal performance accomplishments, vicarious learning, verbal persuasion, and emotional arousal are essential for the construction of career self-efficacy beliefs. Lent, Lopez and Bieschke (1991) explored how these sources of efficacy related to mathematics self-efficacy, academic interests, and science-based occupational choices. Their results found that mathematics ACT score correlated significantly with three of the four sources of career self-efficacy beliefs. Vicarious learning was not significantly correlated. Personal performance accomplishments constituted the most influential source of efficacy information. Men showed higher mathematics self-efficacy, but the authors wrote that the magnitude of this relationship, though statistically significant, was small. The authors suggest that men tend to enroll in more mathematics courses prior to college thus providing them with more opportunity to develop their mathematics skills and efficacy percepts. The gender differences might diminish when men and women have comparable prior coursework experiences. Lent et al. (1991) wrote that the study supports a theoretical sequence where self-efficacy mediates the effects of prior performance on interests, and interest, in turn, mediates the effects of self-efficacy on career aspirations: past success experiences promote self-efficacy.

Lenox and Subich (1994) explored the threshold effect of self-efficacy and vocational interest. Bandura (1986) proposed the threshold effect. Moderate to high self-efficacy may be required to sustain interest in an activity. Additional increases above levels that promote challenge and enhance goals may cause students become uninterested in those activities (Bandura, 1997). Lenox and Subich suspected a hidden curvilinear relationship existed between self-efficacy scores and vocational interest scores. They tested 180 introductory psychology students using the Strong Interest Inventory (SII). Three SII areas were examined: realistic, investigative, and enterprising. The students had been screened to ensure that five equivalent-sized groups representative of a broad, balance range of points on the self-efficacy continuum were used.

Lenox and Subich (1994) found slight curvilinearity in the relationship between self-efficacy beliefs and inventoried vocational interests for two of the three interest themes (realistic and investigative), but the cuvilinearity was not in the predicted direction. Instead of increasing from low to moderately high levels of self-efficacy and then dropping off at higher self-efficacy levels, individual's interests in the two areas remained moderate at low to average levels of self-efficacy and then began to rise at the higher levels of self-efficacy. This supports a threshold effect in a different direction than Bandura suggested. It suggests that interest in these activities increased rather than decreased beyond the threshold.

Self-Efficacy related to College Student Persistence and Career Choice

Self-efficacy can be considered a mediating variable in relation to a person's intent to continue in higher education (Lent, Brown, & Hackett, 1994). Lent, Brown, and Larkin (1984) found that student's beliefs about his or her ability to complete their educational

requirements of various science and engineering fields were predictive of subsequent academic performance. Using subjects (28 males and 14 females) majoring in technical/scientific career fields, Lent, Brown, and Larkin developed a list of 15 job duties specific to science and engineering occupations and gathered self-efficacy estimates regarding these titles. Students were retested 1- year later. Their scores were compared to academic performance and persistence in technical/scientific majors. The authors concluded that students with higher self-efficacy ratings generally achieved higher grades and persisted longer in technical majors than did the students with low self-efficacy. The authors further concluded that self-efficacy for technical/scientific educational requirements appeared to be related to objective measures of mathematical aptitude and high school academic achievement. There were no gender differences found in career self-efficacy ratings.

In a follow-up study to their 1984 study, Lent, Brown, and Larkin (1986) assessed the extent that self-efficacy, together with ability, achievement, and interest measured predicted academic grades and retention in technical/scientific fields. Analyses indicated that self-efficacy contributed significantly to the prediction of technical grades, persistence, and range of career options. The authors' suggested that efficacy expectations could be explored in relation to academic problems like poor grades, inefficient study habits, or multiple major changes.

Follow-up studies (Lent, Brown, & Larkin, 1987; Lent, Larkin, & Brown, 1989) compared the extent that self-efficacy related to other career interest measures. Findings from these studies showed non-significant gender differences between self-efficacy and technical career interests that were consistent with previous findings (Lent, Brown, &

Larkin, 1984, 1986). When compared to other career interest measures, self-efficacy was the most useful predictor of grades and retention in technical majors over a 1-year period (Lent, Brown, & Larkin, 1987). The authors concluded that self-efficacy and persistence added unique predictive variance beyond what is accounted for by the measure of ability.

Brown, Lent, and Larkin (1989) reexplored their data from their 1986 and 1987 studies examining academic self-efficacy's affects on the academic achievement and persistence. Their subjects had completed measures of self-efficacy, career indecision, self-esteem, expressed vocational interests, and range of perceived career options in technical/scientific field during the first and final class sessions of a career planning course. Their results indicated that self-efficacy beliefs affected academic achievement and persistence. Attitudes about specific academic abilities (e.g., complete the mathematics requirement for most engineering majors) affected grades and persistence. Measures of self-efficacy towards educational requirements (ability to complete the requirements of science and engineering fields such as electrical engineering) perceptions affected academic performance. Students with lower ranges of aptitude but with high self-efficacy beliefs obtained GPA's that were a full standard deviation higher than those with low self-efficacy beliefs.

The Use of Self-Efficacy Theory and the Tinto Model

A study by Peterson (1992, 1993a, 1993b) used Tinto's integration model to provide the theoretical framework for investigating the relationship between career self-efficacy and integration (overall, social, and academic) of underprepared students. This study's population was from General College which is a non-degree-granting unit of the University of Minnesota. Students at General College qualified as being academically

underprepared because of low high school GPA, low high school percentile rank, or low ACT scores. There were 418 subjects in the study with ages ranging from 18 to 49. Two instruments were administered: the CDMSE (Taylor & Betz, 1983) and the Fox (1986) revision of the Pascarella and Terenzini (1980, 1983) Institutional Integration Scale (IIS). Student background characteristics were obtained from college records and questions asked on the IIS.

Pearson product-moment correlations were used to determine relationships between the CDMSE and the IIS subscales. Scale A (CDMSE) had a moderate correlation with Scale B (initial goals and commitments) ($r = .35$), Scale C (Overall Integration) ($r = .42$), Scale D (social integration) ($r = .34$), and Scale E (academic integration) ($r = .32$). Scale B had moderate correlations with Scales C ($r = .41$), D ($r = .35$), and E ($r = .38$). The scores were all significant at $p \leq .001$. Intention to persist (question 36 from the IIS) had a slight to moderate correlation with all five scales (.21, .26, .30, .23, and .31 respectively) and was significant at $p \leq .01$. Age was correlated to all scales except Scale D (social integration). Correlation scores of age to scales A, B, C, and E were .13 ($p \leq .01$), .10 ($p \leq .05$), .15 ($p \leq .01$), and .19 ($p \leq .01$) respectively.

One-way ANOVA's were performed using the background characteristics (e. g. financial aid receipt, courses attempted, courses completed, proximity to campus, Minnesota residency, GPA, language proficiency, gender, high school rank, and high school GPA) as the independent variable and scales A to E as the dependent variables. Only degree aspirations were significant with all of the scales. The higher the degree aspirations reported, the higher the perceived career self-efficacy, initial goals and commitments, overall integration, social integration, and academic integration. General

College GPA and University of Minnesota GPA showed significant differences on all scales except social integration. No significant differences were found for any of the scales for background characteristics for English language proficiency, courses completed, employment, gender, high school rank, high school GPA, household income, and proximity to campus. One or more of the scales was significant to the background variables of ethnicity, mother's education, General College GPA, mother's occupation, University of Minnesota GPA, age, father's education, father's occupation, registration pattern, living arrangements, condition (handicaps/disabilities), Minnesota residence, number of courses attempted, application for financial aid, and receipt of financial aid. Peterson writes that the non-significant findings for background characteristics were, for the most part, consistent with previous studies that showed background characteristics were not strong contributors to persistence.

Peterson used multiple regression analysis using the dependent variables of overall integration, social integration, and academic integration. The independent variables used included CDMSE scores, initial goals and commitments, intention to persist, and the significant background characteristics based on the ANOVA's (receipt of financial aid, Minnesota residency, University of Minnesota GAP, General College GPA, age).

Based on the multiple regression analysis, Peterson concluded that the variance in students' overall, social, and academic integration scores was explained by their perceived career decision-making self-efficacy score and their initial goals and commitments score. Career decision-making self-efficacy explained more than half of the variance of overall and academic integration. Career decision-making self-efficacy and initial goals and commitments explained 21 percent of the variance in social

integration. The higher the degree aspirations reported, the higher the perceived career self-efficacy, initial goals and commitments, overall integration, social integration, and academic integration.

The conclusions Peterson (1993a) made were that perceived career decision-making self-efficacy and initial goals and commitments significantly contributed to the explanation of the variance of overall and academic integration while background characteristics made negligible contributions. Because career planning contributed to the explanation of the variance in overall and academic integration, student's perceptions of their career planning and decision-making plans may be linked to persistence.

Summary of Self-Efficacy Research

Personal beliefs about one's ability to successfully perform tasks can determine if an individual will attempt the task, how much effort will be expended, and the amount of persistence offered (Bandura, 1977). When self-efficacy theory is applied to career-relevant behaviors, expectations of career decisions may help predict persistence in college students. If students with low self-efficacy tend to avoid some behaviors, students with low career decision-making self-efficacy should have high levels of career indecision. Several studies (Taylor & Betz, 1983; Robbins, 1985; Luzzo, 1993) have been presented that seem to support that career decision-making self-efficacy is a measurable mediating variable influencing career indecision. Several other studies (Lent, Brown, & Larkin, 1984; Lent, Brown, & Larkin, 1986; Lopez & Lent, 1991) link career self-efficacy and educational persistence. None of these studies were performed within a theoretical model of college student persistence. Peterson (1993a) did combine Tinto's model of student persistence to self-efficacy. That study concluded that career decision-

making self-efficacy and integration in college did correlate and may be linked to student persistence.

CHAPTER 3

METHODOLOGY

The following will be discussed in this chapter: 1) a brief review of the study's purpose, 2) population and sample, 3) instrumentation, 4) data collection procedures, and 5) statistical procedures.

Review of the Study's Purpose

The purpose of this study was to determine if level career decision-making self-efficacy and levels of overall, academic, and social integration affects retention of new freshmen. Tinto (1993) suggested that decisions to withdraw from school are based on interactions with formal and informal structures of college life. Interactions with faculty, confidence in the academics, and the ability to make friends are part of the explanation the Tinto model (1993) gives to student integration and persistence. Literature generally supports the Tinto model as a means to explore freshmen integration and persistence (Terenzini & Pacarella, 1977, 1978; Pacarella & Terenzini, 1977, 1980, 1983; Pacarella, Duby & Iverson, 1983; Fox, 1984, 1986).

Bandura (1997) defines self-efficacy as the belief in one's capabilities to organize and execute the courses of action required to produce a given goal. Self-efficacy theory suggests that the initiation and persistence of a task is related to college persistence decisions. Several studies have shown that self-efficacy influences college career beliefs (Hackett & Betz, 1981; Betz & Hackett, 1981, 1986; Taylor & Betz, 1983; Taylor &

Popma, 1990), and college persistence (Lent, Brown, & Larkin, 1984, 1986, 1987; Lent, Larkin, & Brown, 1989).

Few studies have examined self-efficacy within a theoretical model of student persistence such as the Tinto model. One such study (Peterson, 1993a), looked at underprepared students' career decision-making self-efficacy and integration. Further research needs to be conducted looking at career decision-making self-efficacy and integration of general college students.

Population and Sample

This study was conducted at Oklahoma State University main campus (OSU), located in Stillwater, Oklahoma. New freshmen enrollment is summarized in Table 1. The student population, according to the OSU Student Profile (1998), was approximately 19,391 students of which 15,508 were undergraduates. Of the undergraduate population, 12,678 students (78 percent) were from the State of Oklahoma; 1,829 students (13 percent) were from other states; and 1,001 students (9 percent) were from 116 foreign countries. Men represented 8,277 students (53.4 percent) of the undergraduate population and women represented 7,231 students (46.6 percent). In 1998, there were a total of 2,676 new freshmen and 884 were in the College of Arts and Sciences (A&S). The mean age of new freshmen was 19.06. There were 512 female (58 percent) and 372 male (42 percent) new freshmen students in A&S. Retention data for A&S indicates that of 1,013 freshmen enrolled for the fall semester of 1997, 621 students (61.3 percent) were enrolled in A&S in the fall semester 1998, 221 (21.8 percent) were not enrolled at OSU, and 171 (16.8 percent) transferred to other colleges within OSU. This data did not delimitate new or continuing freshmen. Overall, first-year retention for full-time new

freshmen was 82.4 percent. This number appears to be higher than other studies. According to a study from the United States Department of Education (Chaney & Farris, 1991), 70 percent of full-time freshmen continued to be enrolled at the same institution into their sophomore year. According to Tinto (1993) national attrition rates between the freshmen to sophomore year was 27 percent.

Table 1

Summary of Female and Male Enrollment and Retention Rate

	Female	Male	Total	Retention Rate (percentage)
OSU Undergraduate Enrollment	7,231	8,277	15,508	
OSU New Freshmen	1338	1338	2676	82.4
A&S College New Freshmen (1997)	512	372	884	73.5
Study Sample	352	257	589	85.3

This study was a longitudinal study with an intact group. The study's sample were enrolled in the fall 1998 Arts and Sciences Freshman Orientation 1111 (A&S 1111). A&S 1111 was a one-hour, for-credit course required of all entering freshmen in A&S. A&S 1111 had 38 sections with an average enrollment of 22 students per section. There were 836 students enrolled in A&S 1111. Enrollment sheets listed all but one student as freshmen and all students were students in A&S. The study sample was limited to full-

time students who were 18 years of age or older. The students who met the criteria of being full-time were those registered in the Fall-98 and Spring-99 semester, and completed at least twelve hours (full-time enrollment) of courses (for credit or non-credit) during each semester.

Instrumentation

Two instruments were administered: the career decision-making self-efficacy instrument (Taylor & Betz, 1983) and the Fox (1986) revision of the Pascarella and Terenzini (1980, 1983) Institutional Integration Scale (IIS). Background characteristics were obtained on a self-reported survey.

Career Decision-Making Self-Efficacy (CDMSE) Instrument

The Career Decision-Making Self-Efficacy (CDMSE) Instrument (Appendix A: Taylor & Betz, 1983) has been used with several studies as documented in Chapter 2. Most research studying career self-efficacy has been performed using the CDMSE (Betz, Klein, & Taylor, 1996). The CDMSE identifies the extent that students are confident about their ability to engage in occupational information gathering. The CDMSE is made up of 50 questions and has five subscales that measure career choice competencies: self-appraisal, gathering occupational information, goal selection, making plans for the future, and problem solving. The responses are measured on 10-point scales ranging from Complete Confidence (9) to No Confidence (0). A total score reflecting self-efficacy expectations is calculated by summing the confidence ratings for all 50 items. The score range is from 0 to 450. A higher score reflects stronger self-efficacious beliefs in career decision making and should be related to other indices of effective career decision-

making, such as career decisiveness, career maturity, and vocational identity (Luzzo, 1996).

In the initial study by Taylor and Betz (1983), the CDMSE had high internal consistency reliability of .97 for the total scale. The reliability of the CDMSE for the present study was .965. Peterson (1992) found that the scale yielded a similar reliability coefficient of .97. Luzzo (1993) reported an internal consistency reliability of .93. Osipow and Gati (1998) reported an internal consistency reliability of .95. The five subscales in the Taylor and Betz study had individual reliability coefficients calculated as follows: Self-Appraisal (.88), Occupational Information (.89), Goal Selection (.87), Planning (.89), and Problem-Solving (.86). Robbins (1985) and Osipow and Gati (1998) believed that high inter-item correlations failed to show that the scales measured individual constructs of career decision-making and recommended that the subscales not be used. For that reason, the subscales were not used in the present study. Luzzo (1993) reported a test-retest reliability of .83. Luzzo (1996) stated that the scale should be limited to college student populations because the psychometric qualities have not been tested with other populations.

Institutional Integration Scale (IIS)

The Institutional Integration Scale (IIS: Appendix B) is made up of 36 questions. Responses are measured on 5-point scales ranging from Strongly Disagree (1) to Strongly Agree (5). The IIS scale used was the Fox (1986) revision of the Pascarella and Terenzini (1980) scale. Fox found that several items from the original Pascarella and Terenzini scale presented reading comprehension problems to underprepared students so revised some questions. Given that the reading comprehension level was improved, it is

prudent to use the revised scales with general college students to ensure that comprehension problems are avoided regardless of reading level.

The research questions asked for the calculation of several variables from the IIS: Initial Goals and Commitments (IGC), Overall Integration, Social Integration, and Academic Integration. Calculations were made based on recommendations from Peterson (1992). IGC was calculated by summing the scores from the first 11 questions and computing the mean. Overall Integration was derived by summing the scores of items 12 to 35 and computing the means. Social Integration was calculated by summing the scores of items 12, 13, 16, 21, 22, 23, 27, 28, 30, 32 and computing the means. Academic Integration is derived by summing the scores of items 14, 15, 17, 18, 19, 20, 24, 25, 26, 29, 31, 33, 34, 35 and computing the means.

Fox (1984, 1986) reports that the reliability coefficients for his sample population were .72 to .80, but does not state separate reliability coefficients for the instrument. In Peterson (1993a), the scales yielded higher reliability coefficients: Overall Integration had an alpha of .91, Social Integration alpha of .83, Academic Integration alpha of .88 and Initial Goals & Commitments alpha of .73. Pascarella and Terenzini (1980) report reliability to be .71 for the Initial Goals & Commitments scale. In the present study, the scales yielded similar reliability coefficients: Overall Integration alpha of .87, Social Integration alpha of .82, Academic Integration alpha .87, and Initial Goals & Commitments alpha of .74.

Background Questionnaire

There were two background questionnaires used for this study. The first was developed by Peterson (1992) (Appendix C). It asked about parent's educational

background and was administered with the CDMSE during the fall semester. A second background questionnaire (Appendix D) was mailed with the IIS. It asked a series of self-reported background questions on individual student characteristics including financial aid, learning disabilities, living arrangements, gender, and age. On the IIS, a question was asked about hours employed.

Data Collection Procedures

In fall-1998, the investigator solicited instructors of the 38 A&S 1111 sections to allow him access to their classes. He was granted access to 35 sections with a total enrollment of 767 students. Instructors in three sections (69 total students) denied permission and these sections were not surveyed. Between September 15, 1998 and October 9, 1998, the investigator visited each of the 35 sections. A prepared script was read (Appendix E) to students and any questions posed were answered. Students were not obligated to participate in the study and could refuse to participate. Students that did participate completed the Career Decision-Making Self-Efficacy (CDMSE) instrument and a questionnaire about parent's educational background. A consent form (Appendix F) was distributed at that time securing permission from participants to obtain their college address during the spring-99 semester, their GPA and their enrollment status at the beginning of the fall-1999 semester. Of the 767 students enrolled in the 35 sections, 588 students (76.6 percent of total enrollment) completed the CDMSE and background questionnaire.

In February 1999, addresses for the 588 students were generated by the OSU Registrar's office. Enrollment status (enrolled or not enrolled) for the participants was

determined at that time. There were 22 students who had not enrolled for the spring semester, and they were not considered further.

In late March 1999, 566 students were mailed the Institutional Integration Scale (IIS), a pencil, a personalized cover letter (Appendix G), and a business return envelope. Each survey was coded to identify non-respondents. Five of the survey packets were returned as undeliverable. Non-respondents were sent a postcard (Appendix H) approximately two weeks later reminding them to return the survey. A second postcard (Appendix I) was sent approximately 1 week later. In total, 267 students (47 percent) returned the IIS survey. This represents 35 percent of the initial 767 students in the population.

In September 1999, the OSU Registrar's office released grade report information and fall enrollment confirmation on the 588 students in the initial participant group. Students' grade reports contained overall GPA and confirmed if participants could be considered new freshmen. Twenty-three students were identified as suspended because of poor grades. This study was concerned with persistence and voluntary dropout so these students were eliminated from the study. Twelve students were identified as not fitting the criteria of new freshmen and were eliminated from the study. Five students had withdrawn during the spring semester, but were enrolled for the fall; they were eliminated from the study. The grade reports identified 20 additional students who withdrew after February 1999. Since they can not be considered as completing two semesters, they were eliminated from the study. There were 275 students who did not return the IIS survey and were removed from the study.

The final sample consisted of 254 students. There were 237 students who were persisters and returned the IIS survey. Persisters were defined as student who had registered for courses from fall semester of 1998 into the fall semester of 1999. There were 16 students who were withdrawers and returned the IIS survey. Nonpersistence or withdrawal was defined as students who had completed the fall of 1998 and spring of 1999 semesters but were not enrolled or had enrollment cancelled for nonpayment by the end of the first two weeks of school for the fall of 1999. The average age of the students participating in this study was 18.8 years (SD = .62). This is slightly lower than the overall age of new freshmen OSU students.

Statistical Procedures

The data was analyzed using SPSS 7.5 (Chicago) for Windows. Means for Initial Goals and Commitments, Overall Integration, Social Integration, and Academic Integration were calculated according to the criteria described above.

To answer the first research question (Is there a relationship between students perceived career self-efficacy, overall integration, social integration, academic integration, and initial goals and commitment?), simple product-moment correlation was used.

To answer the second research question (Do scores of career decision-making self-efficacy discriminate persistence and withdraw?) discriminant analysis was used. Discriminant Analysis is used to predict group membership (Kerlinger, 1986). It is an appropriate statistic where there is a nominal level dichotomous dependent variable and an interval or ratio level independent variable (Klecka, 1980). While discriminant analysis can be used similar to multivariate analysis for understanding group differences,

it is often used simply for classification purposes (Klecka, 1980). The classification will indicate the accuracy of the discriminant function in correctly predicting classification of individual's scores (Klecka, 1980).

To answer the third research question (Do scores of overall integration discriminate persistence and withdraw?) discriminant analysis was used.

To answer the fourth research question (Do social and academic integration equally discriminate persistence and withdraw?), discriminant analysis was used.

To answer the fifth research question (Do students' perceived career self-efficacy, initial goals and commitments, overall integration, social integration, and academic integration differ by background characteristics?) analysis of variance (ANOVA) was used.

CHAPTER 4

RESULTS

The purpose of the study was to determine the impact career decision-making self-efficacy and integration had on the persistence of new college freshmen. The study population and sample, the study instrumentation, the data collection procedures, and the statistical procedures were described in Chapter 3. The following sections are discussed in this chapter: 1) results and analysis of the first research question, 2) results and analysis of second research question, 3) results and analysis of the third research question, 4) results and analysis of the fourth research question and 5) results and analysis of the fifth research question.

Correlation Findings between Career Decision Making Self-Efficacy and Institutional Integration Scales

The first research question asked "Is there a relationship between students perceived career self-efficacy, overall integration, social integration, academic integration, and initial goals and commitment?" To answer this question, a 5x5 correlation was used. According to Kurtz and Mayo (1979), the critical value for correlations with sample sizes of 253 at the .01 level is .164. According to Cohen and Cohen (1983), the r^2 value measures the proportion of variance in one variable that can be explained by another variable. As shown in Table 2, the correlation coefficients were well above the .164 threshold and indicate slight to strong correlations significantly

different from zero. The first question may therefore be answered as follows: a positive relationship exists between perceived career decision-making self-efficacy, overall integration, social integration, academic integration, and initial goals and commitment.

Table 2

Pearson Correlation Coefficients between the Career Decision-Making Self-Efficacy (CDMSE) scale and the Subscales of the Institutional Integration Survey (IIS). (N= 252)

		Self-Efficacy	Overall Integration	Social Integration	Academic Integration	Initial Goals & Commitments
Pearson Correlation	Self-Efficacy	--	.301 $p < .001$	.310 $p < .001$	.242 $p < .001$	.261 $p < .001$
	Overall Integration		--	.823 $p < .001$	.936 $p < .001$	.234 $p < .001$
	Social Integration			--	.569 $p < .001$	.241 $p < .001$
	Academic Integration				--	.188 $p = .003$
	Initial Goals & Commitments					--

Note. Correlations were all significant at the .01 level (2-tailed).

As illustrated in Table 2, CDMSE was slightly correlated with Academic Integration ($r = .242$) explaining 5.8 percent of the variance, and with Initial Goals & Commitments ($r = .261$) explaining 6.8 percent of the variance. CDMSE was moderately

correlated with Overall Integration (r = .301) explaining 9.1 percent of the variance and with social integration (r = .310) explaining 9.6 percent of the variance.

Overall Integration was strongly correlated to Social Integration (r = .823) and Academic Integration (r = .936). This is to be expected; Social Integration and Academic Integration are parts of the Overall Integration scale. Overall Integration was moderately correlated to Initial Goals & Commitments (r = .234) explaining 5.4 percent of the variance.

Social Integration had a strong correlation (r = .569) with Academic Integration. Social Integration had a slight correlation with Initial Goals & Commitment (r = .241) explaining 5.8 percent of the variance. Academic Integration had a slight correlation with Initial Goals & Commitment (r = .188) explaining 3.5 percent of the variance.

Discriminant Analysis of Career Decision-Making Self-Efficacy and Persistence

The second research question asked "do scores of career decision-making self-efficacy discriminate persistence and withdraw?" To answer this question, discriminant analysis was used. Discriminant analysis classifies cases into mutually exclusive groups based on the values for a set of predictor variables (SPSS, 1997). Discriminant analysis should be used when the criterion or dependent variable is being measured at the nominal level of measurement and the predictor or independent variable is measured at the interval or ratio level (Klecka, 1980). For this research question, scores on the CDMSE were the independent variable and enrollment status was the dependent variable. For enrollment status, subjects were coded as persisters (those who were enrolled Fall-98 into Fall-99), and withdrawers (those who were enrolled Fall-98 and Spring-99 but were not

enrolled in the Fall-99). For scores on the CDMSE, the mean score was 327.8 (Range 130 to 450, SD = 57.6). The results of the analysis are presented in Table 3.

Table 3

Discriminant Analysis between the Career Decision-Making Self-Efficacy (CDMSE) score and Enrollment Status (N=252)

	Canonical Correlation	Wilks' Lambda	Chi-square	Significance
Self-Efficacy	.072	.994	1.301	0.254 NS

Note: df = 1

As shown in Table 3, the canonical correlation was .072. This is a measure of association identical to the Pearson product-moment correlation (Klecka, 1980). The correlation is non-significant. Wilks' Lambda is the proportion of the total variance in the discriminant scores not explained by differences among the groups (SPSS, 1997). To test its significance, the Wilks' Lambda is converted into an approximation of either a Chi-square or an F distribution (Klecka, 1980). A Chi-square was calculated and is non-significant (p = .254). Chi-square is a theoretical probability distribution that measures the probability that a difference in group means observed in a sample is due to chance sampling variation when, in fact, there is no difference in the population (Klecka, 1980).

Table 4 shows the predicted group membership of persisters and withdrawers based on their CDMSE score. As illustrated, 134 of the 236 students (56.8%) who persisted were correctly identified as persisters. Eleven of the 16 withdrawers (68.8%) were correctly identified as non-persisters. While this seems to indicate that persisters

and withdrawers can be distinguished, this result was not statistically significant. The second question may therefore be answered as follows: scores of career self-efficacy do not discriminate persistence and withdraw.

Table 4

Predicted Self-Efficacy Score Group Membership of Persisters and Withdrawers

			Predicted Group Membership		
			Persisters	Withdrawers	Total
Original	Count	Persisters	134	102	236
		Withdrawers	5	11	16
	%	Persisters	56.8	43.2	100.0
		Withdrawers	31.3	68.8	100.0

Note: 57.5% of original grouped cases correctly classified.

Discriminant Analysis of Overall Integration and Persistence

The third research question asked "Do scores of Overall Integration discriminate persistence and withdraw?" To answer this question, discriminant analysis was used. Overall Integration from the IIS was independent variable and enrollment status was the dependent variable. Mean scores on Overall Integration ranged from 2.04 to 4.75 (M = 3.57, SD = .49), The results of the analysis are presented in Table 5.

Table 5

Discriminant Analysis between the Overall Integration score from the Institutional Integration Survey (IIS) and Enrollment Status (N=252)

	Canonical Correlation	Wilks Lambda	Chi-square	Significance
Overall Integration	.129	.983	4.158	0.041

Note: df = 1

As shown in Table 5, the canonical correlation was .129 and is significant at the .05 level ($r_{crit\ .05} = .125$). The Wilks' Lambda is significant ($p = .041$). Table 6 shows that 143 of the 236 students (60.6%) who persisted had been correctly identified as persisters. Eight of the 16 withdrawers (50%) were correctly identified as non-persisters. The third question may therefore be answered as follows: scores of Overall Integration are significant predictors of persistence and withdraw. High Overall Integration scores are indicators of persistence and low scores indicators of withdrawal.

Table 6

Predicted Overall Integration Score Group Membership of Persisters and Withdrawers

			Predicted Group Membership		
			Persisters	Withdrawers	Total
Original	Count	Persisters	143	93	236
		Withdrawers	8	8	16
	%	Persisters	60.6	39.4	100.0
		Withdrawers	50.0	50.0	100.0

Note: 59.9% of original grouped cases correctly classified.

Discriminant Analysis of Academic Integration and Social Integration and Persistence

The fourth research question asked "do Social and Academic Integration equally discriminate persistence and withdraw?" To answer this question, discriminant analysis was used. Each variable was examined in separate discriminant analyses. In the first, Academic Integration from the IIS was the independent variable and enrollment status was the dependent variable. In the second, Social Integration from the IIS was the independent variable and enrollment status was the dependent variable. Mean Academic Integration scores ranged from 1.29 to 5.00 (M = 3.63, SD = .59). Mean Social Integration scores ranged from 1.80 to 4.60 (M = 3.48, SD = .50). Results from the analyses are presented in Table 7.

Table 7

Comparison of Discriminant Analysis of Academic Integration score and Social Integration score from the Institutional Integration Survey (IIS) and Enrollment Status (N=252)

	Canonical Correlation	Wilks Lambda	Chi-square	Significance
Academic Integration	.104	0.989	2.727	0.099
Social Integration	.131	0.983	4.309	0.038

Note: df = 1

As shown in Table 7 for Academic Integration, the canonical correlation was .104 and is not significant. The canonical correlation for Social Integration was .131 and is significant at the .05 level ($r_{crit\ .05} = .125$). The Wilks' Lambda for Academic Integration is not significant ($p = .099$) but is significant ($p = .038$) for Social Integration. Table 8 shows that for Academic Integration 150 of the 236 students (63.6%) who persisted were correctly identified as persisters. Seven of the 16 withdrawers (43.8%) were correctly identified as non-persisters.

Table 8

Predicted Academic Integration Score Group Membership of Persisters and Withdrawers

			Predicted Group Membership		
			Persisters	Withdrawers	Total
Original	Count	Persisters	150	86	236
		Withdrawers	9	7	16
	%	Persisters	63.6	36.4	100.0
		Withdrawers	56.3	43.8	100.0

Note: 62.3 % of original grouped cases correctly classified.

Table 9 shows that persistence was predicted correctly for 155 (65.7%) of the social integration group. Ten of the 16 withdrawers (62.5%) were correctly identified as non-persisters.

Table 9

Predicted Social Integration Score Group Membership of Persisters and Withdrawers

			Predicted Group Membership		
			Persisters	Withdrawers	Total
Original	Count	Persisters	155	81	236
		Withdrawers	6	10	16
	%	Persisters	65.7	34.3	100.0
		Withdrawers	37.5	62.5	100.0

Note: 65.5 % of original grouped cases correctly classified.

The fourth research question may therefore be answered as follows: Social and Academic Integration scores do not equally discriminate persistence and withdraw. Social Integration scores were better predictors of persistence or withdrawal than Academic Integration. High Social Integration scores are indicators of persistence and low scores indicators of withdrawal. Academic Integration scores do not discriminate persisters or withdrawers.

Analysis of Variance of Career Self-Efficacy and Institutional Integration and Background Characteristics

The fifth research question asked "do students' perceived career self-efficacy, overall integration, academic integration, social integration, and initial goals and commitments differ by background characteristics." The background characteristics examined were gender, hours employed, housing arrangements, disability, financial aid

receipt, grade point average, and parental educational background. This question was answered using one-way analysis of variance (ANOVA) for each of the background characteristic variables.

Gender

There were 165 women (65.2 percent) and 88 men (34.8 percent). When students were grouped by gender, one-way ANOVA showed no significant differences between group scores on CDMSE and IIS scales (Table 10). This suggests that gender does not affect scores on the CDMSE and IIS subscales.

Table 10

One-way Analysis of Variance Source Table for Individual Test Scores by Gender

		Sum of Squares	df	Mean Square	F	Sig.
Self Efficacy Score	Between Groups	4607.68	1	4607.68	1.393	.239
	Within Groups	827030	250	3308.12		
	Total	831638	251			
Overall Integration Score	Between Groups	.619	1	.619	2.664	.104
	Within Groups	58.060	250	.232		
	Total	58.679	251			
Academic Integration Score	Between Groups	.694	1	.694	2.132	.145
	Within Groups	81.382	250	.326		
	Total	82.076	251			
Social Integration Score	Between Groups	.521	1	.521	2.073	.151
	Within Groups	62.782	250	.251		
	Total	63.303	251			
Initial Goals & Commitments Sum	Between Groups	.289	1	.289	1.005	.317
	Within Groups	71.978	250	.288		
	Total	72.267	251			

Employment

When students were grouped on the basis of their level of employment (not employed, employed under 15 hours per week, employed 16 to 30 hours per week, and employed over 30 hours per week), the one-way ANOVA showed significant differences between group scores on Overall Integration and Social Integration (Table 11). Post-hoc analyses were performed using Tamhane's correction which does not assume equal variances for cells. Students who were not employed had higher Overall Integration scores than students working 16 to 30 hours weekly ($p = .009$) and over 30 hours weekly ($p = .022$). No significant differences were found between students who were not employed and those who worked 15 hours or less per week ($p = .574$). This suggests that workload may begin to affect students' overall integration in the 16-30 hour per week range.

Students not employed had higher Social Integration scores than students working 16 to 30 hours weekly ($p = .0.025$). Differences between students not employed and those working 30 or more hours per week approached significance ($p = .101$) but were not significant. Further comparisons between the remaining groups proved non-significant as well. Social integration appears to be negatively impacted when students work more than 16 hours a week.

Table 11

One-way Analysis of Variance Source Table for Individual Test Scores by Employed

		Sum of Squares	df	Mean Square	F	Sig.
Self Efficacy Score	Between Groups	5536.93	3	1845.64	.553	.647
	Within Groups	814278	244	3337.21		
	Total	819815	247			
Overall Integration Score	Between Groups	2.572	3	.857	3.847	.01*
	Within Groups	54.391	244	.223		
	Total	56.963	247			
Academic Integration Score	Between Groups	2.363	3	.788	2.482	.062
	Within Groups	77.414	244	.317		
	Total	79.777	247			
Social Integration Score	Between Groups	2.899	3	.966	3.984	.009*
	Within Groups	59.180	244	.243		
	Total	62.079	247			
Initial Goals & Commitments Sum	Between Groups	.510	3	.170	.581	.628
	Within Groups	71.509	244	.293		
	Total	72.019	247			

Housing

When students were grouped on the basis of their housing (live with parents/step-parent/guardian, live in dorm, live in apartment/house/condo by self, live in apartment/house/condo with roommates, live in apartment/house/condo with spouse, or other housing), one-way ANOVA showed significant differences between group scores on Overall Integration and Social Integration (Table 12). Post-hoc analyses were performed using Tamhane's correction which does not assume equal variances for cells. Students who were living with a parent or guardian had lower Overall Integration scores than students in a dorm ($p = .003$) and lower scores than people living in an apartment/house/condo with roommates ($p = .03$). No significant differences were found between students living with parents or guardian and those who lived in a house/apartment/condo alone, apartment/house with a significant other or other living arrangements. This suggests that living in a dorm or housing with roommates may increase students' overall integration while living with parents may lower overall integration.

Students living with parent/guardian had lower Social Integration scores than students living in a dorm ($p = .006$) and lower scores than students living in an apartment/house/condo with roommates ($p = .013$). Further comparisons between the remaining groups were non-significant. This indicates that living in a dorm or housing with roommates may increase students' social integration while living with parents may lower social integration.

Table 12

One-way Analysis of Variance Source Table for Individual Test Scores by Housing

		Sum of Squares	df	Mean Square	F	Sig.
Self Efficacy Score	Between Groups	4504.34	5	900.868	.268	.930
	Within Groups	827134	246	3362.33		
	Total	831638	251			
Overall Integration Score	Between Groups	4.856	5	.971	4.439	.001*
	Within Groups	53.823	246	.219		
	Total	58.679	251			
Academic Integration Score	Between Groups	3.285	5	.657	2.051	.072
	Within Groups	78.792	246	.320		
	Total	82.076	251			
Social Integration Score	Between Groups	7.942	5	1.588	7.058	.001*
	Within Groups	55.360	246	.225		
	Total	63.303	251			
Initial Goals & Commitments Sum	Between Groups	1.041	5	.208	.719	.610
	Within Groups	71.226	246	.290		
	Total	72.267	251			

Disability

When students were grouped on the basis of disability (learning disability, visual handicap, hearing handicap, speech disability, or other physical handicap), one-way ANOVA showed no significant differences between group scores on any of the tests (Table 13). Disability apparently does not affect career self-efficacy or integration. This statistic should be viewed with some wariness. There were 7 people self-identified as having a learning disability, 18 with visual disabilities, and 4 with "other" disabilities. The low number may have affected the result.

Table 13

One-way Analysis of Variance Source Table for Individual Test Scores by Disability

		Sum of Squares	df	Mean Square	F	Sig.
Self Efficacy Score	Between Groups	16578.1	4	4144.54	1.256	.288
	Within Groups	815060	247	3299.84		
	Total	831638	251			
Overall Integration Score	Between Groups	1.490	4	.373	1.609	.173
	Within Groups	57.189	247	.232		
	Total	58.679	251			
Academic Integration Score	Between Groups	2.565	4	.641	1.992	.096
	Within Groups	79.512	247	.322		
	Total	82.076	251			
Social Integration Score	Between Groups	1.017	4	.254	1.008	.404
	Within Groups	62.286	247	.252		
	Total	63.303	251			
Initial Goals & Commitments Sum	Between Groups	.733	4	.183	.633	.640
	Within Groups	71.534	247	.290		
	Total	72.267	251			

Financial Aid

When students were grouped on the basis of receipt of financial aid (yes or no), one-way ANOVA showed no significant differences between group scores on any of the tests (Table 14). Financial aid receipt apparently does not affect level of career self-efficacy or integration.

Table 14

One-way Analysis of Variance Source Table for Individual Test Scores by Financial Aid

		Sum of Squares	df	Mean Square	F	Sig.
Self Efficacy Score	Between Groups	399.210	1	399.210	.120	.729
	Within Groups	831238.9	250	3324.96		
	Total	831638.1	251			
Overall Integration Score	Between Groups	.242	1	.242	1.036	.310
	Within Groups	58.437	250	.234		
	Total	58.679	251			
Academic Integration Score	Between Groups	.498	1	.498	1.526	.218
	Within Groups	81.578	250	.326		
	Total	82.076	251			
Social Integration Score	Between Groups	.037	1	.037	.148	.701
	Within Groups	63.265	250	.253		
	Total	63.303	251			
Initial Goals & Commitments Sum	Between Groups	.911	1	.911	3.191	.075
	Within Groups	71.356	250	.285		
	Total	72.267	251			

Grade Point Average

Students were grouped on the basis of their level of grade point average (GPA .99 or lower, GPA 1.00 to 1.49, GPA 1.50 to 1.99, GPA 2.00 to 2.49, GPA 2.50 to 2.99, GPA 3.00 to 3.49, GPA 3.50 to 4.00) as suggested by Pascarella , Duby and Iverson (1983). Of the GPA's, the mean GPA was 3.30 (Range 1.11 to 4.00, SD = .59). One-way ANOVA showed significant differences between group scores on Overall Integration and Academic Integration (Table 15). Post-hoc analyses were performed using Tamhane's correction which does not assume equal variances for cells. The ANOVA for Overall Integration was significant ($p = .028$). However, post-hoc tests distinguished a significant difference between only the 2.00 to 2.49 GPA grouping and the 3.50 to 4.00 grouping ($p = .001$). Groupings of GPAs of 2.00 to 2.49 and 3.00 to 3.49 approached but were not significant ($p = .081$). Post-hoc tests between the other GPA's failed to distinguish significant differences. Overall integration appear to increase only with high GPA's and decrease with low GPA's.

Students with GPA's from 3.50 to 4.00 had higher Academic Integration scores than students with GPA's of 2.00 to 2.49 ($p = .004$) and students with GPA's of 1.50 to 1.99 ($p = .032$). Comparisons of the remaining scores proved non-significant. This suggests that a higher grade point average may increase students' academic integration.

Table 15

One-way Analysis of Variance Source Table for Individual Test Scores by Grade Point Average

		Sum of Squares	df	Mean Square	F	Sig.
Self Efficacy Score	Between Groups	1770.48	2	885.242	.266	.767
	Within Groups	829868	249	3332.80		
	Total	831638	251			
Overall Integration Score	Between Groups	1.703	2	.852	3.645	.028*
	Within Groups	58.402	250	.234		
	Total	60.105	252			
Academic Integration Score	Between Groups	4.450	2	2.225	6.964	.001*
	Within Groups	79.870	250	.319		
	Total	84.320	252			
Social Integration Score	Between Groups	.103	2	5.2E-02	.203	.817
	Within Groups	63.791	250	.255		
	Total	63.894	252			
Initial Goals & Commitments Sum	Between Groups	.454	2	.227	.789	.456
	Within Groups	71.968	250	.288		
	Total	72.422	252			

Parents Educational Background

When students were grouped on the basis of parents' (mother, stepmother or guardian, father, or stepfather or guardian) educational background (less than high school graduation, high school graduation, less than two years vocational school after high school, two years or more vocational education after high school, less than two years of college, two or more years of college, finished a bachelors degree, finished a master's degree, or finished Ph. D., M. D., or other advanced professional degree), one-way ANOVA showed no significant differences between group scores on any of the tests (Tables 16 to 19) except stepfather's background. Stepfather's background and CDMSE score was significant ($p = .016$). Post-hoc analysis was not possible for stepfather's background because there were too few cases per cell. In total, there were 24 stepfather backgrounds reported. The low per cell count could have affected this result and the significant result may be an artifact of the low cell count. As a whole, parents' educational background apparently did not affect scores on the CDMSE or IIS subscales.

Summary

This chapter presented the results of the Career Decision-Making Self-Efficacy (CDMSE) survey and the Institutional Integration Survey (IIS) impact on freshman retention. Correlations between the CDMSE scale and the subscales of the IIS were found to be significant. Discriminant analysis using scores from the CDMSE indicate that career self-efficacy is not a predictor of persistence and withdraw. Discriminant analysis found that scores of Overall Integration were significant discriminators of persistence and withdraw. Social and Academic Integration scores were examined to determine which was a better predictor of persistence. Academic Integration scores did

not discriminate persistence or withdraw . High Social Integration scores were indicators of persistence while low scores indicators of withdrawal. This implied that scores of Social Integration are better predictors of whether students will persist with or withdraw from this university than Academic Integration scores. Background characteristics of the students were examined to determine if there were differences of the scores on the CDMSE or IIS subscales. Of the background characteristics examined gender, disability, and financial aid did not vary the scores of the CDMSE or IIS subscales. Parent's educational background did not vary the scores of CDMSE or IIS subscales except for the anomaly with stepfathers educational background. Hours employed and housing were significant indicators of Overall and Social Integration scores. The more hours worked the lower Overall and Social Integration scores students had. Students living in dorms or in housing with roommates had higher Overall and Social Integration scores than students who lived with their parents. Student with higher GPAs also had higher Overall and Academic Integration scores. Post-hoc tests failed to show differences between groups of Overall Integration. Academic Integration scores appears to be higher for students with GPA's of 3.50 to 4.00 as compared to students who have GPA's of 1.50 to 1.99 and 2.00 to 2.49.

Table 16

One-way Analysis of Variance Source Table for Individual Test Scores by Mother's Educational Background

		Sum of Squares	df	Mean Square	F	Sig.
Self Efficacy Score	Between Groups	27296.5	8	3412.06	1.012	.427
	Within Groups	788856	234	3371.18		
	Total	816153	242			
Overall Integration Score	Between Groups	2.601	8	.325	1.379	.206
	Within Groups	55.397	235	.236		
	Total	57.998	243			
Academic Integration Score	Between Groups	3.059	8	.382	1.140	.337
	Within Groups	78.811	235	.335		
	Total	81.870	243			
Social Integration Score	Between Groups	3.198	8	.400	1.645	.113
	Within Groups	57.128	235	.243		
	Total	60.326	243			
Initial Goals & Commitments Sum	Between Groups	1.167	8	.146	.503	.853
	Within Groups	68.085	235	.290		
	Total	69.252	243			

Table 17

One-way Analysis of Variance Source Table for Individual Test Scores by Step-Mother or Female Guardian's Educational Background

		Sum of Squares	df	Mean Square	F	Sig.
Self Efficacy Score	Between Groups	27510.8	6	4585.13	1.058	.434
	Within Groups	56329.0	13	4333.00		
	Total	83839.8	19			
Overall Integration Score	Between Groups	1.029	6	.171	.749	.621
	Within Groups	2.976	13	.229		
	Total	4.005	19			
Academic Integration Score	Between Groups	1.928	6	.321	1.290	.327
	Within Groups	3.238	13	.249		
	Total	5.166	19			
Social Integration Score	Between Groups	2.249	6	.375	1.243	.347
	Within Groups	3.920	13	.302		
	Total	6.169	19			
Initial Goals & Commitments Sum	Between Groups	1.655	6	.276	1.492	.256
	Within Groups	2.403	13	.185		
	Total	4.058	19			

Table 18

One-way Analysis of Variance Source Table for Individual Test Scores by Father's Educational Background

		Sum of Squares	df	Mean Square	F	Sig.
Self Efficacy Score	Between Groups	26989.0	8	3373.63	.990	.445
	Within Groups	773704	227	3408.39		
	Total	800693	235			
Overall Integration Score	Between Groups	2.022	8	.253	1.060	.392
	Within Groups	54.382	228	.239		
	Total	56.404	236			
Academic Integration Score	Between Groups	4.049	8	.506	1.510	.155
	Within Groups	76.438	228	.335		
	Total	80.488	236			
Social Integration Score	Between Groups	1.045	8	.131	.528	.835
	Within Groups	56.378	228	.247		
	Total	57.422	236			
Initial Goals & Commitments Sum	Between Groups	2.393	8	.299	1.002	.435
	Within Groups	68.057	228	.298		
	Total	70.451	236			

Table 19

One-way Analysis of Variance Source Table for Individual Test Scores by Step-Father or Male Guardian's Educational Background

		Sum of Squares	df	Mean Square	F	Sig.
Self Efficacy Score	Between Groups	48421.5	7	6917.36	3.601	.016
	Within Groups	30732.1	16	1920.76		
	Total	79153.6	23			
Overall Integration Score	Between Groups	1.127	7	.161	.803	.597
	Within Groups	3.208	16	.200		
	Total	4.335	23			
Academic Integration Score	Between Groups	1.559	7	.223	1.175	.369
	Within Groups	3.033	16	.190		
	Total	4.592	23			
Social Integration Score	Between Groups	2.473	7	.353	1.310	.308
	Within Groups	4.316	16	.270		
	Total	6.790	23			
Initial Goals & Commitments Sum	Between Groups	1.776	7	.254	1.058	.432
	Within Groups	3.838	16	.240		
	Total	5.614	23			

CHAPTER 5

CONCLUSIONS, DISCUSSION, AND IMPLICATIONS

Introduction

This chapter presents an overview of the study and an interpretation of the statistical findings. General conclusions of the research findings are discussed. Recommendations for future research are proposed.

Overview of the Study

In a survey of 27 research universities, freshmen listed "learn things of interest to me," "make more money," and "get a better job" as the three most important reasons in deciding to go to college (Bowers, 1998). Yet, approximately 57 percent will leave higher education without completing a four-year degree (Tinto, 1996). Why some students choose to leave college can be explained with the use of a conceptual model of student departure. The Tinto (1993) model has become one of the most widely accepted views of institutional departure (Christie & Dinham, 1991), and has been the model used in numerous empirical research studies on college student departure (Baker & Velez, 1996; Braxton, Vesper, & Hollser, 1995). It is a longitudinal model that includes interactions between the student and the college environment that contribute to a decision to persist with or depart from college. Studies presented support that this model has predictive ability of student persistence. Yet there may be a neglected dimension of the institutional departure model.

The belief in one's capabilities to organize and execute the courses of action required to produce a given goal is called self-efficacy (Bandura, 1997). Career self-efficacy is the extent that a person is confident in her or his ability to engage in educational and occupational information-gathering decisions (Peterson, 1993a). Several studies were presented on career self-efficacy's effects on student persistence in technical majors (Lent, Brown, & Larkin, 1984, 1986, Lent, Larkin & Brown, 1989). These studies suggest that students with higher levels of self-efficacy had lower levels of career indecision and were more persistent in their major field of study than students with lower levels of self-efficacy. In a study by Peterson (1992) using underprepared freshmen, career self-efficacy was found to surpass all other variables in explaining the variance in overall and academic integration and was second to goals and commitments in explaining the variance in social integration. The impact of career self-efficacy, however, has not been thoroughly explored using a model of student persistence such as the Tinto (1993) model.

Participants in this study were 252 undergraduate freshmen attending Oklahoma State University, a large, primarily residential institution. All subjects were enrolled in a freshmen orientation course and completed the Career Decision-Making Self-Efficacy (CDMSE) instrument (Taylor & Betz, 1983) and a parental background questionnaire during the fall semester. In April of their second semester, they were mailed the Fox (1986) revision of the Pascarella and Terenzini (1983) Institutional Integration Scale (IIS). Background characteristics of students were collected with the IIS. Pearson's correlation, discriminant analysis, and analysis of variance (ANOVA) were used to test the five research questions.

Purpose of the Study

This study examined the relationship of career self-efficacy and institutional integration on new college freshmen persistence. Studies reviewed suggested career self-efficacy appears to impact students retention (Betz & Hackett, 1983; Lent, Brown, & Larkin, 1984, 1986, Lent, Larkin & Brown, 1989; Taylor & Betz, 1983) and their decision to withdraw from or persist with college (Peterson, 1993a, 1993b). Career self-efficacy predicting persistence would have established a neglected dimension of the Tinto (1993) model and to the decision to depart from or persist with college.

Conclusions and Discussion

The Pearson's correlation analysis for this study showed a correlation between Career Decision-Making Self-Efficacy (CDMSE) scores and Overall Integration (r =.301), Social Integration (r =.310), Academic Integration (r =.242), and Initial Goals and Commitment (IGC) (r = .261). In a similar study by Peterson (1992), the correlations between CDMSE scores and IIS subscales were Overall Integration (r = .42) , Social (r = .34), Academic (r = .42), and IGC (r = .35). The present study appears to have weaker correlations than the Peterson study. For the IIS scales, this study found correlations between Overall Integration IIS subscale to Social (r = .823), Academic (r = .936), and IGC (r = .234). Peterson found correlations between the Overall Integration IIS subscale to Social (r = .881), Academic (r = .929), and IGC (r = .405). These numbers are also higher than the present study.

Based on results from discriminant analysis, CDMSE scores did not discriminate between persisters and withdrawers. Discriminant analysis correctly identified only 134 of 236 persisters (56.8%) as persisters. Eleven of the 16 withdrawers (68.8%) were

correctly identified as withdrawers. While there appears to be a large number of persisters and withdrawers correctly identified, a Chi-square test was not statistically significant ($p = .254$) which indicates that scores from the CDMSE did not discriminate persistence and withdraw. Literature on career self-efficacy supports that it is a factor of students' general occupational comfort in college. In previous studies, Peterson (1992, 1993a) found that students who had consistently registered for classes had higher scores in career decision-making self-efficacy. Lent, Brown, and Larkin (1984, 1986) concluded that students with higher self-efficacy scores persisted longer in technical majors than students with lower scores. However, Peterson and delMas (1996) found that CDMSE did not make a direct contribution to persistence in a path analysis model. The result from the present study may have been affected by the low sample size of withdrawers. The statistic may not be sensitive enough to discriminate differences with only 16 students in the withdrawer group. The results may be reflective of the effectiveness of freshmen orientation courses in helping new freshmen adjust to the college environment. Part of the curriculum includes information on feeling comfortable picking a major and having a career with that major.

The nonsignificant result could also be related to an overall confidence of students in the first few months of the school year. Peterson (1992, 1993b) found that students who had just started their school term had significantly higher CDMSE scores than students who were enrolled for two consecutive quarters, student who were enrolled for five consecutive quarters, and students who enrolled intermittently. Peterson suggested that students come to higher education with high levels of confidence and goals, but something during their second or third semester lowers that confidence. The CDMSE

scores from this study may be a reflection of the students' high level of confidence at the beginning of their college career. By the end of their freshman year or future semesters, that confidence level may wane and be more predictive of persistence and withdraw behavior. Notwithstanding these explanations, scores on the CDMSE did not predict student persistence or withdraw.

Discriminant analysis did show differences between persisters and withdrawers in scores on the Overall Integration subscale of the IIS. There were 143 of the 236 persisters (60.6%) correctly identified as persisters. Eight of the 16 withdrawers (50%) were correctly identified as non-persisters. High Overall Integration scores were predictors of persistence while low scores were predictors of withdrawal. Overall Integration comprised two scales: Academic and Social integration.

In comparing Academic and Social Integration subscales from the IIS, scores of Academic Integration did not discriminate between persisters or withdrawers. Discriminant analysis showed high Social Integration scores were better predictors of persisters while low scores predicted withdrawers. Previous researchers have mixed conclusions on the greater importance of academic or social integration on persistence. Terenzini and Pascarella (1978) wrote that the measures used to assess the level of academic integration explained more variance in persistence status and nearly twice the variance than social integration. They wrote that what happens in students' academic life may be more influential than their social experiences in persistence decisions. Stoecker, Pascarella, and Wolfle (1988) found that academic and social integration were both critical determinants for persistence, but that academic integration had that strongest direct effect on persistence. However, Pascarella and Chapman (1983) found in their

study's residential institution, social integration had a significant direct effect on persistence and academic integration had neither a direct or indirect effect. Tinto (1987) writes that academic and social systems, while distinct aspects of institutional integration, need not be equal in strength to affect persistence and the influence of each on persistence will vary from institution to institution. Some institutions may stress intellectual matters that dominate over the social systems. Others may have the opposite influence.

At this institution, integration into social domains appears to have greater importance in persistence decisions than academic integration. There are two conclusions that can be made. The first is new freshmen may be more concerned about their social lives than their academic endeavors. This institution may be well advised to sponsor and encourage involvement in more social events. Increasing opportunities to be active in cultural or intramural events may increase retention. The second conclusion is that this result may be measuring an endemic belief that social involvement is more important than academic performance. This institution may place too much emphasis on social activities to the detriment of academic pursuits. Increased recognition for academic successes and for involvement in academic activities could increase the importance of Academic Integration.

Social Integration's strength in predicting persistence could also be reflective of the large number of subjects who were housed in residence halls verses students not. There were 177 students who lived in dorms, 26 who lived with a roommate and 76 who had other housing arrangements (lived alone, lived with parents, lived with spouse, or other). In ANOVA tests, housing differences were found for overall and social integration.

When students lived in residence halls or in housing with roommates, there was higher overall and social integration scores than students who lived with their parents or alone. These results are consistent with Pascarella and Chapman (1983), Christie and Dinham (1991), Wolfe (1993), and similar to Peterson (1992, 1993b). Peterson found that students who lived in a dorm had higher Overall and Social Integration scores than students living with parents or those who had "other" living arrangements. Pascarella and Terenzini (1991) wrote that living on-campus maximizes opportunities for social, cultural, and extracurricular involvement and this involvement largely accounts for residential living's impact on student change. That Academic Integration did not discriminate persistence and was not influenced by housing is supported by Pascarella et al (1994) who observed that "the normative social milieu of residence halls can at times provide greater opportunities for socializing than for studying" (p. 30). Given this result, students who feel socially isolated may be in danger of dropping out. Institutions could attempt to identify such students to evaluate their risk of leaving school.

Background characteristics of subjects were examined with ANOVAs to determine if there were differences in CDMSE and IIS subscale scores. Of the background characteristics examined gender, disability, financial aid, and parent's educational background were not found to influence scores on the CDMSE or the IIS subscales. Gender was not expected to be an influence on CDMSE or IIS scores. Self-efficacy studies (Betz & Hackett, 1981; Lent, Brown, & Larkin, 1984, 1987; Lent, Larkin, & Brown, 1989) and integration studies (Terenzini & Pascarella, 1977; Terenzini & Pascarella, 1978; Christie and Dinham, 1991) also did not find a link between gender and survey scores.

Of the student's self-disclosed disabilities, there were a total of 7 identified learning disabilities, 18 visual disabilities, and 4 disabilities listed as "other." That there were so few reported disabilities probably affected the results.

Financial aid receipt was did not affect scores for any of the scales. Pascarella and Terenzini (1991) wrote that research on financial aid's effect on persistence is mixed but suggest "the most methodologically rigorous subset of studies suggests that receipt of general financial aid has no statistically significant net effects on persistence and degree attainment" (p. 405-406). The present study seemly corroborates that sentiment. The survey question, however, may not be sufficient to measure the effects of financial aid. There are several different financial aids from student loans to scholarships. The level of aid and the type of aid may affect CDMSE and Integration scores. This question should be expanded upon in future studies.

Except for one anomalous instance, parent's background did not affect CDMSE or IIS scores. Hellman and Harbeck (1997) found that so called first-generation students - students who's family culture lacked higher education experience - had lower self-efficacy of their academic ability than second-generation students did who's parents had completed college. Peterson (1992, 1993b) found that mother's and father's education was significant only on the CDMSE. At this institution, CDMSE and IIS scores are not measurably influenced by parental educational level.

Hours employed affected scores for Overall and Social Integration. The more hours worked the lower scores of Overall and Social Integration students had. This is not consistent with Peterson (1992) who found no significant results between scales and hours employed. That students who work more have lower Overall and Social

Integration scores makes intuitive sense. Students who work more have less time for socializing and attending college functions. However, information about where students worked (on-campus or off-campus) was not asked. Comparing on-campus verses off-campus work to differences in CDMSE and IIS scores may yield measurable differences.

Student grade point average (GPA) influenced scores of Overall and Academic Integration. Post-hoc tests failed to show differences between groupings on Overall Integration. Academic Integration scores were higher for students with GPA's of 3.00 to 4.00. Literature supports the sentiment that GPA is reflective of students' academic integration (Fox, 1986; Pascarella, Duby, & Iverson, 1983; Ross, 1989; Peterson, 1992, 1993a). Ross (1989) found that there was a high correlation between the reported difficulty of OSU courses and retention. Withdrawers in Ross's study reported that OSU courses were more advanced in comparison to their high school courses than did their persisting counterparts. Peterson (1992, 1993b) grouped students according to their GPA and found significant differences between CDMSE, Academic Integration, and IGC. Peterson found that the higher the GPA, the higher the score on Overall and Academic Integration as well as the higher the scores on CDMSE and IGC. There were no significant differences in Social Integration scores. This seems to support the position that academic performance contributes to academic integration but not social integration (Peterson, 1993b).

Recommendations for Future Study

An avenue for exploration is to conduct a similar study comparing career self-efficacy at the beginning of the school term to those at the end of the first school year or in future semesters. As suggested by Peterson (1992, 1993a), something may happen

between the beginning the freshman year and future semesters that lowers career self-efficacy.

CDMSE did not have a direct influence on persistence but it may affect overall, social, and academic integration of students. Peterson (1993a) found that of all background characteristics, only CDMSE contributed to the variance in the social and academic integration of underprepared students. Scores on the CDMSE and Initial Goals and Commitment score explained 21 percent of the variance in social integration. Peterson concluded that CDMSE should be considered a background characteristic in studies of integration. Further analysis of this study's data may reveal a similar result.

Research should be extended into the non-traditional or adult population. Currently only one other study (Sandler, 1998) has been conducted examining CDMSE, integration, and persistence with adult students. Using adult students in the population would expand the generalizability of this study to other student populations at OSU.

Research should also be extended into different colleges at OSU. This study used freshmen only in the College of Arts and Sciences. Other colleges may be unique characteristics.

The strength of Social Integration scores verse Academic Integration scores should be pursued. This aspect of college life at this institution could have implications for activities that should be sponsored. Cynics might argue that this institution places greater importance on social aspects of college life than the academic systems. As students leave their residence halls and move off campus, there may be a shift in importance of social and academic integration.

Limitations

This study was conducted at a single mid-western university. The experiences of freshmen at this university may be unique and not representative of those at other institutions. This study should be replicated with another sample at the same institution to enhance the generalizability of the findings. Students from other colleges should also be included.

This study examined persistence only for one school year. Longitudinal research is necessary to fully understand the long-term persistence and withdraw pattern of students. What happened to the students from the persister cohort after the beginning of their sophomore year is not known.

The small number of student withdrawers (n = 16) undoubtablely affected the statistics. The results of this study could have changed considerably with more withdrawers and the low number hampers the generalizability of this study.

One shortcoming of the living arrangement question is that students living in a social group (fraternity or sorority) were not identified. These students may have unique social and academic integration characteristics that should be investigated.

Information was not considered about student pre-admission commitment to obtaining a degree, standardized test scores, high school class ranking, or social and economic attributes. This information may influence career self-efficacy and integration. It should be included in future research. However, as Terenzini and Pascarella (1978) note, researchers should not concentrate on predicting attrition solely on students' prematriculation characteristics. They suggest that efforts to reduce attrition levels should focus on what happens to students after their arrival on campus.

While the discriminant analysis for Social and Overall Integration were significant, there were still approximately 40 percent of the respondents incorrectly classified. Pascarella and Chapman (1983) suggest that persistence and withdrawal behavior may be composed of behavior that is so complex in external circumstances and personal dispositions that an explanatory model of persistence may be inadequate to explaining such decisions. Students at this university may have unique characteristics that impacted on their persistence or withdraw decisions and these characteristics were not taken into consideration during this study's design.

It is impossible to distinguish permanent withdraw from institutional transfer or stop-out behavior in the absence of a multi-institutional sample that traces a student cohort well beyond the freshman year (Pascarella, Smart, & Ethington, 1986). The State of Oklahoma and Oklahoma State University (OSU) do not track students who voluntarily withdraw from this institution. Further, this study did not seek information from students who voluntarily withdrew. It is not known if students left OSU for another institution during their sophomore year or if they have intentions to return to higher education at a later time. Some withdrawers may later reenroll at the same or at a different institution.

The interactions with university staff were not considered. In many cases academic advisors are not members of the faculty. The instruments asked specifically about faculty interactions. Students may only be considering their interactions with faculty or teachers and not considering interactions with staff such as academic advisors.

This study used quantitative or survey research. There are qualitative methods that should be considered. Freshman focus groups or interviewing freshmen during the first and second semester of college may yield more in-depth information.

Summary

The decision to leave or stay in college has been operationalized by the Tinto (1993) model which is a longitudinal model that includes interactions between the student and the college environment. The predictive ability of this model was measured by the Fox (1986) revision of the Pascarella and Terenzini (1983) Institutional Integration Scale (IIS). The results presented support that scores on Overall and Social Integration scales of the IIS had predictive ability of students who persist or withdrew from school.

Career self-efficacy is the extent that a person is confident in his or her ability to engage in educational and occupational information-gathering decisions (Peterson, 1993a). It's effect on students departure decisions was measured using the Career Decision-Making Self-Efficacy (CDMSE) instrument (Taylor & Betz, 1983). The results presented in this study fail to support the predictive ability of this scale on new freshmen's decision to withdraw from or persist in college. Level of career self-efficacy apparently had no effect on student persistence decisions.

Background characteristics examined were generally supportive of literature explaining these characteristics impact on integration scales. Students overall grade point average, housing, and hours employed did vary by score on IIS scales, but no interactions were found with the CDMSE scale. Students gender, disability, financial aid, and parent's educational background were not found to have significant interactions with the CDMSE or IIS scales.

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APPENDIXES

APPENDIX A

CAREER DECISION-MAKING SELF-EFFICACY

(CDMSE) INSTRUMENT

Career Decision-Making Survey

Instructions:

1. Use only a #2 pencil to fill in the answer sheet;

2. Please locate the area on the provided answer sheet for your name and fill in the blanks then fill in the bubbles with your last name;

3. Please locate the area on the answer sheet for your gender (sex) and fill in the blank;

4. Please locate the area on the answer sheet for your birth date and fill in the blanks then fill in the bubbles.

5. Please locate the area on the provided answer sheet for your student ID number, fill in the blanks then fill in the bubbles with your ID number;
(You do not have to fill in any of the other information.)

6. After reading each statement carefully, indicate **on the answer sheet** how much confidence you have that you could accomplish each of the tasks by filling in the number that best describes how you feel:

No Confidence		Very Little Confidence		Some Confidence		Much Confidence		Complete Confidence	
0	1	2	3	4	5	6	7	8	9

Example: How much confidence do you have that you could summarize the skills you have
developed in the jobs you have held?

If your response is "no confidence," fill in 0 or 1;
if your response is "very little confidence," fill in 2 or 3;
if your response is "some confidence," fill in 4 or 5;
if your response is "much confidence," fill in 6 or 7;
if your response is "complete confidence," fill in 8 or 9.

Please turn to the next page and begin.

Make sure that you mark your answers on the provided answer sheet and have entered your student ID in the appropriate space.

Please use this scale:

No Confidence		Very Little Confidence		Some Confidence		Much Confidence		Complete Confidence	
0	1	2	3	4	5	6	7	8	9

HOW MUCH CONFIDENCE DO YOU HAVE THAT YOU COULD:

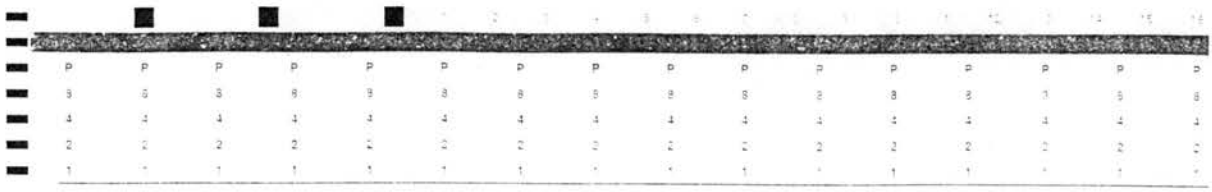
1. List several majors that you are interest in.
2. Find information in the library about occupations you are interested in.
3. Select one major from a list of potential majors you are considering.
4. Make a plan of your goals for the next five years.
5. Determine the steps to take if you are having academic trouble with an aspect of your chosen major.
6. Accurately assess your abilities.
7. Find information about companies that employ people with your chosen college major.
8. Select one occupation from a list of potential occupations you are considering.
9. Determine the steps you need to take to successfully complete your chosen major.
10. Persistently work at your major or career goal even when you get frustrated.
11. List several occupations that you are interested in.
12. Find information about educational programs in the career field of your choice.
13. Choose a career that will fit your preferred lifestyle.
14. Prepare a good resume.
15. Change majors if you did not like your first choice.
16. Determine what your ideal job would be.
17. Talk to a faculty member in a department you are considering for a major.
18. Make a career decision and then not worry about whether it was right or wrong.
19. Get letters of recommendation from your professors.
20. Change occupations if you are not satisfied with the one you enter.
21. Decide what you value most in an occupation.
22. Ask a faculty member about graduate schools and job opportunities in your major.
23. Choose a major or career that your parents do not approve of.
24. Get involved in work experience relevant to your future goals.

25. Resist attempts of parents or friends to push you into a career or major you believe is beyond your abilities.
26. Figure out whether you have the ability to successfully take courses in your chosen field.
27. Describe the job duties of the career/occupation you would like to pursue.
28. Choose a career in which most workers are the opposite sex.
29. Find and use the Placement Office on campus.
30. Move to another city to get the kind of job you really would like.
31. Determine the academic subject you have the most ability in.
32. Find out the employment trends for an occupation in the 1990's.
33. Choose a major or career that will fit your interests.
34. Decide whether or not you will need to attend graduate or professional school to achieve your career goals.
35. Apply again to graduate schools after being rejected the first time.
36. Determine whether you would rather work primarily with people or with information.
37. Find out about the average yearly earnings of people in an occupation.
38. Choose a major or career that will suit your abilities.
39. Plan course work outside of your major or career that will help you in your future career.
40. Identify some reasonable major or career alternatives if you are unable to get your first choice.
41. Figure out what you are and are not ready to achieve with your career goals.
42. Talk with a person already employed in the field you are interested in.
43. Choose the best major for you even if it took longer to finish your college degree.
44. Identify employers, firms, and institutions relevant to your career possibilities.
45. Go back to school to get a graduate degree after being out of school for 5 to 10 years.
46. Define the type of lifestyle you would like to live.
47. Find information about graduate or professional schools.
48. Choose the major you want even though the job market is declining with opportunities in that field.
49. Successfully manage the job interview process.
50. Come up with strategies to deal with flunking out of college.

THANK YOU FOR PATICIPATING IN THIS SURVEY!

APPENDIX B

INSTITUTIONAL INTEGRATION SURVEY



*INTEGRATION SCALE

Directions: USE ONLY A No. 2 PENCIL. After reading each statement carefully, indicate your agreement or disagreement by shading in the circle that best describes how you feel:
Strongly Disagree - 1 Disagree - 2 Neutral - 3 Agree - 4 Strongly Agree - 5

Strongly Agree 5
Agree 4
Neutral 3
Disagree 2
Strongly Disagree 1

I.	**Think back to when you were first enrolled at OSU. What were your feeling at that time?**					
1.	I was certain of what I was going to major in.	1	2	3	4	5
2.	I was certain of my career plans.	1	2	3	4	5
3.	I was certain that OSU was the right choice for me.	1	2	3	4	5
4.	I was certain that I would be able to find funds to continue my education the next year.	1	2	3	4	5
5.	It was important for me to graduate from college.	1	2	3	4	5
6.	It was important for me to graduate for this university as opposed to another.	1	2	3	4	5
7.	It was important to me to be successful in my chosen field.	1	2	3	4	5
8.	I was confident that I made the right decision in choosing to attend this college.	1	2	3	4	5
9.	I believed my college education will be highly useful in getting future employment.	1	2	3	4	5
10.	I believed by college education will be useful in getting a really good job.	1	2	3	4	5
11.	Getting good grades was important to me.	1	2	3	4	5
II.	**Now that you have been at OSU for a period of time, even if only a short time, consider how you currently feel about your experience here at OSU.**					
12.	Since coming to OSU, I have developed close personal relationships with other students.	1	2	3	4	5
13.	My nonclassroom contacts with faculty have had a positive influence on my personal growth, values, and attitudes.	1	2	3	4	5
14.	The faculty members I have had contact with are generally interested in students.	1	2	3	4	5
15.	I am satisfied with the extent of my intellectual development since enrolling at OSU.	1	2	3	4	5
16.	The student friendships I have developed at this college have been personally satisfying.	1	2	3	4	5
17.	My academic experience has had a positive influence on my intellectual growth and interest in ideas.	1	2	3	4	5
18.	I am satisfied with the opportunities to meet informally with faculty members.	1	2	3	4	5
19.	The faculty members I have had contact with are generally outstanding or superior teachers.	1	2	3	4	5
20.	I am satisfied with my academic experience at OSU.	1	2	3	4	5
21.	My personal relationships with other students have had a positive influence on my personal growth, attitudes, and values.	1	2	3	4	5
22.	My personal relationships with other students have had a positive influence on my intellectual growth and interest in ideas.	1	2	3	4	5
23.	My nonclassroom contacts with faculty have had a positive influence on my career goals and aspirations.	1	2	3	4	5
24.	My courses this year have been intellectually stimulating.	1	2	3	4	5
25.	The faculty members I have had contact with are willing to spend time outside of class to discuss issues of importance and interest to students.	1	2	3	4	5
26.	My interest in ideas and intellectual matters has increased since coming to OSU.	1	2	3	4	5
27.	It have been difficult to meet and make friends with other students.	1	2	3	4	5
28.	Since coming to OSU, I have developed a close, personal relationship with at least one faculty member.	1	2	3	4	5
29.	Most of the faculty I have contact with are interested in helping students grow in more than just academic areas.	1	2	3	4	5
30.	Many of the students I know would help me if I had a personal problem.	1	2	3	4	5

*Note. From "Application of a Conceptual Model of College With Drawal" by R.N. Fox, 1986 Review of Education Research, 23 (63), 415-424.

Strongly Agree 5
Agree 4
Neutral 3
Disagree 2
Strongly Disagree 1

31. I am more likely to attend a cultural event (for example, a concert, lecture, or art show) now than I was before coming to OSU.
32. Most students at OSU have values and attitudes different from my own.
33. My nonclassroom contacts with faculty have had a positive influence on my intellectual growth and interest in ideas.
34. Most faculty members I have had contact with are genuinely interested in teaching.
35. I have performed academically as well as I anticipated I would.
36. I expect to be enrolled at OSU one year from today.

III. This section asks you about your background characteristics.

37. Are you currently employed? 1 - Not employed 2 - Employed part-time - under 15 hrs/week 3 - Employed part-time - 16-30 hrs/week 4 - Employed over 30 hrs/week

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APPENDIX C

PARENTS BACKGROUND QUESTIONNAIRE

Demographic Questions

ID Number _____

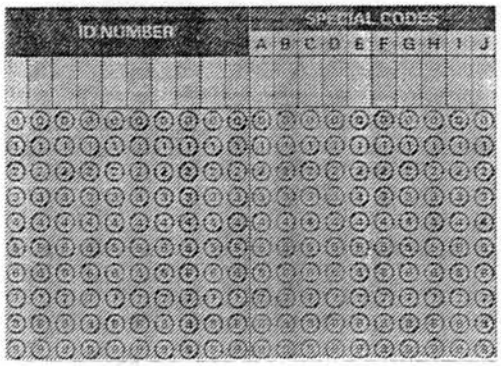
Please mark on this form the answers to your responses to this question.

1. What is the highest level of education of your parent, step-parents, or guardians? (Circle one number).

	Mother	Stepmother or Female Guardian	Father	Stepfather or Male Guardian
Less than high school graduation	1	1	1	1
High School graduation	2	2	2	2
Vocational, trade, or business school after high school				
- Less than two years	3	3	3	3
- Two years or more	4	4	4	4
College educated				
- Less than two years of college	5	5	5	5
- Two years or more years of college	6	6	6	6
- Finished college (received a bachelors degree)	7	7	7	7
- Finished Master degree or equivalent	8	8	8	8
- Finished Ph. D., M. D., or other advanced professional degree	9	9	9	9
Don't know	10	10	10	10
Does not Apply	11	11	11	11

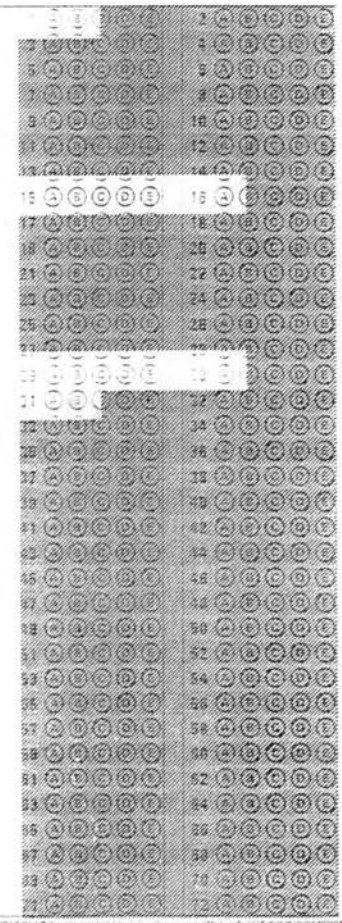
APPENDIX D

STUDENT BACKGROUND QUESITONNAIRE



USE #2 PENCIL ONLY

1. Did you apply for financial aid to attend OSU? 1A - Yes 1B - No
2. Do you have any of the following conditions?
   - 15A - Learning disability
   - 15B - Visual handicap
   - 15C - Hearing handicap
   - 15D - Speech disability
   - 15E - Other physical handicap
   - 16A - None
3. What are your current living arrangements?
   - 29A - Live with parent/step-parent/guardian
   - 29B - Live in dorm
   - 29C - Live in apartment/house/condo by self
   - 29D - Live in apartment/house/condo with roommates
   - 29E - Live in apartment/house/condo with spouse or significant other
   - 30A - Other
4. What is your gender? 31A - Male 31B - Female
5. What is your age? _____



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APPENDIX E

PREPARED SCRIPT

ORAL SOLICITATION FORM

Hi. My name is Craig Satterfield. I am a graduate student in the School of Educational Studies in the College of Education as well as the Undergraduate Advisor in the Department of Psychology. I would like to invite you to participate in a study I am conducting. I will explain the study briefly.

I am looking at two different things: career decision making, and persistence. Career decision making has to do with your ability to engage in educational and occupational information gathering and goal planning. I'd like to find out how student's beliefs about career planning are related to their decision to stay at OSU.

There are two parts to participating with this study. The first is done now. I will pass out a survey asking you about your career decision-making experiences. The next part will happen in the spring when I mail you another survey about how much you like being a student at Oklahoma State University.

This study is an important one to be conducted. The answers to the questions I propose will help lead to an understanding of what makes some students stay at OSU and why some students leave. I'd like you to help me find those answers by participating.

I will distribute a consent form that indicates what is expected if you participate in this study and what will be required of you. Thank you for your cooperation and time. Please ask me any questions.

APPENDIX F

CONSENT FORM

Consent Form

Name of the Study: The Relationship of Career Decision-Making Self-Efficacy and Institutional Integration to Academic Persistence among College Freshmen.

I understand that:

1) The purpose of the study is to explore the relationship between career decision-making and the decision to stay in college;
2) I will be requested to complete a demographic questionnaire, one paper and pencil survey (Career Decision Making Survey) in fall 1998, and one paper and pencil survey (Institutional Integration Scale) in spring 1999;
3) It will take approximately 15 minutes to fill out the individual surveys;
4) I am currently 18 years of age or older;
5) In the spring 1999 semester, the OSU Registrar's Office can release my local address to the investigator. The address information is for contacting me for the follow-up survey only;
6) At the beginning of the fall semester of 1999, the OSU Registrar's Office can release my enrollment status and grade report to the investigator;
7) My student ID number will be requested for tracking purposes only;
8) All records and answers will be kept confidential – only the investigator of the study will know who I am. He will destroy my identifying information at the conclusion of the study;
9) Participation is completely voluntary and that I have the right to withdraw from this study AT ANY TIME;
10) I may contract Dr. Robert Nolan at (405) 744-5000 should I wish further information. I may also contact Ms. Gay Clarkson, IRB executive secretary at 203 Whitehurst, Oklahoma State University, telephone (405) 744-5000.

I understand that participation is voluntary, that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time without penalty after notifying the project director.
I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date: _____

Id number _____

Signed: _____
Signature of Subject

APPENDIX G

COVER LETTER TO STUDENTS

March 25, 1999

Dear

Back in September, I visited your freshman orientation class, and you volunteered to be part of my study on career decision-making. I told you that I would be contacting you in March for your assistance with a survey about your OSU experiences. Enclosed is that survey.

Your opinions are valuable to me, and I hope that you will continue to participate in this study by returning the enclosed questionnaire. By doing so, you will be helping to improve the educational experience for future OSU students.

- Please take a few moments to compete the enclosed surveys. The surveys will take less than 15 minutes of your time. **Use the #2 pencil** included in the envelope to fill out the survey.
- Your responses are confidential. While there is a code number on the survey, it is there only so that I do not send you a reminder letter after you have returned the survey.
- I am only interested in group responses, so your individual information will never be revealed.
- Please return the completed survey by April 9. **A self-addressed, return envelope has been provided** for returning the survey or it can be given to: Craig Satterfield, 202 Life Sciences East, Stillwater, Ok 74078.
- If you have any questions, please feel free to call me at my office at 744-7547.
- Non-respondents will be sent reminder letters to complete the survey.
- **Keep the pencil** as my thanks for helping with this study.

Thank you for your time, for sharing your thoughts, and for helping us to improve the college experience.

Sincerely,

Craig Satterfield
A&S Career Services

APPENDIX H

FIRST POSTCARD MAILED TO NON-RESPONDENTS

Last week I sent you a survey asking about your OSU experiences.

If you have completed and returned it, thank you for doing so. It is only through your dedication in assisting that this study will be a success.

If you have not yet filled out and returned the survey, please take the time to do so. I really appreciate your continued help with this study. If you have lost the survey, please contact me for another. I will be happy to provide you another.

Please return the completed survey by April 9. A self-addressed, return envelope was provided for returning the survey or it can be given to: Craig Satterfield, 202 Life Sciences East, Stillwater, Ok 74078.

If you have any questions, please feel free to call my office at 744-7547.

Thanks for your help!

Last week I sent you a survey asking about your OSU experiences.

If you have completed and returned it, thank you for doing so. It is only through your dedication in assisting that this study will be a success.

If you have not yet filled out and returned the survey, please take the time to do so. I really appreciate your continued help with this study. If you have lost the survey, please contact me for another. I will be happy to provide you another.

Please return the completed survey by April 9. A self-addressed, return envelope was provided for returning the survey or it can be given to: Craig Satterfield, 202 Life Sciences East, Stillwater, Ok 74078.

If you have any questions, please feel free to call my office at 744-7547.

Thanks for your help!

APPENDIX I

SECOND POSTCARD MAILED TO NON-RESPONDENTS

Three weeks ago, I sent you a survey asking about your OSU experiences. It was due by April 9. I have not received your response.

If you have completed and returned it, then I thank you for doing so. My being able to graduate with my doctorate degree is dependent on your participation, and I thank you for helping me finish my studies.

If you have not yet filled out and returned the survey, **it is not to late, so please take the time to do so**. I need your continued help with this study. If you have lost the survey, please contact me for another. I will be happy to provide you another.

Please return the completed survey. A postage free, self-addressed, return envelope was provided for returning the survey or it can be brought to: Craig Satterfield, 202 Life Sciences East, Stillwater, Ok 74078.

If you have any questions, please feel free to call my office at 744-7547.

Thanks for your help!

Three weeks ago, I sent you a survey asking about your OSU experiences. It was due by April 9. I have not received your response.

If you have completed and returned it, then I thank you for doing so. My being able to graduate with my doctorate degree is dependent on your participation, and I thank you for helping me finish my studies.

If you have not yet filled out and returned the survey, **it is not to late, so please take the time to do so**. I need your continued help with this study. If you have lost the survey, please contact me for another. I will be happy to provide you another.

Please return the completed survey. A postage free, self-addressed, return envelope was provided for returning the survey or it can be brought to: Craig Satterfield, 202 Life Sciences East, Stillwater, Ok 74078.

If you have any questions, please feel free to call my office at 744-7547.

Thanks for your help!

APPENDIX J

INTERNAL REVIEW BOARD

APPROVAL FORM

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 08-06-98 **IRB #: ED-99-011**

Proposal Title: THE RELATIONSHIP OF CAREER DECISION-MAKING SELF-EFFICACY AND INSTITUTIONAL INTEGRATION TO ACADEMIC PERSISTENCE AMONG COLLEGE FRESHMEN

Principal Investigator(s): Robert Nolan, Craig Satterfield

Reviewed and Processed as: Expedited

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING, AS WELL AS ARE SUBJECT TO MONITORING AT ANY TIME DURING THE APPROVAL PERIOD.
APPROVAL STATUS PERIOD VALID FOR DATA COLLECTION FOR A ONE CALENDAR YEAR PERIOD AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Disapproval are as follows:

Signature: Thomas C. Collins Date: August 6, 1998

Interim Chair of Institutional Review Board
and Vice President for Research
cc: Craig Satterfield

VITA

Craig D. Satterfield

Candidate for the Degree of

Doctorate of Education

Thesis: EFFECTS OF INSTITUTIONAL INTEGRATION AND CAREER DECISION MAKING SELF EFFICACY ON ACADEMIC PERSISTENCE AMONG COLLEGE FRESHMEN

Major Field: Occupational and Adult Education

Biographical:

Personal Data: Born in Stillwater, Oklahoma, August 4, 1963, the son of Gene and Camilla Satterfield.

Education: Graduated from C. E. Donart High School, in Stillwater, Oklahoma, in 1981; received Bachelor of Sciences degree in Sociology from Oklahoma State University, Stillwater, Oklahoma in May 1986; received Masters of Arts degree in Speech Communication from Oklahoma State University, Stillwater, Oklahoma, in May 1988; and completed requirements for the Doctor of Education degree at Oklahoma State University in December, 1999.

Professional Experience: Coordinator, Arts and Sciences Career Services, Oklahoma State University, 1998 - present; Senior Academic Advisor, Department of Psychology, Oklahoma State University, 1990-1998.

Professional Memberships: Southwestern Psychological Association, Oklahoma Academic Advising Association (OCADA), National Academic Advising Association (NACADA).