



An analysis of performance gap scores as measured by the Student Satisfaction Inventory : the relationship to retention  
by Gloria Jean Lambertz

A thesis submitted in partial fulfillment of the requirements for the degree Of Doctor of Education  
Montana State University  
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**Abstract:**

This study assessed whether a student's decision to return or not return to Carroll College the following semester could be predicted by comparing performance gap scores on 11 comprehensive scales of institutional characteristics measured by the Student Satisfaction Inventory (SSI). Additionally, the researcher examined eleven scales identified in the SSI (Academic Advising, Campus Climate, Campus Life, Campus Support Services, Concern for the Individual, Instructional Effectiveness, Recruitment and Financial Aid, Registration Effectiveness, Responsiveness to Diverse Populations, Safety and Security, Service Excellence, Student Centeredness) for statistically significant differences among class levels and gender.

A literature review yielded research relevant to this study in areas of retention, enrollment management, consumer behavior principles, and student satisfaction.

The sample for the study was divided into two groups of students who responded to the SSI in the spring of 1997. The first (n= 386) were a group of freshmen, sophomores, juniors, and seniors. The second group (n=221) consisted of students who returned or did not return to Carroll College the following semester and who provided a valid social security number. Data were collected and performance gap scores were tabulated on 11 comprehensive scales of institutional characteristics. Multiple regression and analyses of variance were the statistical methods used for the analyses of the hypotheses. Newman-Keuls post hoc analysis was performed as a follow-up procedure for the ANOVAS that showed significance at the .05 level.

Findings indicated that a prediction could not be made on the decision to return or not return to Carroll College using the performance gap scores. Interaction was noted among class level and gender of the students. Significant differences were found between male and female students on 9 of the 11 scales of institutional characteristics. Also, significant differences were found among class level on 2 of the 11 scales of institutional characteristics. These findings provide information to Carroll College for making institutional changes.

It was concluded that the SSI could not be used to predict whether the students' decisions to return or not return could be predicted by comparing performance gap scores.

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by

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This thesis has been read by each member of the graduate committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

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## ABSTRACT

This study assessed whether a student's decision to return or not return to Carroll College the following semester could be predicted by comparing performance gap scores on 11 comprehensive scales of institutional characteristics measured by the Student Satisfaction Inventory (SSI). Additionally, the researcher examined eleven scales identified in the SSI (Academic Advising, Campus Climate, Campus Life, Campus Support Services, Concern for the Individual, Instructional Effectiveness, Recruitment and Financial Aid, Registration Effectiveness, Responsiveness to Diverse Populations, Safety and Security, Service Excellence, Student Centeredness) for statistically significant differences among class levels and gender.

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Findings indicated that a prediction could not be made on the decision to return or not return to Carroll College using the performance gap scores. Interaction was noted among class level and gender of the students. Significant differences were found between male and female students on 9 of the 11 scales of institutional characteristics. Also, significant differences were found among class level on 2 of the 11 scales of institutional characteristics. These findings provide information to Carroll College for making institutional changes.

It was concluded that the SSI could not be used to predict whether the students' decisions to return or not return could be predicted by comparing performance gap scores.

## CHAPTER 1

### INTRODUCTION

Student retention can be studied from various perspectives, including the benefits derived from student persistence. Retention of students impacts not only individuals and their personal success through an educational outcome, but also society, and the financial well being of institutions (Pate, 1993). When students become dissatisfied with their educational process, they are likely to drop out of college (Bean, 1990b). This dissatisfaction leads to failure to meet their educational goals. Along with not meeting their educational goals, students without a college degree earn a lower income (Bean, 1990b) than those students who complete a college degree.

Students are not the only ones impacted when they do not meet their educational goals. Society is also affected. Society loses by not having as many educated individuals going into the work force (Bean, 1990b).

Finally, and very critical to those colleges whose budgets are tuition driven, not retaining students can have a significant impact on whether their doors remain open (Bean, 1990b). It is important to look at what will help satisfy students and increase the likelihood of their persisting with a college education. Rowley, Lujan, and Dolence (1997) stated, "If a central purpose of higher education is to advance knowledge

while helping to create a better society, then colleges and universities must respond to consumer demands in ways not yet perfected by present practice" (p. 54).

In both student numbers and abundant budgets the 1950s through the 1960s were boom years for higher education. As these boom years gave way to the retrenchment and demographic shifts of the 1970s and 1980s (Porter, 1990), institutions put self-preservation as a top priority. As the population increases in age and the pool of young college-age persons continues to change, colleges and universities grow to be even more concerned about competing for new students. The 100-year national average graduation rate of all college students is 50% (Boyle, 1989). As a point of comparison, the overall graduation rate after five years of college entrance is 44.6% (ACT, 1997). With the college dropout rate at 50%, and with enrollment forecasting becoming more difficult to predict (Healy, 1997), it is critical that colleges and universities look for ways to retain their students. The study of student persistence, or retention, is not new, but with an ever-changing student population from which to draw new students, the subject of retention has taken on a new urgency.

Colleges and universities are increasingly committed to stabilizing student enrollments by raising retention rates. The problems with retention were compounded by mistakes in college enrollment projections. When unexpected economic and educational trends changed the projected

enrollment figures that were forecast by the Western Interstate Commission for Higher Education (1993), growth in student numbers at four-year colleges did not materialize (Healy, 1997). When those changes did not materialize, the institutions which are enrollment driven became more vulnerable than others (Billson & Terry, 1987). When limited resources are coupled with the cost of recruiting new students (Werth, 1988; Hossler, 1991) and the average drop-out rate of first-year students at private colleges at 29.9%, private colleges and universities need to analyze, thoughtfully, factors that will maximize retention at minimum expense. Since most private college budgets are tuition driven (Townesley, 1993), retention of students is vital. While the "cost of recruiting is often measured in thousands of dollars, the savings from retention of a full-time student can be measured in tens of thousands of dollars" (Bean, 1990b, p. 147). One might argue that recruitment of non-traditional students could help fill this gap. However, the problems associated with retention of non-traditional students in many ways are the same as retention of the traditional student (Healy, 1997).

Three interrelated factors have emerged over and over as predictors of first-year student persistence. These predictors are a felt sense of community, involvement of students in all aspects of the life at the institution, and academic/social integration (Tinto, 1993). Student satisfaction and how it relates to student persistence is becoming a more

powerful predictor that will aid institutions in their retention efforts (Sanders & Burton, 1996).

When colleges address only a student's academics and fail to treat them holistically (Sanford, 1967), they fail to give the student a sense of community, which is Tinto's first predictor of first-year persistence. Successful learning depends on the student's whole personality, not just intelligence. It is the use of both attributes that helps to integrate the student into the campus community. Sanford (1967) said:

In most of our universities and in many of our liberal arts colleges a majority of the students suffer from a lack of a sense of community, confusion about values, a lack of intimate friends, a very tenuous sense of self (including serious doubt about their personal worth), and the absence of a great cause, movement, service, religion, belief system, or anything else that they might see as larger than themselves and in which they could become deeply involved. (p. 14)

Student involvement, Tinto's second predictor of retention, is the amount of physical and psychological energy that a student devotes to his or her college experience. The correlation between student involvement in all aspects of life at the institution is a predictor of success in the freshmen year. Improved retention through student involvement has been researched and documented by many educators (Tinto, 1993; Astin, 1993; Bean, 1982).

Tinto's research on departure, which studied the student's social and academic integration, a third predictor of retention, used the

framework of Arnold Van Gennep (1960), a Dutch anthropologist. Van Gennep, and now Tinto, divided the first year of college into three stages or three "rites of passage." The first stage that Van Gennep identified is rite of separation. In separation there is a decline or complete cessation of interactions between the individual and members of groups in which he or she previously interacted.

Van Gennep's second stage is transitional rites. This stage is characterized by ambiguity. In the transitional rite stage, the individual begins to interact with members of the new group. Here the student learns the knowledge and skills necessary to function in the new group. In the transitional rites stage the individual is challenged as to whether he or she will adjust to the demands of higher education.

Ceremonies or rituals that symbolically express membership into his or her new position characterize Van Gennep's last stage, incorporation. An example of new membership may include becoming a member of a fraternity or sorority, or it may include belonging to one of the many clubs or organizations typically found on a college campus. The duration of the phases differs from student to student and setting to setting.

Students need sufficient formal mechanisms that will assure that those social interactions with other students and faculty take place. Tinto (1987) stated that there is not one grand theory to explain all the reasons

why a student would persist with his or her education, including his own model. His model has become accepted as most useful for explaining the causes of departure from college and emphasizes two conditions that help predict student retention: social and academic integration. Tinto (1993) reported that for a student to persist in his or her education there needs to be congruency between the student and the institution. The student's motivation and academic ability must be matched with the institution's academic and social characteristics in order for the student to be committed to remain at the institution. The institution must also be committed to the student's educational goals.

Somewhat similar to Tinto's model is Bean's Student Attrition Model. Bean's model was developed by synthesizing research on turnover in work organizations (Bean, 1980). He compared reasons for students' leaving institutions to similar reasons for why employees leave work organizations. As in work organizations where intent is related to behavioral intentions, persistence in college is connected to behavioral intentions. Behavioral intentions are those statements that students make regarding educational goals. The processes in which beliefs about educational goals shape attitudes and attitudes guide behavior, are referred to as behavioral intentions (Fishbein & Ajzen, 1975).

Astin (1984) stated that the amount of student learning and personal development is directly proportional to the quality and quantity of student

involvement. For example, a student who is highly involved will devote energy to studying, to campus organizations, and to interactions with other students and faculty. It is important that colleges and universities aid the student in finding these opportunities for involvement.

Involvement can occur through social and academic integration. In Astin's Theory of Involvement, rather than stressing the need for full integration, he believes that students can be alienated in some areas of the campus experience, but still persist because they are involved in another area such as athletics or music. Astin believes that the better the "fit" between the student and the institution, the more likely the student is to persist or achieve (Astin, 1985). Astin also believes, however, integration is a much more complex phenomenon than "fitting in." He believes integration requires a series of connections with various aspects of the college environment, which make it a community.

The foregoing three theories have the common theme of involvement as a predictor of student persistence. In addition to involvement, there are other variables that are predictors that affect academic and social integration. These variables include the following: high school GPA, financial aid support, and gender. Studies have been conducted measuring these variables (Pascarella & Terenzini, 1980; Cabrera, Nora, and Castaneda, 1993; Kennedy, 1995), and these variables have also been found to be predictors of persistence. It is essential that

the relationships among the variables be established with clarity by looking at factors unique to an individual institution. Noel, Levitz, and Saluri (1985) stated that retention studies should define the unique characteristics of the campus. Baselines must be established for measuring gains in retention and identifying strengths of the institution. It is from these baselines that institutions will be able to make intelligent decisions when assessing their programs.

Students enter college with a set of expectations, and it is from these expectations that they are motivated (Hodgetts, 1982; Bank, Biddle, and Slavings, 1992). Given the students' investment of time, energy, and money, their perception or expectancy should be given substantial weight. Astin (1993) wrote: "Virtually all measures of satisfaction with the undergraduate experience are significantly related to the number of undergraduate years completed" (p. 278). Research has shown (Astin, 1993; Tinto, 1993; Bean, 1980) that academic and social integration of the student into college life are strong indicators for retention. The findings of Braxton, Vesper, and Hossler, (1995) also indicated that meeting student expectations positively influences both academic and social integration and becomes important to those concerned about retention. Braxton, Vesper, & Hossler (1995) said, "If such expectations are not met, then there is early disenchantment with these communities" (p. 596). Braxton, Vesper, and Hossler (1995) also stated, "Put differently, students

with unmet expectations for college are unlikely to become integrated into the academic or social communities of the institution because they perceive that they were misled by the institution prior to matriculation” (p. 596).

### Statement of the Problem

The problem of this study was to determine if the Student Satisfaction Inventory (Schreiner & Juillerat, 1994), and the “performance gap scores” derived from the data, could predict whether or not a student returned to Carroll College the semester after completing the survey. Performance gap scores were calculated. They are based upon the student’s perception of the difference between his or her level of expectation and his or her level at which that expectation was met, called “satisfaction.” Eleven different performance gap scores were calculated, each reflecting a comprehensive scale of institutional characteristics.

A secondary investigation attempted to gain a more thorough understanding of performance gap scores. For each of the eleven comprehensive scales, the differences between the means of gender and class level were studied. Tests for interaction were also investigated.

For purposes of this study, data regarding students at Carroll College, a four-year private liberal arts college, were collected. There were 12 comprehensive scales included in the instrument, but for purposes of this study only 11 of the 12 scales were used in the analyses of data.

The 12 comprehensive scales that measure institutional effectiveness include the following: Academic Advising Effectiveness, Campus Climate, Campus Life, Campus Support Services, Concern for the Individual, Instructional Effectiveness, Recruitment and Financial Aid Effectiveness, Registration Effectiveness, Responsiveness to Diverse Populations, Safety and Security, Service Excellence, and Student Centeredness.

The twelfth scale, Responsiveness to Diverse Populations was the only scale which exclusively measured satisfaction.

Importance was not measured due to the sensitive nature of the question within the scale and the implications of asking such questions to a majority population (Juillerat, 1995).

#### Significance of the Study

In response to the unpredictable number of graduating high school seniors that attend college and the high cost of recruiting students—from \$1800 to \$2400 per student (C. Cain, personal communication, August 22, 1997) colleges and universities are increasingly committed to achieving enrollment stability by increasing the student retention rate. The national average for retention of first-year college students at private institutions is 70.1% (ACT, 1997). Carroll College has a 75% retention rate of first-year students, which is slightly higher than the national average. Carroll's four-year graduation rate is 30%, and five-year graduation rate is 42% of

entering freshmen. In spite of the fact that Carroll College's retention rate of first-year students is slightly higher than the national average, the administration is striving for a goal of an 80% retention rate for first-year students and a four-year graduation rate of 65% (R. Pastoor, personal communication, September 5, 1997). These numbers meet a level which the institution deems financially feasible and acceptable in order to reach its long-term goal for growth of the institution. This rate of retention is also based on a comparison of colleges similar in size and mission to that of Carroll College.

Carroll College depends heavily upon student tuition to fund its operating budget. In a recent study of 1,000 colleges, Townsley (1993) found that 73% drew their revenue from students. Seventy of these private colleges drew 94% of their revenue from student tuition (Townsley, 1993). Carroll College is one of those enrollment-driven private colleges and derives 85% of its budget from student tuition. Carroll College's dependence upon student tuition, coupled with the high cost of student recruiting, means that it is crucial that Carroll College maintain a high student retention rate after the freshman year. In an era of increasing college costs and less predictable numbers of college-bound high school graduates; it is also very important that Carroll College learn what expectations its students have regarding their educational experiences and to what degree these expectations are being satisfied.

Assessing student expectations and satisfaction is an important measurement of the needs and desires of students that institutions must address in order to understand student success, satisfaction, retention, and institutional effectiveness (Schmidt & Sedlacek, 1972; Astin, 1993; Bean, 1980; Spanbauer, 1992; and Tinto, 1993). Earwood-Smith and Colbert (1989) found that as student satisfaction increased, so did the rate of student retention. Regularly assessing a broad range of student outcomes should lead to continuous improvement in student and academic programs which, in turn, would lead to greater student satisfaction and greater student retention. Student satisfaction is a valid gauge of retention (Sanders & Burton, 1996). Earwood-Smith and Colbert (1989) stated, "A more productive research approach is to examine why college students stay instead of why they leave" (p. 14).

When applying for grants and other financial awards, institutions are frequently required to demonstrate that they are retaining their students in high numbers (Howard & Rogers, 1991). As part of receiving accreditation renewal, institutions must demonstrate that student assessment is a part of the institution's procedure (Dolence, 1991). Carroll College is preparing for its accreditation review which will take place in 2000.

For some years now Carroll College has been concerned with its retention numbers. In the past, information as to why students left Carroll

College has for the most part been speculative. With concrete data gained from a student expectation and satisfaction assessment, Carroll College can use its limited resources carefully and wisely, getting the most out of a strained budget. Also, with current data on student expectation and satisfaction, Carroll College can re-evaluate its short-term and long-term planning goals based on what students expect from their educational experience and how satisfied they are with that experience. Earwood-Smith and Colbert (1989) suggested that looking at students' "greatest satisfaction and greatest dissatisfaction is the basis for reordering institutional priorities" (p. 14). Cabrera, Nora, and Castaneda (1993) have said: "Institutions should constantly monitor whether an institution's intervention plan is having an effect on the persistence process" (p. 125). Assessment data will allow Carroll College to look systematically at ways to make changes to its educational and campus life programs that will eventually aid in the retention of its students and provide information for other institutions to utilize. Chaffee (1990) suggested using data to "quickly move from dissatisfaction to solution" (p. 61).

#### Definitions of Terms

The following definitions explain terms as they are used in this study:

1. Academic Integration—a condition or perception of fitting into and being able to keep up with the academic rigor of the

institution.

2. Attrition—the voluntary or involuntary student departure from an institution, not including graduation.
3. Comprehensive Scales—found within the Student Satisfaction Inventory, there are twelve comprehensive areas: Academic Advising Effectiveness, Campus Climate, Campus Life, Campus Support Services, Concern for the Individual, Instructional Effectiveness, Recruitment and Financial Aid Effectiveness, Registration Effectiveness, Responsiveness to Diverse Populations, Safety and Security, Service Excellence, and Student Centeredness. Each of these areas consists of a set of related questions.
4. Importance Score Ratings—measurements of how strongly students feel about the expectation for the given item, referred to as level of expectation.
5. Negative Gap Score—the importance score rating minus student satisfaction score rating resulting in a negative number. The negative number indicates the institution is surpassing the student's expectation.
6. Performance Gap Score—the importance score rating minus student satisfaction rating.

7. Persistence—the flow of students through college over a six-year period.
8. Retention—the continuation of a student's education from year to year.
9. Satisfaction Score—measurement of how satisfied students are that the institution has met their expectation.
10. Social Integration—a condition or perception of fitting into the social life of the campus.
11. Student Satisfaction Inventory (SSI)--developed by Laurie A. Schreiner, Ph.D., and Stephanie L. Juillerat, Ph.D. (1994), with assistance from USA Group Noel-Levitz. The assessment measures expectations of students and the satisfaction of students on twelve comprehensive scales.  
  
The survey also provides a means to measure the gap between expectations and satisfaction.

#### General Questions to Be Answered

1. Is there a relationship between the decision to return or not return to Carroll College and any of the performance gap scores derived from the Student Satisfaction Inventory (SSI)?
2. In which of the 11 performance gap scores can interaction between gender and class level be found?

3. In which of the 11 performance gap scores are there significant differences between the means among the freshmen, sophomores, juniors, or seniors?
4. In which of the 11 performance gap scores are there significant differences between the means of male and female students?

## CHAPTER 2

### REVIEW OF LITERATURE

#### Introduction

There has been much written about retention in higher education in the past twenty-five years. According to the National Center for Education Statistics (NCES, 1997), retention continues to be an issue of importance for colleges and universities as the number of students available to attend postsecondary schools continues to fluctuate (1997). A review of the literature yields a wealth of information on the topic. This literature review will focus on three main areas: first, an overview and review of literature related to the topic of retention, second, an overview of research related to enrollment management, and third, an overview of student satisfaction.

#### Overview of Retention

A review of the literature on the importance of the study of retention and the impact that those results have for institutions doing research shows that certain commonalties reoccur within the theories or models of retention. The common themes are academic integration and social integration. There are various theoretical models that provide a comprehensive framework on college departure decisions (Astin, 1984; Bean, 1982; Tinto, 1993).

For this review of literature, three of these models were examined, Tinto's Student Integration Model, Bean's Student Attrition Model and Astin's Theory of Involvement.

Tinto's Student Integration model has become accepted as one of the most useful models for explaining the causes of departure from college. Two factors that help predict student retention, social and academic integration, are the main factors discussed in the Tinto model (Boyle, 1989; Tinto, 1993). These two factors become a means for discussing and testing the models for college withdrawal (Stage, 1989). The factors, academic integration and social integration, are sometimes referred to as cognitive and affective conditions (Stodt, 1987).

Tinto's Student Integration Model is based on the work of Arnold Van Gennep (1960), a Dutch anthropologist, and Emile Durkheim (1951), a French sociologist. Van Gennep's work looked at a culture's "rites of passage." The culture's rituals were designed to move an individual from one developmental stage to the next. There were three stages to Van Gennep's rites of passage. The first stage that Van Gennep identified was rite of separation. In rite of separation there is a marked reduction or a complete cessation of interaction between the individual and members of the group in which he or she had previously interacted. Van Gennep's second stage was transitional rites, which is characterized by ambiguity. In this stage the individual is tested to see how he or she adjusts to a new

environment, leaving behind familiar relations and recognized patterns. Van Gennep's third and final stage in "rites of passage" was incorporation. This stage is characterized by a series of rituals and ceremonies that symbolically express the new position in the new "culture."

The duration of these three stages differs relative to the individual and the situation. When the institution does not provide college students the opportunity to complete the three stages, they will most likely drop out of school (Tinto, 1993). Tinto's comparison was those institutions' function as "societal rites of passage." He stated that the more integrated students became in the transition stages the more likely they were to persist with their education (Tinto, 1993).

Another influence on the development of Tinto's model was Durkheim's (1951) research on suicide. Durkheim found that when a person shares values with a group, that person is less likely to commit suicide. He also found that when an individual has friends for support that the person is less likely to commit suicide. From Durkheim's research, Spady (1970) made the comparison of students withdrawing from college to people withdrawing from society (Bean, 1982).

Tinto's model examines the processes that motivate individuals to leave colleges and universities before graduating (Cabrera, Nora, & Castaneda, 1993). Within social and academic integration there is a range

of formal and informal experiences of students. Some of these formal and informal experiences are determined by the institution, and some are determined by the student. Tinto (1993) maintained that these formal and informal experiences are both critical to long-term success and persistence in college.

Tinto (1993) reported that for a student to persist in his or her education there needs to be congruency between the student and the institution. The higher the student's goal to complete college the greater the probability of persisting in college (Cabrera, Nora, & Castaneda, 1993). The student's motivation and academic ability must be matched with the institution's academic and social characteristics in order to help shape two underlying commitments: commitment to an educational goal and commitment to remain with the institution (Hodgetts, 1982; Cabrera, Nora, & Castaneda, 1993). The institution must also be committed to the student's educational goals.

The second model to be reviewed that explains retention is Bean's Student Attrition Model. This model is similar to, yet different from, the Tinto model. Bean's model was developed from the results of studying turnover in work organizations (Starr, Betz, & Menne, 1972; Bean, 1980). Employee turnover is chiefly a result of the work environment. When employees are satisfied with the work environment they will most likely not quit (Bean, 1980).

Bean's model asserts that persisting in college is analogous to job turnover in work organizations, and that it is important to look at the student's behavioral intentions. Behavioral intentions are molded by a process in which beliefs shape attitudes and attitudes influence behavior (Fishbein & Ajzen, 1975). A process in which beliefs about educational goals shape attitude, and attitudes guide behavior directs these behavioral intentions. The student's beliefs are affected by the student's experience with the different components of an institution (Cabrera, Nora, & Castaneda, 1993). Stodt (1987) remarked that students must be convinced as consumers to buy more than a semester at a time, to buy a four-year contract. The student needs to recognize how his or her investment is paying off. The level of satisfaction is expected to increase the level of institutional commitment. If there is not enough institutional commitment, the student will drop out of school (Bean, 1980). Bean (1986) found that institutional commitment was the primary variable influencing dropout. Hossler (1994) found that goal commitment and intent to leave are the strongest predictors of dropping out.

The Student Attrition Model recognizes those external factors, such as family support and financial stability, can play a major role in affecting both attitudes and decisions while still attending college (Cabrera, Nora, & Castaneda, 1993). The Student Attrition Model also acknowledges that the student's beliefs, and thus the student's attitudes,

are subject to factors external to the institution. The external factors have been studied and tested to measure the relevancy that they have on a student's persisting in college.

The final model used to study retention is Astin's Theory of Involvement (1977). The roots for this model come from a longitudinal study of more than 200,000 college dropouts. Astin identified several factors in the college environment that influenced students' decisions to stay or leave college.

Astin identified over 80 different student outcome measures (variables). His model focused on the effects of various types of involvement including where the student lived; honors programs; academic involvement; major; athletic participation; student-faculty; student-student; and involvement in student government. Astin (1984) found that the variable that contributed to persistence suggested involvement in the campus community whereas the variable that contributed to dropping out implied a lack of involvement.

Common themes that occur in Tinto's and Bean's models that are closely related to retention are academic integration or performance and social integration. Tinto's concept of integration is the more comprehensive of the two (Hossler, 1994). Retention research shows a high correlation between academic performance and persistence (Spady, 1970). Academic integration occurs through faculty contact such as

teaching, academic advising, or institutional involvement such as providing social events. Most student-faculty contact occurs within academics. However, evidence shows that student-faculty contact outside the classroom is also important (Pascarella & Terenzini, 1991; Tinto, 1993). Contact with faculty comes about in formal and/or informal contacts (Stodt, 1987; Tinto, 1993). Formal contact occurs through teaching and academic advising. Institutions must support teaching and academic advising so that academic integration of the student occurs. Curricula and courses must provide materials and information relevant to the student's educational goals. One way colleges can help students become aware of what their educational goals are is by offering some type of course, such as a freshman seminar course, that will aid the student in gaining that knowledge (Upcraft & Gardiner, 1989).

Since most formal contacts supporting academic integration are ones that occur in the classroom, institutions must place a priority on the quality of student-faculty interactions (Pascarella & Terenzini, 1991; Tinto, 1993). Institutions should maintain quality by challenging their faculty to examine their current teaching methodology to see how the methodology fits the current needs of today's student (Stodt, 1987; Pascarella & Terenzini, 1991; Sines & Duckworth, 1994). Faculty must consider various teaching techniques and methods for delivery of information (Gardiner & Nazri-Robati, 1983). Rowley, Lujan, and

Dolence (1997) stated, "Colleges and universities are no longer the gatekeepers—they no longer hold the only way of creating and disseminating information, let alone learning from it" (p. 23). An active mode of delivering material to students is considered appropriate. It is also important for faculty to teach students to become responsible for their learning. Students make judgments about their academic experience on the basis of factors such as quality of instruction, freedom to contact faculty for consultation, availability of faculty for consultation, and faculty involvement outside the classroom (Noel, 1994).

Another type of formal contact made between student and faculty that supports academic integration is academic advising of students by faculty members. Faculty advising has long been considered a part of the faculty member's job description. Academic advising is also considered an integral part of the higher education process (Crockett, 1978). Good academic advising by faculty has a strong link to student persistence (Crockett, 1978; Stodt, 1987). When a student feels good about the academic advising he or she receives, the student also feels good about the institution. Academic advising can stimulate intellectual growth and development of the student and can also enrich the educational curricula of the school. It has been shown that frequent and high quality contact by faculty with advisees results in student persistence (Crockett, 1978).

Informal interaction with faculty also plays an important role in

retention. Informal contacts with faculty have a role in the total quality educational experience. Examples of informal interaction include casual conversation between classes and conversation at school events. These types of social contacts were consistently found to be linked positively to freshman year persistence (Terenzini & Pascarella, 1980; Astin, 1984; Tinto, 1993). Not only has informal contact been found important, frequency and quality of informal contact played a role in attrition decisions. Sines and Duckworth (1994) noted, "What determines a quality education is more than just what takes place in the classroom" (p. 3). There is also evidence that informal contact is somewhat more important for women students than men students (Terenzini & Pascarella, 1980).

With the attrition rate for first-year students at 29.9% (ACT, 1997) for private four-year institutions, the beginning of the freshman year is critical to retention (ACT, 1997). Colleges and universities need to strongly encourage contact by faculty and staff with students in the freshman year. Many colleges offer freshmen seminar courses as one method of making this investment. These courses help the student to integrate academically and socially into the institution. The more we concentrate resources on a freshman's beginning experience, the greater the likelihood that the freshman will persist with his or her education (Dunphy, 1987). When freshmen take orientation courses, the student experiences a greater sense of community, becomes more comfortable

talking with his or her professors, and gains a greater understanding of where and how to get help (Gordon, 1989; Upcraft & Gardiner, 1989). Further, frequent absences from the freshman course serve as an early warning of likely attrition (Dunphy, 1987).

Research has shown that student participation in orientation courses results in increased retention rates, increased student knowledge, and increased participation in extracurricular activities (Perigo & Upcraft, 1989; Upcraft & Gardiner, 1989).

Variables in the Tinto and Bean model serve as a standard against which other research can be measured. Many research efforts currently are isolating one variable and measuring that variable against one of the models.

Pascarella and Terenzini (1991) looked at the variables of informal faculty and student contacts. When comparing their results to the Tinto model, we see a significant difference between persisters and leavers (Pascarella & Terenzini, 1991). This difference between persisters and leavers held true when students discussed intellectual or course-related subjects with faculty outside of the classroom (Pascarella & Terenzini, 1991).

In other studies done to test the validity of Tinto's model, Terenzini and Pascarella (1980) developed a multidimensional instrument. Their results indicated strong support for both the instrument and the model,

especially validating the constructs of academic and social integration (Boyle, 1989). Getzlaf, Sedlacek, Kearney, and Blackwell (1984) also tested against Tinto's model, and in their findings found GPA to be a significant predictor of persistence (Boyle, 1989).

Retention strategies that work for some students may not work for other students. Additionally, strategies that work for some institutions may not work for other institutions. Patterns of results from studies of retention can lead institutions to various solutions. It is important, however, for the institution to question the student about academic integration and social integration concerns before the student leaves. Any intervention for retention should occur while the student is enrolled, not after he or she leaves.

### Overview of Enrollment Management

While studying theories of retention is useful to understanding why students drop out of college, they do not explain attrition in its entirety. Enrollment Management has two aspects. The first aspect studies recruiting students; the second aspect is the study of retention. For purposes of this paper, I will look at only the retention aspect of enrollment management.

As part of the study of retention, it is important to examine why students remain in college. To do so we must consider the reasons associated with why students return to college year after year. These

reasons involve consumer behavior principles. First, the problems related to retention as a part of enrollment management with special emphasis on consumer behavior will be addressed and second, student satisfaction will be addressed.

Enrollment practices became more formalized starting back in the early 1970s (Pike, 1991) when competition for students began to increase as student numbers available for college were predicted to drop. At the same time, there was also an increased emphasis on quality instruction and service to students. This trend came about in part as a result of students becoming more vocal in expressing their dissatisfaction with some aspects of campus policies such as student life and administrative policies. Student protests became more common on college campuses, and the demand for student services and quality education became more prevalent (Schmidt & Sedlacek, 1972).

As a result of demands for increased accountability and outcome measures, institutions needed methods for measuring these factors. Enrollment managers in higher education borrowed consumer principles from the business industry in order to aid in this task. While institutions can not totally move from a "provider" model to a "consumer" model, the institution must respond to consumer demand (Rowley, Lujan, & Dolence, 1997).

One industry theory that enrollment management borrowed is the expectancy theory (Cummings & Schwab, 1973). Expectancy theory explains motivation behind workers in industry, which can be compared to student motivation. Expectancy theory predicts that a worker will be a high performer when he or she sees that work effort will have some kind of an effect, whether from a "pat on the back" or a pay increase. In expectancy theory, job performance is also related to job satisfaction. When workers are satisfied with their jobs, they "perform" at a higher level. Expectancy theory can be compared to students' satisfaction with their education. The more satisfied students are with the educational experience, the more likely it is that students will continue with their education.

By the late 1980s, demographers told us that there would be a decline in the number of high school seniors going on to post-secondary schools (Porter, 1990). In some states in fact enrollment decrease at four-year colleges did not materialize, and in some states there has been a greater demand for higher education (Healy, 1997). Next came the prediction that there would be dramatic increases in student numbers. With the recent release from NCES (1997), the new forecast for post-secondary schools takes on yet a different look. Enrollment forecasting has become more complicated by several trends. These trends include the following: high school students are taking college classes while still in

high school; there is a heavy demand for classes at community colleges by non-traditional students; and there have been changes in federal and state financial aid policies. Other trends that affect enrollment are growth in distance learning and a good economy which attracts prospective students to jobs instead of going to school (Healy, 1997). Students are making different choices about their post-secondary education from those anticipated in earlier projections. With so many factors influencing enrollment trends, it is nearly impossible to generalize national trends to individual states, or state trends to the nation as a whole (Western Interstate Commission for Higher Education, 1993). Somewhat easier to predict than enrollment are the benefits of a student's staying in college and the cost of attrition when a student decides to leave school:

It is much easier in time, money, and effort to retain students than to recruit them. If a student drops out after the first year, it means the loss of three years of tuition (Bean, 1990b). It would take four freshmen who quit after one year to equal the income of one student who stays for four years. Concern about the retention rate of students is not limited to freshmen. The cost of losing students can not and should not be measured only in dollars. Attrition of students is a problem for more than just the institution that loses the student.

Attrition of college students is also a problem for society. When a student chooses not to further his or her education, this decision creates a

reduction of educated individuals for our society. The individual loses by dropping out of school is the same in that there is personal failure to achieve his or her educational objectives. The student who drops out of college is also at risk of receiving an income at 15% below that of contemporaries who stay in college (Bean, 1990b). Retaining students with positive attitudes toward the college or university means that the student will re-enroll. Upon graduation "alumni" will speak favorably about the institution which will aid in further recruiting new students (Bean, 1990a).

Society and the student lose out when the student drops out of college, and the college or university fails to collect tuition money. The institution surrenders more than just dollars. Faculty morale is affected by attrition (Bean, 1986) as is the morale of admissions counselors who work hard to recruit a new students. Admission counselors expend much time, money, and energy recruiting students, and at times their jobs are in jeopardy when they do not meet their quotas (Ferguson, 1990).

In addition to theories on student departure, are two concepts related to student retention: enrollment management, with the construct of consumer behavior and student satisfaction. These two concepts are an integral part of Tinto's, Astin's, and Bean's work.

The study of consumer behavior comes from marketing principles, including expectancy theory. Consumer behavior studies show how to

get, and keep, customers. While some educators argue that marketing is incompatible with the educational mission and does not fit in higher education, institutions can use marketing knowledge to explain student satisfaction and attrition concerns. Rowley, Lujan, and Dolence (1997) wrote: "If a central purpose of higher education is to advance knowledge while helping to create a better society, then colleges and universities must respond to consumer demand in ways not yet perfected by present practice" (p. 54).

Consumer expectancy can be explained through Vroom's Theory of Expectancy (1960). Vroom made the assertion that consumers form expectations about product performance before they buy. In purchasing an education, which is considered to be an "intangible good," (Levitt, 1981) students "purchase" their college education based on what they see and hear about the institution. From the buyer's (student's) point of view, the product (education) is a promise, and the customer (student), although sold, can just as quickly be unsold if expectations are not met (Levitt, 1981).

Depending on the level of satisfaction with the "purchase," called post-purchase action, this satisfaction can have many positive benefits for the institution as well as some harmful effects. When the consumer is satisfied he or she will "repurchase" the service (take another semester of classes), he or she will recommend the school to other customers (children

and friends), and they will contribute to alumni associations (Stodt, 1987; Pate, 1993). If on the other hand, the consumer is dissatisfied with the service, he or she may speak poorly about the product (Pate, 1993).

### Overview of Student Satisfaction

While models from the business industry can explain expectancy theories, they do not entirely explain student satisfaction, the other principle related to retention. We know from the literature on student retention that recruiting students is expensive (Rowley, Herman, & Dolence, 1997). It was not until the 1980s when studies showed that increasing student satisfaction had a positive effect on retention. Astin (1993) found in his studies on retention that there "appears to be a direct association between student satisfaction and retention (p. 278).

Gardiner and Nazari-Robati (1983) and Earwood-Smith and Colbert (1989) suggested that researchers look at attrition in a different light. Rather than studying why students drop out of college, research must focus on the persisters and retention rates. The quality of student life must be a campus-wide concern. Sanders and Burton (1996) said researchers should be asking about what kind of experience the institution provides to its students, and what the level of satisfaction is with their experience. Of particular importance, faculty need to believe that retention is part of their job (Toy, 1985). In a highly competitive market, institutions must continually assess how satisfied students are if they hope to retain them.

Sanders and Burton (1996) stated, "Although strongly connected to retention, student satisfaction is a more powerful measure that can continue to be improved even in institutions with high retention and graduation rates" (p. 556).

In the 1970s, when the number of high school graduates was projected to decrease dramatically, along with the rising costs for higher education, the competition for students began to increase at institutions of higher education. At this same time demands for greater accountability were put on institutions by legislators, media, parents and the general public (Hartman & Schmidt, 1995). In addition, to the demands for quality instruction and service to students, there were public policy shifts, and continued reduction in state and federal aid to institutions (Hossler, 1994).

Some educators argued that marketing is incompatible with the educational mission and does not fit in higher education institutions (Pate, 1993). However, Sines and Duckworth (1994) stated, "It's time for educational institutions to face two facts: they are in a competitive battle for students, and students are customers" (p. 2). With the continued rising costs of education and unpredictable pools from which to draw students, it is difficult to consider students as less than consumers. Students should be viewed as consumers of educational services and not products (Hartman & Schmidt, 1995). Hossler (1994) said, "Suppliers of

educational services need to know what criteria will influence students' choices, what services will help students achieve their goals, and what factors determine overall student satisfaction or dissatisfaction" (p. 198).

Businesses are suppliers of two types of products, those that are tangible and those that are not (Levitt, 1981). Education is an example of an intangible product (Levitt, 1981; Sines & Duckworth, 1994). Prospective students are consumers looking to "purchase" the intangible product—an education. When prospective customers, students in this case, can not experience the product they are purchasing in advance, they are essentially being asked to buy promises, promises of satisfaction (Levitt, 1981). Students are "purchasing" their college education based on what they see and hear to make a judgement about the realities. From the buyer's point of view, the product is a promise, and although the customers are sold, they can just as easily be unsold if their expectations are not met. Further, Rowley, Lujan, and Dolence (1997) said, "But if the student finds that the institutional environment is coarse, unhelpful, and unforgiving that investment is wasted as the student looks elsewhere" (p. 225).

When it comes to retaining customers, intangible products, like education, pose very special problems. Unique to intangible products is the fact that the customer is seldom aware of being served well. If everything is going well, the customer is oblivious to what he or she is

getting (Levitt, 1981). It is only when something does not go well that the customer (student) becomes aware of what he or she is not getting. It is on these satisfactions that he or she dwells. For this reason it is important to remind students regularly of the presence and value of their investment (Stodt, 1987).

Students must be convinced that attending institutions of higher learning will help them attain their educational goals. Retaining students is related to another concept called "post-purchase marketing" (Levitt, 1981). Consumers' post-purchase evaluation is a crucial issue for two reasons. First, a college education is costly, maybe the most costly purchase an individual will make. The second reason post-purchase evaluation is important is from the benefits an institution will gain when it has "satisfied customers" graduate. These graduates may not only contribute money to the institution, but the institution will also receive free word-of-mouth advertising, and they will serve as resources for jobs for new graduates (Chadwick & Ward, 1987). Students choose their schools on one set of factors, which are intangible, and later evaluate their experience on another set of factors, which are tangible (Chadwick & Ward, 1987). Astin (1993) found that the degree of satisfaction with the college experience is less dependent on the entering characteristics of the student than on the experience he or she has after arriving on campus.

Students are becoming more and more expressive of their dissatisfactions with certain aspects of their educational experience (Hartman & Schmidt, 1995). Bean and Bradley (1986) suggested, "A substantive area of investigation (student satisfaction) has received scant attention over the last decade" (p. 393). In a study of colleges and universities, Pike (1991) reported that virtually all of the administrators surveyed identified satisfaction as a key element in institutional effectiveness. Pike (1991) noted that with the continued interest in assessment of higher education programs would also come increased assessment of student satisfaction. Noel and Levitz (1996) stated that student assessment would continue to be used to pinpoint and prioritize action steps to improve institutional effectiveness. Astin, Korn, and Green (1987) found as a result of studying the results from Cooperative Institutional Research Programs (CIRP) studies that one in four students reports overall dissatisfaction with his or her school. Astin, Korn, and Green (1987), along with Hartman and Schmidt (1995), found that upperclassmen would more often than not offer very different sentiments about their college experience than the lower-division students.

Spady (1970) suggested that academic satisfaction was critical in explaining college persistence. Astin (1993) supported Spady and wrote, "Virtually all measures of satisfaction with the undergraduate experience are significantly related to the number of undergraduate years completed"

(p. 278) and “one promising way to reduce an institution’s dropout rate is to focus more attention on student satisfaction as an ‘intermediate outcome’” (p. 278). An important aspect of focusing on student satisfaction instead of attrition is that the difference between sub-groups such as gender, ethnicity, or parents’ educational background can be studied (Sanders & Burton, 1996).

## CHAPTER 3

### METHODOLOGY

#### Introduction

The literature review in Chapter 2 has provided the foundation from which this research was conducted. Chapter 3 described the procedures and methods that the researcher used to collect and analyze the data. Included in this chapter are the following sections: theoretical background; instrument used; reliability and validity; hypotheses; population description and sampling procedure; method of data collection; analysis of data; and limitations and delimitations.

#### Theoretical Background

This study was based upon several theories of student retention. The theories include the following: Tinto's Theory of Departure, Bean's Student Attrition Model, and Astin's Theory of Involvement. Also discussed were the concepts of enrollment management, which includes consumer behavior and student satisfaction.

Tinto (1975, 1987, & 1993) formulated a theory, Tinto's Theory of Departure, which explains the process that motivates individuals to leave college before graduating. Tinto's theory hypothesized that the match between an individual's motivation and academic ability and the

institution's academic and social characteristics determines student persistence in college.

Astin's Theory of Involvement has at its base information from a longitudinal study of college dropouts. His study identified factors in the college environment that influenced students' decisions to stay or leave the college.

Bean's (1982) Student Attrition Model builds upon process models of organizational turnover. Bean hypothesized that student attrition is analogous to employee turnover in employment situations and stressed the importance of behavioral intentions as predictors of persistence behavior. As a method of studying the various process models and other theories related to student behaviors, enrollment management models were instituted and the people in charge of enrollment, enrollment managers, were hired.

Enrollment managers have as one of their tasks to become knowledgeable about both recruiting and retaining students. Today's students are in a position to be more selective about where they will go to college and whether or not they will stay at the institution that they choose.

As a means of staying abreast of enrollment trends, enrollment managers study marketing trends and issues. Since the study of consumer behavior is a part of the study of marketing trends, it is critical that

enrollment managers pay particular attention to the theories encompassing college students' level of satisfaction with their educational experience. Included in these consumer behavior theories is the theory of expectancy. This theory purports to explain why some workers in industry perform at a higher level than others. Expectancy theory can be used to make the comparison to student satisfaction with his or her educational experience. The more satisfied a student is with his or her educational process the more likely he or she will return semester after semester.

Related to customer behavior is student satisfaction. The study of student satisfaction parallels research conducted on employee satisfaction (Bean, 1980; Bean & Bradley, 1986). Sanders and Burton wrote: "Although strongly connected to retention, student satisfaction is a more powerful measure that can continue to be improved even in institutions with high retention and graduation rates" (p. 556). The difference between expectation and what actually takes place (perception) leads to satisfaction. Looking at student expectations and student satisfaction will enable institutions to make decisions about how to use their resources to meet the expectation of the student. When students are satisfied with the services they are given, it is more likely that they will continue with their education (Astin, 1993).

### Instrument Used

Using the Student Satisfaction Inventory (SSI), students from Carroll College were surveyed regarding their level of expectation and level of satisfaction on 11 comprehensive scales of institutional characteristics. The SSI was developed by Drs. Stephanie Juillerat and Laurie Schreiner. The SSI is used by four-year public and private institutions and two-year vocational schools across the country. The SSI is used to measure level of expectation and level of satisfaction of students on comprehensive scales of institutional characteristics.

The difference between level of expectation and level of satisfaction, which is called the performance gap score, was computed.

The instrument chosen to gather data was the Student Satisfaction Inventory (hereafter referred to as "SSI") (Schreiner & Juillerat, 1994). The instrument consists of 73 individual questions that make up the 12 comprehensive scales of institutional characteristics (see appendices A and B). Of the 12 comprehensive scales, 11 scales were used in the study. The following provides a description of each of the comprehensive scales:

1. Academic Advising Effectiveness assesses the comprehensiveness of the academic advising program. Academic advisors are evaluated on the basis of their knowledge, competence and personal concern for student success, as well as on their approachability.

2. Campus Climate assesses the extent to which the institution provides experiences which promote a sense of campus pride and feelings of belonging. This scale also assesses the effectiveness of the institution's channels of communication for students.
3. Campus Life assesses the effectiveness of student life programs offered by the institution, covering issues ranging from athletics to residence life. This scale also assesses campus policies and procedures to determine students' perceptions of their rights and responsibilities.
4. Campus Support Services assesses the quality of the support programs and services which students utilize in order to make their educational experiences more meaningful and productive.
5. Concern for the Individual assesses the institution's commitment to treating each student as an individual.
6. Instructional Effectiveness assesses the students' academic experience, the curriculum, and campus's overriding commitment to academic excellence.
7. Recruitment and Financial Aid Effectiveness assesses the institution's ability to enroll students in an effective manner.

8. Registration Effectiveness assesses issues associated with registration and billing. This scale also measures the institution's commitment to making this process as smooth and effective as possible.
9. Responsiveness to Diverse Populations assesses the institution's commitment to specific groups of students enrolled at the institution, e.g., under-represented populations, students with disabilities, commuters, part-time students, and older returning students.
10. Safety and Security assesses the institution's responsiveness to students' personal safety and security on the campus. This scale measures the effectiveness of both security personnel and campus facilities.
11. Service Excellence assesses the perceived attitude of the staff toward students, especially front-line staff. This scale pinpoints the areas of the campus where quality service and personal concern for students are rated most favorably and least favorably.
12. Student Centeredness assesses the campus's efforts to convey to students that they are important to the institution. This scale measures the extent to which students feel welcome and valued. (Adapted from Noel-Levitz, 1996 (p. 1-4))

The scale, Responsiveness to Diverse Populations, was the only scale that measured satisfaction only and not importance. According to Juillerat (1995):

The SSI does not include an importance score for the items on the Responsiveness to Diverse Populations Scale because of the sensitive nature of the questions and because of the statistical implications of asking a majority population about the importance of predominantly minority-related issues. Therefore, the authors decided to consider all six of these questions to be important to students (or at least the institution) and avoid any complications with trying to analyze responses based on majority vs. minority populations. (p. 83)

Each of the 73 items is expressed as a statement of expectation or satisfaction. Students were asked, first, to rate how important the expectation was to their overall satisfaction with college, using a seven-point Likert rating scale ranging from 1-7, with one indicating "not at all important" to seven indicating "very important." Next, students were requested to rate their level of satisfaction that the school has met the expectation using a seven-point Likert scale ranging from one indicating "not at all satisfied" to seven indicating "very satisfied." The difference between the two scores is then computed and is called the performance gap score. The SSI is a self explanatory and easily administered questionnaire, which takes approximately 20 minutes to complete. The SSI was used to measure the overall satisfaction and priorities of students.

Surveys were sent to USA Noel-Levitz for initial scoring. A data disk with the raw data was purchased from Noel-Levitz and was used to provide the data for the study.

### Reliability and Validity

There are 12 comprehensive scales on the SSI, each with established reliability. Cronbach's coefficient alpha, which was used to determine how the internal consistency of the instrument was correlated for each item, was .97 for the set of importance scores and .98 for the set of satisfaction scores. These scores support the internal consistency of the instrument. Juillerat stated "that each item was important to the overall instrument and that no item should be deleted" (telephone interview, October 12, 1997). Further she said, "The instrument would not be improved by deleting any of the questions."

The SSI also demonstrates good score reliability over time. The reliability coefficient was found to be .85 for importance scores and .84 for satisfaction scores for the 3-week retest that was conducted. Juillerat (1995) also found there would be no improvement in the instrument, based on alpha, if any of the items were removed.

There is also evidence to support the validity of the Student Satisfaction Inventory. Convergent validity was assessed by correlating satisfaction scores from the SSI with satisfaction scores from the College Student Satisfaction Questionnaire (CSSQ), another statistically reliable

satisfaction instrument. The Pearson correlation between these two instruments ( $r=.71$ ;  $p<.00001$ ) was moderately high, enough to indicate adequate agreement that the SSI's satisfaction scores measure the same satisfaction construct as the CSSQ's scores, and yet the correlation is low enough to indicate that there are distinct differences between the two instruments.

### Hypotheses

The following hypotheses were tested in this study at an alpha of .05.

1. There is no significant relationship between the dependent variable (decision to return to college or not to return to college) and the independent variables (the performance gap scores) of the students surveyed.
2. Class level and gender of students in this study do not interact on the 11 performance gap scores of the comprehensive scales of institutional characteristics.
3. There are no significant differences in performance gap scores among freshmen, sophomore, junior, and senior students in the survey population on the 11 comprehensive scales of institutional characteristics.
4. There are no significant differences in performance gap scores between male and female students in the survey group

on the 11 comprehensive scales of institutional characteristics.

#### Population Description and Sampling Procedure

The population from which the sample was drawn consisted of students enrolled at Carroll College, a private four-year liberal arts college located in the west central part of Montana. Carroll College had a student population of 1,263 students when the data were collected for this study. Data for this study were collected in the spring semester, 1997.

Based on class level, the sample used in the study consisted of a proportional stratified sample drawn from the freshman, sophomore, junior, and senior classes. At the time of the survey the population consisted of 35% freshmen, 22% sophomores, 18% juniors, and 25% seniors. Noel-Levitz, the company from which the SSI was purchased, recommended surveying half of the student population. Carroll College surveyed 600 students.

From the 600 surveys distributed, 210 (35%) freshmen, 132 (22%) sophomores, 108 (18%) juniors, and 150 (25%) seniors, 409 (68%) returned. From the 409 returned questionnaires, 386 had responses that met the criteria to investigate the hypotheses.

The results from the SSI were divided into two groups. The first group consisted of all of the returned useable surveys.

The second group consisted of those students who supplied a valid social security number. The social security number was the only means by which student records could be searched to find out the status of the student.

#### Method of Data Collection

The survey was administered through the Office of Admissions and Retention. Classroom distribution by faculty based on class level was selected as the means by which students were surveyed. The Office of the Registrar provided a computer-generated course listing with student classifications of freshman, sophomore, junior, and senior students. Classes surveyed were selected based on classes that had discrete populations of freshmen, sophomore, junior, and senior students.

#### Analysis of Data

Three statistical methods were used to analyze the data from this study, Multiple Regression, Two-Factor Analysis of Variance, and Newman-Keuls post hoc comparison. The first statistical method, multiple regression, is a method used for analyzing the separate and collective contributions of two or more independent variables to explain the variability in the dependent variable. As Kerlinger and Pedhazur (1973) wrote: "Multiple regression analysis is nicely suited to studying

the influence of several independent variables, including experimental (manipulated) variables, on a dependent variable" (p. 4).

Multiple regression has a number of strengths to be considered for use. Multiple regression's biggest strength is its close relation to the purpose of scientific investigations, and that is to explain natural phenomena (Kerlinger & Pedhazur, 1973). A second strength of multiple regression is that this statistical method can handle any number and type of independent variables. Yet another strength of multiple regression is that it is appropriate for use when there are multiple independent variables and one dependent variable, or one dependent variable at a time (Kerlinger & Pedhazur, 1973). The same authors noted a final strength of multiple regression "is the yield of statistics" (p. 445) found for use in interpreting the data.

Multiple regression analysis was used to test Hypothesis 1. This analysis was used to determine if there was a significant relationship between the decision to return or not to return (dependent variable) to Carroll College and the 11 performance gap scores (independent variables).

To analyze Hypotheses 2 through 4 the second statistical method, two-factor analysis of variance, was used. Analysis of variance is used to investigate the differences between mean scores of the variables being analyzed. In this study, a two-by-four factorial design with tests for

interaction was used. The two-component factors were gender, and the four-component factors were class level.

Two-factor analysis of variance is a precise and informative statistical method (Kerlinger & Pedhazur, 1973). The researcher examined whether gender and class level interacted on the 11 performance gap scores from the 11 comprehensive scales of expectation and the 11 comprehensive scales of satisfaction. Two-factor analysis of variance is often used in the field of education. Popham and Sirotnik (1992) wrote, "Because education is one of the most complex behavioral fields, investigations conducted must employ data analysis techniques that take into consideration not only more than one variable but also extremely subtle interactions among variables" (p. 180).

For each of the 11 performance gap scores, analysis of Hypotheses 2 through 4 were tested at the same time. First, the possibility of interaction was examined. When interaction was found, it was interpreted. If no interaction was found, the researcher went on to test for main effects. Second, differences between the means among class levels were studied. Finally, differences between the means of males and females were examined. If one of the means was found to be significantly different, the null hypothesis was rejected, and Newman-Keuls post-hoc comparison was used to identify which means were different.

Newman-Keuls was chosen for the post-hoc comparison as it

provided the best balance between making a Type I or a Type II error. As Glass and Hopkins (1996) stated, "The Newman-Keuls [significance] levels provide a high degree of protection for the entire [omnibus] null hypothesis, and this is the multiple range this author favors. Moreover, it does not suffer from the conservatism of the Tukey test caused by utilizing just a single critical value" (p. 452).

There are many attitudes (Popham & Sirotnik, 1992) on what significance level should be used for testing the null hypothesis. Popham and Sirotnik (1992) wrote, "It has been conventional in behavioral science research to use the 0.05 level of significance" (p. 50). Further, Skipper, Guenther and Nass (1970) wrote: "Casual examination of the literature discloses that the common, arbitrary, and virtually sacred levels of .05, .01, and .001 are almost universally selected regardless of the nature and type of problem. Of these three, .05 is perhaps the most sacred" (p.155). By setting alpha at 0.05 the researcher wanted to balance against making either a Type I error or Type II error. A Type I error would occur if the null hypothesis was rejected when in fact there really was a difference between students who did not return to Carroll and the students who did return to Carroll College based on their performance gap scores on the 11 institutional characteristics, when in fact there was no difference. Problems encountered by rejecting the null hypothesis may include changes to institutional policies based on reasons why students left, which

would be invalid. If the null hypothesis were retained, which is a Type II error, the researcher would be saying that there were no differences in performance gap scores between the students who returned to Carroll College and those students who did not return to Carroll College. This might suggest that no changes were needed to improve student satisfaction or that inappropriate changes were made to improve student satisfaction, when in fact some changes to improve student satisfaction should have been made. In this study, the researcher choose .05 alpha, as the consequences from either a Type I or a Type II error are about the same.

Analyses for each hypothesis were performed using *Statistical Package for Social Sciences 7.5 (SPSS, version 7.5)*.

#### Limitations and Delimitations

As with many studies there were limitations and delimitations. The limitations in this study included the following:

1. The sample used in the study was not a random sample.
2. The findings from this study should be generalized only to similar populations.
3. The students surveyed were selected on class level to get an equal representation of students from each class level.
4. The sample of non-returning students used in the multiple regression was not random. Only students who provided a valid social security number could be tracked.

5. Faculty who did not emphasize the need to record social security numbers as a means of tracking returning and non-returning students distributed the instrument.

Delimitations of the study included the following:

1. The data for this study were collected from one institution.
2. The study was delimited to those students who provided an accurate social security number as a method of tracking students for the study.

## CHAPTER 4

### FINDINGS AND INTERPRETATIONS

#### Introduction

The major goal of this study was to investigate performance gap scores from 11 comprehensive scales of institutional characteristics. Of those performance gap scores where significant differences were found, interpretations were made. In Chapter 3, information was provided that described how the data were collected, the instrument used, and a description of the sample. This chapter provides results of the tests of hypotheses and analyses of those results.

The problem of this study was to determine if the difference between level of expectation and level of satisfaction, called the performance gap score, could predict whether or not a student would or would not return to Carroll College the following semester. The following questions were also answered: did performance gap scores interact on class level and gender; whether or not there was a significant difference in the performance gap scores among freshmen, sophomore, junior, and senior students; and were there differences in the performance gap scores between male and female students. Those scales for which the null hypotheses of no interaction were retained were further tested for main effects. When a significant main effect was found, a Newman-Keuls

post hoc comparison was run. When the hypothesis for no interaction was rejected, main effects were not tested and the interaction was interpreted.

This chapter is arranged in the following order, description of the sample, statistical analyses of the data, and tests of the null hypotheses.

#### Description of the Sample

A population of 1,263 students attended Carroll College when the questionnaire was distributed spring semester, 1997. Of the students attending Carroll College, 600 were targeted to be surveyed for the study. Classroom distribution by faculty was the method by which the surveys were distributed. Of the 600 questionnaires that were handed out, 409 surveys were returned. From the 409 returned surveys, 386 (64%) had response results that were valid for the criteria of class level and gender. Depending on the hypotheses to be tested, responses to the survey were further classified.

For Hypothesis 1 the sample ( $n=214$ ) consisted of those students who returned ( $n=183$ ) or did not return ( $n=31$ ) the following semester who provided a valid social security number. The social security number was the only means by which a student could be tracked and categorized as a returning or non-returning student. Students who graduated from Carroll College at the end of spring semester, 1997, were not utilized in this phase of the study.

To test Hypotheses 2 through 4, the sample consisted of all students who responded to the questions on the SSI and classified themselves as freshmen, sophomores, juniors, or seniors. The demographic summary of the sample used in Hypotheses 2 through 4 is presented in Table 1. The sample used for the analyses in Hypothesis 2 through 4 included the following: 142 (37%) freshmen, 88 (23%) sophomores, 52 (14%) juniors, and 104 (27%) seniors. This group was comprised of 225 (58%) male and 161 (42%) female.

Table 1. Summary of sample used in Hypotheses 2 through 4.

Source	Freshmen	Sophomores	Juniors	Seniors	Total
Males	78	50	27	70	225
Females	64	38	25	34	161
Total	142	88	52	104	386

#### Statistical Analysis

The hypotheses were tested using one of two analytical statistics, multiple regression, or analysis of variance (ANOVA). Four hypotheses were tested with the results presented in Tables 3 through 9. Main effects were tested for any interaction that was not found to be statistically significant. The null hypothesis for Hypothesis 1 was tested using multiple regression. The null hypothesis for Hypotheses 2 through 4 was tested using ANOVA.

All hypotheses were tested at an alpha level of .05. The p-values are listed in the tables for the analyses that pertain to each hypothesis. Results for the analyses are presented in tables to follow.

All scores used in the analysis of each hypothesis were derived from the raw data scores. Performance gap scores were computed from the raw data by subtracting the means from level of satisfaction scores from means of level of expectation scores for each scale. The performance gap score represents the difference between what the student's expectation was and his or her perceived level at which that expectation was met.

#### Hypothesis 1

There is no significant relationship between the dependent variable (decision to return to college or not return to college) and the independent variables (the performance gap scores).

The relationship between the decision to return or not return and the 11 performance gap scores was determined using multiple regression analysis. Table 2 presents the results of the multiple regression analysis. The null hypothesis, which stated that there was no significant relationship between the decision to return and the decision not to return and the 11 performance gap scores, was retained, since there was not enough evidence to reject it. Less than 3% of the variability in the decision to return can be explained by the 11 independent variables.

Table 2. Results of Multiple Regression Analysis.

Model	SS	df	MS	F-Ratio	P-Value
Regression	.692	11	6.287E-02	.49	.91
Residual	25.818	202	.128		
Total	26.0509	213			
	$R^2=.026$				

The performance gap scores of students who did or did not return to Carroll College the following semester were computed for each of the 11 comprehensive scales of institutional characteristics. These results are not part of the multiple regression analysis, but it is interesting to note that of those students who did not return their performance gap scores were smaller, on 10 of the 11 comprehensive scales than those students who returned. These smaller performance gap scores indicated that students who did not return were more satisfied, on 10 of the 11 comprehensive scales, than those who did. It should be noted however, that the performance gap scores have not been analyzed for statistical significance. Those data are presented in Table 3 on the following page:

Table 3. Performance gap scores of returning and non-returning students from the 11 institutional characteristics.

Source	Return		Non-Return	
	Mean	Std. Dev.	Mean	Std. Dev.
Academic Advising	.97	1.11	.93	1.61
Campus Climate	.80	.78	.66	1.01
Campus Life	.97	.95	.84	1.16
Campus Support Service	.90	.89	.67	1.03
Concern for the Individual	1.02	.92	.95	1.46
Instructional Effectiveness	.86	.68	.81	1.00
Recruitment and Financial Aid	1.07	1.03	.79	1.17
Registration Effectiveness	.89	.97	.71	1.18
Safety and Security	1.53	1.34	1.59	1.45
Service Excellence	.87	.86	.64	1.05
Student Centeredness	.78	.83	.72	1.29

### Hypothesis 2

Class level and gender of students in this study do not interact on 11 performance gap scores of the comprehensive scales of institutional characteristics.

A two-factor ANOVA tested for interaction between class level and gender of student on the performance gap scores of the 11 comprehensive scales of institutional characteristics. Table 4 provides a summary of the two-factor ANOVAS. The summary for each of the 11 performance gap scores included tests for interaction and main effects.

Table 4. Summary of Performance Gap Scores Including Test for Interaction and Main Effects.

Variable	df	MS	F-Ratio	P-Value .05
Academic Advising				
<b>Gender</b>	<b>1</b>	<b>31.077</b>	<b>18.849</b>	<b>.000</b>
Class	3	0.975	0.591	.621
Interaction	3	0.968	0.587	.624
Campus Climate				
<b>Gender</b>	<b>1</b>	<b>11.448</b>	<b>15.123</b>	<b>.000</b>
Class	3	1.144	1.511	.211
Interaction	3	0.944	1.247	.292
Campus Life				
<b>Gender</b>	<b>1</b>	<b>0.051</b>	<b>0.048</b>	<b>.027</b>
Class	3	0.708	0.669	.072
Interaction	3	1.120	1.058	.367
Campus Support Services				
<b>Gender</b>	<b>1</b>	<b>11.976</b>	<b>14.028</b>	<b>.000</b>
<b>Class</b>	<b>3</b>	<b>4.863</b>	<b>5.696</b>	<b>.001</b>
Interaction	3	0.746	0.874	.455
Concern for the Individual				
<b>Gender</b>	<b>1</b>	<b>19.204</b>	<b>16.623</b>	<b>.000</b>
Class	3	1.090	0.943	.420
Interaction	3	0.258	0.223	.880
Instructional Effectiveness				
<b>Gender</b>	<b>1</b>	<b>9.408</b>	<b>14.167</b>	<b>.000</b>
Class	3	1.246	1.876	.133
Interaction	3	0.946	1.425	.225
Recruitment & Financial Aid				
<b>Gender</b>	<b>1</b>	<b>12.175</b>	<b>10.177</b>	<b>.002</b>
<b>Class</b>	<b>3</b>	<b>5.808</b>	<b>4.855</b>	<b>.003</b>
Interaction	3	1.943	1.624	.183
Registration Effectiveness				
<b>Gender</b>	<b>1</b>	<b>7.165</b>	<b>7.073</b>	<b>.008</b>
Class	3	1.196	1.181	.317
Interaction	3	0.927	0.915	.434
Safety & Security				
<b>Gender</b>	<b>1</b>	<b>8.295</b>	<b>4.765</b>	<b>.030</b>
<b>Class</b>	<b>3</b>	<b>18.230</b>	<b>10.473</b>	<b>.000</b>
<b>Interaction</b>	<b>3</b>	<b>7.578</b>	<b>4.353</b>	<b>.005</b>

Table 4. (Continued from previous page).

Service Excellence				
<b>Gender</b>	<b>1</b>	<b>21.847</b>	<b>25.64</b>	<b>.000</b>
Class	3	1.628	1.19	.127
Interaction	3	0.624	0.732	.533
Student Centeredness				
<b>Gender</b>	<b>1</b>	<b>9.553</b>	<b>9.256</b>	<b>.003</b>
Class	3	0.334	0.324	.808
Interaction	3	0.555	0.538	.657

\***Bold** indicates significance

The results from the two-factor ANOVA showed that the null hypothesis of no interaction was retained for all scales with the exception of one—Safety and Security. There was significant interaction on the scale Safety and Security ( $p = .005$ ). The researcher found the following: freshman and sophomore females have higher mean performance gap scores than their male counterparts, but junior and senior females have lower mean performance gap scores than their male counterparts. The mean performance gap scores for freshmen are lower than the mean performance gap scores for juniors and seniors; sophomore and junior mean performance gap scores are higher than freshmen, but lower than seniors; and seniors are higher than the rest of the classes.

Table 5 shows the means of performance gap scores by class level and gender.

Table 5. ANOVA for interaction of performance gap scores—Safety and Security.

	Freshmen	Sophomores	Juniors	Seniors
Males	1.25	1.60	2.00	2.60
Females	1.32	1.81	1.66	1.56

These results implied that there was interaction among class level and gender on the scale Safety and Security. For those scales where no significant interaction was found and the null hypothesis was retained, they were further tested for main effects.

### Hypothesis 3

There are no significant differences in performance gap scores among freshman, sophomore, junior, and senior students on the 11 comprehensive scales of institutional characteristics.

The null hypothesis as stated in Hypothesis 3 was rejected for two scales—Campus Support Services and Recruitment and Financial Aid. According to the analyses, there were significant differences among the means of performance gap scores for freshmen, sophomores, juniors, and seniors on the scale Campus Support Services ( $p = .001$ ) and Recruitment and Financial Aid ( $p = .003$ ).

This implied that there were significant differences among class levels on two scales. The researcher used a Newman-Keuls post hoc procedure to determine which pair-wise differences were significant. Table 6 contains the results of main effects among freshmen, sophomores,

juniors, and seniors on Campus Support Services and Recruitment and Financial Aid.

Table 6. Summary of main effects test for Campus Support Services and Recruitment and Financial Aid.

Source	SS	df	MS	F Ratio	P Value
Campus Support Services	14.588	3	4.863	5.696	.001
Recruitment & Financial Aid	17.424	3	5.808	4.855	.003

The results from Newman-Keuls (Table 7) post hoc procedure for Campus Support Services indicated that the mean performance gap scores for seniors is higher than the mean of freshmen, sophomores, and juniors. The performance gap score is significantly higher for seniors, which implies seniors were more dissatisfied with Campus Support Services than were freshmen, sophomores, or juniors.

Table 7. Newman-Keuls post hoc comparison for Campus Support Services.

Class level	N	Subset for alpha=.05	
		1	2
Freshmen	143	.834699	
Sophomores	88	.928355	
Juniors	52	1.026099	
Seniors	105		1.357279

The results from the Newman-Keuls (Table 8) post hoc comparison for Recruitment and Financial Aid indicated the performance gap score of freshmen were significantly smaller than that of sophomores, juniors, and

seniors. This result indicated freshmen were more satisfied than sophomores, juniors, and seniors on the items measured within the scale of Recruitment and Financial Aid. Additionally the results from the Newman-Keuls indicated that the mean performance gap scores for sophomores, were not different from freshmen, juniors, or seniors. This result indicated that sophomores are no more or less satisfied than the other three class level on the scale of Recruitment and Financial Aid.

Table 8. Newman-Keuls post hoc comparison for Recruitment and Financial Aid.

Class Level	N	Subset for alpha=.05	
		1	2
Freshmen	143	.919930	
Sophomores	88	1.135227	1.135227
Juniors	52		1.334936
Seniors	105		1.439048

#### Hypothesis 4

There are no significant differences in the performance gap scores between male and female students on the 11 comprehensive scales of institutional characteristics.

Hypothesis 4 was tested using ANOVA. The mean performance gap scores were computed and used to test for significant differences between male and female students on 10 comprehensive scales where an analysis was performed when no interaction was present. Results from the ANOVA showed significant differences between male and female students

on 9 of the 10 comprehensive scales tested. The results are documented in Table 9 on the next page.

The differences between males and females indicated that males are significantly less satisfied than are females. The comprehensive scales which show significant differences include the following: Academic Advising, Campus Climate, Campus Support Services, Concern for the Individual, Instructional Effectiveness, Recruitment and Financial Aid, Registration Effectiveness, Service Excellence, and Student Centeredness. Campus Life was the only comprehensive scale where no significant difference was found between male or female students.

Table 9. Main effects for males and females.

Source	Male	Female	F Ratio	P Value
Academic Advising	1.26	.68	18.849	.000
Campus Climate	1.06	.72	11.448	.000
Campus Support Services	1.17	.81	14.028	.000
Concern for the Individual	1.29	.84	16.623	.000
Instructional Effectiveness	1.10	.78	14.167	.000
Recruitment and Financial Aid	1.31	.95	10.177	.002
Registration Effectiveness	1.11	.83	7.073	.008
Service Excellence	1.19	.71	25.640	.000
Student Centeredness	1.04	.72	9.256	.003

## CHAPTER 5

## SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

Today's college student is becoming more selective not only in choosing a college but also when looking at the student services the institution provides. With the increased cost of college and a more consumer-oriented applicant, colleges and universities are finding it more competitive to recruit and retain students.

With a less-than-predictable demographic shift of eligible entering college students and strained operating funds at many institutions, there is a critical need to use each budget dollar in the most productive manner. In order that institutions use their monies well, students are frequently asked for their input through surveys, to find out what services they deem most important or useful to them.

In addition to surveying students to find out which services are most important, institutions try to assess the level of satisfaction of these services. There are a number of reasons for assessing student satisfaction including the following: improvement of student retention; documentation of assessment for accreditation purposes; feedback to administrators who are charged with making institutional changes; setting the retention agenda; and for information to be used in marketing the institution to

prospective students (Juillerat & Schreiner, presentation, July, 1997, National Conference on Student Retention, Washington, D. C.).

The problem of this study was to determine if the difference between level of expectation and level of satisfaction on 11 comprehensive scales of institutional characteristics, called the performance gap score, could be used to predict whether or not a student would return to Carroll College the following semester. The study sought also to determine if combining the variables of class level and gender produced statistically significant results on the comprehensive scales of institutional characteristics. Further, the study tested a hypothesis to determine if there were significant differences in performance gap scores among freshmen, sophomores, juniors, or seniors on any of the 11 comprehensive scales. Finally, the study tested a hypothesis to determine if there were any significant differences in performance gap scores between male and female students, on the 11 comprehensive scales of institutional characteristics.

The data for this study were collected spring semester, 1997, at Carroll College, a private four-year liberal arts college located in west central Montana. The study examined performance gap scores for 11 of 12 comprehensive institutional scales. The twelfth scale, Responsiveness to Diverse Populations, was the only scale which exclusively measured satisfaction. Importance was not measured due to the sensitive nature of

the questions within the scale and the implications of asking such questions to a majority population (Juillerat, 1995).

The following 11 scales were used in this study. The questions that make up each scale can be found in appendix B:

1. Academic Advising Effectiveness assesses the comprehensiveness of the academic advising program. Academic advisors are evaluated on the basis of their knowledge, competence and personal concern for student success, as well as on their approachability.
2. Campus Climate assesses the extent to which the institution provides experiences which promote a sense of campus pride and feelings of belonging. This scale also assesses the effectiveness of the institution's channels of communication for students.
3. Campus Life assesses the effectiveness of student life programs offered by the institution, covering issues ranging from athletics to residence life. This scale also assesses campus policies and procedures to determine students' perceptions of their rights and responsibilities.
4. Campus Support Services assesses the quality of the support programs and services which students utilize in order to make their educational experiences more meaningful and

productive.

5. Concern for the Individual assesses the institution's commitment to treating each student as an individual.
6. Instructional Effectiveness assesses the students' academic experience, the curriculum, and campus's overriding commitment to academic excellence.
7. Recruitment and Financial Aid Effectiveness assesses the institution's ability to enroll students in an effective manner.
8. Registration Effectiveness assesses issues associated with registration and billing. This scale also measures the institution's commitment to making this process as smooth and effective as possible.
9. Safety and Security assesses the institution's responsiveness to students' personal safety and security on the campus. This scale measures the effectiveness of both security personnel and campus facilities.
10. Service Excellence assesses the perceived attitude of the staff toward students, especially front-line staff. This scale pinpoints the areas of the campus where quality service and personal concern for students are rated most favorably and least favorably.
11. Student Centeredness assesses the campus's efforts to convey

to students that they are important to the institution. This scale measures the extent to which students feel welcome and valued. (Adapted from Noel-Levitz, 1996 (p. 1-4)

The instrument used to collect the data, the Student Satisfaction Inventory (SSI) (USAGroup Noel-Levitz, 1993), was formulated to measure the changing trends in higher education to a more consumer-oriented focus (Juillerat and Schreiner, 1995). The SSI is also a more comprehensive survey when it comes to measuring student desires and satisfaction. Currently, other available tools, such as the College Student Satisfaction Questionnaire (CSSQ), are used to collect information on student satisfaction. The CSSQ, however, is less than satisfactory for the purpose of measuring student satisfaction today as it was first published in 1970 (Juillerat, 1995).

Of the 600 students who were targeted for data collection, 409 responded with 386 useable responses. To get the highest return rate possible, faculty were asked to distribute the questionnaires in their classrooms. Those classes targeted for surveying were selected with the aid of the Office of the Registrar.

Results from the questionnaires were sent to USAGroup Noel-Levitz for initial scoring. A data disk containing the raw scores from questionnaires the Carroll College students had completed was purchased from USAGroup Noel-Levitz by the researcher. The performance gap

scores were computed from the raw data using *Statistical Package for the Social Sciences (SPSS, version 7.5, 1996)*.

Students were asked to respond to questions using a seven-point Likert rating scale of 1-7, with one indicating "not at all important" to seven indicating "very important." Three scores were computed for each question. The first score calculated, the expectation score, measured the student's response to the level of importance he or she placed on the question. The second score measured the student's level at which the expectation was met, again using a seven-point Likert rating scale. This score is called the satisfaction score. The third score, performance gap score, was calculated by subtracting the satisfaction score from the expectation score. The performance gap scores were used to depict the difference between the student's level of expectation and his or her perceived level that the satisfaction was being met. The performance gap scores were used for the analyses of the data throughout the study.

From the returned surveys, two sample groups were formulated depending on the criteria of the hypotheses. The first sample group (n=386) consisted all of the returned useable surveys.

The second sample group (n=214) consisted of those students who provided a valid social security number. The social security number was the only means by which student records could be searched to find out whether or not the student returned to Carroll College the following

semester. Of the 214 responses there were 183 students who returned to Carroll College the following semester, and 31 responses were from those students who did not return.

Hypothesis 1 was tested using multiple regression. Multiple regression analysis is used to determine if there is a significant relationship between the dependent variable and independent variable (s). In this study, multiple regression was used to determine if there was a significant relationship between the decision to return or not return to Carroll College and the 11 performance gap scores.

Hypotheses 2 through 4 were tested using analysis of variance (ANOVA). Analysis of variance is used to investigate the differences between mean scores. For purposes of this study, ANOVA was used to investigate the differences in mean scores among class levels, and differences in mean scores between males and females.

Newman-Keuls post hoc procedures were performed as a follow-up procedure for the ANOVAS that were found to be significant at the .05 level. Post hoc procedures are done to identify specifically which of the means found in the analyses of variance is the statistically different mean.

In this chapter the researcher presents a review of the study, summarizes the results, draws conclusions from the results, and makes recommendations for further studies.

### Summary of Findings

Student success and satisfaction have been determined to be important measures of student retention and institutional success. Just as important as measuring success and satisfaction for retention purposes is assessing the students' level of expectations of their college experience. Retention studies have shifted from an institutional perspective to one that looks at what is important and satisfying to students. Institutional and student characteristics, as highlighted in the review of literature, were utilized in this study to assess and examine performance gap scores. The following four hypotheses were formulated and tested.

Hypothesis 1 stated that there was no statistically significant relationship between the decision to return or not return to Carroll College the following semester (dependent variable) and the performance gap scores (independent variables). The analysis showed performance gap scores could not be used to predict a student's decision to return with any reliability. The performance gap scores at best could only account for 2.6% of the variation in the decision.

Hypothesis 2 stated that class standing and gender of students do not interact with performance gap scores on the comprehensive scales of institutional characteristics. The null hypothesis for interaction was retained on one of the 11 scales, Safety and Security. Combining the variables class level with gender, the researcher found a statistically

significant interaction. This interaction indicated that the combination of class level with gender showed a statistically significant difference.

Results from Hypothesis 2 showed that freshmen and sophomore females have higher mean performance gap scores than freshmen and sophomore males. This higher mean performance gap score indicated that freshmen and sophomore females were less satisfied on the scale Safety and Security than their male counterparts. This scale considers the degree of feeling safe and secure on campus, amount of parking available, lighting on campus, and how quickly security responds to emergencies. Junior and senior females had lower mean performance gap scores than junior or senior males. This difference in mean performance gap scores between male and female juniors and seniors indicated that junior and senior females were more satisfied than their male counterparts on the scale Safety and Security.

It was also found when analyzing Hypothesis 2 that the mean performance gap scores of freshmen were lower than the mean scores of juniors or seniors. Once again, these lower mean performance gap scores indicated that freshmen were more satisfied than juniors or seniors on the scale Safety and Security. Sophomore and junior mean performance gap scores were larger than the mean performance gap scores for freshmen, but lower than those of seniors. The mean performance gap score for seniors was larger than the mean performance gap scores of the other

three class levels. Seniors were the least satisfied as revealed by the questions within the scale Safety and Security. As a point of comparison on this scale with those students who did not return, results indicated that the mean performance gap scores of students who did not return were higher than the mean performance gap scores of those who did. While this result was not analyzed for significance, it appears that students who did not return were less satisfied on the scale Safety and Security than those students who did return.

Hypothesis 3 stated that no statistically significant differences existed among freshmen, sophomores, juniors, or seniors on the 11 comprehensive scales of the SSI. The findings of Hypothesis 3 verified the null hypothesis on 8 of the comprehensive institutional scales. A statistically significant difference among class levels was found on the analyzed scales, Campus Support Services and Recruitment and Financial Aid.

Using a Newman-Keuls post hoc procedure on the scale Campus Support Services, findings showed the mean performance gap score for seniors was significantly higher than the mean performance gap score of the other three class levels. The results from the ANOVA indicated that seniors were more dissatisfied with Campus Support Services than were freshmen, sophomores, or juniors.

The other scale for which a statistically significant difference was found, Recruitment and Financial Aid, showed that the mean performance gap scores of freshmen were significantly smaller than the mean performance gap scores of sophomores, juniors, and seniors. This finding indicated that freshmen were more satisfied than sophomores, juniors, and seniors on items measured within the scale, Recruitment and Financial Aid.

Further, the mean performance gap score for sophomores is not different from the mean performance gap scores for sophomores, juniors, or seniors. This result indicated that sophomores were no more or less satisfied on the scale Recruitment and Financial Aid than are freshmen, sophomores, or juniors.

Carroll College needs to examine ways in which to support sophomores, juniors, and seniors to alleviate their dissatisfaction in the area of Recruitment and Financial Aid. The college needs to examine reallocation of funds for sophomores, juniors and seniors. They may also consider a tuition freeze for those students who are juniors and seniors.

Hypothesis 4 stated that no statistically significant differences existed between male and female students on the 11 comprehensive scales of institutional characteristics. The findings of this hypothesis resulted in retaining the null hypothesis on only one of the scales, Campus Life. Significant differences were found on the following scales: Academic

Advising, Campus Climate, Campus Support Services, Concern for the Individual, Instructional Effectiveness, Recruitment and Financial Aid, Registration Effectiveness, Service Excellence, and Student Centeredness.

An examination of these statistically significant findings showed that the means of performance gap scores for males were significantly higher compared with the means of performance gap scores for females. The higher performance gap scores indicated that male students were less satisfied than female students on all of the comprehensive scales of institutional characteristics, except the scale Campus Support Services. Carroll College must examine more closely in what ways the male students are more dissatisfied than female students and institute changes that will correct the situation.

Comparing results from this study to results on a national level was not part of this study. However, a comparison of the results can provide Carroll College with information that could be used for recruitment and retention purposes. Overall findings of performance gap scores, as measured by the SSI, were compared to results of other four-year private institutions which included the following: Carroll College's results indicated lower performance gap scores on 6 of 11 comprehensive institutional scales tested. These lower performance gap scores indicated that when compared to students on a national level, the levels of expectation and satisfaction of Carroll College students were being met to

a greater degree. The three scales where Carroll College performance gap scores were higher than the comparison group included Academic Advising, Concern for the Individual, and Safety and Security. This result provides Carroll College with additional information that can be used to make suitable institutional changes. Carroll College should look at the items/questions within each of the three scales and assess how the college can best make institutional changes that will promote higher satisfaction for students.

### Conclusions

This study attempted to demonstrate both theoretically and statistically the usefulness of assessing students' expectations when compared to their level of satisfaction. The SSI provided a means by which Carroll College could assess its students to determine how satisfied they were regarding various institutional characteristics. A prediction regarding whether or not a student would or would not return to college the next semester based on a comparison of performance gap scores was weak. However, other useful information was gathered from the analyses in this study.

The results of analyzing performance gap scores provides information for recommendations to Carroll College and for further studies. It should be noted, however, that results from the analyses of the performance gap scores provide an overview of the scales of

comprehensive institutional characteristics. To obtain a more detailed summary from the findings of the analyses, one would need to look at the performance gap scores for each question within the comprehensive scales.

The performance gap scores provide information as a starting point for making institutional changes. Carroll College should note that the larger the performance gap score, the greater the level of dissatisfaction expressed by the student. In this study, some performance gap scores produced mean scores that were found to be statistically significant when tested at an alpha level of .05. These findings may lead one to believe that for those scales where significant differences were found changes should be made to those areas first. However, depending on the scale being evaluated, it may prove to be more beneficial in terms of retention to make institutional changes based on the level of expectation that students placed on the individual items within the comprehensive scale, rather than making changes to the institution based on the findings related to the scale.

The results from Hypothesis 2, which stated there was no interaction among class level and gender of students on the 11 comprehensive scales, indicated that there was interaction among class level and gender on only one of the comprehensive scales, Safety and Security. It can be concluded from the results of the tests for interaction

found in Hypothesis 2 that performance gap scores are not strong enough indicators to support the hypothesis that class level and gender together affect the satisfaction that students place on the items within the comprehensive scales. In the absence of interaction, the ability to generalize the results is strengthened. These results could be very important Carroll College.

Hypothesis 3, which stated that there was no significant difference among the class levels, was rejected on two of the comprehensive scales. It can be concluded from these findings that freshmen are generally more satisfied than students from the upper division classes on only two scales Campus Support Services and Recruitment and Financial Aid. The result that freshmen are more satisfied than upper-class level students is consistent, however, with what is found in literature concerning freshmen and satisfaction.

Results from studies show trends in satisfaction research are more consistent when students are separated by class level. Several researchers have found that first-year students are significantly more satisfied than students in the upper classes. Schmidt and Sedlacek's 1972 findings indicated that students become more dissatisfied the longer they are enrolled in school. Part of this discrepancy is explained by the optimism and/or idealism that are held by freshmen in anticipation of starting college (Schmidt & Sedlacek, 1972). Astin et al. (1987) concluded that

“upperclassmen offer very different (frequently more critical) assessments of their college experience than lower division students” (p. 40).

In this study, findings showed significant differences among class levels on two of the comprehensive scales, Recruitment and Financial Aid and Campus Support Services. When these two scales were analyzed, findings showed that freshmen were more satisfied than sophomores, juniors, or seniors on the scale Recruitment and Financial Aid. On the other scale where a significant difference was found, Campus Support Services, findings showed that seniors were the least satisfied. Relating the results of this post hoc comparison to results found in a study by Schmidt and Sedlacek (1972) and Astin et al. (1987) showed that the longer a student stayed in college the more dissatisfied he or she became on some aspect of his or her educational experience.

Hypothesis 4, which stated there were no significant differences between male and females, was analyzed. On the scales where no interaction had been found, significant differences were noted between male and females on 9 of 10 scales tested. In this study males were found to be less satisfied than females.

In previous research findings, where level of satisfaction was compared to gender (Pennington et al., 1989; Okum, 1981; Betz et al., 1972; Knox et al., 1992), results showed differing conclusions. It can be concluded that the results from this study are consistent with the results

of the Okum study (1981), which found females had higher satisfaction levels than males. Pennington et al. (1989) found that male college students had significantly higher overall satisfaction scores than women, which is contrary to the results of this study. Betz et al. (1972) and Knox et al. (1992) found no significant differences in satisfaction between males and females. Carroll College, however, should consider how to use the findings on gender differences that were found in this study as it specifically addresses the opinion of the student population.

Findings from this study and a review of the literature and research indicated that the 11 institutional characteristics identified in the SSI and assessed by the respondents are important at various statistical levels in the educational experience of Carroll College students. Similar conclusions were supported by the works of Tinto (1993), Astin (1977), Bean (1980), Anthrop (1996), and Bank, Biddle, and Slavings (1992), in that the more academically and socially integrated students become in the various aspects of the campus culture the greater the likelihood of being more satisfied and thus remaining in college.

Further, it was concluded that measuring the difference between student expectation and student satisfaction concerning the educational process can be a useful measure for assessing the needs and desires of students. Hossler and Bean (1990) and Spanbauer (1992), who concluded that students should be considered as consumers, support this point of

view. Institutions should investigate the expectations, needs and wants of their students, and look at students as customers as a method that leads towards meeting the needs and desires of students, which should lead to higher levels of retention.

Using satisfaction as a means of comparison to retention and noting whether or not an institution is successful has been supported by the works of Astin (1977, 1993), Astin, Korn and Green (1987), Chadwick and Ward (1987), and Earwood-Smith and Colbert (1989). They concluded that a student's decision to continue with his or her education is dependent on how satisfied he or she is. They also believe that student success and level of satisfaction is a useful measure of retention. Hossler and Bean (1990), and Spanbauer (1992) found that overall measures between expectation and satisfaction regarding the educational experience were an important means by which to assess retention. The use of student satisfaction as a measure related to retention and to institutional success has been shown to be an indicator of retention.

Based on these findings and conclusions, this study reaffirms the complexity between student expectations, institutional factors, and class levels and/or gender of student in terms of predicting and describing factors that influence retention. The findings from this study do not verify that a prediction can be made on whether or not a student will return based on performance gap scores. The study does however provide

useful information for Carroll College in various institutional areas where changes can be initiated that may result in greater student satisfaction. Recommendations can be made from the results found in this study for further consideration.

### Recommendations

Based on the results of this study, the following recommendations are made. Some of the recommendations are for Carroll College, and some of the recommendations are general suggestions for further study.

First, Carroll College should conduct more in-depth research on the comprehensive scales. The comprehensive scales provide a broad overview of how satisfied students are on 11 institutional scales. To gain a more comprehensive picture from those scales, it is important to look at the individual questions of which each scale is comprised. From those individual items, a more complete representation of student satisfaction can be formulated. For example, the scale for Safety and Security could benefit from further examination of why freshmen and sophomore females are more dissatisfied than freshmen and sophomore males. All freshmen and sophomores are required to live on campus. If there is a concern by female students that they do not feel safe walking across campus, Carroll College needs to do something to rectify this perception.

Comparisons among class levels should be made based on expectations on the comprehensive scales. Additionally, comparisons

among class levels should be made based on satisfaction on the comprehensive scales. Analyzing expectations and satisfaction separately might provide insight that was not noted from the performance gap scores as to why students do not return.

Second, research should be completed to determine where differences occur among class levels on the individual questions within the comprehensive scales. Knowledge of where the differences in satisfaction are among class level will provide more specific information to Carroll College.

A third recommendation for further study includes analyzing performance gap scores between males and females using other variables. Other variables to be studied may include GPA, involvement in campus organizations, involvement on athletic teams, and the students' declared major.

A fourth recommendation for further study would be to assess carefully the means by which to distribute the questionnaire. In order to receive complete responses and detailed information, surveyors need to stress the importance of recording accurate social security numbers as a method of tracking students who return or do not return.

A final suggestion for future research includes comparing performance gap scores of students who are currently enrolled with students who have graduated. The fact that students remained at Carroll

College long enough to graduate does not necessarily imply that they were completely satisfied with their educational experience. Surveying students who graduated from Carroll College may provide insight for administrators charged with making institutional changes. Making changes based on feedback from students who graduated may justify the changes that are needed to influence those students who may be thinking of leaving Carroll College before their graduation.

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APPENDICES

APPENDIX A  
STUDENT SATISFACTION INVENTORY

January 20, 1998

Ms. Gloria Lambertz  
 Carroll College  
 1601 North Benton Ave.  
 Helena, MT 59625-0002  
 Fax: 406-447-4533



Dear Gloria:

I am glad to hear that your dissertation work is progressing! Keep up the good work.

You have permission to reproduce a copy of the Student Satisfaction Inventory™ to be included in your dissertation appendix.

Please let me know if you need any additional information. I am glad that you and Stephanie Juillerat were able to connect to discuss her research! I will look forward to continuing to work with you in the future.

Sincerely,

Julie Hanschman  
 Program Consultant

National Centers for

- Enrollment Management
- Faculty Retention
- Student Satisfaction
- Development

1000  
 1000  
 1000

USAGroup Noel-Levitz

# STUDENT SATISFACTION INVENTORY™

## 4-Year College and University Version

Laurie A. Schreiner, Ph.D., and Stephanie L. Juillerat, Ph.D.  
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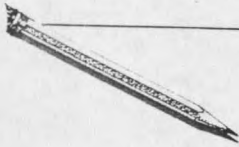
Dear Student,

Your institution is interested in systematically listening to its students. Therefore, your thoughtful and honest responses to this inventory are very important.

You are part of a sample of students carefully selected to share feedback about your college experiences thus far. Your responses will give your campus leadership insights about the aspects of college that are important to you as well as how satisfied you are with them.

To preserve confidentiality, your name is not requested.

— Thank you for your participation.



### Instructions:

- Use a No. 2 pencil only. Please do not use ink or ballpoint pen.
- Erase changes completely and cleanly.
- Completely darken the oval that corresponds to your response.

Item 1 below describes an expectation about your experiences on this campus. On the left, tell us how important it is for your institution to meet this expectation. On the right tell us how satisfied you are that your institution has met this expectation.

How important is it for your institution to meet this expectation?	My level of satisfaction
1 - very important 2 - somewhat important 3 - neutral 4 - somewhat unimportant 5 - very unimportant 6 - does not apply	1 - not satisfied at all 2 - not very satisfied 3 - somewhat dissatisfied 4 - neutral 5 - somewhat satisfied 6 - satisfied 7 - very satisfied
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	1. Most students feel a sense of belonging here. 2. The campus staff are caring and helpful. 3. Faculty care about me as an individual. 4. Admissions staff are knowledgeable.
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	5. Financial aid counselors are helpful. 6. My academic advisor is approachable. 7. The campus is safe and secure for all students. 8. The content of the courses within my major is valuable.
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	9. A variety of intramural activities are offered. 10. Administrators are approachable to students. 11. Billing policies are reasonable. 12. Financial aid awards are announced to students in time to be helpful in college planning.
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	13. Library staff are helpful and approachable. 14. My academic advisor is concerned about my success as an individual. 15. The staff in the health services area are competent. 16. The instruction in my major field is excellent.
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	17. Adequate financial aid is available for most students. 18. Library resources and services are adequate. 19. My academic advisor helps me set goals to work toward. 20. The business office is open during hours which are convenient for most students.

**Importance to me**

1 - not important at all  
 2 - not very important  
 3 - somewhat unimportant  
 4 - neutral  
 5 - somewhat important  
 6 - important  
 7 - very important

does not apply

**... My level of satisfaction**

not available/not  
 very satisfied - 7  
 satisfied - 6  
 somewhat satisfied - 5  
 neutral - 4  
 somewhat dissatisfied - 3  
 not very satisfied - 2  
 not satisfied at all - 1

D 2 3 4 5 6 7	21. The amount of student parking space on campus is adequate.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	22. Counseling staff care about students as individuals.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	23. Living conditions in the residence halls are comfortable (adequate space, lighting, heat, air conditioning, telephones, etc.).	1 2 3 4 5 6 7
D 2 3 4 5 6 7	24. The intercollegiate athletic programs contribute to a strong sense of school spirit.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	25. Faculty are fair and unbiased in their treatment of individual students.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	26. Computer labs are adequate and accessible.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	27. The personnel involved in registration are helpful.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	28. Parking lots are well-lighted and secure.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	29. It is an enjoyable experience to be a student on this campus.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	30. Residence hall staff are concerned about me as an individual.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	31. Males and females have equal opportunities to participate in intercollegiate athletics.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	32. Tutoring services are readily available.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	33. My academic advisor is knowledgeable about requirements in my major.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	34. I am able to register for classes I need with few conflicts.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	35. The assessment and course placement procedures are reasonable.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	36. Security staff respond quickly in emergencies.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	37. I feel a sense of pride about my campus.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	38. There is an adequate selection of food available in the cafeteria.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	39. I am able to experience intellectual growth here.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	40. Residence hall regulations are reasonable.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	41. There is a commitment to academic excellence on this campus.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	42. There are a sufficient number of weekend activities for students.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	43. Admissions counselors respond to prospective students' unique needs and requests.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	44. Academic support services adequately meet the needs of students.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	45. Students are made to feel welcome on this campus.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	46. I can easily get involved in campus organizations.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	47. Faculty provide timely feedback about student progress in a course.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	48. Admissions counselors accurately portray the campus in their recruiting practices.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	49. There are adequate services to help me decide upon a career.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	50. Class change (drop/add) policies are reasonable.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	51. This institution has a good reputation within the community.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	52. The student center is a comfortable place for students to spend their leisure time.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	53. Faculty take into consideration student differences as they teach a course.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	54. Bookstore staff are helpful.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	55. Major requirements are clear and reasonable.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	56. The student handbook provides helpful information about campus life.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	57. I seldom get the "run-around" when seeking information on this campus.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	58. The quality of instruction I receive in most of my classes is excellent.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	59. This institution shows concern for students as individuals.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	60. I generally know what's happening on campus.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	61. Adjunct faculty are competent as classroom instructors.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	62. There is a strong commitment to racial harmony on this campus.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	63. Student disciplinary procedures are fair.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	64. New student orientation services help students adjust to college.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	65. Faculty are usually available after class and during office hours.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	66. Tuition paid is a worthwhile investment.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	67. Freedom of expression is protected on campus.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	68. Nearly all of the faculty are knowledgeable in their field.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	69. There is a good variety of courses provided on this campus.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	70. Graduate teaching assistants are competent as classroom instructors.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	71. Channels for expressing student complaints are readily available.	1 2 3 4 5 6 7
D 2 3 4 5 6 7	72. On the whole, the campus is well-maintained.	1 2 3 4 5 6 7

stitution may choose to provide you with additional questions on a separate sheet. The section numbered 74 - 83 is provided as a response area for those additional questions. Continue on to when you have completed this section.

**Importance to me**

1 - not important at all

2 - not very important

3 - somewhat unimportant

4 - neutral

5 - somewhat important

6 - important

7 - very important

does not apply

**... My level of satisfaction**

not available/not used

1 - not satisfied at all

2 - not very satisfied

3 - somewhat dissatisfied

4 - neutral

5 - somewhat satisfied

6 - satisfied

7 - very satisfied

		(If items 74-83 not available, skip to item 84.)		
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	74.		74.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	75.		75.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	76.		76.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	77.		77.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	78.		78.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	79.		79.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	80.		80.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	81.		81.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	82.		82.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	83.		83.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7

How **satisfied** are you that this campus demonstrates a commitment to meeting the needs of:

84. Part-time students?		<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7
85. Evening students?	84.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7
86. Older, returning learners?	85.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7
87. Under-represented populations?	86.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7
88. Commuters?	87.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7
89. Students with disabilities?	88.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7
	89.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7

How **important** were each of the following factors in your decision to enroll here?

<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	90. Cost
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	91. Financial aid
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	92. Academic reputation
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	93. Size of institution
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	94. Opportunity to play sports
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	95. Recommendations from family/friends
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	96. Geographic setting
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	97. Campus appearance
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7	98. Personalized attention prior to enrollment

the **one** response that best applies to you and darken the corresponding oval for each of the items below.

99. How has your college experience compared to your expectations?

- 1 Much worse than I expected
- 2 A bit worse than I expected
- 3 About the same as I expected
- 4 A bit better than I expected
- 5 Much better than I expected

100. Rate your overall satisfaction with your experience here thus far.

- 1 Not satisfied at all
- 2 Not very satisfied
- 3 Somewhat dissatisfied
- 4 Neutral
- 5 Somewhat satisfied
- 6 Satisfied
- 7 Very satisfied

101. All in all, if you had it to do over again, would you enroll here?

- 1 Definitely not
- 2 Probably not
- 3 Maybe not
- 4 I don't know
- 5 Maybe yes
- 6 Probably yes
- 7 Definitely yes

CONTINUE TO THE NEXT PAGE

se the one response that best describes you and darken the corresponding oval for each of the items below.

**Gender:**

- 1 Female
- 2 Male

**Age:**

- 1 18 and under
- 2 19 to 24
- 3 25 to 34
- 4 35 to 44
- 5 45 and over

**Ethnicity/Race:**

- 1 African-American
- 2 American Indian or Alaskan Native
- 3 Asian or Pacific Islander
- 4 Caucasian/White
- 5 Hispanic
- 6 Other
- 7 Prefer not to respond

**Current Enrollment Status:**

- 1 Day
- 2 Evening
- 3 Weekend

**Current Class Load:**

- 1 Full-time
- 2 Part-time

**Class Level:**

- 1 Freshman
- 2 Sophomore
- 3 Junior
- 4 Senior
- 5 Special Student
- 6 Graduate/Professional
- 7 Other

**Current GPA:**

- 1 No credits earned
- 2 1.99 or below
- 3 2.0 - 2.49
- 4 2.5 - 2.99
- 5 3.0 - 3.49
- 6 3.5 or above

**109. Educational Goal:**

- 1 Associate degree
- 2 Bachelor's degree
- 3 Master's degree
- 4 Doctorate or professional degree
- 5 Certification (initial or renewal)
- 6 Self-improvement/pleasure
- 7 Job-related training
- 8 Other

**110. Employment:**

- 1 Full-time off campus
- 2 Part-time off campus
- 3 Full-time on campus
- 4 Part-time on campus
- 5 Not employed

**111. Current Residence:**

- 1 Residence hall
- 2 Fraternity / Sorority
- 3 Own house
- 4 Rent room or apartment off campus
- 5 Parent's home
- 6 Other

**112. Residence Classification:**

- 1 In-state
- 2 Out-of-state
- 3 International (not U.S. citizen)

**113. Disabilities:**

- Physical disability or a diagnosed learning disability?
- 1 Yes
  - 2 No

**114. When I entered this institution, it was my:**

- 1 1st choice
- 2 2nd choice
- 3 3rd choice or lower

Your Social Security Number is requested for research purposes and will not appear on any report.

**Social Security Number:**

Write your Social Security number in the nine spaces of the box provided. Completely darken the corresponding oval.

			+		+			
0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9

**5. Major:**

Fill in major code from list provided by your institution.

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

**116. Item requested by your institution:**

- 1
- 2
- 3
- 4
- 5
- 6

Thank you for taking the time to complete this inventory.  
Please do not fold

APPENDIX B

ITEMS WITHIN COMPREHENSIVE INSTITUTIONAL SCALES

## Student Satisfaction Inventory

## ACADEMIC ADVISING

6. My academic advisor is approachable.
14. My academic advisor is concerned about my success as an individual.
19. My academic advisor helps me set goals to work toward.
33. My academic advisor is knowledgeable about requirements in my major.
55. Major requirements are clear and reasonable.

## Student Satisfaction Inventory

## CAMPUS CLIMATE

1. Most students feel a sense of belonging here.
2. The campus staff are caring and helpful.
3. Faculty care about me as an individual.
7. The campus is safe and secure for all students.
10. Administrators are approachable to students.
29. It is an enjoyable experience to be a student on this campus.
37. I feel a sense of pride about my campus.
41. There is a commitment to academic excellence on this campus.
45. Students are made to feel welcome on this campus.
51. This institution has a good reputation within the community.
57. I seldom get the "run-around" when seeking information on this campus.
59. This institution shows concern for students as individuals.
60. I generally know what's happening on campus.
62. There is a strong commitment to racial harmony on this campus.
66. Tuition paid is a worthwhile investment.
67. Freedom of expression is protected on campus.
71. Channels for expressing student complaints are readily available.

## Student Satisfaction Inventory

## CAMPUS LIFE

9. A variety of intramural activities are offered.
23. Living conditions in the residence halls are comfortable (adequate space, lighting, heat, air, etc.)
24. The intercollegiate athletic programs contribute to a strong sense of school spirit.
30. Residence hall staff are concerned about me as an individual.
31. Males and females have equal opportunities to participate in intercollegiate athletics.
38. There is an adequate selection of food available in the cafeteria.
40. Residence hall regulations are reasonable.
41. There are a sufficient number of weekend activities for students.
46. I can easily get involved in campus organizations.
52. The student center is a comfortable place for students to spend their leisure time.
56. The student handbook provides helpful information about campus life.
63. Student disciplinary procedures are fair.
64. New student orientation services help students adjust to college.
67. Freedom of expression is protected on campus.
73. Student activities fees are put to good use.

## Student Satisfaction Inventory

## CAMPUS SUPPORT SERVICES

13. Library staff are helpful and approachable.
18. Library resources and services are adequate.
26. Computer labs are adequate and accessible.
32. Tutoring services are readily available.
44. Academic support services adequately meet the needs of students.
49. There are adequate services to help me decide upon a career.
54. Bookstore staff are helpful.

## Student Satisfaction Inventory

## CONCERN FOR THE INDIVIDUAL

3. Faculty care about me as an individual.
14. My academic advisor is concerned about my success as an individual.
22. Counseling staff care about students as individuals.
25. Faculty are fair and unbiased in their treatment of individual students.
30. Residence hall staff are concerned about me as an individual.
59. This institution shows concern for students as individuals.

## Student Satisfaction Inventory

## INSTRUCTIONAL EFFECTIVENESS

3. Faculty care about me as an individual.
8. The content of the courses within my major is valuable.
16. The instruction in my major field is excellent.
25. Faculty are fair and unbiased in their treatment of individual students.
39. I am able to experience intellectual growth here.
41. There is a commitment to academic excellence on this campus.
47. Faculty provide timely feedback about student progress in a course.
53. Faculty take into consideration student differences as they teach a course.
58. The quality of instruction I receive in most of my classes is excellent.
61. Adjunct faculty are competent as classroom instructors.
65. Faculty are usually available after class and during office hours.
68. Nearly all of the faculty are knowledgeable in their field.
69. There is a good variety of courses provided on this campus.
70. Graduate teaching assistants are competent as classroom instructors.

## Student Satisfaction Inventory

## RECRUITMENT AND FINANCIAL AID

4. Admissions staff are knowledgeable.
5. Financial aid counselors are helpful.
12. Financial aid awards are announced to students in time to be helpful in college planning.
17. Adequate financial aid is available for most students.
43. Admissions counselors respond to prospective students' unique needs and requests.
48. Admissions counselors accurately portray the campus in their recruiting practices.

## Student Satisfaction Inventory

## REGISTRATION EFFECTIVENESS

11. Billing policies are reasonable.
20. The business office is open during hours which are convenient for most students.
27. The personnel involved in registration are helpful.
34. I am able to register for classes I need with few conflicts.
50. Class change (drop/add) policies are reasonable.

## Student Satisfaction Inventory

## SAFETY AND SECURITY

7. The campus is safe and secure for all students.
21. The amount of student parking space on campus is adequate.
28. Parking lots are well-lighted and secure.
36. Security staff respond quickly in emergencies.

## Student Satisfaction Inventory

## SERVICE EXCELLENCE

2. The campus staff are caring and helpful.
13. Library staff are helpful and approachable.
14. The staff in the health services area are competent.
22. Counseling staff care about students as individuals.
27. The personnel involved in registration are helpful.
57. I seldom get the "run-around" when seeking information on this campus.
60. I generally know what's happening on campus.
71. Channels for expressing student complaints are readily available.

## Student Satisfaction Inventory

## STUDENT CENTEREDNESS

1. Most students feel a sense of belonging here.
2. The campus staff are caring and helpful.
10. Administrators are approachable to students.
29. It is an enjoyable experience to be a student on this campus.
45. Students are made to feel welcome on this campus.
59. This institution shows concern for students as individuals.

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