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ADJUSTMENT TO COLLEGE: THE CONTRIBUTION OF A LIVING-LEARNING PROGRAM FOR SCIENCE AND ENGINEERING STUDENTS

By

Cynthia K. Helman

A DISSERTATION

Submitted to Michigan State University In partial fulfillment of the requirements For the degree of

DOCTOR OF PHILOSOPHY

Department of Educational Administration

ABSTRACT

ADJUSTMENT TO COLLEGE: THE CONTRIBUTION OF A LIVING-LEARNING PROGRAM FOR SCIENCE AND ENGINEERING STUDENTS

By

Cynthia K. Helman

This study examined the contribution of a residential program on adjustment to college and fall semester grade point average for 174 first year science and engineering students. Specifically, social and academic aspects of the living-learning program were examined to determine their relationship with academic adjustment, social adjustment, full adjustment, and fall semester grade point average. The Student Adaptation to College Questionnaire was used to measure student adjustment to college, and a survey designed for this study was used to measure students' levels of involvement with the academic and social aspects of the program. The data were analyzed using t-tests and multiple regression.

None of the academic or social aspects directly related to the living-learning program were identified by multiple regression as significant predictors of adjustment or fall GPA. Significant predictors of academic adjustment were knowing one's roommate prior to college attendance and the grade received for the seminar class required as a part of the living-learning program. The number of hours per week students spent in class and being satisfied with the roommate relationship were significant predictors of social adjustment. Significant predictors of full adjustment were knowing one's roommate prior to college attendance, the number of hours per week spent in class, and being female. Predicted grade point average and the grade for the seminar class were significant predictors of fall semester grade point average. Limitations of the study were discussed with implications for both further research and professional practice.

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Chapter 1

INTRODUCTION AND STATEMENT OF THE PROBLEM

Going to College

Leaving home to attend college can be a very exciting time. For some students, going to college is the next logical and expected step after high school. For other students, college attendance signifies a somewhat uncomfortable departure from the usual norms and expectations of their communities and families. For all students, however, the first few months of college is a time of transition as students manage the separation from previous relationships and communities and begin to explore the norms and expectations of the new culture. It is during this time that new students seek to learn the unique intellectual and social behaviors of the college environment.

The transition from high school or work to college is an exceedingly complex phenomenon. The nature and dynamics of the process vary according to the student's social, family, and educational background; personality; educational and occupational orientations and aspirations; the nature and mission of the institution being attended; the kinds of peers, faculty, and staff members encountered; the purpose and nature of those encounters, and the interactions of all these variables. The process is a highly interrelated, web-like series of interpersonal, academic, and organizational pulls and pushes that shape student learning (broadly conceived) and persistence. (Terenzini, Allison, Millar, Rendon, Upcraft, Gregg, & Jalomo, 1992, p. 39-40)

Research supports that the first year of college is a critical time for new student adjustment (Christie & Dinham, 1991; Noel, 1985; Tinto, 1993; Upcraft & Gardner, 1989). Tinto (1993) cites data from the American College Testing Program (ACT) for the fall 1990 entering class in which first-year attrition from four-year institutions was an average of 26.8%. Of all institutional departures from four-year institutions, 53.3% occur during or after the first year. Much of the research suggests that the first six weeks are the most important time for new students. There is evidence that experiences in this early period determine students' likelihood of persistence to the second semester and beyond (Nelson, Scott, & Bryan, 1984; Noel, 1985; Tinto, 1988). In the transition to college, many students experience confusion, ambiguity, and uncertainty. The resulting stress may be overwhelming for some and lead to their withdrawal from college. Tinto (1993) states:

Though most students are able to cope with the problems of transition, many voluntarily withdraw from college very early in their first academic year, less from an inability to become incorporated in the social and academic communities of the college than from an inability to withstand the stresses that such transitions commonly induce. (p. 98)

The focus of this study is student adjustment to college as situated in the research on college student attrition. The theoretical perspective that is most instructive is the longitudinal model of college student departure as proposed by Tinto (1975). Van Gennep's (1960) framework of transitions is also helpful in highlighting the importance of the adjustment process in becoming integrated into a new environment. A review of college student adjustment research presents the ways in which others have examined student adjustment to college. Finally, the role of institutional strategies in promoting student adjustment to college will be explored.

Tinto's Longitudinal Theory of Departure

Tinto (1975) supported the work of Spady (1970; 1971) in asserting the importance of both the academic and social systems of the university in the assimilation or integration of students into the environment. Although Tinto recognized pre-entry characteristics such as prior academic achievement and family background as factors in

student persistence, he focused on what happened to students after they entered college.

Tinto (1975) suggested

that the process of dropout from college can be viewed as a longitudinal process of interactions between the individual and the academic and social systems of the college during which a person's experiences in those systems (as measured by his normative and structural integration) continually modify his goal and institutional commitments in ways which lead to persistence and/or varying forms of dropout. (p. 94)

His model emphasizes the distinction between students who are academically dismissed

by the institution and those who voluntary leave the institution, stressing that the majority

of students leave college for non-academic reasons.

Less than 25 % of all institutional departures, nationally, take the form of academic dismissal. Most departures are voluntary in the sense that they occur without any formal compulsion on the part of the institution. Rather than mirroring academic difficulties, they reflect the character of the individual's social and intellectual experiences within the institution. Generally, the more satisfying those experiences are felt to be, the more likely are individuals to persist until degree completion. Conversely, the less integrative they are, the more likely are individuals to withdraw voluntarily prior to degree completion. (Tinto, 1993, pp. 49-50)

Transition to College

For many adolescents, going to college is a major life transition. This transition

can be described as simultaneously exhilarating and anxiety-producing; exciting and

overwhelming; stimulating and confusing. Feldman and Newcomb (1969) described the

new student in college as

a novice in an unfamiliar social organization, and ... therefore confronted with the values, norms, and role structures of a new social system and various new subsystems. Such an experience usually involves desocialization (pressures to unlearn certain past values, attitudes, and behavior patterns) as well as socialization (pressures to learn the new culture and participate in the new social structure). (p. 89) All students are challenged by new academic demands; and most students experience new social situations, a sense of increased independence, and greater freedom than they had in their previous environment. Those who live in residence halls are also required to negotiate new peer relationships in an environment quite unlike any they have previously encountered. For many, this is the first time they will share a room with any other person; let alone with a person from a different background or with values different from their own.

The transition to college can be related to the framework proposed by van Gennep (1960) in his famous work, <u>Rites of Passage</u>. Essentially, van Gennep suggested that individuals who move from one social situation to another, or from one culture to another, go through a process involving three phases: separation, transition, and incorporation. Tinto (1988) proposed that individuals moving from high school to college go through the same three phases.

Student Adjustment to College

According to Baker (1989), adjustment to college is the process of coping with the multifaceted demands of the new environment. Adjustment is characterized by separating from the past, learning new norms and behaviors, and becoming a member of the new environment. This period is often accompanied by feelings of uncertainty, confusion, and normlessness.

During their first few weeks of college life, freshmen see themselves (and perhaps more important, are seen by host students, faculty members, and administrators) more as nameless, faceless, members of a single undifferentiated social category than at any subsequent time in their college careers. (Wallace, 1966, p. 94)

Student adjustment to college has been associated with selecting an academic major (Baker & Siryk, 1986; Smith & Baker, 1987); internal academic locus of control and self-esteem (Mooney, Sherman, & LoPresto, 1991); having positive relationships with parents (Lopez, 1991; Rice, 1992); and having parents whose marriage is not distressed or conflicted (Lopez, Campbell, & Watkins, 1988).

Cooper & Robinson (1988) have suggested that adjustment to college is likely to be related to factors not only within an individual, but also in the institutional environment. Social effectiveness (Baker & Siryk, 1983; Christie & Dinham, 1991); alienation (Baker & Siryk, 1980); and social and intellectual validation (Murguia, Padilla, & Pavel, 1991; Stoecker, Pascarella, & Wolfle, 1988; Terenzini et al., 1996) are related to experiences with others in the environment which influence new students' adjustment to college.

Institutional Strategies

Colleges and universities have used the research about attrition to develop policies and strategies to reduce student departure and to assist students in their transition to college. At some institutions, elaborate predictive models have been developed to guide admissions decisions. Other institutions have designed retention strategies for specific groups of students or for the entire campus (Noel, 1985). Orientation programs have been improved or expanded to last an entire academic term.

Orientation Programs

Orientation programs are one effective strategy many institutions use to introduce new students to college life. Students attending orientation have been found to have significantly higher levels of social integration and commitment to the institution than

students not attending orientation, even when background characteristics were taken into account (Pascarella, Terenzini, & Wolfle, 1986).

Extended orientation programs have taken the form of seminars which may last from several weeks of the first academic term to the entire semester. These programs include freshmen seminars, University 101 courses, and College Success seminars. These programs typically include exercises to promote social interaction, topics such as time management and study skills, an introduction to support resources, and some exploration of academic or career topics (Jewler, 1989).

Tinto (1988) suggested that several other kinds of activities (e.g., fraternities, sororities, extracurricular programs) "may all serve to provide individuals with opportunities to establish repetitive contact with other members of the institution in circumstances which lead to the possibility of integration" (Tinto, 1988, p. 446).

Residential Programs

Much research has focused on the relationship between living in residence halls and college outcomes (see Blimling, 1993; Pascarella, 1991). Living in a residence hall during the first year of college has been found to relate significantly to positive outcomes such as persistence, as well as involvement on campus, gains in interpersonal skills, attitudes, and values (Astin, 1977; Chickering, 1975).

Because of the apparent value of living in a residence hall on campus, institutions with such facilities might want to study ways to enhance the normal positive effect of residential living. Such studies should include an assessment of the effects of roommates, peer groups, living-study arrangements in the residence halls, programming, and staffing of facilities. The results might well put institutions in a position to capitalize still more on the potential value of the residence hall experience. (Astin, 1977, p. 160) Nationally, in the last 20 years, a variety of residential programs have been designed and implemented with the common purpose of assisting students' academic and social adjustment to college. For example, living-learning centers were a hallmark of the 1970's in student housing. New residence halls were built to include classroom space, faculty office space, libraries, and other "academic" components. These centers provided students with opportunities to take classes, interact with faculty, develop relationships with students in the same field of study, and participate in co-curricular activities which complemented their academic work. Planned activities integrating curricular and cocurricular aspects were necessary to achieve maximum benefit from living-learning centers.

Renewed emphasis on undergraduate education on many campuses in the 1990s has resulted in revitalized efforts to integrate the academic and social components within the residential environment. In addition, national studies within the past several years have documented the decline in the number of college students who complete baccalaureate degrees in science and engineering (Atkinson, 1990). The Residential Option for Science and Engineering Students (ROSES) at Michigan State University was developed in 1993 and targets entering students intending to major in a science or engineering field. The program provides academic and social experiences and is intended to assist students in their transition to college and to enhance the retention of students in science and engineering majors.

All students in the ROSES program live in the same residence hall. They are required to take a one-credit seminar during the fall semester, which includes a weekly class and co-curricular activities. Faculty and academic staff have primary responsibility

for the weekly class session, while the residence life staff implement co-curricular seminars and activities which complement the class. Most ROSES students take at least one other course with other ROSES students. There are tutoring services and special tutoring and resource rooms in the residence hall. Additionally, academic advisers hold periodic advising sessions in the residence hall.

Purpose of the Study

The purpose of this study was to determine the relative contribution of the individual components (required course, relationships with peers, relationships with academic advisers and instructors, involvement) of the ROSES program in predicting student adjustment to college. The Fall 1997 cohort of ROSES students were the participants in the study. Their levels of involvement and participation with the various components of the ROSES program were examined in relation to their academic, social, and full adjustment to college, as well as their fall semester grade point average.

Research Questions

This study primarily addressed the question of whether components of a semesterlong program combining academic and residential experiences enhance student adjustment to college. Specifically, this study sought to determine the components of the residential program (ROSES) that best predicted academic adjustment, social adjustment, full adjustment, and fall semester grade point average. This study attempted to answer the following questions:

1. Do specific components of the ROSES program contribute differentially to academic adjustment, social adjustment, full adjustment, and fall semester grade point average?

2. Which components of the ROSES program make the most significant contributions in predicting academic adjustment, social adjustment, full adjustment, and fall semester grade point average?

Methodology

Instruments

The Student Adaptation to College Questionnaire (Baker & Siryk, 1989) was used in this study. The Student Adaptation to College Questionnaire (SACQ) asks respondents to reflect on their adjustment once they are in college. This instrument yields an overall adjustment score, as well as subscale scores on four facets of adjustment (academic adjustment, social adjustment, personal-emotional adjustment, and attachment). The academic and social adjustment subscales were used in this study because the subscales parallel the academic and social integration components identified by Tinto's theoretical model. The full adjustment score was also examined. Several studies have supported the use of the SACQ as a valid and reliable instrument for measuring college student adjustment (Baker, 1986; Baker & Siryk, 1986; Cooper & Robinson, 1988; Dahmus, Bernardin, & Bernardin, 1992; Krotseng, 1992; Mooney et. al., 1991; Smith & Baker, 1987).

Participants were also asked to complete a brief survey about their experiences during the fall semester. The ROSES Experiences Survey, designed specifically for this study, assessed study habits, interactions with academic and student affairs staff, relationships with student peers, and perceptions of the ROSES program.

Collection of Data

The Student Adaptation to College Questionnaire (SACQ) and the ROSES Experiences Survey were administered to all students enrolled in the ROSES program during the last two weeks of fall semester, 1997. Surveys were distributed via student mailboxes in the residence hall for students in the College of Natural Science and the College of Agriculture and Natural Resources. Students in the College of Engineering were participating in another study that incorporated this study; thus, the surveys were distributed during the seminar class.

Demographic data (gender, ethnicity, and college of enrollment), predicted grade point average, ROSES seminar grades, and fall semester grade point average were obtained from institutional records.

Data Analysis

Relationships between individual components of the ROSES program and two sets of outcomes—adjustment to college (academic, social, and full adjustment) and fall semester grade point average—were examined. Regression analysis was utilized to identify significant predictors of academic adjustment, social adjustment, full adjustment, and fall semester grade point average.

Significance of the Study

This study contributes to the literature about institutional strategies which may influence student adjustment to college. Specifically, the focus of the study was a residential program for entering science and engineering students and its contribution to student adjustment. The results of this study may be most significant to science and engineering students who are entering Michigan State University as they consider

programs and services which might assist them in meeting their educational goals. Students may elect to participate in programs similar to the ROSES program because of measurable factors which can be communicated to prospective students. These findings may also be of interest to those concerned about the number of prospective scientists and engineers. Institutional leaders and program designers may also be interested in these findings for the improvement of strategies to assist new students.

Student retention remains a topic of interest on most campuses. It is estimated that 85% of college student attrition is voluntary (Tinto, 1985); that is, not as a result of an institutional action due to poor academic performance. Adjustment to college is a factor in academic and social integration, which are positively related to goal and institutional commitment; in turn, they are positively related to retention. Institutions have implemented many types of programs designed to assist with student adjustment to college. A residential program which integrates academic and social components may be a particularly viable strategy.

On a local level, the results of this study are of interest to the faculty and staff who have designed and implemented the ROSES program since fall, 1993. In addition, replications or adaptations of this residential program could be implemented by other disciplines to improve adjustment and contribute to retention. Students, institutional decision-makers, and program designers may benefit from the results of this study.

Limitations

Findings from this study have limited generalizability. Because the study was conducted at only one institution, results are not generalizable to other institutions. Only students expressing a preference for science or engineering majors were included;

therefore, this study may not be generalizable to students in other fields of study. This study only examined science and engineering majors in one first-year student class. Each first-year student class may differ from one another; thus, caution must be exercised in applying the findings of this study to subsequent groups of first-year science and engineering students.

Another limitation is that the residential experiences of all students in this study are only one part of the complex set of college experiences. While this study focused exclusively on the experiences associated with participation in the residential program, it is acknowledged that experiences beyond the scope of this study may influence adjustment to college.

Organization of the Dissertation

The dissertation is organized into five chapters with the addition of appendices. The second chapter presents a review of the literature relative to student departure, stages of transition, and adjustment to college. The design and methodology used in collecting and analyzing the data is provided in chapter three. Analysis of the data is presented in chapter four. Chapter five includes a summary of the research findings, implications, and recommendations for future research.

Chapter 2

REVIEW OF THE LITERATURE

Introduction

In this chapter, a review of literature related to college student adjustment is presented. Adjustment to college is an important factor in college student persistence; therefore, the first section provides a brief summary of student attrition literature. The second section introduces Tinto's (1975) model of longitudinal departure, with particular attention to the importance of academic and social integration. Third, van Gennep's (1960) description of "rites of passage" is examined relative to student transition to college. The fourth section provides a review of research about student adjustment to college.

Attrition from Higher Education

College student attrition is a concern affecting institutions throughout the country. All colleges and universities regardless of size, type, or geographical location experience student attrition. "Of the nearly 2.4 million students who in 1993 entered higher education for the 1st time, over 1.5 million will leave their first institution without receiving a degree. Of those, approximately 1.1 million will leave higher education altogether, without ever completing either a 2 or 4 year degree program" (Tinto, 1993). Levine (1989) suggested that less than half of the students enrolled in college graduate in four years and less than 70% graduate in seven years.

Perhaps more disturbing is the fact that a large majority of all institutional departures are voluntary. That is, from the institution's perspective, students are eligible to remain. "Nearly 85 percent of student institutional departures are voluntary. They

occur despite the maintenance of adequate levels of academic performance" (Tinto, 1985, p.32). Research has consistently revealed that less than 25% of all institutional departures are due to poor academic performance (Astin, 1977; Tinto, 1993).

Understanding Student Attrition

Considerable research has attempted to uncover the reasons students leave institutions. Information is often obtained through exit interviews with students or postdeparture surveys in which students indicate their reason(s) for leaving the institution by selecting the reason from a pre-determined list, or responding to short answer questions. Thus, students may be forced to choose the answer which most closely relates to their situation. While this information may be easily reported, it may not fully reflect the complexity of student departure.

In a national study conducted in 1977, involving students from 358 institutions, dropouts most frequently cited boredom with courses, a change in career plans, financial difficulties, and dissatisfaction with requirements as the reasons for institutional departure (Astin, 1977). Academic boredom and uncertainty about academic plans, adjustment problems, unrealistic expectations about college, and financial difficulties continue to be themes among those students who leave (Noel, 1985; Upcraft & Gardner, 1989). These categories highlight the reasons for departure; yet provide little assistance in understanding why students leave college.

Financial difficulties may be overstated by students as a reason for their departure. For some students, indicating financial problems may be more socially acceptable or may be simpler than trying to explain a more complex set of reasons. While many students may indeed have financial difficulties, money more often has to do with college access

and choice than with persistence (Noel, 1985). Indeed, many students incur significant debt in order to stay in school.

One of the myths about attrition is that students who drop out of college actually flunk out; that is, they are asked to leave the institution due to unsatisfactory academic performance. Several studies have revealed that dropouts often have grade point averages equal to or greater than the grade point averages of persisting students (Noel, 1985). Certainly, for some students, poor academic performance weighs heavily in their own cost-benefit analysis of college attendance.

A significant number of researchers have tried to predict and explain attrition. Various models have been suggested that emphasize different sets of variables and their relation to attrition. Variables have included background characteristics such as gender, ethnicity, social economic status, parents' education, high school grade point average, and commitments to the institution and to the goal of college completion. Other predictive models have included measures of involvement and activities during the college experience such as place of residence, number of informal contacts with faculty, the nature of peer group interactions, and participation in extracurricular activities. Despite the inclusion of over 100 variables in models of attrition, tests of the models have only explained 10 to 20% of the variance in attrition (Astin, 1977; Panos & Astin, 1968; Terenzini & Pascarella, 1978; Tinto, 1975).

In a national study involving students at 248 institutions, Panos and Astin (1968) investigated the relationship between 120 student background variables and persistence over four years of college. Their findings highlighted the complexity of accurately predicting student attrition. Of the 120 variables, only 20 entered into the final regression

equation, and accounted for only 9% of the variance in the group of students who had dropped out of college. They also found several environmental effects (e.g., interpersonal relationships and institutional policies) to be significantly related to persistence. Thus, completion of four years or more of college seems to be determined by the students' personal characteristics <u>and</u> the environmental context of the institution (Panos & Astin, 1968).

In a sample of 400 freshmen, variables related to students' backgrounds and early college experiences were used to predict attrition. When only background variables were used in the prediction, six of the eight dropouts were predicted correctly. When the early college experience variables were included in the prediction model, however, all eight dropouts were predicted correctly (Nelson et al., 1984).

Tinto (1993) proposed three categories of factors which may lead to early departure: individual, institutional, and external. The individual factors include the goals and intentions of the students upon entry into the institution. The greater the student's commitment to the institution and to goals of obtaining a degree, the greater the persistence. Institutional factors include the experiences of students once enrolled. Issues of adjustment, degree of academic difficulty and congruence between the individual and the environment, and the amount of isolation experienced by students are all institutional factors. Finally, external factors which may contribute to departure include finances and obligations (e.g., personal and family) which pull the student away from the institution.

Attrition from Science and Engineering Majors

Of specific interest for this study is research which documents the projected shortage of scientists and engineers over the next several years. Atkinson (1990) suggests that the problem is one of initial recruitment into science and engineering majors as well as students who drop out of college or who change from science and engineering majors to other fields. For the high school class of 1980, only 46% of the first year students declaring a major in science or engineering actually graduated with those degrees (Atkinson, 1990).

For women and minority students, participation rates in science and engineering are not increasing, despite significant growth of those groups in the general population (Atkinson, 1990; Pool, 1990). The attrition rates for women from science and engineering are higher than those for men, even though women are not less well prepared academically, nor do they have lower grade point averages (Seymour, 1992). A theme identified in research by Seymour and Hewitt (Seymour, 1992) was that women in science and engineering encountered more difficulties in their educational experiences than their male peers did. Female students were more critical of the science and engineering teaching and reported it difficult to learn from faculty who took no personal interest in them, seemingly representing a desire for more affective orientation to teaching.

Pool (1990) suggests that the underrepresentation of minority students in science and engineering is not an easily corrected one; the difficulties for minority group students begin much earlier than the college level. Atkinson (1990) suggests that the

nation's schools must provide a more supportive environment and one in which minority students are encouraged to pursue the sciences as fields of study.

Many students who enter college declaring majors in science and engineering actually switch to majors outside of those fields. Seymour (1995) has investigated reasons students give for switching out of science and engineering majors. Findings from her research that are particularly meaningful in the context of the ROSES program include the following reasons given by students who switch out of these majors: inadequate high school preparation in study skills and basic courses; poor academic advising and lack of academic assistance; absence of peer study group support; and a competitive culture which leads to discouragement (Seymour, 1992).

Tinto's Model of Longitudinal Departure

In contrast to identifying individual variables which lead to student departure, Tinto (1975) proposed that decisions to leave were made over time and were a result of the interactions between the student and the academic and social systems of the institution. Tinto recognized that students enter institutions with a variety of family background characteristics such as social status and parental education. Students also bring their own unique attributes and abilities (e.g., sex, ethnicity, and academic ability), as well as different expectations and motivations. Tinto suggested that the combination of these background attributes leads to a set of initial plans (intentions) and commitments to the institution and to the goal of college completion. He further suggested that interactions between the individual student and the academic and social systems continually modify the goal and institutional commitments in ways which lead to persistence or dropout. External factors, such as work or other commitments, are also

acknowledged as factors which may play a role in decisions to leave school (Tinto, 1975). The Tinto model focuses primarily on the nature of experiences and interactions that occur after students enter the institution rather than on pre-college characteristics. Tinto identified formal and informal components of the academic and social systems of the institution. The academic system includes those activities centered around formal education. The social system is comprised of interactions among students, faculty, and staff that occur outside of the formal academic setting. In both systems, there are formal (more structured) and informal (less structured) components. It is the nature of interactions in the academic and social systems, which influences the degree of academic integration and social integration which, in turn, contribute to revised intentions and commitments. Thus, positive experiences serve as integrative experiences are non-integrative and weaken the intentions and commitments. Over time, decisions to remain or leave the institution result from this process. Tinto's model is presented in Figure 1.



Figure 1 - Tinto's Model of Longitudinal Departure.

Source: Tinto (1993). Leaving College: Rethinking the Causes and Cures of Student Attrition. Chicago: The University of Chicago Press. (p. 114)

Academic and Social Integration

Tinto's theoretical contribution to the study of voluntary attrition is the centrality of academic and social integration and the longitudinal effects of interactions between individuals and the academic and social systems. "Given individual characteristics, prior experiences, and commitments, the model argues that it is the individual's integration into the academic and social systems of the college that most directly relates to his continuance in that college" (Tinto, 1975). Tinto does not suggest that full integration in both systems is necessary for persistence; however, some degree of membership in both the academic and social systems is important. Individual students may belong to several different systems or sub-communities and have different experiences in each of them.

Much research has been conducted to test Tinto's model of student departure. While different studies have focused on different aspects of the model, many of them have found support for the importance of academic and social integration (Nelson et al., 1984; Pascarella & Terenzini, 1980; Stoecker et al., 1988; Terenzini & Pascarella, 1976; Terenzini & Pascarella, 1977; Terenzini & Pascarella, 1978).

Despite the different ways academic integration and social integration are operationally defined, Pascarella and Terenzini (1991) draw two general conclusions about academic and social integration from their summary of the research on this topic:

First, at primarily residential institutions, social integration tends to have a compensatory interaction with academic integration and vice versa. A second generalization is that levels of either social or academic integration tend to have a compensatory influence on freshman-to-sophomore persistence for students who either enter a residential institution with characteristics predictive of withdrawal (for example, low family educational status, low educational aspirations) or who subsequently have low commitment to the institution or the goal of graduation from college. (pp. 411-412)

Transition to College

The academic and social integration at the core of Tinto's model of college student attrition is drawn from van Gennep's (1960) model of life transitions. Van Gennep, an anthropologist, was especially interested in the ceremonies which often accompany an individual's movement from one life position to another or from one social situation to another. Though the activities of the specific ceremonies varied depending on the ceremony, it was possible to identify three major phases in terms of the order and content of the ceremonial activities. Van Gennep (1960) labeled the phases separation, transition, and incorporation; together, he referred to the overall pattern as "rites of passage."

The rites of passage framework may be applied to the process by which a high school student becomes a college student (Tinto, 1988; 1993). Relative to student departure, the focus is on the early stages of the interactions between entering students and members of the institution. The separation phase involves separating from the past. More specifically, for students entering college, this includes a separation from the activities and habits of high school, and most likely includes some degree of separation from home, family, and friends. The transition phase is characterized by interactions with people (e.g., students, faculty, and staff) who are members of the college community. Finally, incorporation is the degree to which the student becomes a competent member of the new community. This requires learning the norms and establishing connections with others.

While each stage has its defining characteristics, the stages may not be clearly distinguished from one another. Though there is considerable variability among

individual students as they pass through the stages, there are some commonalties. It is during this process that new students must learn the necessary skills to become a college student, despite their competence as a high school student. They may interact with different kinds of people, or in ways quite different from their previous interactions. Students may experience feelings of isolation, confusion, loneliness, and normlessness as they pass from one life and social position to another (Tinto, 1993).

Zeller (1993) suggested the transition is analogous to the culture shock experienced by people moving into an unfamiliar culture, during which highpoints and lowpoints are experienced. He described new students as moving from the exciting days of orientation and welcoming activities to the shocking realities of academic work and meeting new people. Students find stability and comfort as they develop routines, but they experience doubts as their academic ability is challenged by first semester grades and the honeymoon period of new relationships wanes. As students begin to form relationships with other people and become involved in the university, they become integrated members of the environment.

Adjustment to College

Adjustment, as defined in this study, is the process of meeting the various demands in the collegiate setting in order to become academically and socially integrated in the university.

The transition to university traditionally regarded as positive, involving new opportunities, nevertheless involves change for all students. There is the need to break with old routines and to adjust to the demands of a new environment including the need to adapt to the new intellectual and social challenges which present themselves. (Fisher & Hood, 1987, p. 425) Draper (1991) suggested that adjustment takes time and requires students to try new behaviors, building on patterns of behavior that are successful. He also suggested that adjustment is "associative in the sense that these patterns are reinforced as freshmen interact with other students who share the same needs and goals" (p.73).

Successful adjustment significantly enhances the success and persistence of new students. For new students, there is transition and adjustment academically, socially, and personally. Students need to feel connected to other people in the institution; they need to have a sense of comfort with their academic and social environments; and they need assistance with issues related to their transition (Upcraft & Gardner, 1989).

Adjustment, then, is multifaceted, and is concerned with the "ability to cope effectively with the varying demands of the new college setting" (Baker & Siryk, 1989, p. 465). Adjustment during the first semester has been found to be a useful predictor of second semester persistence (Nelson et al., 1984). In fact, Krotseng (1992) found that scores on adjustment measures correctly classified 85 percent of all respondents as persisters or nonpersisters after one semester. Bragg (1994) found that student adjustment to college was highly correlated with student intent-to-persist, and was negatively correlated with consideration of institutional withdrawal.

In summary, the adjustment process is the process through which students negotiate their transition from high school to college to become academically and socially integrated into the institution. Since the nature of interactions in the academic and social systems is critical to student persistence, research about adjustment to college is valuable.

Research about Student Adjustment to College

Adjustment to college has been the focus of two general categories of research studies. Relationships between a number of individual or background variables and various facets of adjustment to college have been examined. A smaller number of studies have treated adjustment as a dependent variable, investigating whether specific interventions or environmental characteristics influence adjustment to college.

Correlates of Adjustment

In a study of 56 first-year students, both individual and environmental variables were found to correlate with different aspects of adjustment. Problem-solving skills and ACT scores significantly predicted academic adjustment; while age, family income, perceived social support, and distance from home all related to positive social adjustment (Brooks II & DuBois, 1995).

Mooney et al. (1991) surveyed 88 female college students to assess academic locus of control, self-esteem, and geographical distance from home as predictors of adjustment to college. They found that an internal locus of control, a high level of selfesteem, and the perception that the distance from home was "just right" (regardless of the actual distance) all contributed significantly to accurate predictions of college adjustment.

It may be that distance from home measured by miles is less important than the feelings students have about being away from home. Feelings of homesickness are often reported by students, especially in the first few weeks of the semester. Fisher and Hood (1987) found that homesick students showed higher levels of psychological disturbance and lower levels of college adjustment than students who were not homesick.

Several studies have investigated family relationships and student adjustment to college. Lapsley, Rice, and FitzGerald (1990) found that adolescents with strong attachment relationships with parents had a more positive adjustment to college than students who were insecurely attached. In another study, psychological separation was unrelated to college adjustment in men and negatively correlated with adjustment in women (Lopez, Campbell, & Watkins, 1986).

There is some evidence of variation in the relationship between attachment with parents and adjustment to college depending on the class standing of students. Lapsley et al. (1990) reported that for freshmen, parental attachment variables accounted for a significant amount of variation only in academic adjustment, while for juniors, parental attachment variables accounted for significant amounts of variation in academic, social, and personal adjustment as well as goal commitment. In another study, Lapsley, Rice, and Shadid (1989) found that freshmen were more psychologically dependent on their parents and had lower levels of social and personal adjustment to college than upperclass students.

The nature of family relationships may also play a role in student adjustment to college. Lopez et al. (1988) found a relationship between conflicted parent-student attachments and college adjustment for both men and women. While this relationship may have been affected by variables not controlled for, it still suggested that a conflicted relationship with parents may create emotional difficulties for the students which, in turn, may impact aspects of college adjustment. In Lopez's (1991) study, women and students who reported high levels of marital conflict in their families displayed lower levels of personal adjustment to college.
In three separate studies, Smith and Baker (1987) found a positive relationship between freshman decidedness regarding academic major and adjustment to college. In all three studies, students who were more certain about their choice of academic major, as compared to those who were less certain, scored higher in at least one area of adjustment. There was some evidence that this relationship was more evident in the second rather than the first semester.

There is also evidence that adjustment to college is likely to be related to factors not only within the person, but also in the institutional environment (Barthelemy & Fine, 1995; Brooks II & DuBois, 1995; Cooper & Robinson, 1988). This is consistent with Tinto's view that what happens after a student arrives on campus is critical.

Freshmen who report a high degree of alienation are less likely to be involved in campus activities, are more likely to be dissatisfied with their college experience, and are more likely to experience adjustment difficulties. Alienated students are also more likely to discontinue their enrollment, either for a short time or permanently (Baker & Siryk, 1980). Social effectiveness and social adjustment seem to be significantly related to overall adjustment to college and to persistence (Baker & Siryk, 1983; Christie & Dinham, 1991). While Harris (1991) found social and academic adjustment to predict goal and institutional attachment, social adjustment explained more variance in attachment (30%) than academic adjustment (6%).

In The Transition to College Project (Terenzini et al., 1992), focus groups with diverse groups of students from four distinctly different institutions revealed the importance of social and intellectual validation.

In some ways, perhaps no theme was more persistent throughout the interviews—regardless of race or ethnicity, gender, age, or institution

attended—than new students' need for self-esteem in its many forms: self-confidence, a sense of being in control, pride in oneself and what one does, respecting oneself and being respected by others, valuing oneself and being valued by others. (Terenzini et al., 1996)

The validation may come from parents, peers, faculty, or staff and can take the form of simple words of encouragement. For students of color attending primarily white, residential institutions, social validation and adjustment seem particularly important (Murguia et al., 1991; Stoecker et al., 1988; Terenzini et al., 1996).

Astin (1977) suggested that environmental circumstances could significantly increase the chance of students completing college. Living in residence halls during the first year of college has a positive effect on adjustment. In a study by Wilson, Anderson, and Fleming (1987), first year students who commuted from home demonstrated poorer personal adjustment than freshmen who lived in residence halls. Bragg (1994) also found that commuters, compared to students who lived on campus, did not make as many friends, were less active, did not adjust to college as well, and gave more consideration to dropping out.

Blimling (1993), in a review of research about residential living, suggested that the nature of the social environment in a residence hall encourages greater personal development of students than living at home. "Immersion in the college experience requires students to adapt to the demands of a new environment and, in doing so, forces them to alter perceptions and to learn new ways of interacting in that environment " (Blimling, 1993, p. 263). At the same time, residential students find comfort in the fact that others around them are also in transition, thus, transition is viewed as a cooperative endeavor (Johnson, Staton, & Jorgensen-Earp, 1995; Terenzini et al., 1992).

In an investigation of the effect of residence hall climate on college adjustment, Barthelemy and Fine (1995) found hall climate variables of personal support and group cohesiveness positively correlated with adjustment, while a climate of conflict was negatively related to adjustment. Although this study was correlational in nature, Barthelemy suggested that residence hall climate variables do play a role in student adjustment to college, and could be manipulated to maximize adjustment.

Effects of Interventions on Adjustment

There are some studies which treat student adjustment to college as a dependent variable. All students experience transition from high school and home to college. The identification of strategies that could influence positive adjustment would be very helpful to students and institutions.

In Baker's (1986) investigation of the effect of an intervention on adjustment, students who scored below the means on four subscales of an adjustment survey were divided into control and experimental groups. Students in the experimental group were invited to an individual interview to discuss their scores. Students who participated in the interview, compared with students in the control group, showed significantly greater improvement in adjustment scores on the post-test survey. Additionally, significantly fewer of the interviewed students withdrew from college. The researchers realized that the observed effect may have had little to do with the content of the conversation. It could have been that the retention effect was instead due to a feeling by the interviewed students that someone at the institution cared about them.

The literature reports mixed results regarding the effects of summer orientation programs on adjustment. Orientation programs are generally designed to assist new

students in their transition to college. Pascarella et al. (1986) found that students who attended an orientation program had significantly higher levels of social integration and subsequent commitment to the institution than those who did not attend orientation. Orientation attendance, however, had no effect on adjustment to college or on student persistence in a study by Martin and Dixon (1989). In both cases, orientation attendance was voluntary, which makes it more difficult to eliminate any pre-orientation intentions or motivations which might explain the findings.

Schwitzer, McGovern, and Robbins (1991) investigated the effects of a freshman orientation course and found that participation in the course was associated with improved academic and social adjustment. Participation in the course was voluntary and there was no comparison group of freshmen, so the actual effect of the course is unclear. High school students who enrolled in a college orientation course (University 101) during high school anticipated being able to adjust to college more successfully than a group of high school students who were enrolled in a college government course (Buchanan, 1991). Data from this study indicated that students in the University 101 group had greater actual adjustment to college than students in either the group taking the government course or students in a control group taking no college course; however, the finding was not statistically significant.

Research comparing the experiences of students in residence halls to those who live in living-learning centers suggests that student adjustment is enhanced by the livinglearning environment. Pemberton (1969) found no significant differences after one year of college between the academic performance of freshmen in a living-learning center and those in conventional halls. However, students in the living-learning center believed their

transition to college was made easier due to the friendly, cohesive, and supportive atmosphere of the living-learning center. Surveying seniors at Michigan State University, Nosow (1975) found that seniors in three living-learning centers were more positive in their attitudes about their personal adjustment, well-being, and intellectual growth than seniors in conventional residence halls.

Draper (1991) spent a year in a predominately freshman residence hall during the 1978-1979 academic year. His ethnographic work focused on nine first-year students and their transition to the university. As a result of his study, he makes the following recommendations about on-campus housing for first-year students. Freshmen should be housed in proximity to one another for purposes of support and group identity, yet they should not be isolated from upper division students or faculty or staff of the institution. In fact, he suggested that academic and student affairs offices should be located in residence halls to provide casual contact with students. He encouraged the development of strategies to overcome the real and perceived barriers between new students and the academic life of the institution. Finally, he suggested that faculty and staff should have opportunities to interact informally with students, and that the number of co-curricular activities in the halls should be increased.

Residential Option for Science and Engineering Students (ROSES)

The ROSES program for science and engineering students incorporates many of the recommendations made by Draper and addresses some of the factors cited by students who switch out of science and engineering majors. The purpose of the ROSES program, as described in the pilot program proposal, is

"... to actively pursue the improvement in the quality of the undergraduate experience for those students who choose science and engineering as

academic and professional careers where academic subject matter is both common and challenging as well as to provide a sense of belongingness and community where too often the university environment and academic rigor come into conflict for undergraduates." (E. M. Wilson, personal communication, Spring, 1993)

First-year students who have expressed interest in science and engineering majors may elect to participate in the ROSES program. Students in the program are housed together in the same residence hall, and most are assigned roommates who are also in the ROSES program. All students in the ROSES program are required to enroll in a ROSES seminar class during the fall semester. The seminar is a one-credit course and is designed to assist students in their transition to college by exposing them to resources at the institution, helping them learn academic skills, and introducing them to their field of study. The class meets once per week in a classroom and students are expected, as part of the class, to attend co-curricular activities planned by the residence life staff. Each participating college is responsible for the seminar class for their students. The specific topics covered in the class may vary somewhat among the three colleges.

Resident assistants (undergraduate staff members) receive some additional training related to the ROSES program so they can be of assistance to new students. They are also involved in the implementation of the co-curricular portions of the ROSES seminar class. Several returning students serve as peer mentors and tutors for new students. Faculty and academic advisers serve as instructors for the ROSES seminar class and are encouraged to interact with students in the residence hall, via advising appointments or informal conversations. Special tutoring rooms are also available in the residence hall for group study and for tutoring at designated times.

Summary

In this chapter, the transition from high school to college has been examined in the context of students' academic and social integration into the institution. Students' experiences with the academic and social systems of the institution may be instrumental in helping them adjust to college. There is evidence that the first year of college, especially the first six weeks, are key in shaping the remainder of the undergraduate experience.

While a number of studies document relationships between background variables and adjustment to college, fewer studies have examined strategies which might positively affect adjustment. Several studies have suggested that the peer environment and social climate in residence halls are related to positive adjustment to college. This study sought to determine which components of a residential program, structured to integrate academic and social elements, significantly predicted student adjustment to college. A schematic representation of this study is presented in Figure 2.





Chapter 3

METHODOLOGY

The purpose of this study was to assess the relationships between various components of a residential program for science and engineering students (ROSES) and student adjustment to college. The Student Adaptation to College Questionnaire (Baker & Siryk, 1989) was used to measure self-reported adjustment to college. The Student Adaptation to College Questionnaire (SACQ) yields an overall adjustment score, as well as scores for each of four subscales: academic adjustment, social adjustment, personal/emotional adjustment, and attachment. For the purposes of this study, the academic adjustment and social adjustment subscales were used. A ROSES Experiences Survey, designed for this study, was used to gather information about student participation with various academic and social components of the ROSES program.

This chapter describes the methodology and procedures used in this study. The participants are described, along with the instrumentation, data collection procedures, and design of the study. The research hypotheses are stated and data analysis is described.

Background

In 1993, the College of Engineering, College of Natural Science, and College of Agriculture and Natural Resources, in conjunction with the Departments of Residence Life and University Housing, offered a residential program for entering science and engineering students. Students admitted to the university are not required to be admitted to a college, but may declare a "major preference". If students declare a major preference, the college offering the major area of study shares administrative responsibility for academic matters and records. For the purposes of this residential

program, the students are generally referred to as science and engineering students, although they may have very different specific majors. The College of Engineering has 11 different majors, the College of Natural Science has 18, and the College of Agriculture and Natural Resources has 16 majors (see Appendix A for a list of majors). Because science and engineering majors in the Colleges of Engineering, Natural Science, and Agriculture and Natural Resources have a similar curriculum for their first year, these colleges joined together to sponsor and support a single residential program.

Entering students declaring a preference for a major in one of the participating colleges (Engineering, Natural Science, or Agriculture and Natural Resources) are screened by the college for invitation to the ROSES program. Because of space limitations in the program, each college establishes criteria for acceptance into the ROSES program. The College of Natural Science generally accepts students who have declared a major in a natural science field and who have an ACT score of at least 20. The College of Engineering typically accepts only those major preference students who have an ACT score of at least 24. Because the number of entering students expressing preference for a major in the College of Agriculture and Natural Resources is so small, all of these students are usually invited to participate in the ROSES program.

Information about the ROSES program, including an application, is sent to the students who meet the criteria established by the colleges. Students who apply by the deadline are assigned to Bailey Hall, an undergraduate residence hall at Michigan State University that houses approximately 400 men and women.

The Residential Option for Science and Engineering Students (ROSES) is "... designed to provide a stronger sense of community and academic support within the

greater University" (Zmich, Lux, DeRosa, & Gordon, 1997). In addition to living in the same residence hall, students in the ROSES program are required to enroll in a one-credit class, which consists of a weekly class session taught by faculty and academic staff and regularly scheduled programs by the residence life staff. Students in the ROSES program are also encouraged to enroll in many of the same course sections for biology, chemistry, computer science, math, social science, and writing. Most of the students in the ROSES program do enroll in a reserved section of at least one course. Tutoring rooms, for individual and group study, are designated in the ROSES program. Returning students who were in the ROSES program their first year live in the hall and serve as peer leaders for the new students. There are special events during new student orientation at which new ROSES students are welcomed by faculty and academic staff of the three colleges, the residence life staff, and the ROSES peer leaders.

Participants

This study was limited to first time freshmen enrolled at Michigan State University for the 1997 fall semester. All of the students were participating in the ROSES program and had declared a preference for a science or engineering major in one of three colleges: College of Engineering, College of Natural Science, or College of Agriculture and Natural Resources.

Students in the ROSES program typically enroll for an average of 15 semester credits. Most of the ROSES students take at least one general education or common major course (i.e. math, biology) with other ROSES students. Sections of these courses are reserved for ROSES students, and faculty in these sections are encouraged to

reinforce cooperative learning. In addition, students are encouraged to take advantage of the tutoring rooms available in the residence hall.

Instruments

Student Adaptation to College Questionnaire

The Student Adaptation to College Questionnaire (Baker & Siryk, 1989) was used to measure student adjustment to college. The SACQ yields an overall score, as well as scores for the following subscales: academic adjustment, social adjustment, personal/emotional adjustment, and goal commitment/institutional attachment (generally referred to as the attachment subscale). The SACQ was selected because of its close parallel to factors in Tinto's (1975) model of student departure, specifically social and academic integration, and goal and institutional commitments.

The SACQ consists of 67 items. Students mark their responses to items along a nine-point Likert scale (from "doesn't apply to me at all" to "applies very closely to me"). Half of the items are positively keyed and half are negatively keyed. On all scales, the higher total scores correspond to more positive adjustment.

The academic adjustment subscale consists of 24 items and assesses the student's academic motivation, perceptions about academic performance, and ability to cope with academic demands. The social adjustment subscale consists of 20 items and includes items related to the social environment, interpersonal relationships, and social activities. The personal-emotional subscale has 15 items related to the pressure of college and asks students about their physical and psychological health and well-being. The attachment subscale consists of 15 items which assess the student's satisfaction with the college, thoughts about dropping out, and commitment to completing a degree. Individual items

are organized into 12 critical clusters, that combine to form the subscales. The items

composing the subscales are presented in Appendix B.

Baker (1986) suggests the SACQ can be used to identify students who are having difficulty and as

...a source of dependent variables in studies of factors affecting student adjustment to college. These kinds of studies could be for strictly research purposes, or they could include very practical attempts to assess effects on students of such factors as living arrangements, special counseling programs, variations in financial support, or, in other words, virtually any of those factors that fall in the domain of the student personnel worker. (p. 3)

Reliability

Adequate reliability and validity studies have been conducted with the Student Adaptation to College Questionnaire. Cronbach's (1951) alpha, an estimate of internal consistency reliability, has yielded values on the academic subscale from .78 to .90; and on the social subscale from .73 to .91 (Baker & Siryk, 1989). According to Borg (1979), these values are considered adequate for research purposes.

Validity

In criterion validity studies conducted by Baker and Siryk (1984), subscales of the SACQ correlated significantly with behavioral variables expected to relate differentially to each subscale. Baker and Siryk (19984) found that the academic adjustment subscale was significantly correlated with freshman grade point average for five of six administrations of the SACQ. Election to an academic honor society during the junior and senior years was significantly related to only the academic adjustment subscale, with the exception of one administration in which the social adjustment subscale was also significantly related to honor society election. A social activities checklist, an index of

involvement in the social life of college, was only found to correlate significantly with the social adjustment subscale. The social adjustment subscale was also significantly correlated with being selected as a dormitory assistant (student staff member) after the freshman year. Scores on the personal-emotional subscale significantly correlated with students being known to a psychological services center in all six administrations of the SACQ on which the validity studies were conducted. The general subscale (or attachment subscale) was significantly correlated with attrition in all six administrations.

ROSES Experiences Survey

The ROSES Experiences Survey was designed for this study. See Appendix C for the ROSES Experiences Survey. Items on the survey collected information about students' participation with various components of the ROSES program. Items on the survey asked students about their study habits, involvement, interactions with academic and support staff, relationships with student peers (roommates, RA) and their perceptions of the ROSES program.

Several of the experiences of ROSES students are directly related to their participation in the ROSES program. They are unique to ROSES because of the design or special emphasis of the program. These components include having a roommate who is also in the ROSES program. Since all ROSES students are assigned to the same residence hall, many do have ROSES students as roommates. Students are living with other students who are going through similar experiences and as a result, may experience personal support and feelings of belonging.

Satisfaction with the contact with a resident assistant is also a direct component of the ROSES program because of the special role of the resident assistants. They receive

special training and focus, and are involved in the co-curricular component of the required ROSES seminar class. They serve as peer models for new students.

Faculty and academic staff contact with students is also a feature of the ROSES program. Incoming ROSES students meet their academic advisers during the summer orientation process. Several sections of the ROSES seminar class are taught by advisers and faculty from the three colleges. Because of the relatively small class size of the ROSES seminar class, students have more contact with their adviser or seminar instructor and may develop a more significant relationship with the adviser and/or seminar instructor. Satisfaction with the contact with an academic adviser and the degree to which students feel known by their seminar instructors are measures of these components.

Because ROSES students live in the same hall and many take reserved sections of common courses together (i.e. math, science, writing), studying with other ROSES students is another unique component of the ROSES program. In this study, this measure is expressed as the proportion of time students study with other ROSES students to the total amount of time they study per week.

Finally, the ROSES seminar class is a unique component of the ROSES program. The seminar is designed to assist students in their transition to college, introduce them to the resources on campus and to faculty members, help students develop academic skills, and assist students in exploring their major and career. As a part of the seminar class, students are required to attend evening programs offered in the residence hall. The programs include topics on campus resources, study skills, time management, and stress management. The grade for the seminar is based on an accumulation of points students

earn for attending class, attending evening seminars in the residence hall, and completing in-class and out-of-class assignments. Therefore, the grade serves as a reasonable measure of the degree to which students were involved in the seminar.

There are other activities that all undergraduate students may be engaged in, such as going to class, that were also examined for their contribution to adjustment and grade point average. For purposes of this study, these are indirect components of the ROSES program.

The total number of hours per week students reported being in class and studying were both measured as indirectly related to the ROSES program. The quality of the roommate relationship was also assessed as an indirect component. There were two measures of this component: whether the student had known their roommate prior to attending MSU, and how satisfied the student was with their roommate relationship. Finally, the total number of hours per week students reported being involved in noninstructional activities (i.e. student groups and activities, work, community service) was a measure of involvement. Table 1 presents the ROSES components used in this study as well as the items from the ROSES Experiences Survey used to measure the component.

Direct ROSES Component	Measure	Scoring
Having a ROSES roommate	ROSES roommate (item 1a)	Yes or no
Peer relationship	Satisfaction with RA contact (item 12d)	0-5*
Faculty/academic staff contact	Known by ROSES instructor (item 13b)	1-5**
	Satisfaction with adviser contact (item 12b)	0-5*
Study with other ROSES students	Study with ROSES students (item 4b)	Hours
Perception of ROSES	ROSES helped academically (item 14a)	1-5**
	ROSES helped socially (item 14e)	1-5**
ROSES seminar class	Seminar class grade	0.0-4.0
Indirect Component	Measure	Scoring
Hours in class	Class hours per week (item 2g)	Hours

Table 1 - Components and Measures of ROSES Experiences

Table 1 (con't.)

Hours studying	Study hours per week (item 2h)	Hours
Roommate relationship	Prior knowledge of roommate (item 1b)	Yes or no
	Satisfaction with roommate (item 12a)	0-5*
Involvement	Involvement (sum of items 2a – 2f)	Hours

Note. * scored on a Likert scale and recoded with 0 = does not apply; 5 = very satisfied ** scored on a Likert scale with 1 = not at all; 5 = very well

Students were also asked for their permission to use selected institutional data (ethnicity, gender, college of enrollment, predicted gpa, and fall semester grades and overall GPA) for research purposes. Ethnicity, gender, college of enrollment, and predicted gpa were used to control for pre-entry characteristics of students in the ROSES program.

Data Collection

During the week of December 1, 1997, the SACQ and ROSES Experiences Survey, along with a letter explaining the study, were distributed to all ROSES students. Students enrolled in the Engineering sections of the ROSES program were involved in a related research project; therefore, surveys were distributed as a part of the larger project through the ROSES seminar class. Surveys for the ROSES students enrolled in Agriculture and Natural Resources, and Natural Science received the surveys in their residence hall mailboxes. Participation in the study was voluntary for all students. Engineering students were asked to complete the surveys in class, while the other students were asked to return the completed surveys to the hall director's office by December 8, 1997. The ROSES seminar instructors agreed to award a bonus point toward students' in-class activity points for completing the surveys. This was one of several options available to students to earn extra points toward their seminar grade. Thus, when students turned in the completed surveys, they signed a slip of paper (separate from the surveys). The signed slips of paper were forwarded to the seminar instructors so that credit could be awarded.

The letter accompanying the surveys explicitly stated that responses and personal information would remain confidential and be used for research purposes only.

Data Analysis

The primary goal of data analysis was to determine relationships between students' experiences in the ROSES program and their adjustment to college. Bivariate analysis provided a general overview of relationships and tested for effects of background variables. Regression analysis was utilized to test the full model and to identify the experiences which were significant predictors of academic adjustment, social adjustment, and fall semester grade point average (gpa). The .05 alpha level of significance was used in both analyses; for regression results, .05 - .10 was also examined to determine marginally significant results.

Research Hypotheses

The following research hypotheses tested bivariate relationships and were tested using multiple regression:

- Students with a greater degree of participation with the academic components of the ROSES program will achieve higher academic adjustment, as measured by the academic adjustment subscale of the SACQ.
- There will be no significant difference in academic adjustment, as measured by the academic adjustment subscale of the SACQ, between students who participate more with the social components of the ROSES program and those who participate less.

- Students with a greater degree of participation with the social components of the ROSES program will achieve higher social adjustment, as measured by the social adjustment subscale of the SACQ.
- 4. There will be no significant difference in social adjustment, as measured by the social adjustment subscale of the SACQ, between students who participate more with the academic components of the ROSES program and those who participate less.
- 5. Students with a greater degree of participation with the academic components of the ROSES program will achieve higher full adjustment, as measured by the SACQ.
- 6. Students with a greater degree of participation with the social components of the ROSES program will achieve higher full adjustment, as measured by the SACQ.
- Students with a greater degree of participation with the academic components of the ROSES program will earn higher fall semester grade point averages.
- There will be no significant difference in the fall semester grade point average between students who participate more with the social components of the ROSES program and those who participate less.

Chapter 4

FINDINGS

The purpose of this study was to explore the contribution of a semester-long residential program combining academic and social experiences on student adjustment to college. Specifically, this study sought to determine the components of a living-learning program which best predict academic, social, and overall adjustment to college, and fall semester grade point average. Student participation with the components of the ROSES program was assessed by the ROSES Experiences Survey, a survey designed for this study. Adjustment to college was identified by the academic adjustment and social adjustment subscales, and the full adjustment score of the Student Adaptation to College Questionnaire (SACQ). Fall semester grades were obtained from institutional records. The data analysis and interpretation for the research questions and hypotheses are presented in this chapter. The chapter is divided into four sections: 1) description of the sample, 2) tests of bivariate relationships, 3) multiple regression analyses, and 4) summary of the findings.

Description of the Sample

Research instruments were distributed to 221 first year students who were enrolled in the Residential Option for Science and Engineering Students (ROSES) during fall semester, 1997. A total of 199 surveys were returned; representing a 90% response rate. Of the 199 surveys, 174 were complete and used in the statistical analyses, yielding a usable return rate of 79%.

Table 2 presents the frequency data for the demographic variables of gender, ethnicity, and college of enrollment for the survey respondents. Percentages do not total

one hundred percent due to rounding. The demographics (gender, ethnicity, and college of enrollment) of the survey respondents closely resembled that of the entire ROSES student population for fall semester, 1997.

Demographic Variable	Survey Re	espondents	All ROSES		
	Frequency	Percentage	Frequency	Percentage	
Gender					
Female	64	36.8	74	33.5	
Male	110	63.2	147	66.5	
Total	174	100.0	221	100.0	
Ethnicity					
Caucasian	147	84.5	184	83.3	
African American	11	6.3	17	7.7	
Hispanic	3	1.7	4	1.8	
Native American	3	1.7	4	1.8	
Asian American	9	5.2	11	5.0	
Other	1	.6	1	.5	
Total	174	100.0	221	100.0	
College					
Agriculture and Natural					
Resources	5	2.9	9	4.1	
Engineering	132	75.9	163	73.8	
Natural Science	37	21.3	49	22.2	
Total	174	100.0	221	100.0	

Table 2 - Distribution of Respondents by Gender, Ethnicity, and College of Enrollment

For purposes of data analysis, categories were created for the demographic variables of ethnicity and college of enrollment. Because of the small number of respondents in some of the racial/ethnic groups, ethnicity was divided into two categories: non-minority and minority. A one-way analysis of variance revealed no significant difference in predicted grade point average among the different groups within the minority category (F = 1.797; p > .05). Table 3 presents the mean predicted grade point averages for each racial/ethnic group, as well as the results of the ANOVA. Due to the small number of respondents enrolled in the College of Agriculture and Natural

Resources, their responses were combined with responses from the College of Natural Science to yield two categories for college of enrollment: Engineering and non-Engineering.

Table 3 – Analysis of Variance of Predicted Grade Point Average by Minority Group

Racial/Ethnic group	Predicted gpa
African American $(n = 11)$	2.61
Hispanic $(n = 3)$	2.81
Native American $(n = 3)$	2.57
Asian American $(n = 9)$	2.84
Other $(n = 1)$	3.22
Total $(n = 27)$	2.73
F = 1.787; p > .05	

Adjustment Scores for Respondents

All respondents completed the Student Adaptation to College Questionnaire (Baker & Siryk, 1989), which yields scores for academic adjustment, social adjustment, attachment, personal-emotional adjustment, and full adjustment. For this study, scores from the academic adjustment and social adjustment subscales, and the full score were used. Table 4 presents descriptive statistics for the adjustment scores for this sample. The descriptive statistics (i.e. means, standard deviations, and ranges) for the two subscales and the full score for this sample are similar to those obtained for samples from a number of colleges and universities throughout the United States (see Baker & Siryk, 1989). The scores for all of the adjustment scores are normally distributed, as indicated by measures of skewness and kurtosis. Skewness and kurtosis values between +/- 1.0 are considered excellent for psychometric purposes (George and Mallery, 1995).

Adjustment Score	n	Range	Mean	Std.	Skewness	Kurtosis
				Deviation		
Academic	174	77-201	140.14	23.21	.079	.259
Social	174	71-174	132.95	21.71	516	.010
Full	174	254-568	418.49	60.98	.009	421

 Table 4 - Descriptive Statistics for Adjustment Scores

Table 5 presents the intercorrelations among the two subscales and full adjustment score. The intercorrelations are similar to those obtained in other administrations of the SACQ (see Baker & Siryk, 1989). Baker and Siryk (1989) assert that the "... correlations are large enough to indicate that the subscales are indeed measuring a common construct, but small enough to support the conceptualization of that construct as having different facets as represented by the subscales" (p.34).

Table 5 – Correlations Among Academic, Social, and Full Adjustment

	Academic	Social	Full
Academic	1	.446**	.826**
Social	.446**	1	.806**
Full	.826**	.806**	1
Note ==	174. **** < (11	

Note. n = 174; **p < .01

Adjustment Scores and Background Variables

Descriptive and inferential statistics are presented for the adjustment scores and the background variables of gender, ethnicity, college of enrollment, and predicted grade point average.

Gender

Table 6 indicates the mean adjustment scores for males and females, and provides the results of two-tailed t-tests for each adjustment score and gender. The t-tests revealed that females scored significantly higher on the academic adjustment subscale (t = 2.31;

that females scored significantly higher on the academic adjustment subscale (t = 2.31; $\underline{p} < .05$). There were no gender effects for the social adjustment subscale or the full score.

Adjustment Score	Ma n =	Males n = 110		ales 64		
	x	sd	x	sd	t	prob.
Academic	137.02	22.21	145.52	24.07	2.31	.02*
Social	131.70	20.43	135.11	23.76	.96	.34
Full	411.78	59.53	430.03	62.18	1.90	.06
* <u>p</u> <.05				· · · · · · · · · · · · · · · · · · ·		

Table 6 - T-tests of Means of Adjustment Scores by Gender

Ethnicity

Table 7 presents the mean adjustment scores for non-minority and minority students, as well as the results of two-tailed t-tests. There were no significant differences in adjustment scores between non-minority and minority participants in the ROSES program.

Adjustment Scores Non-minority Minority n = 147 n= 27 sd x sd prob. x t 140.60 Academic 22.60 137.67 26.62 .538 .59 Social 132.15 21.85 137.33 20.78 -1.182 .25 Full 418.73 59.92 417.33 67.67 .108 .92

Table 7 - T-tests of Means of Adjustment Scores by Ethnicity

College of Enrollment

Table 8 presents the means for adjustment scores for students enrolled in the

College of Engineering and those who were not in the College of Engineering, as well as

the results of two-tailed t-tests. There were no significant differences in the adjustment scores between students in the College of Engineering and those who were not in the College of Engineering.

Adjustment Scores	Engin n =	eering 132	Non-Engineering n = 42			
	x	sd	x	sd	t	prob.
Academic	140.07	23.86	140.38	21.32	080	.94
Social	132.92	21.18	133.07	23.56	038	.97
Full	418.09	62.44	419.76	56.85	162	.87

Table 8 - T-tests of Means of Adjustment Scores by College

Predicted Grade Point Average

Predicted grade point average is based upon high school grade point average, test scores (ACT or SAT), and the quality of the high school attended. The median predicted grade point average for all respondents was 2.81, which was used to divide the respondents into two groups. Table 9 presents the means for adjustment scores for students with a predicted grade point average of 2.81 or higher and those with a predicted grade point average below a 2.81, as well as the results of two-tailed t-tests. Students in the higher predicted GPA group scored significantly higher on the academic adjustment subscale than students in the lower predicted GPA group (t = 2.276; $\underline{p} < .05$). There were no predicted grade point average effects on the social adjustment subscale or full score.

Adjustment Scores	Predicted GPA ≥ 2.81 n = 85		Predict < 2 n =	ed GPA 2.81 = 87		
	x	sd	x	sd	t	prob.
Academic	144.29	25.72	136.30	20.06	2.276	.02*
Social	133.86	21.72	131.66	21.72	.664	.51
Full	426.47	67.19	410.52	54.19	1.716	.09

Table 9 - T-tests of Means of Adjustment Scores by Predicted Grade Point Average

*<u>p</u><.05

<u>Summary</u>

Academic adjustment scores were significantly higher for females (t = 2.31; <u>p</u> < .05) and for respondents with predicted GPAs of 2.81 or higher (t = 2.276; <u>p</u> < .05). There were no significant effects for any of the other background variables.

Fall Semester Grade Point Averages for Respondents

Fall semester grade point averages for all respondents ranged from .38 to 4.0, with the mean for the group being 2.86. This was very close to the 2.81 predicted grade point average for the entire group.

Fall Semester Grade Point Average and Background Variables

Descriptive and inferential statistics are presented for fall semester grade point average and the background variables of gender, ethnicity, college of enrollment, and predicted grade point average.

Gender

The fall semester grade point average for females was 3.03, which was significantly higher than the 2.76 fall grade point average for males (t = 2.34; p < .05),

even though there were no significant differences between the predicted grade point averages for males and females (see Table 10).

	Females n = 64		Males n = 110			
	x	sd	x	sd	t	prob.
Predicted Grade						
Point Average	2.81	.257	2.80	.317	.33	.74
Fall Semester Grade						
Point Average	.03	.688	2.76	.797	2.34	.02*

Table 10 - T-test of Means for Grade Point Averages by Gender

*<u>p</u><.05

Ethnicity

Non-minority students had a fall semester grade point average of 2.93, which was significantly higher than the 2.51 received by minority students (t = .64; p < .05). There was no significant difference in the predicted grade point average between minority and non-minority respondents (see Table 11).

	Non-minority n = 147		$\begin{array}{c} \text{Minority} \\ n = 27 \end{array}$			
	x	sd	x	sd	t	prob.
Predicted Grade Point				······································		
Average	2.82	.293	2.73	.302	1.391	.17
Fall Semester Grade						
Point Average	2.93	.675	2.51	1.103	2.63	.01*
* <u>p</u> <.05						

College of Enrollment

A two-tailed t-test revealed no significant difference in the fall semester grade point averages between students enrolled in Engineering and students not in Engineering, even though the predicted grade point average for students in Engineering was significantly higher than students not in Engineering (t = 2.034; <u>p</u> < .05). The means and results of the t-tests are presented in Table 12.

	Engin n =	eering 132	Non- Engineering n = 42			
	x	sd	x	sd	t	prob.
Fall Semester						
Grade Point						
Average	2.87	.803	2.84	.654	.192	.85
Predicted Grade						
Point Average	2.83	.293	2.72	.293	2.034	.05*
* 05						

Table 12 - T-Tests for Fall Grade Point Averages by College

*<u>p</u>=.05

Predicted Grade Point Average

Students with higher predicted grade point averages earned a fall semester grade point average of 3.14, which was significantly higher than the 2.61 fall grade point average earned by respondents who had lower predicted grade point averages (t = 4.798; <u>p</u> < .01). Table 13 presents the mean grade point averages and the results of a two-tailed t-test.

	Predict ≥ 2	Predicted GPA ≥ 2.81		ted GPA 2.81		
	n =	85	n = 87			
	x	sd	x	sd	t	prob.
Fall Semester						
GPA	3.14	.669	2.61	.769	4.798	.00**

Table 13 - T-Test for Fall Semester Grade Point Average by Predicted GPA

**<u>p</u><.01

Summary

Fall semester grade point averages were significantly higher for females (t = 2.34; $\underline{p} < .05$), non-minority respondents (t = 2.64; $\underline{p} < .01$), and for respondents with higher predicted grade point averages (t = 4.798; $\underline{p} < .01$).

ROSES Experiences Survey Data for Respondents

All respondents completed a ROSES Experiences Survey, which was designed for this study. The purpose of the survey was to ascertain the levels of involvement by the respondents in the various components of the ROSES program. Some of these components are unique to the ROSES program and are not available to other students at the university. For purposes of this study, these components are considered directly related to the ROSES program. There are other activities that most students are engaged in, such as spending time in class. Though they are only indirectly related to the ROSES program, the programmatic design and emphasis of the ROSES program suggested that these components also be explored for their contribution to adjustment and grade point average. The components were grouped into two categories: academic and social.

The academic components included the directly related components of students' satisfaction with the contact with their academic adviser, how well students felt their

ROSES seminar instructor knew them, and the degree to which students felt the ROSES program had helped them academically. These components were scored on a Likert scale. The academic components indirectly related to the ROSES program included the number of hours spent in academic activities (i.e. class, studying).

The social components directly related to the ROSES program included whether or not the roommate was in the ROSES program; the proportion of time students spent studying with other ROSES students; and the degree to which they felt the ROSES program had helped them socially. The indirect social components included whether students knew their roommate prior to attending MSU; their satisfaction with their roommate relationship and with the contact with a resident assistant; and the number of hours students spent in non-instructional activities (i.e. work, student groups, community service). Satisfaction items were scored on a Likert scale.

The final component is the ROSES seminar, a unique component required of all ROSES students. The seminar grade was based on an accumulation of points students earned for attending class, attending evening seminars in the residence hall, and completing in-class and out-of-class assignments. The grade received in the seminar serves as a reasonable proxy of the degree to which students were involved in the seminar. Table 14 presents descriptive statistics for the academic and social components of the ROSES program, as well as the ROSES seminar grade.

ROSES Component	N	Range	Mean	Std.
_		_		Deviation
ACADEMIC				
Class (hours/week)	172	0-30	14.9	4.0
Study (hours/week)	173	1-45	15.2	8.28
Satisfied with adviser	173	0-5*	3.1	1.53
Known by ROSES instructor	173	1-5**	2.7	1.02
ROSES helped academically	173	1-5**	3.0	1.21
SOCIAL				
Involvement (hours/week)	174	0-41	8.8	7.64
Study with ROSES (proportion)	172	.0075	.17	.17
Satisfied with roommate	172	0-5*	3.7	1.39
Satisfied with RA	173	0-5*	3.9	1.28
ROSES helped socially	173	1-5**	3.4	1.31
ROSES seminar grade (4.0 scale)	174	0.0-4.0	3.6	.81

 Table 14 - Descriptive Statistics for ROSES Components

Note. * scored on a Likert scale and recoded with 0 = does not apply; 5 = very satisfied ** scored on a Likert scale with 1 = not at all; 5 = very well

ROSES Experiences Survey and Background Variables

Descriptive and inferential statistics are presented for the measures associated with the ROSES components and the background variables of gender, ethnicity, college of enrollment, and predicted grade point average.

Gender

Table 15 presents the mean responses for each of the ROSES components for males and females, and provides the results of two-tailed t-tests for each item and gender. The t-tests revealed that females were significantly more satisfied with their contact with an academic adviser (t = 2.28; $\underline{p} < .05$). Females were also more positive than males in their feeling that the ROSES program had helped them academically (t = 4.20; $\underline{p} < .01$) and socially (t = 4.89; p < .01).

ROSES Component	Males		Females			
	n=110		n=64			
	x	sd	x	sd	1	prob.
ACADEMIC						
Class (hours/week)	15.0	3.68	14.7	4.51	.502	.62
Study (hours/week)	14.6	8.86	16.1	7.15	1.238	.22
Satisfied with adviser	2.9	1.54	3.5	1.46	2.276	.02*
Known by ROSES instructor	2.7	1.04	2.8	.96	.706	.48
ROSES helped academically	2.7	1.26	3.5	.96	4.201	.00**
SOCIAL						
Involvement (hours/week)	9.1	7.65	8.2	7.67	.799	.43
Study with ROSES (proportion)	.18	.17	.16	.18	.700	.49
Satisfied with roommate	3.6	1.29	3.8	1.55	.722	.47
Satisfied with RA	3.9	1.29	3.8	1.28	.383	.70
ROSES helped socially	3.1	1.34	4.0	1.01	4.888	.00**
ROSES seminar grade	3.6	.88	3.8	.64	1.769	.08
+ 0.4 ++ 0.4						

Table 15 - Means of ROSES Components by Gender

*<u>p</u><.05; **<u>p</u><.01

Ethnicity

Table 16 presents the mean responses for the ROSES components for nonminority and minority respondents, as well as the results of two-tailed t-tests. The only significant difference between non-minority and minority students was the ROSES seminar grade (t = 3.44; p < .01) with non-minority students earning significantly higher grades in the seminar than minority students.

ROSES Component	Non-minority		Minority			
	n = 14/		n = 27			
	x	sd	x	sd	t	prob.
ACADEMIC						
Class (hours/week)	14.9	3.89	14.8	4.64	.175	.86
Study (hours/week)	15.2	8.11	15.1	9.32	.042	.97
Satisfied with adviser	3.1	1.50	3.2	1.69	.178	.86
Known by ROSES instructor	2.7	1.01	2.8	1.09	.352	.73
ROSES helped academically	3.0	1.21	3.2	1.21	.784	.43
SOCIAL						
Involvement (hours/week)	8.5	7.67	10.5	7.43	1.299	.20
Study with ROSES (proportion)	.16	.17	.23	.19	1.557	.13
Satisfied with roommate	3.7	1.40	3.7	1.41	.001	.99
Satisfied with RA	3.9	1.25	3.7	1.44	.632	.53
ROSES helped socially	3.4	1.30	3.6	1.37	.784	.43
ROSES seminar grade	3.7	.61	3.2	1.38	3.437	.00*

Table 16 - Means of ROSES Components by Ethnicity

*<u>p</u><.01

College of Enrollment

The means for the ROSES components for students enrolled in the College of Engineering and those not enrolled in Engineering are presented in Table 17, as well as the results of two-tailed t-tests. The t-tests revealed that students enrolled in the College of Engineering were significantly less satisfied with their contact with an academic adviser (t = 3.405; p < .01) than were non-engineering students. The non-engineering students were also more positive in their feeling that the ROSES program had helped them academically (t = 5.224; p < .01); and socially (t = 3.251; p < .01).

ROSES Component	Engineering		Non-Engineering			
	n = 132		n = 42			
	x	sd	x	sd	t	prob.
ACĂDEMIC						
Class (hours/week)	14.9	3.96	14.8	4.16	.149	.88
Study (hours/week)	14.7	8.19	16.7	8.46	1.383	.17
Satisfied with adviser	2.9	1.56	3.8	1.17	3.405	.00**
Known by ROSES instructor	2.6	1.00	2.9	1.05	1.566	.12
ROSES helped academically	2.8	1.19	3.8	.92	5.224	.00**
SOCIAL						
Involvement (hours/week)	8.5	6.96	9.8	9.51	.828	.41
Study with ROSES (proportion)	.17	.16	.19	.20	.648	.52
Satisfied with roommate	3.7	1.33	3.7	1.60	.098	.92
Satisfied with RA	3.8	1.34	4.0	1.07	.944	.35
ROSES helped socially	3.2	1.34	3.9	1.08	3.251	.00**
ROSES seminar grade	3.6	.83	3.6	.72	.020	.98

Table 17 - Means of ROSES Components by College

**<u>p</u><.01

Predicted Grade Point Average

The median of all predicted grade point averages (2.81) was used to divide the respondents into two groups: those with predicted grade point averages greater than or equal to 2.81 and those with predicted grade point averages below 2.81. The means for the ROSES components for respondents in the two categories are presented in Table 18, as well as the results of two-tailed t-tests. The t-tests revealed that respondents with a predicted grade point average of 2.81 or higher felt significantly more well known by their ROSES instructor (t = 2.38; $\underline{p} < .05$); reported spending significantly more hours per week in class (t = 1.987; $\underline{p} = .05$), and earned a significantly higher grade in the ROSES seminar class (t = 2.616; $\underline{p} < .05$).

ROSES Component	Predicted GPA ≥ 2.81		Predicted GPA < 2.81			
	n =	84	n = 87			
	x	sd	x	sd	t	prob.
ACADEMIC						
Class (hours/week)	15.54	4.45	14.32	3.46	1.987	.05*
Study (hours/week)	16.36	8.63	13.98	7.88	1.881	.06
Satisfied with adviser	3.30	1.45	2.94	1.58	1.530	.13
Known by ROSES instructor	2.89	1.01	2.53	1.00	2.38	.02**
ROSES helped academically	3.06	1.28	2.98	1.15	.442	.66
SOCIAL						
Involvement (hours/week)	9.56	7.91	7.71	6.93	1.632	.10
Study with ROSES (proportion)	.15	.14	.19	.20	1.519	.13
Satisfied with roommate	3.81	1.43	3.59	1.38	1.007	.32
Satisfied with RA	3.93	1.34	3.77	1.23	.805	.42
ROSES helped socially	3.48	1.27	3.35	1.31	.645	.52
ROSES seminar grade	3.81	.58	3.49	.94	2.616	.01**

Table 18 - Means of ROSES	Components b	y Predicted GPA
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*<u>p</u>=.05; **<u>p</u><.05

Summary

Comparisons of mean differences on gender, ethnicity, predicted GPA, and college of enrollment showed significant differences in the degree of participation in the ROSES program. Females (t = 2.276; $\underline{p} < .05$) and non-Engineering students (t = 3.405; $\underline{p} < .01$) were significantly more satisfied with the contact with an academic adviser. Females (t = 4.201; $\underline{p} < .01$) and non-Engineering students (t = 5.224; $\underline{p} < .01$) were also significantly more positive about the degree to which they felt the ROSES program had helped them academically. Females (t = 4.888; $\underline{p} < .01$) and non-Engineering students (t = 3.251; $\underline{p} < .01$) were significantly more positive about the degree to which they felt the ROSES program had helped them socially as well. Students with a predicted grade point average of 2.81 or higher felt known by their ROSES instructor to a significantly higher degree than those students with a predicted grade point average below a 2.81

(t = 2.38; <u>p</u> < .05). Finally, minority students (t = 3.437; <u>p</u> < .01) and students with a predicted grade point average below a 2.81 (t = 2.616; <u>p</u> < .05) received significantly lower grades in the ROSES seminar class.

Research Questions and Hypotheses

Two research questions guided this study: 1) Do individual components of the ROSES program contribute differentially to academic adjustment, social adjustment, full adjustment, and fall semester grade point average; and 2) Which components of the ROSES program make the most significant contributions to predicting academic adjustment, social adjustment, full adjustment, and fall semester grade point average.

Research hypotheses were stated in Chapter 3. In this chapter, they are formulated as statistical hypotheses stated in the null form to test relationships between individual components of the ROSES program and adjustment and fall semester grade point average.

Results

The relationships between individual components of the ROSES program and two sets of outcomes-- adjustment scores (academic, social, and full) and fall semester grade point average-- were explored. Bivariate analyses between individual variables and outcomes provided a general overview of these relationships. To test relationships between individual components and outcomes, respondents were split into two groups at the median: those who had a greater degree of participation with the component and those who had a lesser degree of participation with the component. Multiple regression was used to identify significant determinants of adjustment and of fall semester grade point average.
Academic Adjustment

The academic components directly related to the ROSES program included satisfaction with the contact with an academic adviser, the degree to which students felt known by their ROSES seminar instructor, and the degree to which students felt the ROSES program had helped them academically (i.e. classes, studying). Indirect academic components included the number of hours per week students reported being in class and studying. Table 19 presents the means for academic adjustment for the two groups, as well as the results of t-tests.

Hypothesis 1:

There is no difference in academic adjustment scores, as measured by the academic adjustment subscale of the SACQ, between students with a greater degree of participation in any of the academic components directly related to the ROSES program and those with a lesser degree of participation.

Satisfaction with adviser:

A two-tailed t-test revealed no significant difference in academic adjustment scores between those who were more satisfied and those who were less satisfied with the contact with an academic adviser (t = 1.177; <u>p</u> > .05).

Feeling known by the ROSES instructor:

There was no significant difference in academic adjustment scores for students who felt known to a greater degree by their ROSES instructor and those who felt known to a lesser degree (t = 1.692; p > .05).

Feeling that the ROSES program helped academically:

There was no significant difference in academic adjustment scores between students who were most positive and those who were less positive in their feeling that the ROSES program had helped them academically (t = 1.859; <u>p</u> > .05). Hypothesis 1 is accepted. None of the academic components that were directly related to the ROSES program were significantly related to academic adjustment scores.

Hypothesis 2:

There is no difference in academic adjustment scores, as measured by the academic adjustment subscale of the SACQ, between students with a greater degree of participation in any of the academic components indirectly related to the ROSES program and those with a lesser degree of participation.

Hours per week in class:

Students who reported being in class 15 hours per week or more achieved significantly higher academic adjustment scores than students who were in class for less than 15 hours per week (t = 2.044; <u>p</u> < .05).

Hours per week studying:

Students who reported studying 15 hours per week or more achieved significantly higher academic adjustment scores than students who studied less than 15 hours per week (t = 2.582; p < .05).

Hypothesis 2 is rejected. The academic components indirectly related to the ROSES program were significantly related to academic adjustment. Students who spent more hours per week in class achieved significantly higher academic adjustment (t = 2.044; p < .05), as did students who spent more hours per week studying (t = 2.582; p < .05).

ROSES	ROSES Academic		emic		
Component		Adjus	tment		
		x	sd	1	prob.
Satisfied with adviser	≥ 3	141.27	22.68		
	< 3	136.07	24.99	1.177	.24
Known by ROSES instructor	≥ 3	142.66	23.40		
	< 3	136.68	22.79	1.692	.09
ROSES helped academically	≥ 3	142.33	22.79		
	< 3	135.22	23.72	1.859	.07
Hours per week in class	≥ 15	142.78	24.19		
-	< 15	135.54	21.08	2.944	.04*
Hours per week studying	≥ 15	144.34	22.48		
	< 15	135.29	23.36	2.582	.01*
+ . 05					

Table 19-T-tests for Participation with Academic Components and Academic Adjustment

*<u>p</u><.05

The social components unique to the ROSES program included having a ROSES roommate, studying with other ROSES students, satisfaction with the contact with a resident assistant, and feeling that the ROSES program had helped socially (i.e. meeting people, getting involved). The social components indirectly related to the ROSES program included knowing one's roommate prior to attending MSU, satisfaction with the roommate relationship, and the number of hours per week students were involved in non-instructional activities (i.e. student groups, work, community service). Table 20 presents the means for academic adjustment as well as the results of t-tests for participation with the social components of the ROSES program and academic adjustment.

Hypothesis 3:

There is no difference in academic adjustment scores, as measured by the academic adjustment subscale of the SACQ, between students with a greater degree of participation in any of the social components directly related to the ROSES program and those with a lesser degree of participation.

ROSES roommate:

There was no significant difference in the academic adjustment scores between students who had a roommate who was also in the ROSES program and those whose roommate was not in the ROSES program (t = 1.303; p > .05).

Studying with ROSES students:

There was no significant different in academic adjustment scores between students who studied more with other ROSES students and those who studied less with other ROSES students (t = -.866; p > .05).

Satisfaction with resident assistant:

There was no significant difference between students who were more satisfied with the contact with a resident assistant and those who were less satisfied (t = .310;

p > .05).

Feeling that the ROSES program helped socially:

There was no significant difference in academic adjustment scores between students who were more positive that the ROSES program had helped them socially and those who were less positive (t = .823; p > .05).

Hypothesis 3 is accepted. None of the social components directly related to the ROSES program were significantly related to academic adjustment.

Hypothesis 4:

There is no difference in academic adjustment scores, as measured by the academic adjustment subscale of the SACQ, between students with a greater degree of participation in any of the social components indirectly related to the ROSES program and those with a lesser degree of participation.

Prior knowledge of roommate:

Students who knew their roommate before attending MSU scored an average of 149.07 on the academic adjustment subscale which was significantly higher than the 137.42 scored by those who did not know their roommate prior to attendance (t = -2.214; p < .05).

Satisfaction with roommate relationship:

There was no significant difference in academic adjustment scores between students who were more satisfied with their roommate relationship and those who were less satisfied (t = -.746; p > .05).

Involvement:

There was no significant difference in academic adjustment scores between students who were involved for three hours per week or more in non-instructional activities and those who were involved for less than three hour per week (t = -.069; p > .05).

Hypothesis 4 is rejected. Prior knowledge of one's roommate was significantly related to academic adjustment (t = -2.214; p < .05). No other indirect social component of the ROSES program was related to academic adjustment.

ROSES		Academic			
Component		Adjus	stment		
		x	s.d.	t	prob.
ROSES roommate	Yes	138.28	22.61		
	No	144.76	25.12	1.303	.20
Proportion study with ROSES	≥.13	138.74	23.39		
	< .13	141.83	23.30	866	.39
Satisfaction with RA	≥4	140.41	23.00		
	< 4	139.15	24.18	.310	.76
ROSES helped socially	≥ 4	141.45	23.44		
	< 4	138.54	23.10	.823	.41
Prior knowledge of roommate	Yes	149.07	26.49		
	No	137.42	21.97	-2.214	.03*
Satisfaction with roommate	≥4	139.15	24.23		
	< 4	141.75	21.36	716	.48
Hours per week involved	≥ 3	140.03	23.80		
-	< 3	140.28	22.65	069	.95

Table 20 - T-tests for Participation with Social Components and Academic Adjustment

* **p** < .05

Social Adjustment

The social components unique to the ROSES program included having a ROSES roommate, studying with other ROSES students, satisfaction with the contact with a resident assistant, and feeling that the ROSES program had helped socially (i.e. meeting people, getting involved). The social components indirectly related to the ROSES program included knowing one's roommate prior to attending MSU, satisfaction with the roommate relationship, and the number of hours per week students were involved in non-instructional activities (i.e. student group, work, community service).

Two-tailed t-tests were conducted to test for differences in social adjustment scores. For continuous variables, respondents were split into two groups at the median: those who had a greater degree of participation with the component and those who had a lesser degree of participation with the component. Table 21 presents the means for social adjustment for the two groups, as well as the results of two-tailed t-tests.

Hypothesis 5:

There is no difference in social adjustment scores, as measured by the social adjustment subscale of the SACQ, between students with a greater degree of participation in the social components directly related to the ROSES program and those with a lesser degree of participation.

ROSES roommate:

There was no significant difference in social adjustment scores between students who had roommates who were also participating in the ROSES program and those whose roommates were not in the ROSES program (t = .402; $\underline{p} > .05$).

Studying with ROSES students:

A t-test revealed no significant difference in social adjustment between students who studied more with other ROSES students, and those who studied less with other ROSES students (t = .597; $\underline{p} > .05$).

Satisfaction with resident assistant:

Students who were more satisfied with the contact with a resident assistant scored an average of 135.59 on the social adjustment subscale, which was significantly higher that the average score of 128.16 for students who were less satisfied (t = 2.605;

<u>p</u><.05).

Feeling that the ROSES program helped socially:

Students who were more positive that the ROSES program had helped them socially scored an average of 136.37 on the social adjustment subscale which was significantly higher than the average score of 128.88 achieved by the students who were less positive (t = 2.266; p < .05).

Hypothesis 5 is rejected. Feeling that the ROSES program had helped socially was significantly related to social adjustment (t = 2.266; p < .05), as was satisfaction with the contact with a resident assistant (t = 2.605; p < .05). The two remaining social components of the ROSES program were not significantly related to social adjustment.

Hypothesis 6:

There is no difference in social adjustment scores, as measured by the social adjustment subscale of the SACQ, between students with a greater degree of participation in the social components indirectly related to the ROSES program and those with a lesser degree of participation.

Prior knowledge of roommate:

Students who knew their roommate prior to attending MSU had an average score of 142.31 on the social adjustment subscale, which was significantly higher that the average score of 131.55 for the students who did not know their roommate prior to attendance (t = 2.50; $\underline{p} < .05$).

Satisfaction with roommate relationship:

Students who were more satisfied with their roommate relationship scored an average of 135.47 on the social adjustment subscale, which was significantly higher than the average score of 128.16 for the students who were less satisfied with their roommate relationship (t = 2.037; p < .05).

Involvement:

There was no significant difference in the social adjustment scores between students who reported being involved in non-instructional activities for three hours per week or more and those who were involved less than three hours per week (t = 1.336; $\underline{p} > .05$).

Hypothesis 6 is rejected. Two of the indirect components of the ROSES program were significantly related to social adjustment: knowing one's roommate prior to attendance (t = 2.50; $\underline{p} < .05$); and satisfaction with one's roommate relationship (t = 2.037; $\underline{p} < .05$). Involvement in non-curricular activities was not significantly related to social adjustment.

ROSES		Social			
Component		Adju	Adjustment		
		x	s.d.	t	prob.
ROSES roommate	Yes	132.55	22.30		
	No	137.43	18.18	1.27	.21
Proportion study with ROSES	≥.13	133.68	19.22		
	< .13	131.70	24.23	.597	.55
Satisfaction with RA	≥4	135.59	20.83		
	< 4	125.68	22.76	2.605	.01*
ROSES helped socially	≥4	136.37	20.62		
	< 4	128.88	22.55	2.266	.03*
Prior knowledge of roommate	Yes	142.31	20.98		
	No	131.55	21.39	2.50	.02*
Satisfaction with roommate	≥4	135.47	20.92		
	< 4	128.16	22.56	2.037	.04*
Hours per week involved	≥ 3	134.99	20.90		
-	< 3	130.56	22.44	1.336	.18

Table 21 - T-tests for Participation with Social Components and Social Adjustment

*<u>p</u><.05

Hypothesis 7:

There is no difference in social adjustment scores, as measured by the social adjustment subscale of the SACQ, between students with a greater degree of participation in any of the academic components directly related to the ROSES program and those with a lesser degree of participation.

Satisfaction with adviser:

There was no significant difference in social adjustment scores between students who were more positive and those who were less positive about their satisfaction with the contact with an academic adviser (t = -.679; p > .05).

Feeling known by the ROSES instructor:

Students who felt known to a greater degree by their ROSES instructor scored an average of 136.23 on the social adjustment subscale which was significantly higher than the 128.53 scored by those who felt known to a lesser degree (t = 2.337; p < .05).

Feeling that the ROSES program helped academically:

There was no significant difference in adjustment scores between students who were most positive and those who were less positive in their feeling that the ROSES program had helped them academically (t = 1.738; p > .05).

Hours per week in class:

There was no significant difference in social adjustment scores between students who reported being in class 15 hours per week or more and those who were in class for less than 15 hours per week (t = .850; $\underline{p} > .05$).

Hours per week studying:

There was no significant difference in social adjustment scores between students who reported studying 15 hours per week or more and those who studied less than 15 hours per week (t = .264; p > .05).

Hypothesis 7 is rejected. The degree to which students felt known by their ROSES seminar instructor was significantly related to social adjustment (t = 2.337;

p < .05). None of the other academic components of the ROSES program were related to social adjustment. Table 22 presents the means for social adjustment for the two groups, as well as the results of t-tests for participation with the academic components and social adjustment.

ROSES		Social			
Component		Adju	stment		
		x	s.d.	t	prob.
Satisfied with adviser	≥ 3	132.31	22.22		
	< 3	134.85	20.28	679	.50
Known by ROSES instructor	≥3	136.23	19.33		
	< 3	128.53	24.01	2.337	.02*
ROSES helped academically	≥ 3	134.94	20.67		
	< 3	128.51	23.54	1.738	.09
Hours per week in class	≥ 15	133.77	21.78		
-	< 15	130.84	21.63	.850	.40
Hours per week studying	≥ 15	133.31	20.16		
	< 15	132.42	23.65	.264	.79

Table 22 - T-tests for Participation with Academic Components and Social Adjustment

*p < .05

Full Adjustment

To test the relationships between the ROSES components and overall adjustment

to college, t-tests between the academic and social components, and full adjustment

scores were conducted.

Hypothesis 8:

There is no difference in full adjustment scores, as measured by the SACQ, between students with a greater degree of participation in any of the academic components directly related to the ROSES program and those with a lesser degree of participation. The academic components directly related to the ROSES program are: satisfaction with an adviser, feeling known by the ROSES seminar instructor, and feeling that the ROSES program had helped academically.

Satisfaction with adviser:

There was no significant difference in full adjustment scores between those who were more satisfied and those who were less satisfied with the contact with an academic adviser (t = -.1731 p > .05).

Feeling known by the ROSES instructor:

Students who reported a greater feeling of being known by their ROSES instructor achieved significantly higher full adjustment scores that students who reported feeling less well known by the ROSES instructor (t = 2.151; p < .05).

Feeling that the ROSES program helped academically:

There was no significant difference in full adjustment scores between students who were most positive and those who were less positive in their feeling that the ROSES program had helped them academically (t = 1.768; <u>p</u> > .05).

Hypothesis 8 is rejected. Feeling known by the ROSES instructor was significantly related to full adjustment (t = 2.151; p < .05). The other two direct academic components were not related to full adjustment.

Hypothesis 9:

There is no difference in full adjustment scores, as measured by the SACQ, between students with a greater degree of participation in any of the academic components indirectly related to the ROSES program and those with a lesser degree of participation. Academic components that are indirectly related to the ROSES program are the number of hours per week students report being in class, and the number of hours per week students report studying.

Hours per week in class:

There was no significant difference in full adjustment scores for students who reported being in class 15 hours per week or more and those who reported being in class for less than 15 hours per week (t = 1.536; <u>p</u> > .05).

Hours per week studying:

There was no significant difference in full adjustment scores for students who reported studying 15 hours per week or more and those who reported studying less than 15 hours per week (t = 1.622; p > .05).

Hypothesis 9 is accepted. Neither the number of hours per week in class nor the hours per week spent studying was significantly related to full adjustment. Table 23 presents the means for full adjustment for the two groups, as well as the results of t-tests for participation with the academic components and full adjustment.

ROSES		Full			
Component		Adju	stment		
		x	s.d.	t	prob.
Satisfied with adviser	≥ 3	417.82	61.36		
	< 3	419.73	60.87	173	.86
Known by ROSES instructor	≥ 3	426.94	59.76		
	< 3	406.92	61.32	2.151	.03*
ROSES helped academically	≥3	424.03	58.64		
	< 3	405.87	64.84	1.768	.08
Hours per week in class	≥ 15	423.59	62.42		
-	< 15	408.92	58.54	1.536	.13
Hours per week studying	≥ 15	425.47	58.13		
	< 15	410.28	63.96	1.622	.11

Table 23 - T-tests for Participation with Academic Components and Full Adjustment

*<u>p</u><.05

Hypothesis 10:

There is no difference in full adjustment scores, as measured by the SACQ, between students with a greater degree of participation in any of the social components directly related to the ROSES program and those with a lesser degree of participation.

The social components unique to the ROSES program were having a

ROSES roommate, studying with other ROSES students, being satisfied with the

contact with a resident assistant, and feeling that the ROSES program had helped

socially (i.e. meeting people, getting involved).

ROSES roommate:

There was no significant difference in full adjustment scores between

students who had roommates who were also participating in the ROSES program

and those whose roommates were not in the ROSES program (t = 1.272; $\underline{p} > .05$).

Studying with ROSES students:

There was no significant difference in full adjustment scores between students who spent a greater proportion of their total study time studying with other ROSES students and those who studied less with other ROSES students (t = -.562; p > .05).

Satisfaction with resident assistant:

There was no significant difference in full adjustment scores between students who were more satisfied with the contact with a resident assistant and those who were less satisfied (t = 1.721; p > .05).

Feeling that the ROSES program helped socially:

There was no significant difference in full adjustment scores between students who were more positive and those who were less positive in their feeling that the ROSES program had helped them socially (t = 1.333; <u>p</u> > .05).

Hypothesis 10 is accepted. None of the social components directly related to the ROSES program were significantly related to full adjustment.

Hypothesis 11:

There is no difference in full adjustment scores, as measured by the SACQ, between students with a greater degree of participation in any of the social components indirectly related to the ROSES program and those with a lesser degree of participation.

The social components indirectly related to the ROSES program included knowing one's roommate prior to attending MSU, satisfaction with the roommate relationship, satisfaction with the contact with a resident assistant, and the number of hours per week students were involved in non-instructional activities (i.e. student groups, work, community service).

Prior knowledge of roommate:

Students who knew their roommate prior to attending MSU scored an average of 449.93 on the full adjustment scale which was significantly higher than the 410.89 achieved by the students who did not know their roommate prior to attending MSU (t = -3.102; $\underline{p} < .05$).

Satisfaction with roommate relationship:

There was no significant difference in full adjustment scores between students who were more satisfied with their roommate relationship and those who were less satisfied with their roommate relationship (t = .777; <u>p</u> > .05).

Involvement:

There was no significant difference in full adjustment scores between students who reported being involved in non-instructional activities for three hours per week or more and those who were involved less than three hours per week (t = .341; <u>p</u> > .05).

Hypothesis 11 is rejected. Knowing one's roommate prior to attending MSU was significantly related to full adjustment (t = -3.102; $\underline{p} < .05$). None of the other indirect social components were related to full adjustment. Table 24 presents the means for full adjustment for the two groups, as well as the results of t-tests for participation with the social components of the ROSES program and full adjustment.

ROSES		F	Full		
Component		Adjus	stment		
		x	s.d.	t	prob.
ROSES roommate	Yes	430.43	60.31		
	No	414.90	61.38	1.272	.21
Proportion study with ROSES	≥.13	415.87	59.32		
	< .13	421.16	63.67	562	.58
Satisfaction with RA	≥4	423.24	59.76		
	< 4	404.91	63.20	1.721	.09
ROSES helped socially	≥4	424.12	60.96		
	< 4	411.76	60.92	1.333	.18
Prior knowledge of roommate	Yes	449.93	59.14		
	No	410.89	62.07	-3.102	.00**
Satisfaction with roommate	≥4	420.89	60.58		
	< 4	413.04	62.83	.777	.44
Hours per week involved	≥3	419.96	59.91		
-	< 3	416.78	62.55	.341	.73

Table 24 - T-tests for Participation with Social Components and Full Adjustment

** <u>p</u><.01

Fall Semester Grade Point Average

To test for differences in fall semester grade point average, medians were used to divide respondents into two groups: those who had a greater degree of participation with

the ROSES components and those who had a lesser degree of participation.

Hypothesis 12:

There is no difference in fall grade point average between students with a greater degree of participation in any of the academic components directly related to the ROSES program and those with a lesser degree of participation.

The academic components directly related to the ROSES program are: satisfaction

with an adviser, feeling known by the ROSES seminar instructor, and feeling that the

ROSES program had helped academically.

Satisfaction with adviser:

There was no significant difference in fall semester grade point averages between students who were more satisfied with their contact with an academic adviser and those who were less satisfied (t = 1.687; p > .05).

Feeling known by ROSES instructor:

There was no significant difference in fall semester grade point average for students who felt known to a greater degree by their ROSES instructor and those who felt known to a lesser degree (t = 1.425; p > .05).

Feeling ROSES helped academically:

Students who were more positive in their feeling that the ROSES program had helped them socially earned an average fall semester grade point average of 2.95, which was significantly higher than the 2.67 earned by students who were less positive

(t = 2.060; <u>p</u><.05).

Hypothesis 12 is rejected. Feeling that the ROSES program helped academically was significantly related to fall semester grade point average (t = 2.060; <u>p</u> < .05).

However, the other two ROSES indicators were unrelated to grade point average.

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Hypothesis 13:

There is no difference in fall grade point average between students with a greater degree of participation in any of the academic components indirectly related to the ROSES program and those with a lesser degree of participation.

Academic components that are indirectly related to the ROSES program are the number of hours per week students report being in class, and the number of hours per week students report studying. Hours in class:

There was no significant difference in fall semester grade point average between students who spent 15 or more hours per week in class and those who spent less than 15 hours per week in class (t = 1.439; $\underline{p} > .05$).

Hours studying:

Students who spent 15 or more hours per week studying earned a fall semester grade point average of 3.01, which was significantly higher than the 2.70 grade point average earned by students who studied fewer than 15 hours per week (t = 2.705; p < .05).

Hypothesis 13 is rejected. Fall semester grade point average was significantly related to the number of hours per week students reported studying (t = 2.705; <u>p</u><.05). Table 25 presents the mean grade point averages for the two groups, as well as the results of t-tests for participation with the academic components of the ROSES program and fall semester grade point average.

ROSES		Fall GPA			
Component					
		x	s.d.	t	prob.
Satisfied with adviser	≥ 3	2.92	.722		
	< 3	2.66	.893	1.687	.10
Known by ROSES instructor	≥ 3	2.93	.755		
	< 3	2.77	.784	1.425	.16
ROSES helped academically	≥ 3	2.94	.701		
	< 3	2.67	.878	2.060	.04*
Hours per week in class	≥ 15	2.95	.703		
_	< 15	2.75	.868	1.439	.15
Hours per week studying	≥ 15	3.01	.745		
	< 15	2.70	.762	2.705	.01*
	< 15	2.70	. /02	2.705	.01*

Table 25 - T-tests for Participation with Academic Components and Fall Semester GPA

*<u>p</u><.05

Hypothesis 14:

There is no difference in fall grade point average between students with a greater degree of participation in any of the social components directly related to the ROSES program and those with a lesser degree of participation.

The social components that were unique to the ROSES program were having a ROSES roommate, studying with other ROSES students, satisfaction with the contact with a resident assistant, and feeling that the ROSES program had helped socially (i.e. meeting people, getting involved).

ROSES roommate:

There was no significant difference in the fall semester grade point average for students who had a ROSES roommate and those who did not (t = -.666; <u>p</u> > .05).

Studying with ROSES students:

There was no significant difference in the fall semester grade point average between students who spent 13 percent or more of their total study time studying with other ROSES students and those who studied with other ROSES students less than 13 percent of the time (t = -1.522; $\underline{p} > .05$).

Satisfaction with resident assistant:

There was no significant difference in the fall semester grade point average between students who were more satisfied with their contact with a resident assistant and those who were less satisfied (t = .325; $\underline{p} > .05$).

Feeling that ROSES helped socially:

There was no significance difference in the fall semester grade point average between students who were more positive in their feeling that the ROSES program had helped them socially and those who were less positive (t = .660; $\underline{p} > .05$).

Hypothesis 14 is accepted. There were no significant differences in fall semester grade point average between students who participated more in the social components of the ROSES program and those who participated less.

Hypothesis 15:

There is no difference in fall grade point average between students with a greater degree of participation in any of the social components indirectly related to the ROSES program and those with a lesser degree of participation.

The social components indirectly related to the ROSES program included knowing one's roommate prior to attending MSU, satisfaction with the roommate relationship, and the number of hours per week students were involved in noninstructional activities (i.e. student groups, work, community service).

Prior knowledge of roommate:

There was no significant difference in the fall semester grade point average between students who knew their roommate prior to attending MSU and those who did not (t = 1.296; <u>p</u> > .05).

Satisfaction with roommate:

There was no significant difference in the fall semester grade point average between students who were more satisfied with their roommate relationship and those who were less satisfied (t = -.059; $\underline{p} > .05$).

Involvement:

There was no significant difference in the fall semester grade point average between students who spent three or more hours per week involved in non-instructional activities and those who were involved fewer than three hours per week (t = .606; $\underline{p} > .05$). Hypothesis 15 is accepted. There were no significant differences in fall semester grade point average between students who participated more in the social components indirectly related to the ROSES program and those who participated less. Table 26 presents the mean grade point averages for the two groups, as well as the results of t-tests for participation in the social components of the ROSES program and fall semester grade point average.

ROSES		Fal	Fall GPA		
Component					
		x	s. d .	t	prob.
ROSES roommate	Yes	2.84	.811		
	No	2.92	.591	666	.51
Proportion study with ROSES	≥.13	2.79	.685		
	<.13	2.96	.844	-1.522	.13
Satisfaction with RA	≥4	2.87	.752		
	< 4	2.83	.824	.325	.75
ROSES helped socially	≥4	2.91	.725		
	< 4	2.84	.777	.660	.51
Prior knowledge of roommate	Yes	2.30	.606		
_	No	2.82	.805	1.296	.20
Satisfaction with roommate	≥4	2.85	.793		
	< 4	2.86	.724	059	.95
Hours per week involved	≥ 3	2.88	.747		
-	< 3	2.80	.833	.606	.55

Table 26 - T-tests for Participation with Social Components and Fall Semester GPA

Summary of Bivariate Analyses

A summary of the results of bivariate tests of significance between the individual ROSES components and the outcomes of academic adjustment, social adjustment, full adjustment, and fall semester grade point average are presented in Table 27. An "*" indicates a significant relationship between the individual variable and outcome.

The analyses revealed that background variables were related to academic adjustment and fall semester grade point average. Gender was significantly related to academic adjustment and to fall gpa; ethnicity was significantly related to fall gpa; and predicted gpa was significantly related to academic adjustment and fall gpa.

The only academic components of the ROSES program significantly related to academic adjustment were the number of hours per week spent in class and studying, both of which are not directly related to the ROSES program. The degree to which students felt known by their ROSES seminar instructor was significantly related to social adjustment and full adjustment. The degree to which students felt the ROSES program had helped them academically and the number of hours students reported studying were both significantly related to fall gpa.

The social components of the ROSES program that were significantly related to social adjustment were satisfaction with the contact with a resident assistant, feeling that ROSES had helped socially, knowing one's roommate prior to attending MSU, and being satisfied with the roommate relationship. Knowing one's roommate prior to attending MSU was also significantly related to academic adjustment and full adjustment.

	Academic	Social	Full	Fall GPA
BACKGROUND				
Gender	*			*
Ethnicity				*
College				
Predicted GPA	*			*
ACADEMIC				
Satisfied with				
Adviser				
Known by ROSES				
Instructor		*	*	
ROSES helped				
Academically				*
Class (hours)	*			
Study (hours)	*			*
SOCIAL				
ROSES roommate				
Study with ROSES				
Knew roommate	*	*	*	
Satisfied with RA		*		
ROSES helped				
Socially		*		
Satisfied with				
Roommate		*		
Involvement (hours)				

Table 27 - Summary of Relationships between Components and Outcomes

Multiple Regression Analysis

Multiple regression was utilized to test the full model, with all variables entered, for the outcomes of academic adjustment, social adjustment, and fall grade point average. Collinearity was assessed for all regression models by examining the tolerance statistics. All regression models had low tolerance statistics (close to 0); thus, multi-collinearity was not deemed problematic (George and Mallery, 1995).

The same predictor variables were entered for each regression to determine the relative importance of each predictor for each of the four outcomes (academic

adjustment, social adjustment, full adjustment, and fall grade point average). Background variables in each regression included gender, race/ethnicity, college of enrollment, and predicted grade point average. The predicted grade point average is based upon high school grade point average, test scores (ACT or SAT), and quality of the high school attended.

A second category of variables measured the academic components of the ROSES program and consisted of satisfaction with contact with an academic adviser; feeling known by the ROSES seminar instructor; the degree to which students felt the ROSES program had helped them academically; the number of hours per week respondents reported being in class; and the number of hours per week respondents reported studying.

A third category of variables entered into the regression incorporated the social components of the ROSES program: having a ROSES student as a roommate; the proportion of study time students spent studying with other ROSES students; satisfaction with the contact with a resident assistant, the degree to which students felt the ROSES program had helped them socially; prior knowledge of their roommate; satisfaction with the roommate relationship; and the number of hours per week the student was engaged in non-instructional activities such as work, student organizations and community service.

Finally, the ROSES seminar grade was entered into each regression equation. The seminar grade is based on the number of points earned by students for attendance and completion of assignments. Thus, the grade reflected the degree to which students attended and participated in the weekly ROSES seminar class and evening programs facilitated by the residence life staff.

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Dummy variables were created for some of the variables. For gender, female was coded 1 and male was coded 0. A dummy variable was created for college of enrollment; with a code of 1 if the respondent had a major in the College of Engineering and a code of 0 if they were in the College of Natural Science or in the College of Agriculture and Natural Resources. Race/ethnicity was coded as a 1 to indicate non-minority students and 0 to indicate students in all other racial categories. Having a ROSES roommate was coded 1, while having a roommate who was not a ROSES student was coded 0. Knowing one's roommate prior to attending MSU was coded 1, and not knowing one's roommate prior to attendance was coded 0. Satisfaction scores (satisfaction with the roommate, satisfaction with the Resident Assistant and satisfaction with the academic adviser) were coded 0 through 5, with 0 being "does not apply" and 5 indicating "very satisfied". How well the respondent felt the ROSES seminar instructor knew them was coded 1 for "not at all" through 5 for "very well". The degree to which students believed the ROSES program had helped them socially and academically was coded from 1 for "helped not at all" to 5 for "helped to a great extent". The number of hours each week that respondents reported studying with other ROSES students was expressed as a proportion of the total number of hours each respondent reported studying.

Multiple regression analyses were conducted for three different outcomes: academic adjustment, social adjustment, and fall semester grade point average. The same variables were entered into each of the regressions. Of particular interest was the amount of variance in the outcome variable explained by the predictor variables. The unstandardized regression coefficients (B) indicate the effect of each individual variable on the outcome variable. Additionally, by examining the relationships between

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individual predictor variables and the outcome, insight was gained with regard to the relative importance of various predictors to that outcome. Because the independent variables had different units of measurement, the Beta coefficients were used for comparative purposes. All regression results were interpreted at the .05 level of significance, but .05 - .10 was also examined for marginally significant results.

Academic Adjustment

As shown in Table 28, background variables, social component variables, academic component variables, and the ROSES seminar grade, taken together; accounted for 20% of the variance in academic adjustment scores. This relationship was statistically significant ($F_{17,143} = 2.08$, p < .05). In this regression model, the ROSES seminar grade was significantly positively related to academic adjustment ($t_{17,143} = 2.00$, p < .05). Knowing one's roommate prior to attending MSU was marginally significant ($t_{17,143} =$ 1.93; p < .10). For each point increase in the seminar grade, the academic adjustment score increased by 5.35 points. Knowing one's roommate prior to attendance added 10.01 points to the academic adjustment score.

Predictor Variables				
	B	Beta	t	Sig.
(Constant)	82.31		4.12	.00
Engineering (dummy)	8.071	.146	1.485	.14
Ethnicity (dummy)	.501	.008	.093	.93
Gender (dummy)	7.231	.149	1.567	.12
Predicted GPA	4.159	.054	.627	.53
Know roommate (dummy)	10.006	.165	1.933	.06
ROSES roommate (dummy)	-2.516	042	492	.62
Involvement (hours per week)	301	098	-1.223	.22
Study with ROSES	4.974	.037	.449	.65
Satisfied with RA	983	055	682	.50
Satisfied with roommate	.606	.030	.373	.71
ROSES helped socially	.594	.033	.336	.74
Study (hours per week)	.354	.128	1.517	.13
Satisfied with adviser	.587	.038	.457	.65
Known by ROSES instructor	1.059	.046	.542	.59
ROSES helped academically	1.175	.061	.630	.53
Class (hours per week)	.299	.052	.649	.52
Seminar grade	5.349	.184	2.004	.05*
$F_{} = 2.08$; $p < 05$; $P^2 = 20$				

Table 29 - Regression Coefficients for Model Predicting Academic Adjustment

 $F_{17,143} = 2.08; p < .05; R^2 = .20$

*****<u>p</u><.05; *****<u>p</u><.10

Social Adjustment

All variables in the model accounted for 21% of the variance in social adjustment scores, and were significantly associated with social adjustment ($F_{17,143} = 2.24$; <u>p</u> < .05). The degree of satisfaction with one's roommate $(t_{17,143} = 2.05; p < .05)$ and the number of hours spent in class ($t_{17,143} = 2.54$; <u>p</u> < .05) were both significantly positively related to social adjustment. The regression model is presented in Table 30. Each incremental increase in satisfaction with one's roommate added 3.07 points to the social adjustment score. For each additional hour spent in class, social adjustment scores increased 1.08 points.

Predictor variables				
	B	Beta	t	Sig.
(Constant)	108.437		5.904	.00
Engineering (dummy)	5.189	.101	1.038	.30
Ethnicity (dummy)	-1.076	018	218	.83
Gender (dummy)	6.746	.150	1.590	.11
Predicted GPA	-8.961	125	-1.469	.14
Know roommate (dummy)	7.118	.127	1.496	.14
ROSES roommate (dummy)	-3.463	062	737	.46
Involvement (hours per week)	.292	.103	1.292	.20
Study with ROSES	13.553	.108	1.330	.19
Satisfied with RA	1.501	.091	1.132	.26
Satisfied with roommate	3.070	.164	2.053	.04*
ROSES helped socially	2.620	.157	1.612	.11
Study (hours per week)	073	028	341	.73
Satisfied with adviser	-1.023	072	868	.39
Known by ROSES instructor	2.573	.121	1.433	.15
ROSES helped academically	658	037	383	.70
Class (hours per week)	1.077	.203	2.542	.01*
Seminar grade	583	022	238	.81

Table 30 - Regression Coefficients for Model Predicting Social Adjustment

 $F_{17,143} = 2.24; p < .05; R^2 = .21$

*p < .05

Full Adjustment

The regression model including background variables, social component variables, academic component variables, and the ROSES seminar grade explained 17% of the variance in full adjustment scores, and the overall relationship was significant $(F_{17,143} = 1.78; p < .05)$. Hours spent in class $(t_{17,143} = 2.10; p < .05)$ and knowing one's roommate $(t_{17,143} = 2.27; p < .05)$ were significantly positively related to full adjustment. For each hour spent in class, full adjustment score increased 2.61 points. Knowing one's roommate added 31.58 points to the full adjustment score. The final regression model is presented in Table 31.

Predictor Variables				
	B	Beta	t	Sig.
(Constant)	289.343		5.376	.00
Engineering (dummy)	15.886	.108	1.085	.28
Ethnicity (dummy)	3.649	.021	.253	.80
Gender (dummy)	21.109	.164	1.698	.09
Predicted GPA	-5.422	026	303	.76
Know roommate (dummy)	31.578	.196	2.265	.03*
ROSES roommate (dummy)	-5.805	037	422	.67
Involvement (hours per week)	093	011	141	.89
Study with ROSES	19.006	.053	.637	.53
Satisfied with RA	1.193	.025	.307	.76
Satisfied with roommate	5.618	.105	1.282	.20
ROSES helped socially	5.274	.110	1.108	.27
Study (hours per week)	.315	.043	.502	.62
Satisfied with adviser	-1.673	041	484	.63
Known by ROSES instructor	4.388	.072	.834	.41
ROSES helped academically	650	013	129	.90
Class (hours per week)	2.605	.171	2.098	.04*
Seminar grade	6.675	.086	.928	.36

Table 31 - Regression Coefficients for Model Predicting Full Adjustment

 $F_{17,143} = 1.78; p < .05; R^2 = .17$

*p < .05

Fall Semester Grade Point Average

Fall semester grade point average was the final outcome assessed by multiple regression. Because the seminar grade was included in the calculation of the fall semester grade point average, in this analysis, fall gpa was recalculated to exclude the seminar grade. Background variables, social component variables, academic component variables, and the ROSES seminar grade, taken together, accounted for 42% of the variation in fall semester grade point average. The model was also statistically significant ($F_{17,143} = 5.973$; $\underline{p} < .01$). Predicted grade point average was significantly positively related to fall semester grade point average $(t_{17,143} = 4.21; \underline{p} < .01)$, with each point increase in predicted grade point average adding an additional .31 point to the fall

semester grade point average. The other significant individual variable in this model was the ROSES seminar grade ($t_{17,143} = 4.273$; p<.01), with each point increase in the ROSES seminar grade increasing the fall semester grade point average by .33 point. The coefficients for the final regression model are presented in Table 32.

Predictor Variables				
	B	Beta	t	Sig.
(Constant)	-2.007		-3.291	.00
Engineering (dummy)	.221	.112	1.347	.18
Ethnicity (dummy)	.181	.078	1.121	.26
Gender (dummy)	.177	.103	1.275	.20
Predicted GPA	.859	.312	4.211	.00*
Know roommate (dummy)	024	011	152	.88
ROSES roommate (dummy)	073	034	471	.64
Involvement (hours per week)	.007	.033	.477	.63
Study with ROSES	.264	.055	.785	.43
Satisfied with RA	.017	.027	.396	.69
Satisfied with roommate	.066	.092	1.341	.18
ROSES helped socially	058	091	-1.089	.28
Study (hours per week)	.004	.039	.546	.59
Satisfied with adviser	.043	.078	1.099	.27
Known by ROSES instructor	.041	.050	.695	.49
ROSES helped academically	.059	.087	1.053	.29
Class (hours per week)	.009	.045	.658	.51
Seminar grade	.344	.334	4.273	.00*
$E = 5.072; n < 01; D^2 = 4^{\circ}$	`			

 $F_{17,143} = 5.973; p < .01; R^2 = .42$ *p < .05

Summary

Bivariate analyses identified significant relationships between individual variables

and outcomes. Regression analyses tested each hypothesis using the full set of predictor

variables.

Academic Adjustment

For academic adjustment, the seminar grade (Beta = .184) was a stronger predictor than knowing one's roommate prior to attendance (Beta = .165) though they were both significant in the regression. Neither of these variables were academic components of the ROSES program. With all variables included in the model, no other variables were significant predictors of academic adjustment.

Social Adjustment

The hours spent in class (Beta = .203) was a stronger predictor of social adjustment than the degree of satisfaction with the roommate relationship (Beta = .164). With all variables included in the regression, these two variables were the only ones which significantly predicted social adjustment. Both of these variables were considered components of the ROSES program, albeit indirect; that is, they are not exclusive components of the ROSES program. Only the degree of satisfaction with the roommate relationship was a direct social component.

Full Adjustment

With all variables entered in the regression, only knowing one's roommate prior to attendance at MSU and the number of hours per week spent in class were significant predictors of full adjustment. Prior knowledge of one's roommate (Beta = .196) was a stronger predictor than the number of hours per week in class (Beta = .171). Neither of these variables are uniquely related to the ROSES program.

Fall Semester Grade Point Average

With all variables entered in the regression, only the predicted grade point average and seminar grade were significant predictors of fall semester grade point

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average. The seminar grade (Beta = .427) was a stronger predictor than the predicted grade point average (Beta = .323). None of the academic components or social components of the ROSES program were significant predictors of fall semester grade point average.

Table 32 presents a summary of the relationships between the predictor variables and the outcomes of academic adjustment, social adjustment, full adjustment, and fall semester grade point average. The bivariate relationships revealed that individual academic components of the ROSES program were related to academic adjustment, full adjustment, and to fall semester grade point average; but not to social adjustment. Some of the individual social components of the ROSES program were related to social adjustment and full adjustment; but not to academic adjustment or to fall semester grade point average. The results of the regression analyses revealed that with background variables, academic components, social components, and seminar grade entered into the model, the significant predictors of academic adjustment were the seminar grade and knowing one's roommate prior to attendance at MSU. The significant predictors of social adjustment, with all variables entered into the regression, were the hours per week spent in class and satisfaction with one's roommate relationship. The significant predictors of full adjustment were the number of hours per week in class and knowing one's roommate prior to attendance at MSU. With all variables entered into the regression, the significant predictors of fall semester grade point average were the seminar grade and the predicted grade point average.

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	Academic	Social	Full	Fall GPA
BACKGROUND				
Gender	*			*
Ethnicity				*
College				1
Predicted GPA	*			*X
ACADEMIC				
Satisfied with				
Adviser				
Known by ROSES				
Instructor		*	*	
ROSES helped				
Academically				*
Class (hours)	*	X	X	
Study (hours)	*			*
SOCIAL				
ROSES roommate				
Study with ROSES				-
Satisfied with RA		*		
ROSES helped				
Socially		*		
Knew roommate	*X	*	*X	
Satisfied with				
Roommate		*X		
Involvement (hours)				
ROSES Seminar	X			X

Table 32 - Summary of Relationships between Predictors and Outcomes

Note. * = significant bivariate relationship X = significant predictor of outcome

Chapter 5

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

Summary and Discussion

The purpose of this study was to examine the contribution of a residential program for first year science and engineering students on their adjustment to college. Specifically, social and academic aspects of the program were examined to determine their relationship with academic adjustment, social adjustment, full adjustment, and fall semester grade point average. All first year students (221 total) enrolled in the Residential Option for Science and Engineering Students (ROSES) were included in this study.

All respondents received an introductory letter and two surveys near the end of fall semester, 1997. This time was selected in order to give students nearly a full semester of experiences in college and the ROSES program, yet not conflict with the end of the semester and finals week. A total of 199 surveys were returned, representing a 90% return rate. Of the returned surveys, 174 were complete and used for statistical analyses, yielding a 79% usable return rate. Data were analyzed using the SPSS for Windows Statistical Package for the Social Sciences.

Two primary research questions guided the study: 1) Do components of the ROSES program contribute differentially to academic adjustment, social adjustment, full adjustment, and fall semester grade point average; and 2) Which individual components of the ROSES program make the most significant contributions to predicting adjustment to college and fall semester grade point average? Bivariate relationships between individual components of the ROSES program and outcomes were examined. Multiple

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regression was utilized to identify significant predictors of academic adjustment, social adjustment, full adjustment and fall semester grade point average. Data were analyzed at the .05 level of significance, with .05 - .10 also examined in the multiple regression analyses for marginally significant results.

Relationships between Individual Variables and Outcomes

Background Variables

Background variables consisted of gender, ethnicity, college of enrollment, and predicted grade point average. Females achieved significantly higher academic adjustment than males. Females also had significantly higher fall semester grade point averages than males, even though there was no significant difference in the predicted grade point averages between females and males. This finding is interesting because females are often thought to achieve lower grades in math and science. The first semester curriculum for all students consists of general education course requirements. Included in the typical first semester course schedule for entering science and engineering students are introductory math and science courses. Further research should explore whether females who participated in the ROSES program as first-year students continue to earn higher grades in math, science, and engineering courses during subsequent academic years. Nonetheless, this finding for female students in the ROSES program should not be overlooked in the male-dominated fields of science and engineering.

Ethnicity was significantly related to fall semester grade point average. Minority students in the ROSES program had significantly lower grade point averages than nonminority students, despite entering college with predicted grade point averages that were not significantly different. This finding is troubling, not only for the success of minority

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students, but also as it relates to the under-representation of minority group members in science and engineering fields.

Predicted grade point average was significantly related to academic adjustment and to fall semester grade point average. There were no significant relationships between the college of enrollment and academic adjustment, social adjustment, full adjustment, or fall semester grade point average.

Academic Variables

Not surprisingly, the number of hours students reported being in class and the number of hours students reported studying were significantly related to academic adjustment. Additionally, the number of hours students reported studying was significantly related to fall semester grade point average. These relationships are reasonable to understand. Faculty and staff should certainly use this information to promote class attendance and studying, especially among new students.

Satisfaction with the contact with an academic adviser was not related to any form of adjustment or to fall semester grade point average. This finding is unexpected, given the intentional efforts to connect students with academic advisers. The advisers often meet the ROSES students during the summer orientation program. Once school starts, academic advisers for the ROSES students attempt various strategies to maintain ongoing contact with students throughout the first semester. Some students are required to meet with their academic adviser as part of the ROSES seminar, and some advisers serve as instructors for the ROSES seminar.

Feeling known by the ROSES seminar instructor was not related to academic adjustment or fall semester grade point average, but was significantly related to social

adjustment and full adjustment. It is possible that, for those advisers who are ROSES seminar instructors, students relate to them more as instructors than as advisers. In any case, the quality of the relationship between students and the instructors for the seminar appears to be important to social adjustment and full adjustment.

Students' feelings that the ROSES program helped them academically (i.e. classes, studying) was positively related to fall semester grade point average. This finding could also be explained by other factors (such as motivation or general attitude toward academic work) which could contribute to both.

Social Variables

Knowing one's roommate prior to attending MSU was significantly related to academic, social, and full adjustment. Further, being satisfied with one's roommate relationship was significantly related to social adjustment. These findings suggest that comfort, or at least the lack of uncertainty about one's roommate, may be beneficial, not only to social adjustment, but also to academic and full adjustment. It is reasonable that the quality of the roommate relationship may provide elements of the social validation that Terenzini et al. (1992) identified as crucial to the transition to college. However, neither of these variables (prior knowledge of roommate or the satisfaction with the roommate relationship) are directly related to the ROSES program, and there is nothing to suggest that the importance of roommate relationships is unique to the ROSES program.

An unexpected finding was that having a roommate who was also a ROSES student was not related to social adjustment or to fall semester grade point average. It was hypothesized, and implied in the design of the ROSES program, that students would

benefit from having roommates who were in the same program and going through similar experiences. It may be that any effects of having a ROSES roommate are evident later in one's academic experience.

The proportion of time students spent studying with other ROSES students was not related to academic adjustment, social adjustment, full adjustment, or to grade point average. One of the underlying premises of the ROSES program was that students would find academic support and assistance from one another that might assist them academically and socially. For the group of students in this study, only about 17% of their total study time was spent with other ROSES students. It was anticipated that students in the ROSES program would spend a greater proportion of their total study time with one another because they have several of the same courses. This finding is difficult to interpret due to the lack of a comparison group (students in the same classes but who do not live in the same residence hall). It could be that studying together 17% of the time is more than other groups of first-year students study together. In any case, studying with other ROSES students was not significantly related to adjustment or to fall semester grade point average.

Satisfaction with the contact with a resident assistant was related to social adjustment. As returning students, resident assistants are in positions to be viewed by students as institutional agents who are also students. Resident assistants interpret the rules and procedures of the institution, assist individual students with personal issues, and plan activities. In the ROSES program, the resident assistants are involved with the new student orientation program and the evening programs which supplement the ROSES seminar class. Thus, students have opportunities to see resident assistants often and in a

variety of roles. The resident assistants may act as peer socialization agents in the living environment.

Involvement in non-instructional activities did not relate to any form of adjustment or grade point average. It may be that students need a longer period of time than what was afforded in this study in order to establish meaningful involvement opportunities. Further investigation of the role of involvement in non-instructional activities and adjustment over a longer period of time may be valuable.

The feeling that the ROSES program helped students socially (i.e. meeting people, getting involved) was significantly related to social adjustment. This finding, in combination with the significance of the relationships with the roommate and resident assistant, suggests at least an initial importance of the social and interpersonal experiences for new students.

Predictors of Adjustment and Fall Semester Grade Point Average

The second research question of interest in this study was to identify the components of the ROSES program which predicted academic adjustment, social adjustment, full adjustment, and fall semester grade point average. Multiple regression was used to identify the significant predictors for each outcome.

Academic Adjustment

Only one of the variables found to be significantly related to academic adjustment in the bivariate analyses was identified by multiple regression as a significant predictor of academic adjustment. Knowing one's roommate prior to attending MSU was considered a social component; yet, it was a significant predictor of academic adjustment. This

finding was surprising and suggests the importance of the social environment, not only for social adjustment, but also for academic adjustment.

The ROSES seminar grade was also a significant predictor of academic adjustment. This finding seems congruent with the topics that are covered in the seminar class and evening sessions. Topics include academic skills such as test taking and time management, as well as issues such as learning styles and career exploration. Students are also exposed to a variety of academic resources on campus.

Perhaps most interesting is the finding that none of the variables identified in this study as academic components of the ROSES program were significant predictors of academic adjustment. Despite the efforts of advisers and ROSES seminar instructors to develop connections with new students, the two measures in this study (satisfaction with the contact with an adviser and feeling known by a ROSES instructor) were not significant predictors of academic adjustment. Even though the number of hours spent in class and the number of hours spent studying were significantly related to academic adjustment in the bivariate analyses, neither were identified as significant predictors in the regression analysis.

Overall, the results of the regression analysis do not suggest that greater involvement with the academic components of the ROSES program results in higher academic adjustment. Prior knowledge of one's roommate (identified in this study as a social component) is indirectly related to the ROSES program in that knowing one's roommate is not a design element of the ROSES program. The only significant predictor of academic adjustment that is specifically related to the ROSES program is the ROSES seminar class.

Social Adjustment

The number of hours students reported being in class was a significant predictor of social adjustment. This finding was surprising in that the number of hours per week spent in class was considered to be an academic component. One possible explanation for this finding is that being in class may increase one's interactions with others (peers and faculty), which may contribute to social adjustment.

Satisfaction with the relationship with one's roommate was significantly related to social adjustment and was also a significant predictor of social adjustment. Satisfaction with the roommate relationship is not directly related to the ROSES program, but in this study, it was considered a social component. This finding seems to highlight the importance of the immediate environment (one's room) for the successful social adjustment of new students.

None of the other individual variables of the ROSES program were significant predictors of social adjustment. Relationships with peers in the environment, specifically with other ROSES students and with resident assistants, were not predictors of social adjustment. Thus, the hypothesis that greater involvement in the social components of the ROSES program results in higher social adjustment is only minimally supported, since the only significant predictors of social adjustment were indirectly related to the ROSES program.

Full Adjustment

Knowing one's roommate prior to attendance at MSU and the number of hours per week students reported spending in class were significant predictors of full adjustment. Again, the importance of the roommate relationship is crucial. The positive relationship between the number of hours spent in class and full adjustment may suggest that the structure of attending class and the contact with others are important to overall adjustment. Neither of the significant predictors of full adjustment are features directly related to the ROSES program.

Fall Semester Grade Point Average

Regression analysis identified the predicted grade point average as the only background variable that was a significant predictor of fall grade point average, despite the significant relationships between gender and fall grade point average and between ethnicity and fall grade point average. Thus, with all other components of the ROSES program considered, gender and ethnicity are not significant predictors of fall grade point average.

The ROSES seminar grade was also a significant predictor of fall semester grade point average. Because the grade is based upon class attendance, evening session attendance, and completion of assignments, it could be that the student habits required for successful seminar performance are also practiced in other classes, which contributes to successful academic performance in other courses.

It was hypothesized that the social components would not be significantly related to fall semester grade point average. In the bivariate analyses, the number of hours of studying and feeling that the ROSES program had helped academically were both significantly related to fall semester grade point average. However, none of the academic components or social components of the ROSES program were identified by multiple regression as significant predictors of fall semester grade point average.

Summary

Even though there were some significant relationships between some individual variables and outcomes, multivariate analyses did not identify the significant predictors that had been hypothesized. Academic components did not significantly predict academic adjustment or fall semester grade point average. The only social component that significantly predicted social adjustment was the degree of satisfaction with the roommate relationship, which is not a directly related component of the ROSES program.

Implications for Practice

The findings of this study, both the expected and the unexpected, provide implications for staff and institutional leaders.

Implications for Staff

One striking implication of this study is the importance of the roommate relationship on adjustment to college. This may be true for students not only in a residential program such as the ROSES program, but for students in other programs or in no special program. Thus, it seems wise for administrators of living-learning programs and housing systems to allow students to choose their roommates; and for residence hall staff to focus on the development of satisfactory roommate relationships. Certainly, many students enter college without the opportunity or inclination to live with someone they already know. Residence life staff should consider implementing strategies which would more quickly assist roommates in establishing roommate relationships that are comfortable.

It also seems that living-learning programs, such as the ROSES program, are designed based upon knowledge or beliefs that may not be fully understood or tested.

For example, there appears to be support for the idea of housing students together who have classes or majors in common. Presumably, this arrangement should make it easier for students to study with one another. Yet, in this study, the proportion of time students spent studying with other ROSES students did not significantly relate to adjustment or to fall semester grade point average, nor did it significantly predict academic or social adjustment or fall grade point average. Perhaps additional or different interventions are necessary to achieve the maximum benefit from housing students together who have classes or majors in common. It may be that students do not know how to productively study with others. Instructors should consider designing assignments that will assist students in developing the skills necessary for working with others to complete a task. Another benefit would be that such group work may reduce the degree of competiveness among students that can be detrimental to student success.

Implications for Institutional Leaders

For leaders of institutions, especially of the size and complexity of Michigan State University, the importance of the student transition experience should not be overlooked. This study suggests that for students in their first semester of college, the immediate and interpersonal environment is important. In a very general sense, it appears that those students who form satisfactory relationships with those nearest to them in their environment experience greater social adjustment.

The small classroom experience of the ROSES seminar allows students to have contact with an adult who acts as an agent of the institution. Yet the relationships with advisers and ROSES instructors, as measured in this study, do not significantly contribute to adjustment or fall semester grade point average. The allocation of resources so that

first-year students in the ROSES program have a small classroom experience is wellintentioned, but should be examined further to determine the relative costs in terms of resources and benefits to students. It may also be important to note that the academic advisers for the ROSES program are professional advisers and not faculty. Faculty advisers may be perceived differently by students and their impact on students may be different than that of professional advisers. Assigning faculty advisers to first-year students is a significant institutional resource, but one that may be worth exploring.

Leaders should continue to encourage and support the collaborative efforts between academic affairs and student affairs which are necessary to implement livinglearning programs. New programs should be designed to address issues or deficiencies identified through careful study, with the goals of the programs clearly articulated. Additionally, systematic assessment must be conducted to determine the contributions of living-learning programs and to guide the innovations made to existing programs. Assessment and evaluation data should be used to determine the appropriate roles and responsibilities of academic and student affairs staff members.

Finally, many living-learning programs focus on experiences for first-year students. Without diminishing the attention to first-year students, institutional leaders ought to encourage faculty and staff to consider what happens to students beyond their first year, with special attention to the sophomore year. Do living-learning programs for first-year students create a set of expectations about college that lead to disillusionment once the first year program has ended? Are students who enter the institution through a smaller, more comfortable living-learning program ready and able to negotiate the larger university, or do they experience another transition?

Limitations of the Study

A limitation of this study is the reliance on self-reported information about participation and involvement with components of the ROSES program, as well as selfreported responses to the items on the adjustment surveys. Adjustment scores from this group of respondents were similar to scores obtained in other research studies (see Baker & Siryk, 1989), so there is some assurance of the use of this survey for this purpose. Additionally, the elements that compose the ROSES program are difficult to isolate and measure as individual components.

The respondents in this study were not a randomly drawn sample from the general student population; thus, the results can not be generalized to other groups of first-year students. There is a self-selection factor among these respondents in that students interested in science and engineering majors request to participate in the ROSES program; thus, they may exhibit a higher level of motivation, readiness, and interest in college experiences than peers who do not express interest in this program. Additionally, due to space limitations in the program, two of the participating colleges establish selection criteria for students interested in the ROSES program. It may be interesting to examine the effects of a living-learning program on the adjustment and academic success of students who are less academically prepared.

Finally, participation in an academic, residential program is only one set of a multitude of experiences which influence and shape the lives of college students. This study did not attempt to measure or to control for the myriad of academic and social experiences which are potentially related to adjustment to college or to fall semester

grade point average. This study also did not control for personal or psychological factors within individual students which may be related to adjustment.

Recommendations for Further Research

This study was primarily interested in outcomes of adjustment to college and the contribution of a residential program on those outcomes. Other research about college students suggests that the first six weeks are crucial in the transition to college. However, Baker and Siryk (1989) report some significant effects on at least some of the adjustment scales depending on whether the survey was administered during the first semester or the second semester. Therefore, it would be beneficial to examine the contributions of the ROSES program to adjustment over a longer period of time. For example, it may be that the relationships formed with peers in the first year of college will lead to less competition among students when they are engaged in upper level science or engineering courses. Controlled, longitudinal studies should be undertaken to explore whether students who participate in the ROSES program as first-year students progress differently through their majors and ultimately to graduation.

Given the factors which contribute to students switching out of science and engineering majors (Seymour, 1992), it would be insightful to investigate majorswitching among students who enter the university as ROSES students. While retention within science and engineering majors is a desired outcome of the ROSES program, there will undoubtedly be students who switch to non-science and non-engineering majors. It would be interesting to know if ROSES students who ultimately switch into other majors cite different reasons for switching than those identified by Seymour's research.

This study raises questions about the impacts of clustering students with similar academic interests in one residence hall. While this study did not compare students in this hall-based program to similar students not participating in a similar program, the added residential features of this program did not seem to have powerful predictability relative to adjustment. Further research which compares participants of living-learning programs to non-participants is needed to further investigate the added value of the residential experience. It is also possible that living-learning programs associated with different academic disciplines would yield a different array of relationships between the program components, adjustment, and grade point average.

Certainly, multi-faceted adjustment to college and fall semester grade point average are only a few of the potentially valuable outcomes of a living-learning program. Additional research ought to examine relationships between participating in these sorts of programs and other outcomes associated with higher education, including cognitive and intellectual development, psychosocial development, and educational attainment. It would also be valuable to conduct qualitative research with students in living-learning programs in order to describe the kinds of experiences that students identify as meaningful to their adjustment and success.

Current conversations about undergraduate education are laced with suggestions for programs similar to the ROSES program. Living-learning programs, learning communities, and freshman interest groups are intended to add integration and coherence to the undergraduate experience. These programs are designed to increase the connections between curricular and co-curricular aspects of the collegiate experience. Program developers must be explicit about the program goals and implement strategies

consistent with the goals and mission of the program. Even when conceptually sound, these programs require resources of time, effort, and money. Evaluation reseach should be conducted to determine the effectiveness and efficiency of these various innovations, and the degree to which the desired goals are met. Additionally, program developers must be cognizant of the effects of such programs on students from diverse backgrounds and in different academic disciplines. **APPENDIX** A

APPENDIX A

SCIENCE AND ENGINEERING BACCALAUREATE DEGREE PROGRAMS MICHIGAN STATE UNIVERSITY

College of Agriculture and Natural Resources

Agribusiness Management Agriculture and Natural Resources Communications Agriscience Animal Science **Biosystems Engineering Building Construction Management Crop and Soil Science Environmental and Natural Resource Policy Issues** Fisheries and Wildlife Food Industry Management Food Science Forestry Horticulture Packaging Park, Recreation, and Tourism Resources Public Resource Management

College of Engineering

Biosystems Engineering Chemical Engineering Civil Engineering Computer Science Computer Engineering Electrical Engineering Engineering Arts Material Science and Engineering Manufacturing Engineering Mechanical Engineering Mechanics

College of Natural Science

Astrophysics Biochemistry Biochemistry/Biotechnology Botany and Plant Pathology Chemical Physics Chemistry **Clinical Laboratory Science Computational Mathematics** Entomology Environmental Geoscience **Geological Sciences Mathematics** Medical Technology Microbiology Physics Physiology **Statistics and Probability** Zoology

APPENDIX B

APPENDIX B

SURVEY ITEM CLUSTERS

Survey items on the Student Adaptation to College Questionnaire (SACQ) are organized into 12 critical clusters, which comprise four subscales.

Cluster	Item Description
	Is definite about reasons for being in
	college.
	Has well-defined academic goals.
Motivation	Considers college degree important.
	Doubts value of college degree.
	Enjoys academic work.
	Most interests are not related to course
	work.
	Keeps up-to-date with academic work.
Application	Does not work as hard as he or she should.
	Is not motivated to study.
	Attends classes regularly.
	Finds academic work difficulty.
	Does not function well during exams.
	Is satisfied with academic performance.
Performance	Does not feel smart enough for course
	work.
	Does not use study time efficiently.
	Enjoys writing papers for courses.
	Has trouble concentrating when studying.
	Does not do well academically, considering
	effort.
	Has trouble getting started on homework.
	Is satisfied with variety of courses.
	Is satisfied with quality of courses.
Academic Environment	Is satisfied with program of courses.
	Is satisfied with professors.
	Is satisfied with academic situation.

ACADEMIC ADJUSTMENT SUBSCALE

APPENDIX B (cont'd).

Cluster	Item Description
	Fits in well with college environment.
	Is very involved with college social
	activities.
General	Is adjusting well to college.
	Has several close social ties.
	Is satisfied with social participation.
	Is satisfied with social life.
	Is meeting people and making friends.
	Has informal contact with professors.
	Gets along well with roommates.
	Has difficulty feeling at ease with others at
Other People	college.
	Does not mix well with opposite sex.
	Feels different from others in undesirable
	ways.
	Has good friends to talk about problems
	with.
	Is lonesome for home.
Nostalgia	Feels lonely a lot.
	Would rather be home.
	Is pleased about decision to attend this
Social Environment	college.
	Enjoys living in a dormitory.
	Is satisfied with extracurricular activities.

SOCIAL ADJUSTMENT SUBSCALE

APPENDIX B (cont'd).

Cluster	Item Description
	Feels tense or nervous.
	Feels blue and moody.
	Being independent has not been easy.
	Is not able to control emotions well lately.
Psychological	Has thought about seeking psychological
	help recently.
	Gets angry too easily lately.
	Sometimes things gets muddled too easily.
	Worries a lot about college expenses.
	Has trouble coping with college stress.
	Feels tired a lot lately.
	Appetite is good.
	Has a lot of headaches.
Physical	Gained or lost a lot of weight lately.
	Is not sleeping well.
	Feels in good health.

PERSONAL-EMOTIONAL SUBSCALE

ATTACHMENT SUBSCALE

Cluster	Item Description
General	Is pleased with decision to go to college. Thinks a lot about dropping of college permanently. Is thinking about taking time off from college.
This College	Is pleased about attending this college. Would prefer to be at another college. Expects to finish bachelor's degree. Is thinking about transferring to another college.

APPENDIX C

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APPENDIX C

ROSES EXPERIENCES SURVEY

Please answer the following questions based on your experiences this semester. There are no correct or incorrect answers.

By providing your PID, you authorize the researcher to use selected institutional data (fall semester course enrollment, ROSES seminar attendance, ACT/SAT score, high school GPA, enrollment status for spring semester, expected fall semester GPA, fall semester GPA, academic status at the beginning of spring semester) for research purposes only.

Information from this survey will be used for research purposes only. Research findings will not associate individual students with specific responses.

Your PID: _____

- 1. How many roommates do you have (or for a majority of the semester)? zero _____ one ____ two ____ (if zero, skip to item 2)
 - a. Do you have a roommate(s) in the ROSES program? yes ____ no ____
 - b. Did you know your roommate(s) before coming to MSU?
 yes _____ no _____
- 2. For the following activities, indicate the approximate numbers of hours per week you have been involved in each activity this semester. You can round your answers to the nearest whole hour. If you have had no involvement, place a zero in the space provided.

Hours per week Activity

a .	Hall groups (caucus, government, floor council, other groups)
b .	Campus organizations (i.e. academic or social organizations)
C.	Part-time work
d.	Off-campus organizations (i.e. religious or community groups)
е.	Community service (volunteer work)
f.	Floor activities (i.e. IM sports, social activities)
g.	Class
h.	Study (i.e. homework, reading for class, other academic work)

- 3. Of the total hours you study, how many hours per week do you study:
 - _____a. in your own room
 - ____b. in another student room in your residence hall
 - _____ c. in a consulting room in Bailey Hall (B108, B208, B308)
 - d. in a lounge in your residence hall
 - e. in a location other than any residence hall
- 4. Of the total hours you study, how many hours per week do you study:
 - _____a. by yourself
 - _____b. with other ROSES student(s)
 - c. with non-ROSES student(s)
 - d. with a consultant in Bailey Hall

For the following items, please indicate the number of times you have interacted with the individuals listed. If you have had no contact, please write a zero in the space provided.

- 5. How many times this semester have you:
 - a. met with a consultant for ROSES students in Bailey Hall
 - b. talked with your academic adviser
 - c. talked with an instructor (professor, TA, ROSES seminar instructor) outside of class
- 6. How many times this semester have you talked about **academics (i.e. classes, grades, professors, major, studying)** with:
 - _____a. your academic adviser
 - _____b. an instructor (professor, TA)
 - ____ c. a peer leader
 - _____d. a resident assistant
 - _____e. the hall director
- 7. How many times this semester have you talked about career information with:
 - _____a. your academic adviser
 - _____ b. an instructor (professor, TA)
 - _____ c. a peer leader
 - _____d. a resident assistant
 - _____e. the hall director

- 8. How many times this semester have you talked about the ROSES seminar or program with:
 - _____a. your academic adviser
 - _____b. an instructor (professor, TA)
 - _____ c. a peer leader
 - _____d. a resident assistant
 - _____e. the hall director
- 9. How many times this semester have you talked about social concerns (i.e. roommate, friends, extracurricular activities) with:
 - _____a. your academic adviser
 - _____b. an instructor (professor, TA)
 - _____ c. a peer leader
 - _____d. a resident assistant
 - _____e. the hall director
- 10. How many time this semester have you talked about **personal concerns (i.e. health, stresses)** with:
 - _____a. your academic adviser
 - _____b. an instructor (professor, TA)
 - _____c. a peer leader
 - _____d. a resident assistant
 - e. the hall director
- 11. How many times this semester have you talked about general concerns (your decision to come to MSU, campus resources) with:
 - a. your academic adviser
 - _____b. an instructor (professor, TA)
 - _____c. a peer leader
 - _____d. a resident assistant
 - e. the hall director

12. For each of the following items, please indicate your degree of satisfaction by placing the number from the scale in the space provided to the left of each item.

Does not Apply	Very Satisfied	Satisfied		Dissatisfied	Very Dissatisfied
0	1	2	3	4	5
a. b. c. d. e.	your room contact wi contact wi contact wi contact wi	mate relationshi th an academic a th a peer leader th a resident assi th an instructor	p idviser stant		

13. Please respond to the following items by placing the number from the scale in the space provided to the left of the item.

Not at all	Somewhat	Moderately well	Fairly well	Very well
1	2	3	4	5
a.	How well do	you feel your academ	nic adviser know	vs you?
b.	How well do	you feel your ROSES	5 seminar instru	ctor knows you?
C.	How well do knows you?	you feel any of your	instructors for o	ther courses
d .	How well do	you feel your residen	t assistant know	rs you?
e.	How well do	you feel any of the R	OSES peer lead	ers knows you?

14. How well do you believe the ROSES program has helped you in the following areas? Place your response from the scale in the space provided.

Helped to a great extent	Helped to a good extent	Helped to a fair extent	Helped somewhat	Helped not at all
1	2	3	4	5
a. b.	Academically Personally (i.	v (i.e. classes, s e. support, assi	tudying) stance)	
C.	Gain informa	tion about you	r major	
d.	Gain informa	tion about MS	U	
e.	Socially (i.e.	meeting people	e, getting invol	ved)

15. Would you recommend the ROSES program to another freshman in your major?

Yes No ____

- 16. At this time, what is your intent regarding your major? (indicate the most likely choice by placing an "X" in the blank)
 - _____ stay in my current major
 - change to a different major in science, engineering, or agriculture and natural resources
 - _____ change to a major outside of science, engineering, or agriculture and natural resources
 - ____ I have no idea

APPENDIX D

	Acad.	Social	Full	Fall	Pred.	Sat. w/	ROSES	Help	Class	Study	Study	Help	Sat. w/	Sat. w/	Involv.	Seminal
				GPA	GPA	Adv.	Know	Acad.		,	w/ ROSES	Soc.	Room.	RA		
Academic	1.00	0.45**	0.83**	0.44**	0.19**	0.17*	0.13	0.16*	0.15	0.19*	-0.06	0.14	-0.04	-0.02	-0.09	0.29**
Social	0.45**	1.00	0.81**	-0.05	-0.04	0.00	0.19*	0.06	0.15	0.00	0.13	0.24**	0.23**	0.13	60.0	0.03
llu	0.83**	0.81**	1.00	0.25**	0.10	0.07	0.17*	0.09	0.20**	0.10	0.07	0.19**	0.08	0.07	-0.01	0.19**
Fall GPA	0.44**	-0.05	0.25**	1.00	0.49**	0.23**	0.12	0.20**	0.17*	0.22**	-0.08	0.07	0.04	0.02	-0.03	0.57**
Pred. GPA	0.19*	-0.04	0.10	0.49**	1.00	0.12	0.16*	0.01	0.13	0.16*	-0.19*	0.02	0.04	0.02	0.12	0.31**
Sat. w/ adv.	0.17*	0.00	0.07	0.23**	0.12	1.00	0.13	0.24**	0.13	0.17*	-0.08	0.14	0.04	0.15*	0.02	0.22**
ROSES	0.13	0.19*	0.17*	0.12	0.16*	0.13	1.00	0.16*	0.06	0.14	0.06	0.31**	-0.06	0.21**	0.03	0.15*
MOU																
Help acad.	0.16*	0.06	0.09	.20**	0.01	0.24**	0.16*	1.00	0.06	0.27**	0.09	0.50**	0.11	0.01	0.01	0.18*
Class	0.15	0.15	0.20**	0.17*	0.13	0.13	0.06	0.06	1.00	0.18*	-0.10	-0.06	-0.09	0.07	-0.01	0.20**
Study	0.19*	0.00	0.10	.22**	0.16*	0.17*	0.14	0.27*	0.18*	1.00	-0.09	0.22**	-0.04	0.06	0.06	0.26**
Study w/	-0.06	0.13	0.01	-0.08	-0.19*	-0.08	0.06	0.09	-0.10	-0.09	1.00	0.12	0.01	0.12	0.05	0.05
ROSES																
Help soc.	0.14	0.24**	0.19**	0.07	0.02	0.14	0.31**	0.50**	-0.06	0.22**	0.12	1.00	0.10	0.12	0.11	0.09
Sat. w/	-0.04	0.23**	0.08	0.04	0.04	0.04	-0.06	0.11	-0.09	-0.04	0.01	0.10	1.00	0.03	0.10	-0.04
.uoon.																
Sat. w/ RA	-0.02	0.13	0.07	0.02	0.02	0.15*	0.21**	0.01	0.07	0.06	0.12	0.12	0.03	1.00	-0.10	-0.02
nvolv.	-0.09	0.09	-0.01	-0.03	0.12	0.02	0.03	0.01	-0.01	0.06	0.05	0.11	0.10	-0.10	1.00	0.07
Seminar	0.29**	0.03	0.19**	0.57**	0.31**	0.22**	0.15*	0.18*	0.20**	0.26**	0.05	0.09	-0.04	-0.02	0.07	1.00
44 .0																

Table 33- Correlation Matrix for Variables and Outcomes

*p < .05; **p < .01

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APPENDIX D

APPENDIX E

MICHIGAN STATE

IINIVERSITY

October 24, 1997

Kathryn M. Moore TO: 418 Erickson Hall

> CATEGORY: APPROVAL DATE:

RE: IRB#: TITLE:

97-513 ADJUSTMENT TO COLLEGE: THE CONTRIBUTION OF A LIVING-LEARING PROGRAM FOR SCIENCE AND ENGINEERING STUDENTS **REVISION REQUESTED:** N/A 1-C 10/22/97

R

The University Committee on Research Involving Human Subjects' (UCRIHS) review of this project is complete. I am pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and methods to obtain informed consent are appropriate. Therefore, the UCRIHS approved this project and any revisions listed above.

- UCRIHS approval is valid for one calendar year, beginning with the approval date shown above. Investigators planning to continue a project beyond one year must use the green renewal form (enclosed with the original approval letter or when a project is renewed) to seek updated certification. There is a maximum of four such expedited renewals possible. Investigators wishing to continue a project beyond that time need to submit it again for complete review. **RENEWAL:**
- **REVISIONS:** UCRIHS must review any changes in procedures involving human subjects, prior to initiation of the change. If this is done at the time of renewal, please use the green renewal form. To revise an approved protocol at any other time during the year, send your written request to the UCRIHS Chair, requesting revised approval and referencing the project's IRB # and title. Include in your request a description of the change and any revised instruments consent forms or advertisements that are applicable instruments, consent forms or advertisements that are applicable.

PROBLEMS/ CHANGES :

Should either of the following arise during the course of the work, investigators must notify UCRIHS promptly: (1) problems (unexpected side effects, complaints, etc.) involving human subjects or (2) changes in the research environment or new information indicating greater risk to the human subjects than existed when the protocol was previously reviewed and approved.

If we can be of any future help, please do not hesitate to contact us at (517)355-2180 or FAX (517)432-1171.

University Committee on Research involving Human Subjects (UCRIHS)

OFFICE OF RESEARCH AND GRADUATE

STUDIES

Michigan State University 246 Administration Building East Lansing, Michigan 48824-1046

> 517/355-2180 FAX: 517/432-1171

Sincerely, David E. Wright, Ph Æ UCRIHS Chair DEW:bed

cc: Cynthia K. Helman 🖌

The Michigan State University IDEA is Institutional Diversity Excellence in Action.

APPENDIX F

APPENDIX F

October 6, 1997

Western Psychological Services Publishers and Distributors 12031 Wilshire Boulevard Los Angeles, CA 90025

ATTN: Ms. Susan Weinberg

I am a doctoral student in the Higher, Adult and Lifelong Education program at Michigan State University. The topic of my dissertation research is college student adjustment, and I would like to use the Student Adaptation to College Questionnaire.

My research specifically examines the contribution of a living-learning program on the adjustment of first year science and engineering students. Several hundred first year students will receive the survey near the end of Fall Semester (December, 1997).

In previous telephone communication with Western Psychological Services, I understand that there is a discount for purchasing instruments to be used in student research projects. Thus, I am requesting the discount for the Student Adaptation to College Questionnaire (hand-scored version). I will need the discount through May, 1998.

This dissertation research is a requirement for the completion of my doctoral degree. In accordance with policies at Michigan State University, I am an enrolled student and will be enrolled during the time of data collection. All research procedures conform to APA standards as well as to the policies at Michigan State University governing research projects.

Sincerely,

Cynthia K. Helman

Cynthia K. Helman Doctoral Student Michigan State University (517)339-3632 email: helman@pilot.msu.edu

APPENDIX G

APPENDIX G

December 1, 1997

Dear ROSES student:

I am a doctoral student in the Higher, Adult and Lifelong Education program here at MSU. I am conducting research for my dissertation and am requesting your assistance.

The transition from high school and home to college and living in a residence hall is a period of adjustment for most students. My dissertation research focuses on the transition made by first semester students. In particular, I am interested in learning about the experiences of students in the ROSES program and their transition to college. I am asking all students in the ROSES program this Fall to complete the enclosed two surveys.

I know this is a busy time of the semester; however, I would appreciate it very much if you would take a few minutes to share your experiences with me by completing the surveys. The two surveys should take **only about 25 minutes to complete**.

You may be assured of complete confidentiality. I will use your PID only to match the two surveys, and to access selected institutional data (SAT/ACT score, high school GPA, predicted GPA, fall class schedule, and ROSES seminar attendance, fall semester GPA, and spring semester enrollment status). Once matched, all data will be assigned a random four digit number; data will be stored and analyzed only by that code. The code sheet linking PIDs and the random numbers will be securely stored apart from all other data and records pertaining to this research project.

Please return the completed surveys in a sealed envelope (enclosed) to the Bailey Hall Resident Director's office (A101 Bailey) by December 8, 1997.

You have had a variety of opportunities (i.e. attending an extra success seminar, attending a workshop, and other experiences announced by seminar instructors) to earn bonus points in the ROSES seminar. The ROSES seminar instructors have agreed that returning the survey by December 8, 1997 is also an opportunity to gain **a bonus point** toward your total In-Class Activity Points for the ROSES seminar. When you turn in your surveys to the Resident Director, you will be asked to sign a slip of paper which will be forwarded to your ROSES seminar instructor so you receive credit for returning the surveys.

You indicate your voluntary agreement to participate by completing and returning the surveys. Participation in this study is voluntary and there is no penalty for not responding. You may choose to omit any question on the surveys. By providing your PID, you authorize me to access the institutional data indicated above. All results and information will be treated with strict confidence and all respondents will remain anonymous in all reports of the research findings. Copies of the results of this research will be available in Bailey Hall during the spring semester, 1998.

I would be happy to answer any questions you may have about this study. I can be reached at 2-2493 or helman@pilot.msu.edu.

Thank you very much for your thoughtful responses and your assistance with this study.

Cindy Helman Graduate Student
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BIBLIOGRAPHY

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