AN EVALUATION OF THE RESIDENTIAL LEARNING COMMUNITIES PROGRAM AT OHIO UNIVERSITY:
AN ANALYSIS OF STUDENT INVOLVEMENT, SATISFACTION, ACADEMIC SUCCESS, AND RETENTION

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This dissertation entitled
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AN ANALYSIS OF STUDENT INVOLVEMENT, SATISFACTION, ACADEMIC
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As a result of the many dramatic forces shaping the climate for higher education, a number of new initiatives for improving the undergraduate experience have emerged on college and university campuses across the United States. The Residential Learning Communities program at Ohio University, built on the learning community model of freshman interest groups with the addition of a residential component, was launched in fall 2000 with five goals in mind: a) create residential, learning-based peer networks, b) improve academic success of first-year students, c) improve student retention from the freshman to sophomore year, d) increase student satisfaction with the university, and e) increase student-faculty interaction outside the classroom.

The purpose of this study was to determine the effectiveness of the Residential Learning Communities program in achieving, in its first full year of operation, its goals of enhancing the first-year experience at Ohio University. Utilizing available data from the university’s Student Involvement Questionnaire and student information system, this study sought to identify whether there were differences in involvement with peers, academic involvement, involvement with faculty, student satisfaction, academic success, and retention based on participation in learning community participation, major declaration status, and gender, controlling for preadmission characteristics. Analysis of Covariance tests or chi-square tests of independence were used to test the null
hypotheses. Results were inconclusive for many of the dependent variables under study, but significant interaction effects were found for hours of involvement with peers, academic involvement, and student satisfaction.

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CHAPTER ONE

Introduction

Background of the Study

Perhaps at no other point in the history of higher education in America have colleges and universities been faced with such enormous pressures to perform. The higher education environment of today is one characterized by the challenge of satisfying the public demands for quality in undergraduate education while attempting to maintain fiscal stability in an era of declining state appropriations, increasing competition for tuition dollars, and constant pressure to stem the escalating costs of tuition.

Over the last 20 years, a number of policy studies and publications have brought higher education issues to the forefront. The 1983 National Commission on Excellence in Education report *A Nation at Risk* alerted the public to the “problems afflicting American education” (para. 3). The report called attention to the marked decline in student achievement in K-12 students as well as college graduates and documented the rapid rise in remedial courses offered at four-year higher education institutions. The following year brought stronger criticisms for colleges and universities. The Final Report of the Study Group on the Conditions of Excellence in American Higher Education (1984) *Involvement in Learning: Realizing the Potential of American Higher Education* charged that colleges and universities were failing to realize their potential in undergraduate education and offered practical steps for fulfilling the promise of excellence in higher education. Boyer’s 1987 evaluation of American higher education, *College: The Undergraduate Experience in America*, supported by the Carnegie Foundation for the Advancement of Teaching, echoed the previous criticisms of higher
education and challenged colleges and universities to reinvent the undergraduate experience.

Throughout the 1990s, further criticisms and recommendations were offered for reinvigorating undergraduate education and focusing on student learning (Pascarella & Terenzini, 1991; Astin, 1993; American College Personnel Association, 1996; The Kellogg Commission, 1997; American Association for Higher Education, American College Personnel Association & National Association of Student Personnel Administrators, 1998). As Lenning (1999) noted, “everyone [seemed] to agree—students, parents, employers, politicians among them—that undergraduate education in this country must improve dramatically” (p. 1).

Compounding the public’s demands for reform in undergraduate education in recent years has been the price of higher education. College tuition and fees have risen at a greater rate than inflation or family income: tuition at four-year public institutions has climbed by 53% over the last decade, while median family income rose by only 8% (U.S. Department of Education, 2000). At the same time, families have seen a decline in financial aid grant awards. U.S. Department of Education figures indicate that two-thirds of the increases made in total financial aid to students in the past 10 years have been in loans. As students and families have been forced to allocate a higher percentage of family income for attending college, it is not surprising that these consumers of higher education would demand quality in the “product’ they purchase.

While higher education officials have been challenged to reform undergraduate education, they have been asked to do so with limited resources. In recent years, although state appropriations for higher education have increased, the allocations have
often failed to keep pace with inflation and increases in enrollment (Schmidt, 2002).

The National Center for Public Policy and Higher Education (2002) outlined the problems facing public higher education:

Public higher education—including funding for student financial aid—must compete with other state services for its share of available funds. Higher education's declining share of state expenditures does not represent any deliberate policy decision to substantially curtail state funding. Indeed, state support for higher education has often increased in absolute dollars, even as its share declined. The reasons for the decline in share can be found in the nature of the competition for state funds, the growth of other state services, political priorities, and the perceptions of key state officials. (p. 3)

The Center for the Study of Education Policy at Illinois State University found that state spending on higher education for fiscal year 2001-2002 grew by the smallest rate in five years, and in thirteen states, “higher education was not appropriated enough new money to stay ahead of inflation” (Schmidt, 2002, p. 1).

In many states the pressures to reform and perform have merged with the challenge of competing for state resources. While institutions’ failure to perform inevitably translates into a loss of tuition dollars by students taking their business elsewhere, many public institutions now face a loss of state appropriations as well. Several state legislatures “have begun, or are considering, tying their appropriations to performance-based benchmarks, such as retention and graduation rates” (Reisberg, 1999, p. A54). Traditional state budgeting systems that have typically “funded public higher education primarily for current costs, enrollment levels, and inflationary and salary expenses” (p. 3) are giving way to a new model that requires institutions to demonstrate their effectiveness and value.
trends” (Burke, 1997, p. 6) have been replaced by budgeting systems that allocate some portion of funds based on how well an institution performs. According to Carnevale, Johnson, and Edwards (1998, para. 9), “Tennessee was the first state to link appropriations for public colleges and universities to performance, in 1979, when the state’s higher-education commission began the program as a way to improve undergraduate education.” Since then, many states have followed suit. By 1998, McKeown-Moak (1999, p. 6) reported, “34 states had adopted some form of performance budgeting or performance funding” and “over forty percent of the states [expected] performance funding to be on 1999 legislative agendas.”

As a result of the many dramatic forces shaping the climate for higher education, a number of new initiatives for improving the undergraduate experience and, in turn, restoring the public’s trust in higher education, have emerged on college and university campuses across the United States. Among the most promising of these innovations is the introduction of learning communities (Tinto, 1996). While learning communities can take a number of different forms, a widely accepted definition of learning communities is that offered by Gabelnick, MacGregor, Matthews, and Smith, who in 1990 wrote Learning Communities: Creating Connections Among Students, Faculty, and Disciplines. Learning communities “purposefully restructure the curriculum to link together courses or coursework so that students find greater coherence in what they are learning as well as increased intellectual interaction with faculty and fellow students” (p. 5). Gabelnick et al. described five major curricular models for learning communities: a) linked courses, b) learning clusters, c) freshman interest groups, d) federated learning communities, and e) coordinated studies. Tinto (1999) called for colleges and
universities to make “learning communities…a hallmark of the first-year experience” (p. 6).

In an era of increased competition and constant calls for reform of undergraduate education, learning communities, Smith (1991) argued, “offer a practical avenue for reform that deals with many educational issues at once in that they are adaptable to diverse issues and varied institutional settings” (p. 42). Learning communities, Gaff (1997) purported, are one way in which the intersection of quality and efficiency in higher education can occur. Gaff reported that there have been two reform agendas in recent years: the educational improvement agenda and the agenda to improve management and accountability of colleges and universities. He argued that “until recently, these two efforts have operated on different tracks and have involved very different people” (p. 14). The intersecting of these two can be a new transition that “puts students and their learning at the center” (p. 17). He argued that quality and efficiency are not antithetical; they can intersect through learning communities.

Tinto (1997, p. 599) postulated that learning communities could be an avenue through which institutions can begin “taking retention seriously.” As Levitz, Noel, and Richter (1999) acknowledged:

Student retention is the primary gauge for collectively assessing the success—defined much more broadly than just academic success—of students, and therefore of an institution. Retention, then, is not the primary goal, but it is the best indicator that an institution is meeting its goal of student satisfaction and success. (p. 31)
An institution’s retention rate is not only the most visible performance indicator possible but is also a critical factor in an institution’s ability to maintain fiscal solvency. Research (Levitz et al., 1999) indicates that by reducing the number of freshmen dropouts by a single student, a four-year institution will, on average, “save’ $15,000 to $25,000 in gross revenue over four to five years” (p. 48).

The interconnectedness of retention and student involvement has been well documented (Astin, 1975, 1977, 1982, 1993; Pascarella & Terenzini, 1991; Tinto, 1987). Astin (1985) defined involvement as “the amount of physical and psychological energy that the student devotes to the academic experience” (p. 134). Astin (1975) theorized that “if ways can be found to involve students more in the life and environment of the institution, their chances of staying in college are improved” (p. 148). As Jerry Supple, president of Southwest Texas State University acknowledged: students often say that they are leaving an institution because of financial reasons, a boyfriend or girlfriend, or they want to be closer to home, “but the real reason students leave is that [institutions] have failed to significantly engage them in the campus community” (as cited in Reisberg, 1999, p. A54). Tinto (1999) agreed that “simply put, involvement matters, and at no point does it matter more than during the first year of college when student attachments are so tenuous and the pull of the institution so weak” (p. 6).

National studies have established the importance of considering students’ entering characteristics, gender, and major declaration status in relation to retention, satisfaction, student involvement, and other academic outcomes. Astin (1993) reported that the best predictors of academic success in college are “high school GPA and SAT verbal score” (p. 188). Astin (1975) also reported gender differences in involvement in extracurricular
activities and retention rates for men and women. Similarly, Burke (1992) found differences in involvement with peers, involvement with faculty, and academic involvement based on gender. Astin (1993) reported that “several measures of satisfaction are significantly related to gender (being a woman)” (p. 404). Further, national retention studies indicate that undecided students have higher attrition rates than other students (Noel, Levitz, & Salure, 1987, as cited in McDonald, 1995). Learning communities, Soldner, Lee, and Duby (1999, p. 117) offered, provide avenues “for students to interact academically and socially with their faculty members and peers; both are positively associated with improved adjustment and retention.” Learning communities’ deliberate restructuring of the way in which students experience the university can be a tool for colleges and universities to build on students’ entering characteristics and provide enhanced opportunities for both genders as well as undecided students.

Lenning (1999) offered that learning communities hold the promise of addressing the roots of early withdrawal. Astin’s student involvement model and Tinto’s student departure model, Lenning posited, “suggest that learning communities should increase students’ development, achievement, and persistence through encouraging the integration of social and academic lives within a college or university and its programs, and through quality interaction with peers, faculty members, and the campus environment” (p. 22). Several studies have demonstrated the benefits of learning communities. Research (Minor, 1997; Schroeder, Minor, & Tarkow, 1999; Johnson & Romanoff, 1999; Durrington & Bacon, 1999) indicates that students in learning communities nationwide have significantly higher levels of involvement, are more successful academically, and
have retention rates that are ten to twenty percent higher than those not in learning communities. In the dynamic higher education environment of today, learning communities can prove a worthwhile investment for a college or university.

Recognizing the need to offer enticements for enhancing and reforming the undergraduate experience, the Ohio University Foundation Board of Trustees established The 1804 Fund. Each year, The 1804 Fund invites proposals that offer innovative strategies to achieve the goals of fostering a superior undergraduate experience and integrating students into the full mission of the university. Funded in 1999 by an 1804 Undergraduate Learning Award, the Residential Learning Communities (RLC) program at Ohio University was designed with five goals in mind: a) create residential, learning-based peer networks, b) improve academic success of first-year students, c) improve student retention from the freshman to sophomore year, d) increase student satisfaction with Ohio University, and e) increase student-faculty interaction outside the classroom (Tampke, Burke, & Kahrig, 1999, p. 3). The RLC program was built on the learning community model of freshman interest groups, in which the student “cohort registers for all three courses and travels as a subset of about twenty-five students to larger classes” (Gabelnick et al., 1990, p. 25), with the addition of a residential component.

In addition to the Residential Learning Communities program, Ohio University has offered the Paired Courses learning community program since 1995. The Paired Courses learning community is essentially the model that Gabelnick, MacGregor, Matthews and Smith (1990) and Smith (1991) called linked courses, which “involves pairing two courses and listing them in the class schedule so that a specific cohort of students co-register for them” (Gabelnick et al., 1990, p. 20).
If programs such as the Residential Learning Communities project at Ohio University are going to become a part of the fabric of the institution and not be relegated to status as “just another fad,” assessment data demonstrating the outcomes of such programs is essential. Further, since resources are being allocated to fund learning communities programs on campuses across the nation, evaluation of these programs simply must be done.

Statement of the Problem

The problem of this study is to determine the effectiveness of the Residential Learning Communities program in achieving its goals of enhancing the first-year undergraduate experience at Ohio University.

Research Questions

1. Are there differences in the level of involvement with peers based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics?

   - Are there differences in the number of formal involvement activities with peers based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics?

   - Are there differences in the number of hours of formal involvement with peers based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics?

   - Are there differences in the number of contacts of informal involvement with peers based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics?
2. Are there differences in academic involvement levels based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics?

3. Are there differences in the level of involvement with faculty based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics?

4. Are there differences in the level of satisfaction with the university based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics?

5. Are there differences in academic success based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics?
   - Are there differences in student accumulative grade-point averages at the end of the first term of college based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics?
   - Are there differences in student accumulative grade-point averages at the end of the first year of college based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics?
   - Are there differences in progress toward degree completion at the end of the first year of college based on participation in learning communities,
gender, and major declaration, controlling for preadmission characteristics?

6. Is there a relationship between student retention rates and participation in learning communities?

**Null Hypotheses**

The following null hypotheses, based on the research questions, were tested at the .05 level of significance:

**Null Hypothesis 1a (involvement with peers):** There are no significant differences in the number of formal involvement activities with peers based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics.

**Null Hypothesis 1b (involvement with peers):** There are no significant differences in the number of hours of formal involvement activities with peers based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics.

**Null Hypothesis 1c (involvement with peers):** There are no significant differences in informal involvement levels with peers based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics.

**Null Hypothesis 2 (academic involvement):** There are no significant differences in academic involvement levels based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics.
Null Hypothesis 3 (involvement with faculty): There are no significant differences in involvement with faculty levels based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics.

Null Hypothesis 4 (satisfaction): There are no significant differences in satisfaction levels based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics.

Null Hypothesis 5a (first quarter grade-point average): There are no significant differences in first-quarter grade-point average based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics.

Null Hypothesis 5b (accumulative grade-point average): There are no significant differences in first-year accumulative grade-point average based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics.

Null Hypothesis 5c (academic progress): There are no significant differences in academic progress based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics.

Null Hypothesis 6 (retention): There is no significant relationship in retention rates and participation in learning communities.

Importance of the Study

This study may make a number of significant contributions to higher education theory and practice. First and foremost, it offers practitioners at Ohio University a comprehensive evaluation of the Residential Learning Communities program at the institution. As Zumeta (2000, p. 66) noted, “pervasive, persistent, and society-wide
forces” are driving accountability concerns for higher education. Business leaders demand that colleges and universities pay greater attention to outcomes and “customer” satisfaction (p. 1). Governmental leaders place pressure on institutions to perform by tying portions of state subsidy to performance indicators such as retention and graduation rates (Burke, 1997). Students, parents, and state officials demand that colleges and universities stem escalating tuition costs by becoming more efficient (Zumeta). And, in recent years, the accountability movement has found a new momentum in the form of state report cards. Colleges and universities must justify their costs by demonstrating outcomes. The assessment provided by this study offers practitioners at Ohio University a means of demonstrating the outcomes and contributions of the Residential Learning Community initiatives. Such information may be an effective tool for securing and maintaining a source of permanent funding for the program not only for Ohio University officials but also for those practitioners at other colleges and universities seeking to launch similar initiatives.

Additionally, because the Residential Learning Communities program at Ohio University offers services throughout the first year, while most such programs focus entirely on the first term (Pike, Schroeder, & Berry, 1997), this study may make an important contribution to the body of literature on learning communities. Further, the assessment of the behavioral outcomes of academic involvement, involvement with peers, and involvement with faculty offers an assessment of those dimensions identified by Astin (1996) as being “the most potent forms of involvement” (p. 126). Such an approach is of added import because learning community studies at large institutions have typically overlooked involvement measures (Walker, 2001).
While a number of studies of learning communities examine retention and grade-point averages (Lenning, 1999; Tokuno, 1993; Baker & Pomerantz, 2001) or satisfaction (Johnson & Romanoff, 1999; Bergstrom, 1999 Schroeder, Minor, & Tarkow, 1999) or involvement (Pike et al., 1997), no studies have been found that provide a comprehensive evaluation of a residentially-based learning community at a large institution that examines student involvement, academic success, satisfaction, and retention all in one study. Further, no such studies have been found that examine these outcomes based on gender and major declaration status. By examining multiple measures of outcomes and examining gender differences and differences in major declaration status, this study complements previous research. Moreover, since preadmission student characteristics may influence involvement, success, and persistence rates (Pascarella & Terenzini, 1991), controlling for high school rank and scores on the ACT strengthen this study and advance its contributions to the field.

Delimitations and Limitations of the Study

Delimitations

1. The focus of this study is the Residential Learning Communities program at Ohio University. No other learning community programs at other colleges or universities were included in the study.

2. This study is limited to students who were first-year students at Ohio University during the 2000-2001 academic year and who completed the Student Involvement Questionnaire. Students who participated in learning community programs but did not complete the Student Involvement Questionnaire are not included in this study.
3. Of particular interest in this study are those 93 students from the population described in number 2 who participated in the Residential Learning Communities program. Thus, this delimitation of the number of participants creates some statistical limitations in terms of sample size.

4. The undecided student population in this study includes undecided students who entered into a particular college (e.g. undecided in the College of Business, undecided in the College of Communication) as well as those students who were undecided about any college and enrolled in University College.

**Limitations**

1. This study was conducted as an evaluation of the Residential Learning Communities program at Ohio University. The profile of the institution is a large public university situated in a rural region of southeast Ohio, with an enrollment of nearly 17,000 undergraduates. The majority of the students live on campus in one of the 41 residence halls or near campus in private housing. While the focus of this study is a learning community program that includes common features such as cohorts of students enrolling in cluster of courses and activities facilitated by a peer mentor, the anchor of the program is that the participants reside in the same residential complex. Thus, the conclusions of this study will be most helpful to institutions with programs employing similar features.

2. An additional limitation relates to the design of the Residential Learning Communities program itself. First, while the program was made available to all first-year students living on campus, students self-selected into the program. As noted by Tokuno, (1993), “any study which uses groups assigned by self-selection
will have results that can be questioned” (p. 15). Since practical and ethical reasons prevent a random assignment of students into RLC program, a logical way to address the concerns associated with self-selection is to control for preadmission differences and employ the use of comparison groups, as is done in this study.

3. The design of the Residential Learning Communities program created an additional limitation. Because the RLC program offered services throughout the first year, students identified as RLC participants in this study may have had varying levels of participation. Some RLC participants may have participated in the program in the fall quarter only, while some may have participated in both the fall and winter quarters. Additionally, some students who participated in the winter quarter may have been enrolled in two courses and the University College anchor course while others may have opted out of the two courses and may have been enrolled only in the University College anchor course. These varying levels of a student’s participation are not accounted for in this study.

4. The Residential Learning Communities program was in its infancy. Although a pilot year of the program occurred in the academic year 1999-2000, this study examines the outcomes of the program in its first full year of operation. Thus, additional evaluation of the program will need to occur as the program matures to see if the results still hold true.

5. Using the Student Involvement Questionnaire as a source for much of the data for this study creates a further limitation. Any survey is limited by the willingness of the group surveyed to respond—and to respond truthfully. However, because the
Student Involvement Questionnaire typically yields an 80% response rate and has been shown to yield stable results from year to year at Ohio University (Williford, 1989), it can be used with reasonable confidence. Further, a number of doctoral dissertations have successfully used the questionnaire as a source of data from Ohio University in recent years (Williford, 1989; Burke, 1992; Sand, 2000).

**Definition of Terms**

*Academic Involvement*: The degree to which a student reports involvement with academic activities, as described by Astin (1993), such as time spent studying or doing homework per week (SIQ numbers 1, 14, and 15a).

*Academic Success*: Refers to three indicators of academic success.

*First-Term Grade-Point Average*. Refers to the student’s grade-point average after the first term.

*Accumulative Grade-Point Average (GPA)*. Refers to the student’s accumulative grade-point average (GPA) at the end of the first year.

*Academic Progress*. Refers to the student’s progress towards earning a degree as indicated by the number of credit hours earned at the end of the first year.

*Formal Involvement*. Includes such activities as participating in intramural sports, being a member of a fraternity or sorority, and hours per week spent in student clubs or organizations. Includes information on the number of activities as well as the time spent in those activities as identified by SIQ number two.

*Informal Involvement*: Includes time spent socializing (SIQ numbers four and five) and time spent conversing with someone from a different culture (SIQ number seven).
Involvement with Faculty: Described by Astin (1993) as including measures such as being a guest in a professor’s home, working on a professor’s research project, assisting faculty in teaching a class, and hours spent talking with faculty outside of class, in this study, involvement with faculty refers to the degree to which the student had such contacts as indicated by SIQ numbers 10, 11, and 12.

Involvement with Peers: The extent to which a student reports involvement with student peers, as described by Astin (1993). Involvement with peers is comprised of two components: formal involvement and informal involvement.

Paired Courses learning community: The learning community program in which a cohort of 20 students co-enrolled in English Composition and a larger general education course.

Paired Courses Participant: Any student who participated in the Paired Courses learning community project (not residentially-based) during the specified year.

Preadmission Characteristics: Refers to academic characteristics of the student that were present prior to enrollment at the university, including ACT composite score (or SAT equivalent converted from concordance table) and high-school percentile rank.

Residential Learning Communities program: Residentially-based learning community program in which cohorts of 20 students or less living in a particular building or complex co-enroll in two or more courses, including a University Experience course taught by the resident director in that building or complex and a peer mentor.

RLC Participant: Any student who participated in the Residential Learning Communities program for the specified year.
Retention: Refers to whether or not the student was retained at the university as indicated by enrollment during the fall term of the second year (freshman to sophomore year retention).

Student Satisfaction: The extent to which a student indicates satisfaction with his/her choice in attending the university (SIQ number 18), the importance of graduating from the university (SIQ number 19), and the rating of the quality of instruction at the university (SIQ number 22), as identified by Williford (1989).

Organization of Study

This study is organized into five chapters. Chapter One is an overview and background of the topic to be investigated. It includes the background of the study, statement of the problem, research hypotheses, the importance of the study, limitations and delimitations of the study, and definition of terms used in the study.

Chapter Two contains a review of the relevant literature and related previous research. It provides a historical perspective of learning communities as well as analysis and discussion of the available research on the outcomes of learning communities.

In Chapter Three the details of the research design (including operational definitions of the variables, identification of the population, instrumentation, and data collection procedures as well as data analysis procedures used in the study) are included.

The results of the data analysis are presented in Chapter Four. Statistical tables support a discussion of the results.

In Chapter Five the results of study, interpretations, conclusions, and recommendations for practical application and further research are summarized.

References and Appendices follow the main body of the study.
CHAPTER TWO

Review of the Literature

The purpose of this study is to provide a comprehensive evaluation of the Residential Learning Communities program at Ohio University. This chapter surveys pertinent research regarding learning community models and outcomes associated with learning community participation. First, background information is provided to trace the roots of learning communities and establish the rationale for their existence in higher education. Second, an overview of the five most common learning community models and the emergence of residential learning communities as a new model are discussed. Next follows a discussion of the benefits of learning communities and an examination of the available evidence linking learning community participation to outcomes in student involvement, student satisfaction, academic success, student persistence, and other areas. Concluding the chapter is a detailed description of the model of the Residential Learning Communities program at Ohio University.

History of Learning Communities

Credit for the creation of the learning community concept is generally given to Alexander Meiklejohn (1932), who in 1927 established the Experimental College at the University of Wisconsin-Madison. Perhaps the earliest evidence of an organized learning community, Meiklejohn’s Experimental College organized the freshman and sophomore years into a study of society “built on the principles of connected and integrated learning” (Shapiro & Levine, 1999, p. 18). Meiklejohn’s deliberate restructuring of the curriculum challenged the traditional approaches to undergraduate educations that were characterized by fragmentation of the curriculum due to departmentalism.
While Meiklejohn is often noted as the “father of learning communities,” acknowledged also must be the work of John Dewey and Joseph Tussman. According to Shapiro and Levine (1999), Dewey viewed education “as a purposeful, student-centered process that required a close relationship between teacher and student” (p. 17). Dewey’s tenets of the best approaches to learning are at the center of the learning community movement of today. Joseph Tussman, likewise is credited for laying the groundwork for learning communities. Tussman’s reform of undergraduate education in the form of the Experiment at Berkeley (1965-1969) was an attempt at formatting the curriculum “within programs that would unite faculty and students in distinct communities” (Johnson & Romanoff, 1999, p. 385).

Whereas Meiklejohn, Dewey, and Tussman are viewed as early reformers shaping the learning community movement, the most widely accepted definition of learning communities is that described in the work of Gabelnick, MacGregor, Matthews, and Smith, who in 1990 wrote *Learning Communities: Creating Connections Among Students, Faculty, and Disciplines*:

A learning community is any one of a variety of curricular structures that link together several existing courses—or actually restructure the curricular material entirely—so that students have opportunities for deeper understanding and integration of the material they are learning, and more interaction with one another and their teachers as fellow participants in the learning enterprise. (p. 19)
**Learning Community Models**

Gabelnick et al. (1990) described five major curricular models for learning communities, including linked courses, learning clusters, freshman interest groups, federated learning communities, and coordinated studies. Lenning (1999) offered a broader taxonomy of learning communities that included curricular learning communities, classroom learning communities, residential learning communities, and student-type learning communities (i.e. for certain groups such as academically disadvantaged students). Lenning included under the category of curricular learning communities the five models identified by Gabelnick, MacGregor, Matthews, and Smith. Lenning further postulated, as an expansion of earlier work by Tokuno (1985), that learning communities “can be categorized into high-level, middle-level, or low-level positions along each of five dimensions: 1) student collaboration, 2) faculty collaboration, 3) curricular coordination, 4) shared setting, and 5) interactive pedagogy” (p. 9).

**Linked Courses**

Identified as the most basic form of a learning community, the linked courses model “involves pairing two courses and listing them in the class schedule so that a specific cohort of students co-register for them” (Gabelnick et al., 1990, p. 20). Smith (1991) added that this model often connects a typically large general education course with a smaller skill course, such as English composition or public speaking. Lucas and Mott (1996) further described linked courses as “loosely linked” in which the instructors teach individually but may coordinate syllabi and/or assignments in some manner, and
“linked,” in which instructors teach together in the same classroom. This model is also known as paired courses or dyads.

Learning Clusters

Learning Clusters build on the linked-course model by adding another course or two so that the cluster becomes a substantial part of the student’s schedule. The three or four courses may speak to a common theme or topic, and there may or may not be interaction among the faculty members (Smith, 1991). This model may also be known as blocks.

Freshmen Interest Groups

Freshmen interest groups (FIGs) represent another type of learning community approach. The FIG model is essentially the learning clusters model, in which “the FIG cohort registers for all three courses and travels as a subset of about twenty-five students to larger classes” (Gabelnick et al., 1990, p. 25), with the absence of any faculty collaboration and the addition of a peer advising component. The model usually centers on a pre-major topic or theme and has a credit-bearing discussion session convened by a peer advisor that often includes orientation activities and becomes the basis for study groups (Smith, 1991). The FIG model, suggested Gabelnick et al, is particularly appropriate to large colleges and universities because it does not require faculty to redo everything or make drastic pedagogical changes.

Lucas and Mott (1996) reported that FIGs are the model most commonly used by larger four-year institutions. They reported that such programs exist at the University of Oregon, University of Hawaii at Manoa, Illinois State University, Michigan State University, North Carolina Appalachian State University, Gettysburg College, Temple
University, Eastern Washington University, Seattle Pacific University, Washington State University, and University of Wisconsin.

Federated Learning Communities

This model is a more complex version of learning clusters involving a credit bearing program seminar led by a Master Learner. This Master Learner is a faculty member from another discipline who in essence becomes “a learner with the students and as a co-learner brings new energies and perspectives on the inter-relatedness of the three courses” (Lucas & Mott, 1996, p. 5). Because the Master Learner is relieved of all teaching duties to serve in the learning community capacity, this model is among the most costly (Gabelnick et al., 1990).

Coordinated studies

Most directly resembling the earliest learning community models by Meiklejohn and Tussman is the coordinated studies model. Smith (1991) stated that “coordinated studies discard the notion of four-credit courses in favor of a curriculum of fully integrated sixteen-credit programs that last a full quarter or an entire year” (p. 45). Coordinated studies programs interdisciplinary approach is the most radical restructuring of the traditional curriculum (Gabelnick et al., 1990).

The Move Toward Residential Learning Communities

A more recent development in learning community models has been the addition of a residential component to the curricular models of linked courses, learning clusters, freshman interest groups, federated learning communities, or coordinated studies. Daie (1995) viewed this new movement as a rediscovery of the concept of integrated studies and the residential college, and traced the roots of residential learning communities to the
long-standing tradition of an integrated academic and social life, such as that at Harvard University and Rutgers University, based on the effective British “college” model. Still, residential learning communities have emerged as one of latest innovations in the undergraduate education reform movement. This new approach to learning communities attempts to marry the powerful potential of the residence hall environment to the benefits of the learning community structure to create a tool for bridging the academic-social divide that characterizes the first year (Tinto, 1996).

There is much evidence demonstrating the impact of living in a residence hall environment. Boyer (1987) stated that students living in residence halls have more contact with faculty members, are more involved in organized activities with peers, and “show greater gain in artistic interests, liberalism, and interpersonal esteem than do commuters” (p. 207). Pascarella and Terenzini in their review of 20 years of research, How College Affects Students (1991), concluded that “living on campus maximizes opportunities for social, cultural, and extracurricular involvement; and it is this involvement that largely accounts for residential living’s impact on student change” (p. 611). Astin (1993) demonstrated that living in a campus residence hall has a significant positive impact on student involvement, student persistence and satisfaction with nearly every aspect of the undergraduate experience.

A number of researchers’ conclusions and recommendations have built a case for the introduction of residentially based learning communities. Riker (in Chickering, 1981) described the opportunity presented by residence hall living:

The indications clearly are that residential learning programs hold great potential for helping colleges and universities to meet the developmental needs of a diverse
student population in the years ahead. Realizing this potential depends largely on focusing institutional goals on students as individuals, closely coordinating academic and residential activities, and enlisting residential staff prepared to serve as teachers of human relations and facilitators of student development. Residential learning can aid development through increasing students’ self-knowledge, self-confidence, sense of self-worth, clarification of goals, interpersonal competence, and regard for others and the community as a whole. As a consequence, students will be better able to take full advantage of their academic programs. (p. 688)

Further, because of the large percentage of first-year students who live in campus housing, residence halls are positioned to make a significant impact at that critical point “when student attachments are so tenuous and the pull of the institution so weak” (Tinto, 1999, p. 6).

Perhaps the most influential work that may have sparked the surge in residential learning communities in the past decade is *Realizing the Educational Potential of Residence Halls* by Schroeder, Mable, and associates (1994). In their chapter “The Impact of Residential Life on Students,” Pascarella, Terenzini, and Blimling (1994) charged that although residence halls are in a position to make significant contributions to undergraduate education, they often fail to reach this potential. They called for residence halls to be transformed into “living learning centers” with academic learning as the focus. Similarly, Schroeder (1994) suggested that residence halls should be used to reinforce and enhance classroom learning. In his chapter “Developing Learning Communities,” he
offered recommendations for capitalizing on the potential of the residential environment to be a learning community.

**Benefits of Learning Communities**

Whatever form a learning community takes, all incorporate common features and are designed with similar outcomes in mind. At the core of every learning community is the attempt to foster student involvement—attributable in part to *Involvement in Learning: Realizing the Potential of American Higher Education* by the Study Group on the Conditions of Excellence in American Higher Education (1984) and Kuh’s (1991) *Involving Colleges: Successful Approaches to Fostering Student Learning and Development Outside the Classroom*, which called for colleges to focus more energy on the involvement of students. The goal of any learning community program, according to Evenbeck and Williams (1998), “is to replicate those personal relationships [we value so highly from our own experience] and—by extension—to provide access to resources that will lead students to fall in love with learning” (p. 36).

The resurgence of the learning communities’ movement in 1990s is one way officials sought to address the public’s concerns and restore trust in higher education by “removing structural barriers endemic to many colleges and universities that often impede effective teaching and learning” (Johnson & Romanoff, 1999, p, 385). Tinto and Goodsell (1994) described the mechanisms through which learning communities operate to enhance the undergraduate experience:

First, [learning communities] require students to take several courses together, most often around a unifying theme. In a very real sense, students travel together through a cluster of courses, some of which may be linked in content and
assignments (e.g. English and a content area). Second, they require students to come together for some form of unifying experience that seeks to establish linkages between course content (e.g. an integrative seminar). Third, and perhaps most importantly, they enable students to form a community of learners in which both social and academic integration is possible. (pp. 9-10)

Bruffee (1999) added that the power of learning communities comes through the utilization of the classroom experience as a springboard for social integration. He argued that first-year students’ social connections rarely come from their classes. As juniors and seniors, students do make friends in their smaller major classes, but freshmen do not. As a result, first-year students are less likely to engage in discussions that are academic and intellectual. Bruffee argued that learning communities are an excellent way to achieve one of most important goals of liberal education: “to enrich life with the kind of conversation that comes with substantive friendship” (p. B9).

Lucas and Mott (1996) cited the following as ways in which learning communities can achieve institutional goals and produce desirable outcomes:

1. Students understand how subjects and issues are interrelated and cross subject matter boundaries.

2. Learning communities provide an academic community for students who attend commuter schools. This sense of community helps bolster commitment and helps to stem the tide of student attrition.

3. Students become active and responsible participants in their own education. Social and academic commitment are increased which results in higher
retention. Students stretch their assumptions about coursework and the nature of going to school. Higher level and critical thinking are encouraged.

4. Students have a greater intellectual interaction and connection with each other, faculty and members of the outside community. The exposure to diverse populations is very great.

5. Learning communities provide faculty revitalization and encourage the sharing of knowledge between faculty.

6. Learning communities provide an excellent forum to explore and understand diverse perspectives.

7. Learning communities are a pedagogical style and organizational framework that is student centered rather than teacher centered and emphasizes active student association and involvement.

8. Bringing several faculty members together to teach adds an intellectual richness to students’ experience that traditional pedagogy does not.

(pp. 6-7)

In summary, the literature suggests that learning communities can be of tremendous value in shaping the first-year experience. Specifically, researchers contend that learning communities increase student involvement, improve student performance, and impact student retention (Levine, 1999). The next section is a review of the literature in which the outcomes of learning community participation have been explored.

Student Involvement

Alexander Astin (1975) is generally accepted as the first researcher to recognize the importance of student involvement as a critical component in the undergraduate
student experience. Astin (1985) defined student involvement as “the amount of physical and psychological energy that the student devotes to the academic experience” (p. 134) and postulated that involvement could influence all other outcomes of the college/university experience, including cognitive and affective development, satisfaction, and persistence. Astin (1975) offered that “if ways can be found to involve students more in the life and environment of the institution, their chances of staying in college are improved” (p. 148).

Boyer (1987) reaffirmed the significance of student involvement:

What students do in dining halls, on the playing fields, and in the rathskeller late at night all combine to influence the outcome of the college education, and the challenge, in the building of community, is to extend the resources for learning on the campus and to see academic and nonacademic life as interlocked. (p. 177)

Boyer further added that “the college of quality remains a place where the curricular and cocurricular are viewed as having a relationship to each other” (p. 195).

Astin (1993) identified five areas of student involvement measures: academic involvement, involvement with faculty, involvement with peers, involvement in work, and other forms of involvement. Academic involvement, he concluded, “is positively related to nearly all academic outcomes” (pp. 375-376) including student persistence, graduating with honors, enrollment in graduate school, and all self-reported increases in cognitive and affective skills. Involvement with faculty and involvement with peers were also found to be positively correlated with a range of academic outcomes as well as with measures of student satisfaction with the college experience (p. 383).
Astin’s (1993) findings led him to the conclusion that “the student’s peer group is the single most potent source of influence on growth and development during the undergraduate years” (p. 398). Astin (1996) later offered that the three most potent forms of involvement as a means of shaping students’ cognitive and affective development are academic involvement, involvement with faculty, and involvement with peer groups. Astin asserted that “given the demonstrated importance of student involvement, one of the things we should regularly assess is how much time students devote to various activities” (p. 132).

Spitzberg and Thorndike (1992) suggested that the power of student involvement has typically been ignored. The researchers stated that “the potential for learning and for the experience of intellectual community that comes from engagement with the liberal arts and from substantial faculty-student and student-student interaction is rarely recognized in this country” (p. 124). Tinto (quoted in Braxton, 2000) further noted that the potential of the classroom as a vehicle for student involvement has been overlooked:

For most students classrooms serve as smaller academic and social meeting places or crossroads that intersect the diverse faculty and student communities marking the college generally. Membership in the community of the classroom can provide important linkages to membership in communities external to the classroom. For new students in particular, engagement in the community of the classroom can become a gateway for subsequent student involvement in the academic and social communities of the college generally. (p. 82)

The work of these researchers suggested that the structure offered by learning communities could be a means through which students could bridge the academic-social
divide. Learning communities could enhance student involvement because such programs would allow students to “attend to both social and academic needs within the context of the program” (Tinto & Russo, 1994, p. 24).

More recently, discussions about the importance of student involvement have evolved into national discussions about “student engagement.” As a result of the introduction of the National Survey of Student Engagement in 1999, the term “student engagement” has become more readily understood and recognized as the measure of quality for which institutions should aspire. Created by a 1998 working group of the Pew Charitable Trusts as a means to address national concerns about quality in higher education and to provide incentives for improving undergraduate education, the National Survey of Student Engagement “attempts to determine the extent to which undergraduates engage in effective learning activities” (Marcy, 2003, para. 12). Using an instrument called The College Student Report to survey undergraduates across the nation directly about their educational experiences, the National Survey of Student Engagement provides a lens through which the undergraduate experience at colleges and universities nationwide can be viewed (National Survey of Student Engagement, 2004, para. 4).

Using data from the National Survey of Student Engagement (NSSE) in 2002, Zhao and Kuh (2004) offered perhaps the largest study of the relationship between learning community participation and rich educational experiences. Using a sample of more than 80,000 students from 365 four-year colleges and universities, Zhao and Kuh found that participation in learning communities was “positively linked with more frequently interacting with faculty members, engaging in diversity-related activities, and having classes that emphasize higher order thinking skills” (p. 124). Zhao and Kuh also
reported that “higher levels of academic effort, academic integration, and active and collaborative learning” (p. 124) were found for students who had indicated experience with a learning community. Making the study even more powerful was the effect sizes that were reported. The effect size for interaction with faculty for first year students, for example, was .60, and the effect size for seniors was .51. The statistics indicated that not only was the impact of learning community participation substantial, but also that the effect of the learning community was enduring (Zhao & Kuh).

A number of other studies have explored student involvement as an outcome of learning community participation. Leonard (1996) reported that Pascarella, Terenzini, and Blimling’s (1994) review of research on residence halls found “that students in residence hall environments that were structured as learning communities had significantly higher levels of involvement in educational activities and interaction with faculty and peers” (p. 4). The research of Taylor, Moore, MacGregor, and Lindblad (2004) offered additional evidence. Living-learning community participants at the University of Michigan were found to have more frequent face-to-face interaction with faculty outside the class, and “with the exception of intramural or intercollegiate athletics, living-learning students were more involved in extracurricular activities than non living-learning peers” (Taylor et al; p. 50). Leonard concluded that this involvement was significant because it, in turn, led to higher levels of educational achievement and persistence.

Researchers (Schroeder, Minor, & Tarkow, 1999) at the University of Missouri-Columbia investigated student involvement through both an institution-specific instrument, the MU Freshman Survey, and the widely used College Student Experiences
Questionnaire (CSEQ). Students participating in the residentially-based FIGs program were found to have significantly higher levels of involvement on all three involvement scales on the CSEQ. Further, FIG participants were found to have higher levels of involvement than nonparticipants in two principle areas: informal interaction with faculty outside class and interaction with peers. In a related study, Pike, Schroeder, and Berry (1997) found that the learning community program at University of Missouri-Columbia “had significant positive effects on social integration and institutional commitment, after controlling for antecedent variables” (p. 616). Pike (1999), in a later study, also analyzed CSEQ data from the same institution. Pike found that “students in residential learning communities had significantly higher levels of involvement, interaction, integration, and gains in learning and intellectual development than did students in traditional residence halls” (p. 269).

In their qualitative study of the Freshman Interest Groups at the University of Washington, Seattle, Tinto and Goodsell (1994) asserted that learning community participation positively impacted student involvement with peers:

First, FIGS allowed students to interact with the same group of peers across their classes. Consistently seeing the same people could not be taken for granted at this large university; consequently, this aspect of the FIG program was not trivial. Second, this consistency enabled students to form a social network in which other academic support mechanisms could begin to operate. Finally, writing link classes were a place where students became engaged with their course content through the peer review writing process. (p.14)
Similarly, a study of the Russell Scholars learning community at the University of Southern Maine revealed that, although not statistically significant, Russell Scholars spent more free time in organized campus activities—an indicator of a higher level of involvement with peers (Johnson & Romanoff, 1999). Tinto (1997), using a modified version of Pace’s Quality of Effort Scales, found that Coordinated Studies Program students at Seattle Central Community College “reported greater involvement in a range of academic and social activities than did students in the comparison classes of the regular curriculum” (p. 606).

The true value of student involvement can be seen in its relation to other positive outcomes of the undergraduate experience. Integration into the academic and social aspects of college life lead to commitment, and commitment leads to persistence (Pike et al.; 1997). Furthermore, student involvement is associated with other outcomes that are viewed as desired behaviors for undergraduates. Fenzel found, in his 2001 study of students enrolled at a parochial liberal arts university on the East Coast, that students who reported being involved in one or more activities on campus also reported better attendance at classes, less binge drinking and illicit drug (i.e. marijuana) use, and placed a higher level of importance on performing community service.

**Student Satisfaction**

Studies examining student satisfaction as an outcome of participation in a learning community are sparse. This may be due to the assumption that if students are satisfied with their experience at the institution, their satisfaction will show in their persistence rates.
Still, some researchers have deemed student satisfaction an important variable to study. Baker and Pomerantz (2001) reported that Northern Kentucky University learning community participants “indicated greater satisfaction with their university experiences than those students in the control group as demonstrated by their responses to a nationally normed student-satisfaction survey” (p. 122). Likewise, Johnson and Romanoff (1999), in their study of the Russell Scholars learning community program at the University of Southern Maine, found that participants were significantly more satisfied with their faculty than nonparticipants, and generally more satisfied with their experience at the university, (though not a statistically significant difference). Bergstrom (1999) reported that participants in the NU Start summer residential learning community at the University of Nebraska-Lincoln “expressed near-unanimous satisfaction with their experience in the residence halls” (p. 6) and with their peers in the learning community.

**Academic Success**

One of the purported benefits of participation in learning communities is improved academic success. Although studies vary on what measures indicate academic success, most researchers report grade-point average differences between learning community participants and non-participants as evidence that participation in learning communities is associated with increased academic success. Grade-point average comparisons are typically made by examining the grade-point average at the end of the first term of participation in the learning community, although some researchers seek to examine longer-term impact by reviewing the accumulative grade-point average at the end of the first year. Other indicators of academic success are comparisons between
learning community participants and nonparticipants on academic standing at the university and progress toward degree completion.

In *Learning Community Research and Assessment: What We Know Now*, a National Learning Communities Project monograph, Taylor, Moore, MacGregor, and Lindblad (2004) identified multiple institutions who had documented differences in the academic performance of students participating in learning communities in comparison to students who did not participate. Learning community cohorts were reported to have significantly higher grade-point averages after the first term than comparison groups at Iowa State University, University of Northern Colorado, University of Massachusetts Amherst, and University of Wisconsin Madison (Taylor et al.).

In a study of students from the University of Washington from 1988, 1989, and 1990, Tokuno (1993) examined both immediate and long-term effects relating to grade-point average. Tokuno found higher GPAs for Freshman Interest Group participants than nonparticipants, even when an admission index based on high school GPA and college test scores, was retained as a covariate. On average, the FIG participants had a GPA that was from .08 to .09 grade points higher than nonparticipants. The differences between mean GPAs of participants and nonparticipants were found to be significant up to three years after participation in the FIG program.

Similarly, Minor (1997) found significant differences in the mean GPA for participants in the residentially based FIG program at the University of Missouri-Columbia when compared to nonparticipants. Even after statistically controlling for entering ability, the mean GPA of FIG students was significantly higher than that of nonparticipants; 2.89 compared to 2.66 for nonparticipants. Conversely, Pike et al.,
(1997), in their study of the same program, were surprised to find that “the FIGs program did not directly or indirectly enhance students’ academic achievement” (p. 619). They called for RLC initiatives (such as coenrollment and seminars) “to be continued throughout the academic year” (p. 620) in order to improve academic achievement.

Baker’s and Pomerantz’s (2001) study of learning community participants at Northern Kentucky University found results similar to those of Tokuno (1993) and Minor (1997). In a comparison of learning community participants with a control group of students based on gender, age, race, age, ACT composite score, major, part-time/full-time status, enrollment or not in the UNIV 101 course, and admission status, the researchers found that learning community participants had significantly higher fall GPAs (2.61) compared to the control group (2.34).

Soldner, Lee, and Duby (1999) asserted that academic standing might be a more useful performance indicator than GPA “since prior research has indicated that FYE students achieve comparable but not necessarily higher GPAs than similar freshmen not in the program” (p. 122). In their examination of students at the University of Northern Michigan, Soldner et al. found “a distinct and statistically significant difference in the number and percentage of students staying in clear academic status at the end of the first semester” (p. 122) between First Year Experience (FYE) participants and nonparticipants. While 33% of the nonparticipants were on probation at the end of the first semester, only 22.2% of the FYE participants were on probation. The researchers further examined academic status after several semesters of enrollment. Although the results were not significant beyond the first year, FYE participants consistently performed at a higher level than nonparticipants (Soldner et al.).
Baker and Pomerantz (2001) also reported academic standing as an indicator of academic success. Their findings offered support for Soldner’s et al. (1999) claim that learning community participants are less likely than nonparticipants to be placed on academic probation. Only 11% of the LC participants in their study were on probation at the end of the fall semester compared to 17% for the non LC students.

Another indicator of academic performance reported by some researchers is progress toward degree attainment as measured by the number of quarter or semester hours earned. In a study of FIG students from 1988, 1989, and 1990, Tokuno (1993) found that progress toward degree attainment was higher for each of the years for participants than for nonparticipants. FIG students were more likely to be at or ahead of what is considered normal progress (as measured by the number of credit hours earned) in their first, second, and third years. The difference was even more notable when looking at students who could be considered “far behind (i.e. two full quarters or more for second- and third-year students and one full quarter or more for first-year students)” (p. 21). Higher percentages of students far behind were found in the nonparticipants.

Participants in the learning community program at Northern Kentucky University were also found to have higher progress toward degree attainment than nonparticipants. Learning community students earned 1.07 more semester credit hours on average than did the control group of nonparticipants (Baker & Pomerantz, 2001).

Student Retention

Arguably the biggest question driving the research on learning communities is whether or not there is a difference in student retention rates for students who participate in learning communities than those who do not. Regardless of whether the approach is a
qualitative one or quantitative in nature, researchers generally include at least
descriptive statistics on student persistence rates, and oftentimes retention rates are
examined for statistical significance as well.

That student retention is of interest is not surprising. As Tinto (1987) reported, 41
of every 100 students who pursue higher education leave the institution without earning a
degree, most departing during the first two years. This loss of students translates into a
substantial loss for the institution, as noted by Dennis (1998):

Students who drop out after one year represent a loss of the next three years’
tuition. If your school’s annual tuition is $10,000 and one freshman stays for all
four years, the fiscal return on that student could be as much as $40,000. Even if
the student receives institutional funds of $10,000 over the course of four years,
the return on the investment is still $30,000. For every student who transfers or
drops out after the first year, the net income loss could be as much as $30,000.
Multiply that figure by the number of first-year students who withdraw, and the
net revenue loss can be substantial. (p. 79)

If more students stay at the institution, the fiscal stability of that college or university is
greatly enhanced.

Studies examining the relationship between learning community participation and
student retention have been conducted at a wide range of institutions. The National
Learning Communities Project’s 2004 synthesis of learning community research and
assessment authored by Taylor et al. found that researchers at American University of
Paris, Stony Brook University, Iowa State University, University of Northern Colorado,
University of Texas El Paso, and LaGuardia Community College had reported higher
retention rates for learning community cohorts than comparison groups who did not participate in learning communities. For example, “one-, two-, three-, and four-year retention rates were consistently and significantly higher” (p. 42) for learning community participants at Iowa State University.

In a study of students at the University of Washington, Tokuno (1993) reported higher retention rates for FIG learning community participants than for nonparticipants. The difference in retention for the three years of the study was 8.4%, 2.9%, and 6.9% more students retained for FIG participants than for nonparticipants. The retention difference was statistically significant for two of the three years (the 1988 and 1990 cohorts).

Additional studies have documented the association of learning community participation with student retention at large public institutions. Reisberg (1999) reported that the freshman-to-sophomore retention rate at Minnesota State University in Mankato climbed from 69% to 79% in the five years following the inception of the university’s First-Year Experience “enhanced living and learning environment.” In their review of the residentially-based FIGs program at the University of Missouri-Columbia, Minor (1997) and Schroeder, Minor, and Tarkow (1999) found that students who participated in FIGs had significantly higher freshman to sophomore retention rates than other students—87% versus 81%—even when controlling for preadmission ability differences.

Similar differences in retention rates for learning community participants have been found at smaller institutions in a variety of settings. Students who participated in learning communities at the City University of New York’s Brooklyn College were found to return for their second year at a rate of 73% compared to the college’s normal average
of 59% (Bruffee, 1999). Van Sickle and Mehs (1994) reported that participants in the Integrated Learning Program at a mid-sized public liberal arts college in Colorado returned for their second year in significantly higher numbers than the control group matched on preadmission characteristics. Soldner et al. (1999) reported that participants in Northern Michigan University’s First-Year Experience block program returned at a higher rate than nonparticipants, 73.1% compared to 66.6%. Although the difference was not statistically significant, the persistence results were consistently in favor of the FYE participants.

Other Studies of Learning Communities

A number of doctoral dissertations in recent years have focused on learning communities. Several researchers have studied learning community programs at community colleges (Lucca, 2002; Tutt, 2001; Minkler, 2000; Moore, 2000; Ortiz, 1999; Roberts, 1998; Pincus, 1997; Schaad, 1997; Ramaker, 1992; Tollefson, 1990). While a few researchers (Moore; Ortiz) used mixed methods approaches to their dissertations, the majority of the doctoral studies of learning communities have employed a qualitative design (Lucca; Horn, 2000; Minkler; Schmidt, 2000; Woods, 1999; Roberts, 1998; Pincus, 1997; Schaad, 1997; Henscheid, 1996). The qualitative studies have generally sought insights into students’ attitudes and feelings about the impact of learning community participation on their first year of college or have examined faculty perceptions of participation in learning community initiatives.

Doctoral dissertations that have used a quantitative methodology have found results similar to those described previously in this chapter. In several instances, researchers found no significant differences on the dependent variables under study.
between learning community participants and non-participants. This was particularly true when the dependent variable was student retention. Halloran (2000) found no significant differences in perceptions of adjustment between learning community students and non-learning community students. Chonko (1999) found no significant differences in student involvement, achievement, and retention between learning community participants and non-participants. However, Chonko concluded that since significant group differences existed with regard to previous academic achievement, it appeared that learning community participation had a slight but positive impact. Woods (1999) reported slightly higher (though not statistically significant) retention rates for learning community participants than for non-participants at the University of North Carolina at Greensboro. Ramaker (1992) found no significant differences in retention between collaborative learning community participants and comparison group members in a community college setting.

Mediating Factors in Student Involvement, Student Satisfaction, Academic Success, and Student Retention

Research suggests that a number of factors can influence measures of student involvement, student satisfaction, academic success, and student retention. Preadmission characteristics, such as high school GPA and SAT score, for instance, can greatly impact one’s academic success in college (Astin, 1993), interpersonal and extracurricular involvement (Pascarella & Terenzini, 1991), and retention (Ohio University Office of Institutional Research [OUOIR], 2001). Moreover, significant gender effects have been reported for a number of outcomes. Astin (1975) and Burke (1992) reported differences in involvement with peers, involvement with faculty, and academic involvement based on
gender. Astin (1993) found that several measures of satisfaction are significantly related to being a woman and that being female is also a predictor of academic success in college. Gender differences were also reported for retention rates for men and women (Astin, 1975). Astin (1993) further reported differences in student outcomes based on major field of study. Researchers at Ohio University found that undecided students have retention rates markedly lower than students in other majors—a rate of approximately 73% compared to the university-wide average of 85% (OOUIR, 2001).

The Residential Learning Communities Program at Ohio University

Funded in 1999 through the Ohio University’s Foundation Board of Trustees Fund, the Residential Learning Communities (RLC) program at Ohio University was introduced as an innovative strategy for enhancing the first-year experience at the institution. The Residential Learning Communities program was created with five goals in mind: a) create residential, learning-based peer networks; b) improve the academic success of first-year students; c) improve student retention from the freshman to sophomore year; d) increase student satisfaction with Ohio University; and e) increase student-faculty interaction outside the classroom (Tampke, Burke, & Kahrig, 1999). The program was a collaborative effort initiated by the director of freshman programs in University College, the director of residence life, and the director of housing.

The model for the RLCs is best described as a freshman interest group (FIG) model of minimal faculty collaboration with the addition of a residential component. After a smaller pilot project in the 1999-2000 academic year, the RLC program was launched in fall 2000 with the following program elements in place: cluster courses,
common residential experience, resident director involvement, peer mentors, out of class experiences, and a graduate associate. A description of each element follows.

Cluster Courses

Following the model successfully employed at other institutions, six learning communities were created around sets of thematically related courses. Each RLC offered a cluster of three courses in which up to 20 students could enroll. The clusters included a small “anchor” course (freshman seminar or university experience) in which only the students in that cohort could enroll, and two larger general education courses in which the cohort of up to 20 students made up only a small part of the total enrollment. Cluster courses were offered for each of the three academic quarters.

Common Residential Experience

Participants of a particular learning community lived together in the same residential area of campus. The credit-bearing anchor course of the RLC, University College 115 or 125, was taught in a location in the residence hall or an academic building adjacent to the residence hall. In winter and spring, a seminar designed to emphasize relationships among cluster courses and explore issues related to the theme of the community was delivered in the residence hall.

Resident Director Involvement

Each residential complex on the Ohio University campus is managed by a resident director, an administrative student affairs professional responsible for oversight of the residence hall. The resident director for each learning community was actively involved in the program. In the fall quarter, the resident director co-taught the anchor course with
a peer mentor and participated in out-of-class activities with students in the learning community.

**Peer Mentors**

Each learning community employed an advanced undergraduate peer mentor (PM). The PM was responsible for assisting the resident director in teaching the anchor course, organizing co-curricular activities, and convening informal group study sessions for learning community members.

**Out-of-Class Experiences**

Each learning community was given a small budget to offer students the opportunity to participate in academic and social activities designed to reinforce social and intellectual linkages and acquaint participants with the wider academic community. Peer mentors were responsible for assessing the interests of the students and working with the resident director, participating faculty members, and others to arrange out-of-class activities.

**Graduate Associate**

A graduate associate (GA) was employed to assist with the coordination of the RLC project. The GA assisted the director of freshman programs with the training, mentoring, and supervision of the peer mentors as well as development of the materials for the first-year seminar. The GA was responsible for working with residence life staff and the instructors and faculty in the linked courses to encourage cooperation and interaction.
CHAPTER THREE

Research Method

The purpose of this study was to evaluate the effectiveness of the Residential Learning Communities program at Ohio University. In this chapter the research method employed in this study is described. The population selected for the study and the methods used to collect and analyze the data are discussed. This chapter is organized into the following sections: a) subjects, b) instrumentation, c) data collection, d) independent variables, e) dependent variables, and f) data analysis. Data used in this study came from existing data sources collected through the Office of Institutional Research at Ohio University.

Subjects

The population selected for this study was students at Ohio University who were first-year students in the academic year that began in fall 2000 (N=3661). The subjects for this study were limited to those first-year students who completed the Student Involvement Questionnaire at the end of the second quarter (N=2422; 1179 did not complete the SIQ). Students who left the university after the fall quarter were not surveyed and were not included in this study. Students who self-selected and participated in the Residential Learning Community program (N=77) were compared to students who self-selected and participated in the Paired Courses learning community (N=57), and other first-year students who were not involved in learning communities (N=2288). To make the group sizes more comparable, using the random sample command in SPSS 12.0, a random sample (N=100) was selected from the 2288 students completing the SIQ who did not participate in any learning community program.
Instrumentation

Each year, the Office of Institutional Research, in conjunction with the Department of Residence Life and the Division of Student Affairs, administers the Student Involvement Questionnaire (SIQ) to all first-year students living in one of the 41 residence halls at Ohio University. During the academic year 2000-2001, nearly 3,500 students were asked to complete the survey; 83% responded. This response rate is consistent with that of recent years: 1997-1998, 82%; 1998-1999, 71%; and 1999-2000, 83% (Ohio University Office of Institutional Research, 2002).

The Student Involvement Questionnaire has been used annually since 1979 as part of Ohio University’s university-wide student assessment program. The questionnaire is an adapted version of an instrument that was initially used as part of the University of Michigan Project CHOICE (Center for Helping Organizations Improve Choice in Education) study. The instrument collects information on various aspects of student involvement, including academic involvement, social involvement and activities, student satisfaction, and personal goals and adjustment to college. A number of items ask students to report how frequently they participated in various activities. A copy of the instrument appears in Appendix A.

The Student Involvement Questionnaire is the source of data for the dependent variables of student involvement (academic, peer, and faculty) and student satisfaction, while data for academic success and retention were obtained from the university’s Student Information System.
Data Collection

During the first week of the spring quarter, the resident assistants in each hall convened floor section meetings at which the SIQ was distributed to all first-year students. All of the students were surveyed in the same manner. Each student was given, in addition to the questionnaire, a personal letter from the Dean of Students explaining the importance of the study and requesting the student’s cooperation. Students who did not live in residence halls were mailed the letter and SIQ.

Independent Variables

The independent variables for the study are learning community group, gender, and major declaration status.

Learning Community Group

Ohio University offers two types of learning community programs for first-year students: Paired Courses and Residential Learning Communities. The Paired Courses learning community is essentially the model that Gabelnick, MacGregor, Matthews and Smith (1990) and Smith (1991) called linked courses, which “involves pairing two courses and listing them in the class schedule so that a specific cohort of students co-register for them” (Gabelnick et al., p. 20). Learning community group members were identified through course registration records in the university’s Student Information System and were coded as follows: “1” students who self-selected and participated in the Residential Learning Communities program, “2” students who participated in one of the Paired Courses learning communities, and “3” other first-year students who did not participate in a learning community.
Gender

Gender was identified by the student records in the Student Information System as was coded as “1” male or “2” female.

Major Declaration

The major declaration variable was coded as “1” declared major or “2” undecided student according to the student’s major code of record in the Student Information System. A student was coded as an undecided student if he/she had one of the following Ohio University major codes during the fall quarter of his/her first term: ND1201, ND1206, ND0410, ND0610, ND0810, ND0910, ND1010, or ND0210. Major codes ND1201 and ND1206 were students who were undecided about their majors and entered into University College, while the remaining major codes were for students who had entered a particular college (e.g. College of Business, College of Health and Human Services, College of Communication, etc.) but were undecided which major they wanted in that college.

Dependent Variables

The dependent variables for the study were student involvement, satisfaction, academic success, and persistence. Student involvement was further divided into academic involvement, involvement with peers (both formal and informal), and involvement with faculty. In cases where data reduction techniques were utilized to make the data more manageable, individual Analysis of Covariance procedures were ran to ensure that the results were not altered by the data reduction techniques employed.
Student Involvement

*Academic involvement.* Academic involvement is defined as the degree to which a student reports involvement with academic activities. Three items on the SIQ served as measures of academic involvement. Question number one asked students to indicate how many hours they had spent studying each week. Question number 14 asked students to indicate the number of times they had been to the library during the year. Question number 15a asked students to indicate the numbers of hours spent daily using a computer for academic and course work. Though the scales of measurement were different for the three questions, time was the measure for all. Therefore, using the means and standard deviations, a standard score (Z score) was created in SPSS 12.0. The standard scores were then summed to yield a score for academic involvement.

*Involvement with peers.* Involvement with peers is the extent to which a student reports involvement with peers. A number of questions on the SIQ were indicators of involvement with peers: questions number two, four, five, and seven. Question number two was an indicator of involvement with peers in structured activities (formal involvement with peers), while questions four, five, and seven were indicators of involvement with peers in informal, unstructured activities (informal involvement with peers). Question number two asked students to identify the activities in which they participated as well as the time spent each week in those activities. Question number four asked students to report the amount of time spent per month going out with friends. Question number five asked students to report the number of parties attended each month. Question number seven asked students to indicate the number of conversations they had with students from a different culture each month.
Data reduction techniques were utilized to make the data more manageable. Because question number two included 13 possible activities in which a student could have participated, the responses were summed to yield a score of the total number of activities in which the student participated (formal involvement activities) and the total number of hours of participation (formal involvement hours). Questions number four, five, and seven were summed to yield a score representing the total number of contacts of informal involvement with peers.

*Involvement with faculty.* Involvement with faculty was measured by SIQ questions 10, 11, and 12. Question number 10 asked the student to report the number of conversations he/she had during the academic year with faculty or other staff members regarding educational plans, problems, or progress. Question number 11 asked students to indicate the number of conversations with faculty about research and scholarship during the academic year. Question number 12 asked students to report the number of times they had informal contacts, such as dinner or communication via email, with faculty members during the academic year. Because the three questions were of similar intent, responses were summed to yield a total faculty contact score for each student.

*Student Satisfaction*

Student satisfaction refers to the extent to which a student indicates satisfaction with the university. The measures of satisfaction were the SIQ questions numbered 18, 19, and 22. Each of the questions asked the student to respond by selecting one of the four or five responses that best described his/her feelings about the university. Question 18 asked the student to indicate how sure he/she was that he/she made the right choice in attending Ohio University. Number 19 asked the student to indicate how important it
was to him/her that he/she graduate from Ohio University. Question number 22 asked
the student to rate the quality of instruction at Ohio University. To create an overall
satisfaction score with the university, the responses for each question were converted to
numbers and then summed, as indicated.

Questions 18 and 22 contained five possible responses on a range from highest to
lowest satisfaction. The responses were assigned the following values: A=1; B=2; C=3;
D=4; E=5. Thus, higher scores indicated lower levels of satisfaction.

Question number 19 contained four possible responses and was assigned the
following values: A=1; B=2; C=3; D=4. Because questions 18 and 22 used a five-point
scale and number 19 used a four-point scale, the responses from number 19 were
multiplied by 1.25 to convert the responses to the five-point scale used for questions 18
and 22. Standard scores (Z scores) were not created because the intent of the scale of
measurement was the same for all three questions.

Questions 18, 22, and 19 were then summed to yield a satisfaction score in which
higher scores indicated lower levels of satisfaction and lower scores indicated higher
levels of satisfaction.

Academic Success

Three types of student data pertaining to academic success were collected from
the university’s student files stored in the Student Information System. The data was
provided by the Office of Institutional Research.

First-quarter grade-point average. The first measure of academic success was
grade-point average at the end of the student’s first term at the institution (fall quarter
2000) as reported by the Office of Institutional Research.
*Accumulative grade-point average.* The measure used was the student’s accumulative GPA at the end of the first year of enrollment. The data were collected from the university’s Student Information System by selecting the student’s accumulative GPA at the end of the spring quarter 2001 term.

*Academic progress.* The academic progress measure referred to the student’s progress towards earning a degree. The source of data was the student’s total number of credit hours earned at the end of the first year. The data were collected from the university’s Student Information System by selecting the number of credit hours earned at the end of the spring 2001 term.

*Student Retention*

The retention measure refers to whether or not the student continued at the university as indicated by enrollment during the fall term of the second year (fall quarter 2001). If the student was enrolled in fall quarter 2001, he/she received a retention score of 1. If he/she was not enrolled, he/she received a retention score of 0. The data were collected from the Office of Institutional Research.

*Data Analysis Procedures*

All data collected for this study were input into the Statistical Package for the Social Sciences for Windows (SPSS 12.0). The statistical analyses performed were based on the independent and dependent variables driving the research questions. The alpha level of .05 was used as the level of significance to determine whether to reject or fail to reject the null hypotheses.

Because student pre-admission characteristics could confound the relationship under study or cause spurious interpretation of that relationship, statistical control was
employed to extract the effects of ACT composite score and high school percentile rank (Punch, 1998). The statistical control allowed for reducing the bias that could be present in the results due to academic characteristics of the students (ACT score and high school percentile rank) that were present prior to their enrollment at Ohio University.

Univariate Analysis of Covariance (ANCOVA) was used to analyze the data, using ACT composite score and high school rank as covariates. Learning community group, gender, and major declaration were the independent variables. The dependent variables were academic involvement; involvement with peers (formal involvement activities, formal involvement hours, and informal involvement); involvement with faculty; student satisfaction; first-quarter grade-point average; accumulative grade-point average; academic progress; and student persistence.

Analysis of covariance (ANCOVA) procedures were run for each dependent variable, with the exception of student retention, to examine the differences in main effects and identify any interaction effects. Chi-square tests of independence were utilized to test the null hypothesis for student retention. Descriptive statistics are reported.
CHAPTER FOUR

Analysis of the Data

Introduction

The purpose of this study was to determine if there were differences in the student involvement, satisfaction, academic success, and persistence of first-year students who participated in the Residential Learning Communities or Paired Courses Learning Community programs at Ohio University compared to students who did not participate in any learning community. In Chapter Four, the data for this study are presented and analyzed. First, sample size and demographic features of the subjects are discussed. The gender, major declaration status, ACT composite score, and high school rank of the subjects are presented. Each research question and the results of the hypothesis testing for each are presented in the second section.

Demographic Information/Profile of the Subjects

The participants in this study were first-year students who completed the Involvement Study Questionnaire in academic year 2000-2001. A total of 2422 students returned the questionnaire. Because this study focused on learning community groups, the 2422 students were arranged according to the learning community group into which they self-selected: a) students who participated in the Residential Learning Communities program, b) students who participated in the Paired Courses learning community program, and c) other first-year students who did not participate in any learning community program. Using the random sample command in SPSS 12.0, a random sample of 100 was selected from the population of the group of students who did not
participate in any learning community program to make the group sizes more comparable.

Demographic information is presented in Table 1. After the random sample was selected, there were 234 subjects in this study. The Residential Learning Communities program had 77 participants. The Paired Courses learning community program had 57 participants. There were 100 other first-year students who did not participate in any learning community program (hereafter identified as non-participants). 66% of the subjects were female; 34% were male. 65% of the subjects had declared majors, while 34% were undecided about a major. The preadmission academic characteristics of the subjects as measured by ACT composite score and high school rank are displayed in Tables 2 and 3. The ACT composite scores for the three learning community groups were comparable. Residential Learning Community participants’ mean ACT score was 23.96 compared to 23.44 for Paired Courses Learning Community participants and 23.86 for non-participants. The high school rank was 72.88 for Residential Learning Community participants, 68.02 for Paired Courses participants, and 73.80 for non-participants.

Research Questions and Hypothesis Testing

Univariate Analysis of Covariance was used to test each hypothesis associated with the research question under examination. Analysis of Covariance “adjusts the posttest means to what they would be if all groups started out equally on the covariate; at the grand mean” (Stevens, p. 316). Thus, the Analysis of Covariance procedure allowed the researcher to detect differences among the groups while controlling for differences that may have existed in the groups due to academic characteristics (i.e. ACT
Table 1

*Frequency and Percentage of Declared and Undecided Majors and Males and Females by Learning Community Group*

<table>
<thead>
<tr>
<th>Major and Gender</th>
<th>Residential Learning Communities Frequency</th>
<th>Residential Learning Communities Percentage</th>
<th>Paired Courses Frequency</th>
<th>Paired Courses Percentage</th>
<th>Non-Participant Frequency</th>
<th>Non-Participant Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declared</td>
<td>56</td>
<td>73.0</td>
<td>30</td>
<td>53.0</td>
<td>67</td>
<td>67.0</td>
</tr>
<tr>
<td>Declared Male</td>
<td>14</td>
<td>18.0</td>
<td>11</td>
<td>19.0</td>
<td>25</td>
<td>25.0</td>
</tr>
<tr>
<td>Declared Female</td>
<td>42</td>
<td>55.0</td>
<td>19</td>
<td>33.0</td>
<td>42</td>
<td>42.0</td>
</tr>
<tr>
<td>Undecided</td>
<td>21</td>
<td>27.0</td>
<td>27</td>
<td>47.0</td>
<td>33</td>
<td>33.0</td>
</tr>
<tr>
<td>Undecided Male</td>
<td>9</td>
<td>12.0</td>
<td>11</td>
<td>19.0</td>
<td>10</td>
<td>10.0</td>
</tr>
<tr>
<td>Undecided Female</td>
<td>12</td>
<td>16.0</td>
<td>16</td>
<td>28.0</td>
<td>23</td>
<td>23.0</td>
</tr>
<tr>
<td>Male</td>
<td>23</td>
<td>30.0</td>
<td>22</td>
<td>39.0</td>
<td>35</td>
<td>35.0</td>
</tr>
<tr>
<td>Female</td>
<td>54</td>
<td>70.0</td>
<td>35</td>
<td>61.0</td>
<td>65</td>
<td>65.0</td>
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<td><strong>Total</strong></td>
<td><strong>77</strong></td>
<td><strong>100.0</strong></td>
<td><strong>57</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Table 2

*Mean Scores and Standard Deviations of ACT Composite by Learning Community Group*

<table>
<thead>
<tr>
<th>Major and Gender</th>
<th>Residential Learning Communities Mean</th>
<th>Residential Learning Communities Standard Deviation</th>
<th>Paired Courses Mean</th>
<th>Paired Courses Standard Deviation</th>
<th>Non-Participant Mean</th>
<th>Non-Participant Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Declared Male</td>
<td>24.14</td>
<td>3.55</td>
<td>25.00</td>
<td>2.57</td>
<td>24.80</td>
<td>3.40</td>
</tr>
<tr>
<td>Declared Female</td>
<td>23.83</td>
<td>3.19</td>
<td>24.21</td>
<td>2.02</td>
<td>24.02</td>
<td>3.20</td>
</tr>
<tr>
<td>Declared Total</td>
<td>23.91</td>
<td>3.26</td>
<td>24.50</td>
<td>2.22</td>
<td>24.31</td>
<td>3.27</td>
</tr>
<tr>
<td>Undecided Male</td>
<td>25.67</td>
<td>3.39</td>
<td>23.55</td>
<td>2.51</td>
<td>22.30</td>
<td>2.63</td>
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<tr>
<td>Undecided Female</td>
<td>22.92</td>
<td>3.40</td>
<td>21.38</td>
<td>2.09</td>
<td>23.22</td>
<td>3.20</td>
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<tr>
<td>Undecided Total</td>
<td>24.10</td>
<td>3.59</td>
<td>22.26</td>
<td>2.47</td>
<td>22.94</td>
<td>3.03</td>
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<tr>
<td>Total Male</td>
<td>24.74</td>
<td>3.49</td>
<td>24.27</td>
<td>2.59</td>
<td>24.09</td>
<td>3.36</td>
</tr>
<tr>
<td>Total Female</td>
<td>23.63</td>
<td>3.23</td>
<td>22.91</td>
<td>2.48</td>
<td>23.74</td>
<td>3.20</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>23.96</strong></td>
<td><strong>23.44</strong></td>
<td><strong>2.58</strong></td>
<td><strong>23.86</strong></td>
<td><strong>3.24</strong></td>
</tr>
<tr>
<td>Major and Gender</td>
<td>Residential Learning Communities Mean</td>
<td>Residential Learning Communities Standard Deviation</td>
<td>Paired Courses Mean</td>
<td>Paired Courses Standard Deviation</td>
<td>Non-Participant Mean</td>
<td>Non-Participant Standard Deviation</td>
</tr>
<tr>
<td>------------------</td>
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<td>--------------------------------------------------</td>
<td>--------------------</td>
<td>----------------------------------</td>
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</tr>
<tr>
<td>Declared Male</td>
<td>75.00</td>
<td>14.08</td>
<td>64.70</td>
<td>16.63</td>
<td>72.84</td>
<td>14.24</td>
</tr>
<tr>
<td>Declared Female</td>
<td>75.43</td>
<td>15.32</td>
<td>74.88</td>
<td>15.60</td>
<td>76.12</td>
<td>14.52</td>
</tr>
<tr>
<td>Declared Total</td>
<td>75.33</td>
<td>14.91</td>
<td>71.11</td>
<td>16.45</td>
<td>74.90</td>
<td>14.40</td>
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<tr>
<td>Undecided Male</td>
<td>68.86</td>
<td>20.53</td>
<td>60.70</td>
<td>15.96</td>
<td>68.40</td>
<td>18.28</td>
</tr>
<tr>
<td>Undecided Female</td>
<td>63.00</td>
<td>16.86</td>
<td>67.38</td>
<td>15.66</td>
<td>72.96</td>
<td>16.47</td>
</tr>
<tr>
<td>Undecided Total</td>
<td>65.41</td>
<td>18.08</td>
<td>64.81</td>
<td>15.80</td>
<td>71.58</td>
<td>16.88</td>
</tr>
<tr>
<td>Total Male</td>
<td>72.74</td>
<td>16.46</td>
<td>62.70</td>
<td>16.00</td>
<td>71.57</td>
<td>15.35</td>
</tr>
<tr>
<td>Total Female</td>
<td>72.94</td>
<td>16.26</td>
<td>71.24</td>
<td>15.85</td>
<td>75.00</td>
<td>15.19</td>
</tr>
<tr>
<td>Total</td>
<td>72.88</td>
<td>16.19</td>
<td>68.02</td>
<td>16.30</td>
<td>73.80</td>
<td>15.26</td>
</tr>
</tbody>
</table>
composite and high school rank). The results of the hypothesis testing follow. Tables displaying the adjustment means and standard deviation for each learning community group by gender and major are provided. Tables of the results of the ANCOVA testing are also presented.

**Research Question One**

Research Question One focused on differences in the level of involvement with peers based on participation in learning communities, major declaration, and gender controlling for preadmission characteristics. The first null hypothesis linked with this subproblem was:

*Null Hypothesis 1a (formal involvement activities):* There are no significant differences in the number of formal involvement activities with peers based on participation in learning communities, major declaration, and gender controlling for preadmission characteristics.

The information in Table 4 presents the mean scores of involvement in formal activities with peers based on learning community group, major declaration status, and gender. Univariate Analysis of Covariance (ANCOVA) was performed using a .05 level of significance. First, parallelism of the regression planes was tested at the .05 level of significance to ensure that there is no covariate by treatment interaction effects. The results indicated that the assumption of parallelism of the regression planes was tenable since $F(1, 203) = 1.03, p = .42$. The ANCOVA data in Table 5 show the differences in involvement in formal activities based on learning community group, major, and gender controlling for ACT score and high school rank. Students who participated in the Residential Learning Communities program were involved in more formal activities with
### Table 4

*Adjusted Mean Scores and Standard Deviations of Involvement in the Number of Formal Activities Based on Learning Community Group, Major Declaration Status, and Gender*

<table>
<thead>
<tr>
<th>Major and Gender</th>
<th>Residential Learning Communities Adjusted Mean</th>
<th>Residential Learning Communities Standard Deviation</th>
<th>Paired Courses Adjusted Mean</th>
<th>Paired Courses Standard Deviation</th>
<th>Non-Participant Adjusted Mean</th>
<th>Non-Participant Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declared Male</td>
<td>2.08</td>
<td>1.88</td>
<td>1.80</td>
<td>1.13</td>
<td>1.44</td>
<td>1.26</td>
</tr>
<tr>
<td>Declared Female</td>
<td>1.40</td>
<td>1.26</td>
<td>1.29</td>
<td>1.36</td>
<td>1.29</td>
<td>1.31</td>
</tr>
<tr>
<td>Declared Total</td>
<td>1.56</td>
<td>1.43</td>
<td>1.48</td>
<td>1.28</td>
<td>1.34</td>
<td>1.29</td>
</tr>
<tr>
<td>Undecided Male</td>
<td>1.43</td>
<td>0.79</td>
<td>1.40</td>
<td>0.84</td>
<td>1.20</td>
<td>0.92</td>
</tr>
<tr>
<td>Undecided Female</td>
<td>2.10</td>
<td>1.52</td>
<td>0.75</td>
<td>0.68</td>
<td>1.17</td>
<td>1.27</td>
</tr>
<tr>
<td>Undecided Total</td>
<td>1.82</td>
<td>1.29</td>
<td>1.00</td>
<td>0.80</td>
<td>1.18</td>
<td>1.16</td>
</tr>
<tr>
<td>Total Male</td>
<td>1.84</td>
<td>1.57</td>
<td>1.60</td>
<td>1.00</td>
<td>1.37</td>
<td>1.17</td>
</tr>
<tr>
<td>Total Female</td>
<td>1.54</td>
<td>1.33</td>
<td>1.03</td>
<td>1.10</td>
<td>1.25</td>
<td>1.29</td>
</tr>
<tr>
<td>Total</td>
<td>1.62</td>
<td>1.39</td>
<td>1.25</td>
<td>1.09</td>
<td>1.29</td>
<td>1.24</td>
</tr>
</tbody>
</table>

*Note.* The adjusted mean scores indicate the number of formal activities in which students participated, such as intercollegiate athletics, intramural athletics, Greek life, residence hall activities, student government, hobbies or social clubs, etc.
Table 5

Analysis of Covariance of Involvement in Number of Formal Activities by Learning Community Group, Major, and Gender

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Covariate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT composite</td>
<td>1</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>.99</td>
</tr>
<tr>
<td>High school rank</td>
<td>1</td>
<td>2.21</td>
<td>2.21</td>
<td>1.40</td>
<td>.24</td>
</tr>
<tr>
<td><strong>Between</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Community Group (LC)</td>
<td>2</td>
<td>7.32</td>
<td>3.66</td>
<td>2.31</td>
<td>.10</td>
</tr>
<tr>
<td>Major Declaration Status (Major)</td>
<td>1</td>
<td>1.06</td>
<td>1.06</td>
<td>0.67</td>
<td>.41</td>
</tr>
<tr>
<td>Gender (Gender)</td>
<td>2</td>
<td>2.36</td>
<td>2.36</td>
<td>1.49</td>
<td>.22</td>
</tr>
<tr>
<td>LC x Major</td>
<td>2</td>
<td>1.58</td>
<td>0.79</td>
<td>0.50</td>
<td>.61</td>
</tr>
<tr>
<td>LC x Gender</td>
<td>2</td>
<td>2.92</td>
<td>1.46</td>
<td>0.92</td>
<td>.40</td>
</tr>
<tr>
<td>Major x Gender</td>
<td>1</td>
<td>2.21</td>
<td>2.21</td>
<td>1.40</td>
<td>.24</td>
</tr>
<tr>
<td>LC x Major x Gender</td>
<td>2</td>
<td>3.40</td>
<td>2.00</td>
<td>1.26</td>
<td>.29</td>
</tr>
<tr>
<td><strong>Within</strong></td>
<td>208</td>
<td>328.91</td>
<td>1.58</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significance at the .05 level.*
peers, $M=1.62$, than students who participated in the Paired Courses learning community, $M=1.25$. Likewise, RLC students were involved in more formal activities with peers than other first-year students who did not participate in any learning community, $M=1.29$. Undecided females who participated in the Residential Learning Communities program had the highest mean of all groups $M=2.10$, while undecided females who participated in the Paired Courses learning community had the lowest mean, $M=.75$. Although the means were higher for the RLC participants, the results of the ANCOVA test indicated that the differences in the number of formal involvement activities with peers based on learning community group $F(2, 208)=2.31, p=.10$, major $F(1, 208)=.67, p=.41$, and gender $F(1, 208)=1.49, p=.22$ were not significant at the .05 level. There were also no interaction effects. Fail to reject the null hypothesis.

The second null hypothesis associated with Research Question One was:

*Null Hypothesis 1b (formal involvement hours):* There are no significant differences in the number of hours of formal involvement activities with peers based on participation in learning communities, major declaration, and gender, controlling for preadmission characteristics.

The mean scores of the hours of involvement in formal activities with peers based on learning community group, major, and gender are presented in Table 6. An ANCOVA test was performed using a .05 level of significance. To verify that ANCOVA was appropriate, the assumption of parallelism of the regression planes was tested at the .05 level of significance. The assumption held since $F(1, 203)=1.75, p=.06$. The results of the ANCOVA test in Table 7 indicated that the differences in the hours of involvement
Table 6

*Adjusted Mean Scores and Standard Deviations of Hours of Involvement in Formal Activities Based on Learning Community Group, Major Declaration Status, and Gender*

<table>
<thead>
<tr>
<th>Major and Gender</th>
<th>Residential Learning Communities Adjusted Mean</th>
<th>Residential Learning Communities Standard Deviation</th>
<th>Paired Courses Adjusted Mean</th>
<th>Paired Courses Standard Deviation</th>
<th>Non-Participant Adjusted Mean</th>
<th>Non-Participant Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declared Male</td>
<td>14.42</td>
<td>15.82</td>
<td>10.20</td>
<td>11.61</td>
<td>7.96</td>
<td>8.55</td>
</tr>
<tr>
<td>Declared Female</td>
<td>5.92</td>
<td>9.59</td>
<td>3.00</td>
<td>3.74</td>
<td>6.07</td>
<td>7.16</td>
</tr>
<tr>
<td>Declared Total</td>
<td>7.88</td>
<td>11.72</td>
<td>5.67</td>
<td>8.24</td>
<td>6.78</td>
<td>7.70</td>
</tr>
<tr>
<td>Undecided Male</td>
<td>4.29</td>
<td>2.29</td>
<td>7.50</td>
<td>7.00</td>
<td>8.70</td>
<td>8.22</td>
</tr>
<tr>
<td>Undecided Female</td>
<td>17.80</td>
<td>29.17</td>
<td>4.44</td>
<td>5.43</td>
<td>4.26</td>
<td>5.07</td>
</tr>
<tr>
<td>Undecided Total</td>
<td>12.24</td>
<td>22.97</td>
<td>5.62</td>
<td>6.13</td>
<td>5.61</td>
<td>6.40</td>
</tr>
<tr>
<td>Total Male</td>
<td>10.68</td>
<td>13.41</td>
<td>8.85</td>
<td>9.43</td>
<td>8.17</td>
<td>8.34</td>
</tr>
<tr>
<td>Total Female</td>
<td>8.30</td>
<td>15.89</td>
<td>3.70</td>
<td>4.62</td>
<td>5.43</td>
<td>6.51</td>
</tr>
<tr>
<td>Total</td>
<td>8.96</td>
<td>15.19</td>
<td>5.64</td>
<td>7.21</td>
<td>6.39</td>
<td>7.29</td>
</tr>
</tbody>
</table>

*Note.* The adjusted mean scores indicate the number of hours spent each week participating in formal activities, such as intercollegiate athletics, intramural athletics, Greek life, residence hall activities, student government, hobbies or social clubs, etc.
Table 7

*Analysis of Covariance of Hours of Involvement in Formal Activities by Learning Community Group, Major Declaration Status, and Gender*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covariate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT composite</td>
<td>1</td>
<td>47.89</td>
<td>47.89</td>
<td>0.47</td>
<td>.50</td>
</tr>
<tr>
<td>High school rank</td>
<td>1</td>
<td>16.39</td>
<td>16.39</td>
<td>0.16</td>
<td>.69</td>
</tr>
<tr>
<td>Between</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Community Group (LC)</td>
<td>2</td>
<td>533.40</td>
<td>267.00</td>
<td>2.61</td>
<td>.08</td>
</tr>
<tr>
<td>Major Declaration Status (Major)</td>
<td>1</td>
<td>2.05</td>
<td>2.06</td>
<td>0.02</td>
<td>.89</td>
</tr>
<tr>
<td>Gender (Gender)</td>
<td>2</td>
<td>125.91</td>
<td>125.91</td>
<td>1.23</td>
<td>.27</td>
</tr>
<tr>
<td>LC x Major</td>
<td>2</td>
<td>12.87</td>
<td>6.44</td>
<td>0.06</td>
<td>.94</td>
</tr>
<tr>
<td>LC x Gender</td>
<td>2</td>
<td>411.42</td>
<td>205.71</td>
<td>2.01</td>
<td>.14</td>
</tr>
<tr>
<td>Major x Gender</td>
<td>1</td>
<td>667.36</td>
<td>667.36</td>
<td>6.52</td>
<td>.01*</td>
</tr>
<tr>
<td>LC x Major x Gender</td>
<td>2</td>
<td>1153.71</td>
<td>576.85</td>
<td>5.64</td>
<td>.00*</td>
</tr>
<tr>
<td>Within</td>
<td>208</td>
<td>21292.43</td>
<td>102.37</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significance at the .05 level.
in formal activities with peers based on major $F(1, 208)=.02, p=.89$ and gender $F(1, 208)=1.23, p=.27$ were not significant at the .05 level. Participants in the Residential Learning Community program appeared to have spent more hours in formal involvement activities, $M=8.96$, than Paired Courses participants, $M=5.64$, and other first-year students who did not participate in any learning community, $M=6.39$, but this difference was not significant at the .05 level, $F(2, 208)= 2.61, p=.08$. Significant differences were found, however, for the interaction of major and gender $F(1, 208)=6.52, p=.01$ and the interaction of learning community, major, and gender $F(2, 208)=5.64, p=.00$. Thus, the null hypothesis was rejected. The interaction of major and gender is illustrated in Figure 1. Undecided females who participated in the Residential Learning Community program had the highest means of all groups, $M=17.80$, while females with declared majors who participated in the Paired Courses program had the lowest mean $M=3.00$. The interactions of learning community group and major $F(2, 208)=.06, p=.94$ and learning community group and gender $F(2, 208)=2.01, p=.14$ were not significant at the .05 level.

The third null hypothesis associated with Research Question One was:

**Null Hypothesis 1c (informal contacts):** There are no significant differences in informal involvement levels with peers based on participation in learning communities, major declaration, and gender controlling for preadmission characteristics.

The mean scores of the informal involvement levels with peers based on learning community group, major, and gender are displayed in Table 8. The assumption of parallellism of the regression planes was tested and found not to be significant at the .05 level, $F (1, 203)=.76, p=.69$. The ANCOVA test, presented in Table 9, found no significant differences at the .05 level in informal involvement with peers based on
Figure 1

Adjusted Mean Hours of Formal Involvement with Peers Based on the Interaction of
Major Declaration Status and Gender

![Graph showing the interaction of major declaration status and gender on adjusted mean hours of formal involvement with peers. The graph compares declared majors and undecided majors between male and female students.]
### Table 8

*Adjusted Mean Scores and Standard Deviations of Informal Involvement with Peers Based on Learning Community Group, Major Declaration Status, and Gender*

<table>
<thead>
<tr>
<th>Major and Gender</th>
<th>Residential Learning Communities Adjusted Mean</th>
<th>Residential Learning Communities Standard Deviation</th>
<th>Paired Courses Adjusted Mean</th>
<th>Paired Courses Standard Deviation</th>
<th>Non-Participant Adjusted Mean</th>
<th>Non-Participant Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Declared Male</td>
<td>17.50</td>
<td>12.12</td>
<td>23.90</td>
<td>15.21</td>
<td>22.56</td>
<td>16.61</td>
</tr>
<tr>
<td>Declared Female</td>
<td>21.75</td>
<td>24.32</td>
<td>22.94</td>
<td>9.31</td>
<td>20.38</td>
<td>9.98</td>
</tr>
<tr>
<td></td>
<td>20.77</td>
<td>22.08</td>
<td>23.30</td>
<td>11.56</td>
<td>21.19</td>
<td>12.78</td>
</tr>
<tr>
<td>Undecided Male</td>
<td>25.71</td>
<td>24.03</td>
<td>21.50</td>
<td>6.75</td>
<td>18.60</td>
<td>12.18</td>
</tr>
<tr>
<td>Undecided Female</td>
<td>16.10</td>
<td>8.17</td>
<td>17.25</td>
<td>7.79</td>
<td>20.43</td>
<td>13.03</td>
</tr>
<tr>
<td></td>
<td>20.66</td>
<td>16.77</td>
<td>18.88</td>
<td>7.57</td>
<td>19.88</td>
<td>12.62</td>
</tr>
<tr>
<td>Total Male</td>
<td>20.53</td>
<td>17.37</td>
<td>22.70</td>
<td>11.52</td>
<td>21.43</td>
<td>15.41</td>
</tr>
<tr>
<td>Total Female</td>
<td>20.62</td>
<td>22.10</td>
<td>20.18</td>
<td>8.95</td>
<td>20.40</td>
<td>11.05</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>20.59</strong></td>
<td><strong>21.13</strong></td>
<td><strong>9.97</strong></td>
<td><strong>20.76</strong></td>
<td><strong>12.68</strong></td>
</tr>
</tbody>
</table>

*Note.* The adjusted mean scores indicate the total number of contacts with peers each month in informal activities such as going out with friends, number of parties attended, and conversations with students from a different culture.
Table 9

Analysis of Covariance of Informal Involvement with Peers by Learning Community Group, Major, and Gender

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covariate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT composite</td>
<td>1</td>
<td>460.85</td>
<td>460.85</td>
<td>1.96</td>
<td>.16</td>
</tr>
<tr>
<td>High school rank</td>
<td>1</td>
<td>10.32</td>
<td>10.32</td>
<td>0.04</td>
<td>.83</td>
</tr>
<tr>
<td>Between</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Community Group (LC)</td>
<td>2</td>
<td>32.15</td>
<td>16.07</td>
<td>0.07</td>
<td>.93</td>
</tr>
<tr>
<td>Major Declaration Status (Major)</td>
<td>1</td>
<td>177.45</td>
<td>177.45</td>
<td>0.76</td>
<td>.39</td>
</tr>
<tr>
<td>Gender (Gender)</td>
<td>2</td>
<td>236.00</td>
<td>236.00</td>
<td>1.00</td>
<td>.32</td>
</tr>
<tr>
<td>LC x Major</td>
<td>2</td>
<td>244.32</td>
<td>122.16</td>
<td>0.52</td>
<td>.60</td>
</tr>
<tr>
<td>LC x Gender</td>
<td>2</td>
<td>120.69</td>
<td>60.34</td>
<td>0.26</td>
<td>.77</td>
</tr>
<tr>
<td>Major x Gender</td>
<td>1</td>
<td>246.81</td>
<td>246.81</td>
<td>1.05</td>
<td>.31</td>
</tr>
<tr>
<td>LC x Major x Gender</td>
<td>2</td>
<td>742.07</td>
<td>371.04</td>
<td>1.58</td>
<td>.21</td>
</tr>
<tr>
<td>Within</td>
<td>208</td>
<td>48901.36</td>
<td>235.10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
learning community group, $F(2, 208)=.07, p=.93$, or major, $F(1, 208)=.76, p=.39$, or gender $F(1, 208)=1.00, p=.32$ nor the interactions of learning community group and major $F(2, 208)=.52, p=.60$, learning community group and gender $F(2, 208)=.26, p=.77$, major and gender $F(1, 208)=1.05, p=.31$, and learning community group, major, and gender $F(2, 208)=1.58, p=.21$. Undecided males who participated in the Residential Learning Community program had the highest mean of all groups, $M=25.71$, while undecided females who participated in the Residential Learning Community program had the lowest score $M=16.10$. The null hypothesis that there are no differences in informal involvement levels with peers based on learning community group, major, and gender, controlling for preadmission characteristics was not rejected.

**Research Question Two**

Research Question Two looked for differences in academic involvement levels based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics. The null hypothesis for this question was:

*Null Hypothesis 2 (academic involvement)*: There are no significant differences in academic involvement levels based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics.

The mean scores of academic involvement based on learning community group and major are displayed in Table 10. Univariate Analysis of Covariance (ANCOVA) was performed using a .05 level of significance. Initially, parallelism of the regression planes was tested at the .05 level of significance to ensure that there was no covariate by treatment interaction effects. The results indicated that the assumption of parallelism of the regression planes was plausible since $F(1, 203)=.99, p=.46$. The results of the
### Table 10

*Adjusted Mean Scores and Standard Deviations of Academic Involvement Based on Learning Community Group, Major Declaration Status, and Gender*

<table>
<thead>
<tr>
<th>Major and Gender</th>
<th>Residential Learning Communities Adjusted Mean</th>
<th>Residential Learning Communities Standard Deviation</th>
<th>Paired Courses Adjusted Mean</th>
<th>Paired Courses Standard Deviation</th>
<th>Non-Participant Adjusted Mean</th>
<th>Non-Participant Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declared Male</td>
<td>17.88</td>
<td>12.03</td>
<td>19.77</td>
<td>10.40</td>
<td>24.32</td>
<td>31.68</td>
</tr>
<tr>
<td>Declared Female</td>
<td>34.12</td>
<td>31.67</td>
<td>18.14</td>
<td>12.64</td>
<td>28.23</td>
<td>23.72</td>
</tr>
<tr>
<td>Declared Total</td>
<td>30.37</td>
<td>29.09</td>
<td>18.75</td>
<td>11.68</td>
<td>26.77</td>
<td>26.80</td>
</tr>
<tr>
<td>Undecided Male</td>
<td>21.11</td>
<td>19.39</td>
<td>43.47</td>
<td>30.28</td>
<td>36.07</td>
<td>17.57</td>
</tr>
<tr>
<td>Undecided Female</td>
<td>17.97</td>
<td>11.79</td>
<td>25.72</td>
<td>13.91</td>
<td>27.66</td>
<td>44.85</td>
</tr>
<tr>
<td>Undecided Total</td>
<td>19.26</td>
<td>14.89</td>
<td>32.54</td>
<td>22.89</td>
<td>30.21</td>
<td>38.53</td>
</tr>
<tr>
<td>Total Male</td>
<td>19.07</td>
<td>14.70</td>
<td>31.62</td>
<td>25.17</td>
<td>27.68</td>
<td>28.62</td>
</tr>
<tr>
<td>Total Female</td>
<td>30.89</td>
<td>29.44</td>
<td>21.82</td>
<td>13.62</td>
<td>28.03</td>
<td>32.43</td>
</tr>
<tr>
<td>Total</td>
<td>27.63</td>
<td>26.64</td>
<td>25.52</td>
<td>19.20</td>
<td>27.91</td>
<td>31.00</td>
</tr>
</tbody>
</table>

*Note.* The adjusted mean scores indicate the degree to which students reported involvement with academic activities such as hours spent studying each week, number of times in the library, and hours spent daily for academic and course work. Standard scores were created and summed to yield a standard academic involvement score for each student.
ANCOVA test in Table 11 presented no significant differences in academic involvement based on learning community $F(1, 208)=.70, p=.50$ or major declaration status $F(1, 208)=1.01, p=.32$ or gender $F(1, 208)=.40, p=.53$. A significant interaction effect was found, however, for the interaction of major and gender $F(1, 208)=3.81, p=.05$. Thus, the null hypothesis was rejected. The interaction of major and gender is illustrated in Figure 2. Undecided males overall had the highest levels of academic involvement $M=33.55$, while declared males had the lowest levels of academic involvement $M=20.66$. Declared females had higher levels of academic involvement $M=26.83$ than undecided females $M=23.78$. No other significant interaction effects were found.

**Research Question Three**

Research Question Three addresses the question of whether or not there are differences in the level of involvement with faculty based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics. The null hypothesis associated with this question was:

Null Hypothesis 3 (involvement with faculty): There are no significant differences in involvement with faculty levels based on participation in learning communities, major declaration, and gender controlling for preadmission characteristics.

The information in Table 12 presents the mean scores of the level of involvement with faculty based on learning community group, major declaration status, and gender. The test of the assumption of parallelism of the regression planes found no significance, $F(1, 203)=.53, p=.90$, meaning that it was appropriate to proceed with ANCOVA. The results of the ANCOVA test are presented in Table 13. Participants in the Residential
Table 11

Analysis of Covariance of Academic Involvement by Learning Community Group, Major, and Gender

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Covariate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT composite</td>
<td>1</td>
<td>784.55</td>
<td>784.55</td>
<td>1.07</td>
<td>.30</td>
</tr>
<tr>
<td>High school rank</td>
<td>1</td>
<td>113.71</td>
<td>113.71</td>
<td>0.16</td>
<td>.69</td>
</tr>
<tr>
<td><strong>Between</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Community Group(LC)</td>
<td>2</td>
<td>1028.66</td>
<td>514.33</td>
<td>0.70</td>
<td>.50</td>
</tr>
<tr>
<td>Major Declaration Status (Major)</td>
<td>1</td>
<td>741.51</td>
<td>741.51</td>
<td>1.01</td>
<td>.32</td>
</tr>
<tr>
<td>Gender (Gender)</td>
<td>2</td>
<td>290.25</td>
<td>290.25</td>
<td>0.40</td>
<td>.53</td>
</tr>
<tr>
<td>LC x Major</td>
<td>2</td>
<td>2482.96</td>
<td>1241.48</td>
<td>1.70</td>
<td>.19</td>
</tr>
<tr>
<td>LC x Gender</td>
<td>2</td>
<td>1584.31</td>
<td>92.16</td>
<td>1.08</td>
<td>.34</td>
</tr>
<tr>
<td>Major x Gender</td>
<td>1</td>
<td>2787.49</td>
<td>2787.49</td>
<td>3.81</td>
<td>.05*</td>
</tr>
<tr>
<td>LC x Major x Gender</td>
<td>2</td>
<td>195.04</td>
<td>97.52</td>
<td>0.13</td>
<td>.88</td>
</tr>
<tr>
<td><strong>Within</strong></td>
<td>208</td>
<td>152289.38</td>
<td>732.16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significance at the .05 level
Adjusted Mean Scores of Academic Involvement Based on the Interaction of Major Declaration Status and Gender

Figure 2
### Table 12

*Adjusted Mean Scores and Standard Deviations of Involvement with Faculty Based on Learning Community Group, Major Declaration Status, and Gender*

<table>
<thead>
<tr>
<th>Major and Gender</th>
<th>Residential Learning Communities Adjusted Mean</th>
<th>Residential Learning Communities Standard Deviation</th>
<th>Paired Courses Adjusted Mean</th>
<th>Paired Courses Standard Deviation</th>
<th>Non-Participant Adjusted Mean</th>
<th>Non-Participant Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declared Male</td>
<td>11.00</td>
<td>6.86</td>
<td>5.30</td>
<td>4.37</td>
<td>15.80</td>
<td>24.00</td>
</tr>
<tr>
<td>Declared Female</td>
<td>14.90</td>
<td>18.16</td>
<td>10.00</td>
<td>8.66</td>
<td>14.00</td>
<td>13.12</td>
</tr>
<tr>
<td>Declared Total</td>
<td>14.00</td>
<td>16.28</td>
<td>8.26</td>
<td>7.62</td>
<td>14.67</td>
<td>17.81</td>
</tr>
<tr>
<td>Undecided Male</td>
<td>8.57</td>
<td>2.88</td>
<td>7.80</td>
<td>3.22</td>
<td>8.20</td>
<td>10.44</td>
</tr>
<tr>
<td>Undecided Female</td>
<td>11.10</td>
<td>7.67</td>
<td>9.75</td>
<td>5.52</td>
<td>9.78</td>
<td>7.81</td>
</tr>
<tr>
<td>Undecided Total</td>
<td>10.06</td>
<td>6.15</td>
<td>9.00</td>
<td>4.79</td>
<td>9.30</td>
<td>8.55</td>
</tr>
<tr>
<td>Total Male</td>
<td>10.11</td>
<td>5.74</td>
<td>6.55</td>
<td>3.95</td>
<td>13.63</td>
<td>21.16</td>
</tr>
<tr>
<td>Total Female</td>
<td>14.14</td>
<td>16.61</td>
<td>9.88</td>
<td>7.20</td>
<td>12.51</td>
<td>11.64</td>
</tr>
<tr>
<td>Total</td>
<td>13.03</td>
<td>14.52</td>
<td>8.62</td>
<td>6.34</td>
<td>12.90</td>
<td>15.54</td>
</tr>
</tbody>
</table>

*Note.* The adjusted mean scores indicate the degree to which students reported involvement with faculty outside the classroom, such as number of conversations with faculty regarding educational plans, problems, or progress; number of conversations with faculty about research; number of times having dinner with faculty; and number of times communicating with faculty via e-mail. Responses were summed to yield a total faculty contact score for each student.
Table 13

Analysis of Covariance of Involvement with Faculty by Learning Community Group, Major Declaration Status, and Gender

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covariate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT composite</td>
<td>1</td>
<td>433.53</td>
<td>433.53</td>
<td>2.33</td>
<td>.13</td>
</tr>
<tr>
<td>High school rank</td>
<td>1</td>
<td>19.88</td>
<td>19.88</td>
<td>0.11</td>
<td>.74</td>
</tr>
<tr>
<td>Between</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Community Group (LC)</td>
<td>2</td>
<td>448.86</td>
<td>224.43</td>
<td>1.21</td>
<td>.30</td>
</tr>
<tr>
<td>Major Declaration Status (Major)</td>
<td>1</td>
<td>175.09</td>
<td>175.09</td>
<td>0.94</td>
<td>.33</td>
</tr>
<tr>
<td>Gender (Gender)</td>
<td>2</td>
<td>302.38</td>
<td>302.38</td>
<td>1.63</td>
<td>.20</td>
</tr>
<tr>
<td>LC x Major</td>
<td>2</td>
<td>400.92</td>
<td>200.46</td>
<td>1.08</td>
<td>.34</td>
</tr>
<tr>
<td>LC x Gender</td>
<td>2</td>
<td>190.93</td>
<td>95.46</td>
<td>0.51</td>
<td>.60</td>
</tr>
<tr>
<td>Major x Gender</td>
<td>1</td>
<td>0.74</td>
<td>0.74</td>
<td>0.00</td>
<td>.95</td>
</tr>
<tr>
<td>LC x Major x Gender</td>
<td>2</td>
<td>43.09</td>
<td>21.55</td>
<td>0.12</td>
<td>.89</td>
</tr>
<tr>
<td>Within</td>
<td>208</td>
<td>38663.90</td>
<td>185.88</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Learning Community program appeared to have had more contacts with faculty $M=13.03$, than Paired Courses participants, $M=8.62$, and other first-year students who did not participate in any learning community, $M=12.90$, but this difference was not significant at the .05 level, $F(2, 208)=1.21, p=.30$. Similarly, students with declared majors had more contacts with faculty, $M=13.25$, than undecided students, $M=9.37$, and females had more contacts with faculty $M=12.47$, than males, $M=10.81$, but these differences were not significant at the .05 level, $F(1, 208)=.94, p=.33$, and $F(1, 208)=.163, p=.20$. Likewise, there were no interaction effects. The groups having the most contacts with faculty were males with declared majors who did not participate in a learning community, $M=15.80$, followed by females with declared majors who participated in the Residential Learning Community program, $M=14.90$. The null hypothesis was not rejected.

**Research Question Four**

Research Question Four was concerned with differences in the level of satisfaction with the university based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics. The null hypothesis for this question was:

*Null Hypothesis 4 (satisfaction):* There are no significant differences in satisfaction levels based on participation in learning communities and major declaration, controlling for preadmission characteristics.

The mean scores of the level of satisfaction based on learning community group, major, and gender are shown in Table 14. Higher scores indicated lower levels of satisfaction. Univariate Analysis of Covariance (ANCOVA) was performed using a
.05 level of significance. Initially, parallelism of the regression planes was tested at the level of significance to ensure that there was no covariate by treatment interaction effects. The results indicated that the assumption of parallelism of the regression planes was plausible since $F(1, 203)=1.49, p=.13$. The results of the ANCOVA test are presented in Table 15. Students who did not participate in learning communities appear to be more satisfied, $M=5.64$, than both Paired Courses participants, $M=5.91$, and Residential Learning Community participants, $M=6.41$, but these differences were not significant at the .05 level, $F(2, 208)=2.65, p=.07$. Satisfaction levels for males and females were similar $M=5.91$ and $M=5.95$, with no significant differences detected, $F(1, 208)=1.11, p=.74$. Undecided students appear to be less satisfied with their experience, $M=6.34$, than declared students, $M=5.73$, but this difference was not significant at the .05 level, $F(1, 208)=3.31, p=.07$. The interaction of learning community group and gender was found to be significant, $F(2, 208)=3.96, p=.02$. Thus, the null was rejected. The interaction of learning community group and gender is illustrated in Figure 3. Undecided males who participated in the Residential Learning Community program were the least satisfied group $M=8.25$, followed by undecided female Paired Courses participants, $M=7.08$, while declared male Paired Courses participants were the most satisfied, $M=4.75$. No other interaction effects were found to be significant.

Research Question Five

Research Question Five concerned any differences in academic success based on participation in learning communities, gender, and major declaration status holding the effects of the ACT composite and high school rank constant. Three types of student data pertaining to academic success were available to evaluate: grade-point average after the
### Table 14

*Adjusted Mean Scores and Standard Deviations of Level of Satisfaction Based on Learning Community Group, Major Declaration Status, and Gender*

<table>
<thead>
<tr>
<th>Major and Gender</th>
<th>Residential Learning Communities Adjusted Mean</th>
<th>Residential Learning Communities Standard Deviation</th>
<th>Paired Courses Adjusted Mean</th>
<th>Paired Courses Standard Deviation</th>
<th>Non-Participant Adjusted Mean</th>
<th>Non-Participant Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declared Male</td>
<td>6.71</td>
<td>2.64</td>
<td>4.75</td>
<td>1.64</td>
<td>5.27</td>
<td>1.74</td>
</tr>
<tr>
<td>Declared Female</td>
<td>6.18</td>
<td>2.32</td>
<td>5.50</td>
<td>2.97</td>
<td>5.63</td>
<td>2.44</td>
</tr>
<tr>
<td>Declared Total</td>
<td>6.30</td>
<td>2.38</td>
<td>5.22</td>
<td>2.55</td>
<td>5.49</td>
<td>2.20</td>
</tr>
<tr>
<td>Undecided Male</td>
<td>8.25</td>
<td>3.07</td>
<td>5.90</td>
<td>2.50</td>
<td>6.15</td>
<td>1.98</td>
</tr>
<tr>
<td>Undecided Female</td>
<td>5.65</td>
<td>2.27</td>
<td>7.08</td>
<td>2.88</td>
<td>5.84</td>
<td>2.15</td>
</tr>
<tr>
<td>Undecided Total</td>
<td>6.72</td>
<td>2.86</td>
<td>6.63</td>
<td>2.75</td>
<td>5.93</td>
<td>2.07</td>
</tr>
<tr>
<td>Total Male</td>
<td>7.28</td>
<td>2.82</td>
<td>5.33</td>
<td>2.14</td>
<td>5.52</td>
<td>1.83</td>
</tr>
<tr>
<td>Total Female</td>
<td>6.08</td>
<td>2.30</td>
<td>6.27</td>
<td>2.99</td>
<td>5.70</td>
<td>2.33</td>
</tr>
<tr>
<td>Total</td>
<td>6.41</td>
<td>2.49</td>
<td>5.91</td>
<td>2.72</td>
<td>5.64</td>
<td>2.16</td>
</tr>
</tbody>
</table>

*Note.* Higher scores indicate lower levels of satisfaction. The adjusted mean scores indicate the degree to which students reported satisfaction with the university through responses to questions about how sure they were that they made the right choice in attending the institution, how important it was that they graduate from the institution, and how they rated the quality of instruction at the institution. Responses were summed to create the student satisfaction score.
### Table 15

*Analysis of Covariance of Level of Satisfaction by Learning Community Group, Major Declaration Status, and Gender*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Covariate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT composite</td>
<td>1</td>
<td>0.05</td>
<td>0.05</td>
<td>0.01</td>
<td>.92</td>
</tr>
<tr>
<td>High school rank</td>
<td>1</td>
<td>17.10</td>
<td>17.10</td>
<td>3.03</td>
<td>.08</td>
</tr>
<tr>
<td><strong>Between</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Community Group (LC)</td>
<td>2</td>
<td>29.91</td>
<td>14.95</td>
<td>2.65</td>
<td>.07</td>
</tr>
<tr>
<td>Major Declaration Status (Major)</td>
<td>1</td>
<td>18.67</td>
<td>18.67</td>
<td>3.31</td>
<td>.07</td>
</tr>
<tr>
<td>Gender (Gender)</td>
<td>2</td>
<td>0.62</td>
<td>.62</td>
<td>0.11</td>
<td>.74</td>
</tr>
<tr>
<td>LC x Major</td>
<td>2</td>
<td>6.37</td>
<td>3.18</td>
<td>0.57</td>
<td>.57</td>
</tr>
<tr>
<td>LC x Gender</td>
<td>2</td>
<td>44.62</td>
<td>22.31</td>
<td>3.96</td>
<td>.02*</td>
</tr>
<tr>
<td>Major x Gender</td>
<td>1</td>
<td>6.80</td>
<td>6.80</td>
<td>1.21</td>
<td>.27</td>
</tr>
<tr>
<td>LC x Major x Gender</td>
<td>2</td>
<td>9.61</td>
<td>4.80</td>
<td>0.85</td>
<td>.43</td>
</tr>
<tr>
<td><strong>Within</strong></td>
<td>208</td>
<td>1173.12</td>
<td>5.64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significance at the .05 level*
Figure 3

Adjusted Means Scores of Satisfaction Based on the Interaction of Learning Community and Gender
first term, accumulative grade-point average after the first year, and hours earned at the end of the first year.

The first null hypothesis related to Research Question Five was:

Null Hypothesis 5a (first quarter grade-point average): There are no significant differences in first-quarter grade-point average based on participation in learning communities and major declaration, controlling for preadmission characteristics.

The first-quarter grade-point averages based on learning community group and major declaration status are offered in Table 16. To verify that ANCOVA was appropriate, the assumption of parallelism of the regression planes was tested at the .05 level of significance. The assumption was maintainable since $F(1, 203)=1.61, p=.09$.

The results of the ANCOVA test are displayed in Table 17.

Students with declared majors who participated in the Paired Courses learning community had higher grade-point averages than students in all other groups. Undecided students who participated in either the Residential Learning Community or the Paired Courses learning community had higher first-quarter grade-point averages than declared students in the Residential Learning Community program and both declared and undecided students who did not participate in any learning community. Though the means were higher for learning community participants than non-participants, these difference were not statistically significant $F(2, 208)=2.82, p=.06$. Although the covariates were statistically significant, no significant differences were found in major $F(1, 208)=2.31, p=.13$ nor the interaction of learning community and major $F(2, 208)=.93, p=.39$ or any other combination of the variables. The null hypothesis was not rejected.
# Table 16

*Adjusted Mean Scores and Standard Deviations of First Quarter Grade-Point Average Based on Learning Community Group, Major Declaration Status, and Gender*

<table>
<thead>
<tr>
<th>Major and Gender</th>
<th>Residential Learning Communities Adjusted Mean</th>
<th>Residential Learning Communities Standard Deviation</th>
<th>Paired Courses Adjusted Mean</th>
<th>Paired Courses Standard Deviation</th>
<th>Non-Participant Adjusted Mean</th>
<th>Non-Participant Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declared Male</td>
<td>2.88</td>
<td>0.70</td>
<td>3.11</td>
<td>0.73</td>
<td>2.84</td>
<td>0.65</td>
</tr>
<tr>
<td>Declared Female</td>
<td>2.97</td>
<td>0.77</td>
<td>3.32</td>
<td>0.53</td>
<td>2.91</td>
<td>0.83</td>
</tr>
<tr>
<td>Declared Total</td>
<td>2.95</td>
<td>0.75</td>
<td>3.24</td>
<td>0.61</td>
<td>2.88</td>
<td>0.77</td>
</tr>
<tr>
<td>Undecided Male</td>
<td>3.24</td>
<td>0.54</td>
<td>3.16</td>
<td>0.54</td>
<td>2.85</td>
<td>0.64</td>
</tr>
<tr>
<td>Undecided Female</td>
<td>3.17</td>
<td>0.29</td>
<td>2.85</td>
<td>0.70</td>
<td>2.91</td>
<td>0.91</td>
</tr>
<tr>
<td>Undecided Total</td>
<td>3.20</td>
<td>0.40</td>
<td>2.97</td>
<td>0.65</td>
<td>2.89</td>
<td>0.83</td>
</tr>
<tr>
<td>Total Male</td>
<td>3.01</td>
<td>0.66</td>
<td>3.14</td>
<td>0.62</td>
<td>2.84</td>
<td>0.64</td>
</tr>
<tr>
<td>Total Female</td>
<td>3.01</td>
<td>0.70</td>
<td>3.09</td>
<td>0.66</td>
<td>2.91</td>
<td>0.85</td>
</tr>
<tr>
<td>Total</td>
<td>3.01</td>
<td>0.68</td>
<td>3.11</td>
<td>0.64</td>
<td>2.87</td>
<td>0.78</td>
</tr>
</tbody>
</table>

*Note.* The university uses a 4.0 point grading scale. The adjusted mean scores indicate the grade-point average after the first term.
Table 17

*Analysis of Covariance of First Quarter Grade-Point Average by Learning Community Group, Major Declaration Status, and Gender*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covariate</td>
<td></td>
<td>Sum of Squares</td>
<td>Mean Square</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT composite</td>
<td>1</td>
<td>8.13</td>
<td>8.13</td>
<td>17.62</td>
<td>.00*</td>
</tr>
<tr>
<td>High school rank</td>
<td>1</td>
<td>3.09</td>
<td>3.09</td>
<td>6.70</td>
<td>.01*</td>
</tr>
<tr>
<td>Between</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Community Group(LC)</td>
<td>2</td>
<td>2.60</td>
<td>1.30</td>
<td>2.82</td>
<td>.06</td>
</tr>
<tr>
<td>Major Declaration Status (Major)</td>
<td>1</td>
<td>1.07</td>
<td>1.07</td>
<td>2.31</td>
<td>.13</td>
</tr>
<tr>
<td>Gender (Gender)</td>
<td>2</td>
<td>0.15</td>
<td>0.15</td>
<td>0.33</td>
<td>.57</td>
</tr>
<tr>
<td>LC x Major</td>
<td>2</td>
<td>0.86</td>
<td>0.43</td>
<td>0.93</td>
<td>.39</td>
</tr>
<tr>
<td>LC x Gender</td>
<td>2</td>
<td>0.22</td>
<td>0.11</td>
<td>0.24</td>
<td>.79</td>
</tr>
<tr>
<td>Major x Gender</td>
<td>1</td>
<td>0.16</td>
<td>0.16</td>
<td>0.35</td>
<td>.55</td>
</tr>
<tr>
<td>LC x Major x Gender</td>
<td>2</td>
<td>0.48</td>
<td>0.24</td>
<td>0.52</td>
<td>.60</td>
</tr>
<tr>
<td>Within</td>
<td>208</td>
<td>95.91</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significance at the .05 level.
The second null hypothesis associated with Research Question Five examined the differences in student academic success at the end of the first year as measured by accumulative grade-point average. The second null hypothesis states:

*Null Hypothesis 5b (first-year grade-point average):* There are no significant differences in first-year accumulative grade-point average based on participation in learning communities and major declaration, controlling for preadmission characteristics.

The mean first-year accumulative grade-point averages based on participation in learning communities, major declaration status, and gender are shown in Table 18. Parallelism of the regression planes was tested at the .05 level of significance to ensure that there was no covariate by treatment interaction effects. The results indicated that the assumption was reasonable since $F(1, 203)=1.02, p=.43$. ANCOVA was performed using a .05 level of significance. The results of the ANCOVA in Table 19 indicated that the differences in first-year accumulative grade-point average based on learning community group and gender were not significant at the .05 level of significance. While the first-year accumulative grade-point averages for students who participated in the Residential Learning Community program $M=3.02$ were slightly higher than both Paired Courses participants $M=2.97$ and students who did not participate in any learning community $M=2.99$, these differences were not significant at the .05 level, $F(2, 208)=.21, p=.81$. Differences based on the covariates, ACT composite and high school percentile rank, were significant at the .05 level. Differences in first-year accumulative grade-point average based on major were also significant at the .05 level, $F(1, 208)=6.11, p=.01$. Thus, the null hypothesis was rejected. Undecided RLC students had higher first-year accumulative averages than RLC students with declared majors, $M=3.14$ for undecided
Table 18

*Adjusted Mean Scores and Standard Deviations of First Year Accumulative Grade-Point Average Based on Learning Community Group, Major Declaration Status, and Gender*

<table>
<thead>
<tr>
<th>Major and Gender</th>
<th>Residential Learning Communities Adjusted Mean</th>
<th>Residential Learning Communities Standard Deviation</th>
<th>Paired Courses Adjusted Mean</th>
<th>Paired Courses Standard Deviation</th>
<th>Non-Participant Adjusted Mean</th>
<th>Non-Participant Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declared Male</td>
<td>2.92</td>
<td>0.72</td>
<td>2.91</td>
<td>0.79</td>
<td>2.88</td>
<td>0.64</td>
</tr>
<tr>
<td>Declared Female</td>
<td>2.99</td>
<td>0.67</td>
<td>3.16</td>
<td>0.44</td>
<td>2.99</td>
<td>0.63</td>
</tr>
<tr>
<td>Declared Total</td>
<td>2.97</td>
<td>0.68</td>
<td>3.07</td>
<td>0.59</td>
<td>2.95</td>
<td>0.63</td>
</tr>
<tr>
<td>Undecided Male</td>
<td>3.29</td>
<td>0.57</td>
<td>3.01</td>
<td>0.58</td>
<td>3.06</td>
<td>0.43</td>
</tr>
<tr>
<td>Undecided Female</td>
<td>3.04</td>
<td>0.23</td>
<td>2.79</td>
<td>0.61</td>
<td>3.06</td>
<td>0.63</td>
</tr>
<tr>
<td>Undecided Total</td>
<td>3.14</td>
<td>0.41</td>
<td>2.88</td>
<td>0.60</td>
<td>3.06</td>
<td>0.57</td>
</tr>
<tr>
<td>Total Male</td>
<td>3.06</td>
<td>0.68</td>
<td>2.96</td>
<td>0.68</td>
<td>2.93</td>
<td>0.59</td>
</tr>
<tr>
<td>Total Female</td>
<td>3.00</td>
<td>0.61</td>
<td>2.98</td>
<td>0.55</td>
<td>3.02</td>
<td>0.63</td>
</tr>
<tr>
<td>Total</td>
<td>3.02</td>
<td>0.62</td>
<td>2.97</td>
<td>0.60</td>
<td>2.99</td>
<td>0.61</td>
</tr>
</tbody>
</table>

*Note.* The university uses a 4.0 point grading scale. The adjusted mean scores indicate the accumulative grade-point average at the end of the first year (spring quarter accumulative).
Table 19

*Analysis of Covariance of First Year Accumulative Grade-Point Average by Learning Community Group, Major Declaration Status, and Gender*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Covariate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT composite</td>
<td>1</td>
<td>7.81</td>
<td>7.81</td>
<td>26.05</td>
<td>.00*</td>
</tr>
<tr>
<td>High school rank</td>
<td>1</td>
<td>5.07</td>
<td>5.07</td>
<td>16.92</td>
<td>.00*</td>
</tr>
<tr>
<td><strong>Between</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Community Group (LC)</td>
<td>2</td>
<td>0.13</td>
<td>0.06</td>
<td>0.21</td>
<td>.81</td>
</tr>
<tr>
<td>Major Declaration Status (Major)</td>
<td>1</td>
<td>1.83</td>
<td>1.83</td>
<td>6.11</td>
<td>.01*</td>
</tr>
<tr>
<td>Gender (Gender)</td>
<td>2</td>
<td>0.05</td>
<td>0.05</td>
<td>0.17</td>
<td>.68</td>
</tr>
<tr>
<td>LC x Major</td>
<td>2</td>
<td>0.44</td>
<td>0.22</td>
<td>0.74</td>
<td>.48</td>
</tr>
<tr>
<td>LC x Gender</td>
<td>2</td>
<td>0.02</td>
<td>0.01</td>
<td>0.04</td>
<td>.96</td>
</tr>
<tr>
<td>Major x Gender</td>
<td>1</td>
<td>0.37</td>
<td>0.37</td>
<td>1.25</td>
<td>.27</td>
</tr>
<tr>
<td>LC x Major x Gender</td>
<td>2</td>
<td>0.19</td>
<td>0.09</td>
<td>0.31</td>
<td>.73</td>
</tr>
<tr>
<td><strong>Within</strong></td>
<td>208</td>
<td>62.34</td>
<td>0.30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significance at the .05 level
students, $M=2.97$ for declared majors. Of all groups, undecided male Residential Learning Community participants had the highest grade-point average, $M=3.29$, while undecided female Paired Courses participants had the lowest, $M=2.79$. No interaction effects among the variables were found.

The third null hypothesis related to Research Question Five examined the differences in student academic progress at the end of the first year as measured by total credit hours earned. The third null hypothesis states:

*Null Hypothesis 5c (academic progress):* There are no significant differences in academic progress based on participation in learning communities, major declaration status, and gender controlling for preadmission characteristics.

Means for the number of credit hours earned based on learning community group, major declaration status, and gender are shown in Table 20. The assumption of parallelism of the regression planes was tested at the .05 level of significance. The assumption was viable since $F(1, 203)=1.01, p=.44$. The results of the ANCOVA test in Table 21 revealed no significant differences in credit hours earned based on learning community group $F(2, 208)=.03, p=.98$, major declaration status $F(1, 208)=.22, p=.64$, or gender $F(1, 208)=1.41, p=.24$, nor any of the interaction combinations of learning community group, major declaration status, and gender. The null hypothesis was not rejected.

*Research Question Six*

Research Question Six was to identify if there is a relationship between student retention levels and participation in learning communities. The null hypothesis
Table 20

*Adjusted Mean Scores and Standard Deviations of Credit Hours Earned Based on Learning Community Group, Major Declaration Status, and Gender*

<table>
<thead>
<tr>
<th>Major and Gender</th>
<th>Residential Learning Communities Adjusted Mean</th>
<th>Residential Learning Communities Standard Deviation</th>
<th>Paired Courses Adjusted Mean</th>
<th>Paired Courses Standard Deviation</th>
<th>Non-Participant Adjusted Mean</th>
<th>Non-Participant Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declared Male</td>
<td>49.25</td>
<td>4.41</td>
<td>48.50</td>
<td>11.61</td>
<td>50.84</td>
<td>11.32</td>
</tr>
<tr>
<td>Declared Female</td>
<td>49.48</td>
<td>10.74</td>
<td>50.00</td>
<td>7.17</td>
<td>52.90</td>
<td>18.89</td>
</tr>
<tr>
<td>Declared Total</td>
<td>49.42</td>
<td>9.61</td>
<td>49.44</td>
<td>8.88</td>
<td>52.13</td>
<td>16.41</td>
</tr>
<tr>
<td>Undecided Male</td>
<td>46.14</td>
<td>9.86</td>
<td>47.40</td>
<td>3.50</td>
<td>45.80</td>
<td>4.05</td>
</tr>
<tr>
<td>Undecided Female</td>
<td>50.80</td>
<td>5.25</td>
<td>46.38</td>
<td>5.82</td>
<td>47.78</td>
<td>7.94</td>
</tr>
<tr>
<td>Undecided Total</td>
<td>48.88</td>
<td>7.58</td>
<td>46.77</td>
<td>5.00</td>
<td>47.18</td>
<td>6.98</td>
</tr>
<tr>
<td>Total Male</td>
<td>48.11</td>
<td>6.83</td>
<td>47.95</td>
<td>8.36</td>
<td>49.40</td>
<td>10.00</td>
</tr>
<tr>
<td>Total Female</td>
<td>49.74</td>
<td>9.86</td>
<td>48.24</td>
<td>6.70</td>
<td>51.09</td>
<td>16.01</td>
</tr>
<tr>
<td>Total</td>
<td>49.29</td>
<td>9.10</td>
<td>48.13</td>
<td>7.30</td>
<td>50.50</td>
<td>14.17</td>
</tr>
</tbody>
</table>

*Note.* The adjusted mean scores indicate the number of quarter credit hours earned at the end of the first year.
Table 21

**Analysis of Covariance of Credit Hours Earned by Learning Community Group, Major Declaration Status, and Gender**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Covariate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT composite</td>
<td>1</td>
<td>1196.91</td>
<td>1196.91</td>
<td>10.17</td>
<td>.00*</td>
</tr>
<tr>
<td>High school rank</td>
<td>1</td>
<td>993.83</td>
<td>993.83</td>
<td>8.45</td>
<td>.00*</td>
</tr>
<tr>
<td><strong>Between</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Community Group(LC)</td>
<td>2</td>
<td>5.89</td>
<td>2.94</td>
<td>0.03</td>
<td>.98</td>
</tr>
<tr>
<td>Major Declaration Status (Major)</td>
<td>1</td>
<td>25.68</td>
<td>25.68</td>
<td>0.22</td>
<td>.64</td>
</tr>
<tr>
<td>Gender (Gender)</td>
<td>2</td>
<td>165.50</td>
<td>165.50</td>
<td>1.41</td>
<td>.24</td>
</tr>
<tr>
<td>LC x Major</td>
<td>2</td>
<td>134.14</td>
<td>67.07</td>
<td>0.57</td>
<td>.57</td>
</tr>
<tr>
<td>LC x Gender</td>
<td>2</td>
<td>115.64</td>
<td>57.82</td>
<td>0.49</td>
<td>.61</td>
</tr>
<tr>
<td>Major x Gender</td>
<td>1</td>
<td>39.44</td>
<td>39.44</td>
<td>0.34</td>
<td>.56</td>
</tr>
<tr>
<td>LC x Major x Gender</td>
<td>2</td>
<td>203.99</td>
<td>101.80</td>
<td>0.87</td>
<td>.42</td>
</tr>
<tr>
<td><strong>Within</strong></td>
<td>208</td>
<td>24472.14</td>
<td>117.65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significance at the .05 level*
associated with this research question was:

Null Hypothesis 6 (retention): There is no relationship between retention and learning community group.

The mean first-to-second year retention rates based on participation in learning communities, major declaration status, and gender are shown in Table 22. The null hypothesis was tested using a chi-square test of independence with a .05 level of significance. Gender and major declaration status were not included in the chi-square test of independence because, if included, several chi-square cells would have a count less than five, and would thus indicate a violation of the chi-square assumptions. The results of the chi-square test of independence are presented in Table 23. No significant relationship in retention rates and learning community group was found $X^2(2, N=234)=3.35, p=.19$. The null hypothesis was not rejected.
Table 22

*Retention Rates Based on Learning Community Group, Major Declaration Status, and Gender*

<table>
<thead>
<tr>
<th>Major and Gender</th>
<th>Residential Learning Communities Percentage Retained</th>
<th>Paired Courses Percentage Retained</th>
<th>Non-Participant Percentage Retained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declared Male</td>
<td>93</td>
<td>91</td>
<td>92</td>
</tr>
<tr>
<td>Declared Female</td>
<td>83</td>
<td>89</td>
<td>95</td>
</tr>
<tr>
<td>Declared Total</td>
<td>86</td>
<td>90</td>
<td>94</td>
</tr>
<tr>
<td>Undecided Male</td>
<td>67</td>
<td>91</td>
<td>90</td>
</tr>
<tr>
<td>Undecided Female</td>
<td>83</td>
<td>75</td>
<td>87</td>
</tr>
<tr>
<td>Undecided Total</td>
<td>76</td>
<td>81</td>
<td>88</td>
</tr>
<tr>
<td>Total Male</td>
<td>83</td>
<td>91</td>
<td>91</td>
</tr>
<tr>
<td>Total Female</td>
<td>83</td>
<td>83</td>
<td>92</td>
</tr>
<tr>
<td>Total</td>
<td>83</td>
<td>86</td>
<td>92</td>
</tr>
</tbody>
</table>
Table 23

*Chi-Square Test of Independence for Retention and Learning Community Group*

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>3.35</td>
<td>2</td>
<td>.19</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>3.44</td>
<td>2</td>
<td>.18</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>2.97</td>
<td>1</td>
<td>.09</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>234</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significance at the .05 level*
CHAPTER FIVE

Summary, Conclusions, and Recommendations

Chapter Five summarizes chapters one through four of this study, provides conclusions, and offers recommendations for practical application and further research. First, the background, method, and research questions for the study are reviewed. Next, the analysis of the data is summarized. The findings and conclusions complete the chapter.

Summary of the Study

As indicated by Tampke, Burke, and Kahrig (1999, p. 3), the Residential Learning Communities (RLC) program at Ohio University was designed with five goals in mind:

1) create residential, learning-based peer networks,
2) improve academic success of first-year students,
3) improve student retention from the freshman to sophomore year,
4) increase student satisfaction with Ohio University, and
5) increase student-faculty interaction outside the classroom.

Using the learning community model of freshman interest groups, in which the student “cohort registers for all three courses and travels as a subset of about twenty-five students to larger classes” (Gabelnick et al., 1990, p. 25), in combination with the addition of a residential component, the Residential Learning Communities program was intended to bring to Ohio University what Tinto (1996) suggested is one of the most promising innovations for improving the first year experience.

The problem of this study was to determine the effectiveness of the Residential Learning Communities program in achieving its goals of enhancing the first year
experience at Ohio University. By examining the variables of student involvement, academic success, satisfaction, and persistence of first-year students at Ohio University who participated in the Residential Learning Communities or Paired Courses Learning Community programs compared to students who did not participate in any learning community, this study aimed to provide practitioners at Ohio University useful feedback concerning this new program. Such information may be an effective tool for securing and maintaining a source of permanent funding and building support for expansion of the program not only for Ohio University officials but also for those practitioners at other colleges and universities seeking to launch similar initiatives. In addition, the inclusion of the Paired Courses participants in this study provides an opportunity for practitioners to examine the outcomes of two learning community models at a large research institution.

The review of the literature suggested that learning communities can be of tremendous value in shaping the first-year experience. In Chapter Two, examples were provided in which researchers found learning community participation to be associated with: a) increased student involvement, as measured by increased participation in extracurricular activities or organized campus activities or by more frequent interaction with faculty; b) increased academic success, as indicated by larger number of credit hours earned and higher grade-point averages at the end of the first term or the end of the first year; and c) higher first to second year retention rates. Though not widely studied as an outcome of learning community participation, a few researchers also found learning community participation to be associated with higher levels of student satisfaction.
While the review of the literature provided support for learning communities, the emphases on quality, efficiency, and accountability in today’s higher education environment demand that additional assessment of learning communities be done. Further assessment data demonstrating the outcomes of such programs is essential to building lasting support. Moreover, since learning community programs often start as pilot programs serving a small number of students, assessment data can demand that such programs be expanded to serve larger numbers of students.

Whereas a number of studies provide information about student involvement, since most learning community programs focus entirely on the first term and the Residential Learning Communities program at Ohio University offered services throughout the first year, this study was necessary to add to the body of evidence on student involvement. Additionally, this study complements the previous research in that it reports three indicators of academic success in one study: a) grade-point average after the first-term, b) accumulative grade-point average at the end of the first year, and c) progress toward degree completion as indicated by the number of credit hours earned. Furthermore, this study’s inclusion of student satisfaction as a variable under study may make an important contribution to the literature, especially since this study is of a learning community program at a large research institution.

Method

The population under study was students at Ohio University who entered the institution as first-year students in fall 2000. This study included as subjects only those first-year students who completed the Student Involvement Questionnaire that was administered to all first-year students during their second term of enrollment as part of
the institution’s university-wide student assessment program. The Student Involvement Questionnaire (SIQ) was an attractive survey instrument for this study because it collects information on various aspects of student involvement, including academic involvement, social involvement and activities, and student satisfaction, and would thus provide the researcher a source of data for several of the dependent variables under study.

The independent variables for the study were learning community group, gender, and major declaration status. The dependent variables for the study were student involvement, satisfaction, academic success, and retention. Student involvement was further divided into academic involvement, involvement with peers (both formal and informal), and involvement with faculty. The SIQ was the source of data for student involvement and satisfaction, while the university’s Student Information System was the source for data on academic success and retention.

Six research questions were developed to address the problem in this study. Research Question One focused on differences in the level of involvement with peers based on participation in learning communities, major declaration, and gender controlling for preadmission characteristics. Three null hypotheses were tested for this research question. Null hypothesis 1a used the SIQ to compare the number of formal involvement activities with peers based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics. The second null hypothesis, 1b, used the SIQ to compare the number of hours of formal involvement with peers based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics. Null hypothesis 1c used the SIQ to compare the number of
contacts of informal involvement with peers based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics.

Research Question Two and the null hypothesis associated with it focused on differences in academic involvement levels based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics. The third research question and null hypothesis used the SIQ to compare the number of contacts with faculty based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics. Research Question Four and its null hypothesis used the SIQ to compare levels of satisfaction with the university based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics.

Academic success was the focus of Research Question Five. There were three null hypotheses associated with this question. The first null hypothesis, 5a, compared student accumulative grade-point averages at the end of the first term of enrollment based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics. Null hypothesis 5b compared student accumulative grade-point averages at the end of the first year based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics. The third null hypothesis, 5c, used the number of credit hours earned to compare student progress toward degree completion based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics. The final research question and the null hypothesis tested was to compare student retention levels based on participation in learning communities, gender, and major declaration.
Each hypothesis, except null hypothesis six, was tested using Analysis of Covariance to compare means while employing statistical methods to control for academic differences that might have been present in the students as indicated by ACT composite score and high school rank. Chi-square tests of independence were used to test the null hypotheses associated with research question six. The .05 level of significance was used. Demographic information was reported and examined.

Summary of the Data Analysis

The data for this study was presented and analyzed in Chapter Four. Descriptive statistics, including information on the gender, major declaration status, ACT composite scores, and high school rank of the subjects, were provided. Means and standard errors for each dependent variable and the results of the ANCOVA testing were displayed in various tables.

Findings for Research Question One

Are there differences in the level of involvement with peers based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics? The first null hypothesis, 1a, addressing this research question examined the differences in the number of formal involvement activities with peers based on participation in learning communities, gender, and major declaration, using ACT composite score and high school rank as covariates. Students who participated in the Residential Learning Communities program appeared to be involved in more formal activities with peers, $M=1.62$, than students who participated in the Paired Courses learning community, $M=1.25$, or other first year students who did not participate in any learning community, $M=1.29$. Undecided RLC females had the highest mean of all
groups, while undecided females who participated in Paired Courses had the lowest mean. Although the means were higher for the RLC participants, the results of the ANCOVA test indicated that the differences in the number of formal activities with peers based on learning community group, $F(2, 208)=2.31, p=.10$, major $F(1, 208)=.67, p=.41$, and gender $F(1, 208)=1.49, p=.22$ were not significant at the .05 level. There were also no interaction effects. The null hypothesis was not rejected.

The second null hypothesis associated with Research Question One, 1b, was to examine differences in the number of hours of formal involvement with peers based on participation in learning communities, gender, and major declaration using ACT composite score and high school rank as covariates. No significant differences were found based on major and gender. It appeared that RLC participants spent more hours in formal involvement activities, $M=8.96$, than Paired Courses participants, $M=5.64$, and other first-year students who did not participate in any learning community, $M=6.39$, but this difference was not significant at the .05 level, $F(2, 208)=2.61, p=.08$. Significant differences were detected, however, for the interaction of major and gender $F(1, 208)=6.52, p=.01$, and the interaction of learning community, major, and gender $F(2, 208)=5.64, p=.00$. Undecided RLC females had the highest means of all groups, $M=17.80$, while females with declared majors who participated in the Paired Courses program had the lowest mean, $M=3.00$. The null hypothesis was rejected.

The third null hypothesis for Research Question One, 1c, looked for significant differences in the number of contacts of informal involvement with peers based on participation in learning communities, gender, and major declaration, using ACT
composite and high school rank as covariates. No significant differences were found. The null hypothesis was not rejected.

Findings for Research Question Two

Are there differences in academic involvement levels based on participation in learning communities, gender, and major declaration, controlling for preadmission characteristics? Null Hypothesis Two was tested to address this question. While no significant differences were found in the main effects, a significant interaction effect was found for the interaction of major and gender $F(1, 208)=3.81, p=.05$. Undecided males overall had the highest levels of academic involvement, $M=33.55$, while declared males had the lowest levels of academic involvement, $M=20.66$. Declared females had higher levels of involvement $M=26.83$ than undecided females $M=23.78$. The null hypothesis was rejected.

Findings for Research Question Three

Are there differences in the level of involvement with faculty based on participation in learning communities, gender, and major declaration, using ACT composite and high school rank as covariates? Participants in the Residential Learning Communities program appeared to have had more contacts with faculty $M=13.03$, than Paired Courses participants, $M=8.62$, and other first-year students who did not participate in any learning community, $M=12.90$, but this difference was not significant at the .05 level, $F(2, 208)=1.21, p=.30$. Correspondingly, differences in involvement with faculty based on gender and major were not significant at the .05 level, $F(1, 208)=.94, p=.33$ for major, and $F(1, 208)=1.63, p=.20$ for gender, although students with declared majors
appeared to have had more contact with faculty than undecided students, and females had more contact with faculty than males. The null hypothesis was not rejected.

Findings for Research Question Four

Are there differences in the level of satisfaction with the university based on participation in learning communities, gender, and major declaration, using ACT composite and high school rank as covariates? No significant differences were found in student satisfaction based on the main effects, learning community $F(2, 208)=2.65$, $p=.07$, or gender, $F(1, 208)=.11$, $p=.74$, or major $F(1, 208)=3.31$, $p=.07$, though the results are close for learning community and major. Students who did not participate in learning communities appeared to be more satisfied, $M=5.64$, than both Paired Courses participants, $M=5.91$, and Residential Learning Communities participants, $M=6.41$ (lower scores indicate higher levels of satisfaction). Similarly, undecided students appeared to be less satisfied with their experience, $M=6.34$, than declared students, $M=5.73$. Significant differences were found in the interaction of learning community group and gender $F(2, 208)=3.96$, $p=.02$. The null hypothesis was rejected. Undecided males who participated in the Residential Learning Community program were the least satisfied group, $M=8.25$, followed by undecided female Paired Course participants, $M=7.08$, while declared male Paired Courses participants were the most satisfied, $M=4.75$.

Findings for Research Question Five

Are there differences in academic success based on participation in learning communities, gender, and major declaration, controlling for preadmission academic characteristics? Three null hypotheses were tested to investigate this question. Null
hypothesis 5a looked for differences in student accumulative grade-point averages at the end of the first term of enrollment. No significant differences were found for major or gender. Though not statistically significant $F(2, 208)=2.82, p=.06$, it appeared that learning community participants earned higher first term grade-point averages than students who did not participate in learning communities. Undecided students who participated in either the Residential Learning Community, $M=3.20$, or the Paired Courses learning community, $M=2.97$, had higher grade-point averages than declared students in the Residential Learning Community, $M=2.95$, and both declared and undecided students who did not participate in any learning community, $M=2.88$, $M=2.89$. No other statistical significance was found at the .05 level with the exception of the ACT covariate $F(1, 208)=17.62, p=.00$ and the high school rank covariate $F(1, 208)=6.70, p=.01$. The null hypothesis was not rejected.

The second null hypothesis pertaining to academic success, 5b, looked for differences in accumulative grade-point averages after the first year of enrollment based on learning community participation, gender, and major declaration, using ACT composite and high school rank as covariates. Differences in first-year accumulative grade-point average based on major were significant at the .05 level of significance $F(1, 208)=6.11, p=.01$. The null hypothesis was rejected. Undecided students overall had higher grade point averages than declared students, with the exception of Paired Courses participants. Undecided RLC students had higher first year accumulative grade-point averages $M=3.14$ than RLC students with declared majors $M=2.97$. No other statistical significance was found.
The third academic success null hypothesis, 5c, explored differences in the number of credit hours earned as an indicator of academic progress based on participation in learning communities, gender, and major declaration. The results of the ANCOVA test revealed no significant differences based on learning community group $F(2, 208)=.03, p=.98$, gender $F(1, 208)=1.41, p=.24$, or major declaration status $F(1, 208)=.22, p=.64$, nor any of the interaction combinations of the variables. The null hypothesis was not rejected.

**Findings for Research Question Six**

Research Question Six and the corresponding null hypotheses sought to identify whether or not there are relationships in student retention rates based on participation in learning communities, gender, and major declaration. The first null hypothesis, tested using a chi-square test of independence, stated that there is no significant relationship in retention rates and learning community group based on gender. No significant relationship in retention rates and learning community group was found for males, $X^2(2, N=80)=1.22, p=.54$, or females, $X^2(2, N=154)=2.79, p=.25$. The null hypothesis was not rejected.

The second null hypothesis stated that there is no significant relationship in retention rates and learning community group based on major. The chi-square test of independence found no significant relationship in retention rates and learning community group for students with declared majors, $X^2(2, N=153)=2.39, p=.30$, or undecided students, $X^2(2, N=81)=1.27, p=.53$. The null hypothesis was not rejected.
Findings and Conclusions

Based on this study, a number of conclusions can be drawn. These conclusions are based on the findings, limitations, and delimitations of this study as well as the review of the literature on learning communities.

1. According to enrollment patterns, the Residential Learning Communities program was more attractive to students with declared majors than undecided students, while the Paired Courses learning community program seemed to appeal to undecided students and declared students alike. Seventy-three percent of the students in the RLC program had declared majors, while 27% percent did not, in contrast to 53% declared majors and 47% undecided in the Paired Courses learning community.

2. Based on enrollment patterns, one can also conclude that the Residential Learning Communities program was more attractive to females than males. Seventy percent of the RLC participants were female, compared to 61% in the Paired Courses program and 65% in the non-participant group.

3. The Residential Learning Communities program appears to be the most effective for undecided females. In five of the six research questions under study, undecided females who participated in the Residential Learning Communities program fared better than undecided females who participated in Paired Courses or did not participate in any learning community. Undecided female RLC students had higher mean scores in the areas of formal involvement activities, number of hours of formal involvement, involvement with faculty, satisfaction, first-quarter grade point average, first-year accumulative grade-point average,
number of credit hours earned, and retention. Undecided RLC females had lower scores in informal involvement and academic involvement.

4. It is reasonable to conclude that students who participated in the Residential Learning Communities program had higher, although not significantly higher, levels of involvement with peers in formal activities than Paired Courses participants and other first-year students who did not participate in learning communities. Students who participated in the Residential Learning Communities program were involved in more formal activities with peers, $M=1.62$, than students who participated in the Paired Courses learning community, $M=1.25$. Likewise, RLC students were involved in more formal activities with peers than other first-year students who did not participate in any learning community, $M=1.29$. This finding is in accordance with similar findings by Johnson and Romanoff (1999), Pike (1999), and Taylor et al. (2004). Differences in the level of involvement with peers in formal activities were even more powerful when learning community participation was combined with major and gender. The interaction of learning community, major, and gender for the number of hours of involvement in formal activities was significant at the .05 level of significance and appeared to be most powerful for undecided females in the Residential Learning Communities program.

5. There are no significant differences in informal involvement with peers based on learning community participation, gender, or major declaration. This finding, at first glance, might seem to suggest that the increased interaction with peers associated with learning community participation as discussed in the literature is
not occurring for the Residential Learning Communities program at Ohio University. However, since the questions for the informal contacts with peers construct do not readily correspond with the stated goals of and programmatic components of the RLC program, this finding may be more of an indication that a better construct is needed to measure informal involvement with peers than an actual representation of what is occurring. The questions for the informal involvement with peers construct ask students to respond to the following questions:

1. how many times did you go out with friends (for pizza, soft drink, movie, etc.) each month?
2. how many on-campus parties did you attend each month during this year?
3. how many conversations with International students have you had in an average month?

Since the intent of the Residential Learning Communities program is to “create residential, learning-based peer networks,” rather than increase the informal contacts measured by the SIQ, it is not surprising that no significant differences were found. No element of the RLC program was designed to address these aspects of social involvement. Given the intent of the RLC program, it is possible that students in learning communities might actually have lower scores on this construct of informal involvement with peers. For example, one might expect RLC students to have lower scores on the question pertaining to the number of on-campus parties attended each month due to the fact that students in the RLC program might meet more people in their residence halls and might be more
aware of social involvement opportunities other than parties. Since the intent of the RLC program is to “create residential, learning-based peer networks,” additional studies should seek to evaluate this dimension using survey questions that more closely match the goals of the program. Questions like the following might provide a clearer picture of whether there are differences in informal involvement with peers based on learning community participation, gender, and major declaration:

1. How many conversations about academics did you have with peers living in your residence hall?

2. How many times did you interact socially with peers who are in your classes?

6. There are no significant differences in academic involvement based on the main effects of learning community participation, gender, or major declaration status. When gender and major are examined in combination, however, significant differences are present, $F(1, 208)=3.81, p=.05$. Undecided males appeared to have higher levels of academic involvement than declared males, while the opposite was true for females. Declared females had higher levels of academic involvement than undecided females. Further study is needed to examine this interaction.

Since the academic involvement variable included the following components: a) hours spent each week studying for classes, b) times to the library this year, and c) hours spent daily using a computer for academic course work, additional study examining the components individually might provide further
insights. The lower mean scores for declared males, undecided males, and undecided females in the Residential Learning Communities program, for example, might be explained in part by the responses to “times to the library this year” portion of the question. Residence life staff who reside in RLC buildings anecdotally have reported that students in the RLC program tend to utilize the study lounges in the residence halls more than students not involved in the RLC program (and thus may go to the library less often).

7. Participants in the Residential Learning Communities program appeared to have had more contacts with faculty than Paired Courses participants or other first year students who did not participate in any learning community, though this result was not statistically significant. A number of studies (Leonard, 1996; Schroeder, Minor, & Tarkow, 1999; Taylor et al., 2004; Zhao & Kuh, 2004) have found higher levels of involvement with faculty for learning community participants, and since the RLC had this as a stated goal, one would expect RLC participants to have higher levels of involvement with faculty than non-participants. The lack of a statistically significant finding here may be partially due to the fact that this study is of the RLC program in its first full year of operation. At that time, faculty awareness of the program of this recently implemented program was minimal, and since faculty were in no way compensated for the inclusion of their courses in the RLC program, faculty involvement with students outside the classroom occurred only when faculty were willing to attend events or informal gatherings arranged by the peer mentor or resident director for that particular learning community. As might be expected, faculty in some Residential Learning
Communities were more willing to interact with students outside the classroom than faculty in other communities. Some faculty, for example, went to the residence halls to have a meal with their students, some faculty took small groups of students out to dinner, some went to the residence hall for an informal “fireside chat,” while some faculty were not willing to participate in any activities.

8. Although no significant differences were found in involvement with faculty based on gender and major, the results were close enough to suggest that further study is warranted. Students with declared majors appeared to have more contacts with faculty than undecided students, and females appeared to have more contacts with faculty than males, but these differences were not statistically significant. It is within reason to conclude that undecided students would have less contact with faculty outside the classroom than their peers with majors. Undecided students might be less likely than students with declared majors to talk with faculty about their plans during their first two quarters because they are still identifying their educational plans. Undecided students might also be less likely to have the opportunity to have dinner or refreshments with a faculty member simply because they are not yet in a major department. It is interesting to note that although the results were not significant, undecided males and undecided females who participated in the Residential Learning Communities program had higher means than undecided students in either the Paired Courses learning community or other first year students who did not participate in any learning community. This suggests that learning communities might be a powerful opportunity for
connecting undecided students to faculty outside the classroom and should be explored further.

9. It is unclear whether learning community participation is associated with higher levels of satisfaction. Very few studies have explored satisfaction as an outcome of learning community participation. The results of this study were mixed. Whereas there were no significant differences in satisfaction based on learning community participation, gender, or major declaration, the results of the ANCOVA test for learning community participation and major declaration were close to significance at the .05 level, $F(2, 208)=2.65, p=.07$ and $F(1, 208)=3.31, p=.07$, respectively. The results seem to suggest that students who did not participate in learning communities were more satisfied than both Paired Courses participants and Residential Learning Communities participants, and students with declared majors appeared to be more satisfied than undecided students, though this was not true for all groups. Undecided females who participated in the RLC program had higher levels of satisfaction than their counterparts in the Paired Courses or non-participant groups. When learning community group and gender were combined, the interaction effect was found to be significant at the .05 level, $F(2, 208)=3.96, p=.02$. Undecided RLC males were the least satisfied group, while declared male Paired Courses participants were the most satisfied. One plausible explanation for the mixed results for satisfaction is that students in the Residential Learning Communities might have had higher expectations for their experience. Because students were recruited into the program and self-selected, it is possible that they chose the program because they thought they
would get better instruction or better courses, and perhaps their high expectations were not met. Conversely, students who did not participate in any learning community may not have had any particular expectations about the quality of instruction they would receive at the institution. Another reasonable explanation for the mixed results for satisfaction is that the variable as it was constructed, with its limited scope, may not have been an accurate measure of overall satisfaction with the university. The satisfaction variable in this study was limited and did not include any measure of satisfaction of some of the key components of the RLC program, e.g. residence hall environment, peer mentors, course availability. Given the aims of the RLC program and the learning community model it employed, it is logical to conclude that further study might reveal differences in satisfaction with variables that were more closely tied to the program components.

10. Learning community participation does appear to be associated with first term academic success. Students who participated in either the Residential Learning Communities program or the Paired Courses learning community earned higher grade-point averages after the first term than students who did not participate in learning communities. Although this difference was not significant at the .05 level, $F(2, 208)=2.82, p=.06$, the data suggest that there are differences. Undecided students, especially, who participated in the Residential Learning Communities program had higher first term grade-point averages, $M=3.20$, than undecided students who participated in either Paired Courses, $M=2.97$, or did not participate in learning communities, $M=2.89$. These findings are particularly
interesting when one considers the model upon which the Residential Learning Communities were built. Because one of the goals of the program was to “improve academic success of first-year students,” (especially in those areas in which students typically experienced low success rates) five of the six learning community course configurations in the Residential Learning Communities program included one or more courses that were identified as “high-risk” courses at the institution. For example, two of the communities, Women in Engineering and Chemistry of Life, were intentionally designed for students in majors (and undecided students thinking about majors in those areas) in which several of the courses in the standard first term curriculum were high-risk (e.g. biological sciences, chemistry, mathematics, etc.).

In contrast to the Residential Learning Communities model, the Paired Courses learning community is built around the first year English composition course, which is known to be a course in which students typically earn grades higher than C. Thus, it is not surprising to see relatively high first term grade-point averages for the Paired Courses learning community participants.

11. There are differences in first year accumulative grade-point average based on major, $F(1, 208)=6.11, p=.01$, but not learning community participation and gender. Undecided students earned higher first year grade-point averages than students with declared majors. This was especially true for undecided students who participated in the RLC program.

12. There are no significant differences in academic progress based on learning community participation, gender, or major declaration.
13. Participation in learning communities, gender, and major declaration was not associated with higher retention rates in this study. The most plausible explanation for this is that the design of this study presents an inaccurate picture of retention at the institution. By limiting the subjects of the study to those students who completed the Student Involvement Questionnaire, the retention data excluded a potentially influential group of students. This is because the Student Involvement Questionnaire was administered at the end of the second quarter of enrollment, and students who had already left the institution after the first quarter would not have completed questionnaires and would not be included in this study. The inaccurate retention picture is most evident in the non-participant group in this study. The retention rate for non-participants in this study was 92%, while the actual retention rate for first-year students for that year was 85%.

Another important factor that contributes to the retention picture in this study is the design of the Residential Learning Communities program and the students for whom the program was most attractive. As was mentioned earlier, one of the Residential Learning Communities, Chemistry of Life, was targeted to students with majors in the biological sciences and to undecided students in University College or the College of Arts and Sciences who were considering majors in this area. Institutional Research data indicate that biological sciences majors and undecided students in University College and the College of Arts and Sciences (76%; 74%; and 69% retention respectively) had retention rates that were well below the institutional average of 85% for that year. Thus, the
retention rates for the Residential Learning Community participants might appear lower because the RLC participants were more likely to be in majors that have lower retention rates. Similarly, students with majors at the institution who typically have higher retention rates (e.g. majors in the College of Communication or College of Business) were less likely to be RLC participants.

A third plausible explanation for the lack of association between learning community participation and retention is the possibility that out-of-state students, who typically have lower retention rates, may have comprised a higher percentage of Residential Learning Community participants than the other two groups. Anecdotal information from Ohio University officials involved in the program suggests that the RLC program is particularly appealing to out-of-state students who are more apprehensive about adjusting to the new environment, forming peer networks, and establishing a sense of community. Further studies are needed to substantiate this claim.

**Recommendations for Practice**

1. The literature indicates that learning communities are a powerful tool for enhancing the involvement, success, satisfaction, and persistence of first year students. In order to maximize the potential of learning communities, institutions launching new programs or redesigning current programs should give careful consideration to the goals of the program and should strategically develop the program elements and assessment to address the stated goals. For instance, if the aim of the program is to enhance success in high-risk courses, then the model should include high-risk courses and should incorporate additional elements such
as supplemental instruction, study sessions, etc. Similarly, if the goal is to foster a greater sense of community in the residence hall, then residence life staff should be key players in the model. Without clearly stated goals and a model and assessment plan that mirrors the stated goals, the power of learning communities might be diffused.

2. Institutions seeking to launch learning community programs should allow adequate time to design a model suited to the needs of the students and the institution. A smart timeline would be one that would allow time to consider institutional research data about students and courses and would engage a wide spectrum of the university community. Input from academic colleges and institutional research, as well as cooperation and a collaborative spirit among staff from residence life, academic advising, and the registrar’s office, and the faculty are essential to the planning and launching of a learning community program.

3. Institutions planning learning community programs should make a commitment to provide support for the programs for a minimum of three years. The first year of any new program is a learning experience for everyone involved, and it may take a few years to overcome pitfalls and build a successful program.

4. Since undecided students who participated in the Residential Learning Communities program appeared to be more involved in campus life, more involved with faculty outside the classroom, and more successful academically than other undecided students in this study, efforts should be made to encourage more undecided students, especially females, to participate in the RLC program at Ohio University. For this group of students who leave the university at a higher
rate than any other group at the institution, the RLC program may be an
effective tool for enhancing their social integration and academic success and
ultimately retaining them. Practitioners at other institutions should be cognizant
of the undecided student populations at their campuses and consider how learning
communities might enhance the undecided student experience at their institutions.

5. Learning community models that include high-risk courses are recommended.
Enrollment in high-risk courses in the first term can be an overwhelming
experience for first-year students. Taking high-risk courses in a supportive
learning community model might help students achieve greater success in their
first term and provide them with a successful start at the institution.

6. Practitioners seeking to launch learning community programs should make a
concerted effort to build faculty support for the initiative and should consider
incentives for faculty participation in learning communities. One of the most
powerful outcomes of learning community participation can be increased
interaction with faculty outside the classroom. To maximize this potential and
increase the likelihood that the interaction will occur, it may be necessary to build
that interaction into the model and reward faculty for their important role.

Recommendations for Further Research

1. While this study suggests that Residential Learning Communities may be a tool
for enhancing the student involvement, satisfaction, academic success, and
retention of undecided students, the small sample size in this study warrants
further study in this area.
2. Additional study is needed to better evaluate the variable of informal involvement with peers. The construct used in this study did not readily correspond to the aims and programmatic components of the RLC program. Future studies should evaluate whether RLC participants establish “residential, learning-based peer networks.”

3. Future research on academic involvement should utilize different constructs to measure academic involvement. The question pertaining to “trips to the library” may not be a valid measure of academic involvement. Students who participate in residentially based learning communities may go to the library less because they may utilize designated study lounges in their residence halls instead of leaving their building. Moreover, since the majority of library resources are now accessible on-line, students may be less likely to go the library, and it is unclear whether less trips to the library means students have lower levels of academic involvement.

4. The model of the Residential Learning Communities program requires a more complex research design. The Residential Learning Communities program, unlike other learning community programs, offers services throughout the first year rather than just the first term. Thus, some students participate in the program only in the fall, while some participate in both fall and winter, and still others participate all three terms. This study did not identify those students who had participated in the program only one term versus those who had participated for two terms, and due to the use of the SIQ as the source of data, students had not yet had the opportunity to participate for the third term. Additional study is needed to
determine if there are differences in students based on their level of participation in the program.

5. This study examined the Residential Learning Communities program as a whole and did not explore differences in participants based on which of the six RLC cohorts the students were in. Future studies should employ research designs that allow for identification of differences based on the type of RLC. This data could prove useful to Ohio University officials seeking to maximize the impact of the program.

6. Additional studies are needed to examine student satisfaction as an outcome of learning community participation. Very few learning community studies have explored this important variable, and the data in this study is inconclusive.

7. In today’s higher education climate in which competition for resources is fierce, additional research is needed to further substantiate the need for learning communities. While the body of literature offers strong evidence that learning community participation is associated with increased student involvement, academic success, and retention, little evidence is provided about the actual learning that takes place in learning communities. Do students who participate in learning communities have better critical thinking skills? Are learning community participants better able to integrate knowledge from multiple disciplines? Do learning community participants view their education differently? These questions demand further study.

8. A longitudinal study examining student involvement, satisfaction, academic success, and retention should be considered to evaluate the outcomes of the
Residential Learning Communities program over time and determine if trends exist.
REFERENCES


Chonko, B. B. (1999). The impact of learning communities and University Orientation 101 on student involvement, satisfaction, achievement, and retention
at the University of Akron [Abstract]. *ProQuest Digital Dissertations, 60*(11), 3925.


APPENDIX A
BEGIN SURVEY

OHIO UNIVERSITY
STUDENT INVOLVEMENT STUDY

Social Security Number __________________________________ [1-9]

Directions: The following questions ask about how often you do certain activities ---weekly, monthly, and yearly.
Please answer every question, placing your response in the blank beside each question. When completed, return this form to your R.A. or Staff Office by March 8. Disregard the numbers in brackets [ ].

WEEKLY: The first two questions ask about how much time you spent per week doing certain activities.

1. How many hours did you spend each week studying for your classes during this academic year? [10-11]

2. How many of the following activities did you participate in? (For the following list of activities, place a check mark on the first line for those in which you participated. For those you check, please indicate the number of hours you participated each week during this academic year in the space to the right.)

<table>
<thead>
<tr>
<th>NO.</th>
<th>CHECK</th>
<th>HOURS</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

- Intercollegiate Athletics [12, 13-14]
- Intramural Athletics (e.g., intramurals, Campus recreation, Ping Center) [15, 16-17]
- College Publications (e.g., newspaper, yearbook) [18, 19-20]
- College Productions or Performances (e.g., theater, band) [21, 22-23]
- Fraternities, Sororities [24, 25-26]
- Professional or Departmental Clubs (e.g., Accounting Club, Arts Alliance) [27, 28-29]
- Hobbies or Social Clubs (e.g., Karate Club, Crazy cats Boosters) [30, 31-32]
- Religious Organizations (e.g., Newman Club, Christian Fellowship, hillel House) [33, 34-35]
- Residence Hall Activities (e.g., Hall Council, Green Council, social activities, workshops) [36, 37-38]
- Student Government (e.g., Student Senate, Interfraternity Council) [39, 40-41]
- International-Related Activities [42, 43-44]
- Leadership Programs (e.g., Emerging leaders, Community Building Institute, Conferences) [45, 46-47]
- Volunteer Services (e.g., individually or in organizations such as Circle K) [48, 49-50]

MONTHLY: Questions 3 through 7 ask you about how much time you spent per month doing certain activities.

3. How many weekends each month do you spend on campus? [51-52]

4. How many times did you go out with friends (for a pizza, soft drink, movie, etc.) each month? [53-54]

5. How many on-campus parties did you attend each month during this academic year? [55-56]

6. At how many of these parties did you drink alcoholic beverages? [57-58]

7. How many conversations with International students have you had in an average month? [59-60]

YEARLY: Questions 8 through 14 ask you about how much time you spent per year doing certain activities.
8. How many books other than those assigned for class did you read for your own pleasure or information this academic year? [61-62]

9. How many cultural events did you attend during this academic year? (e.g., performance, concert, lecture, play)? [63-64]
   ______ Kantner Theater [65] ______ Patio Theater [66]
   ______ Memorial Auditorium [67] ______ Baker Center [68]
   ______ Music Building [69] ______ Lindley Student Ctr. [70]
   ______ Convocation Center [71] ______ Other ______________________ [72]

10. How many conversations about educational plans, problems, or progress did you have with the following people during this academic year?
   ______ Academic Advisor [line 2, 1-2]
   ______ Faculty Member [3-4]
   ______ Residence Life Staff Member [5-6]
   ______ Student Organization Advisor [7-8]
   ______ Other Staff Member [9-10]

11. How many conversations about faculty research and scholarship have you had with faculty during this academic year? [11-12]

12. During this academic year, how many times did you do the following:
   ______ Have dinner or refreshments at a faculty member’s home [13-14]
   ______ Go out for refreshments with a faculty member? [15-16]
   ______ Have a meal on campus with a faculty member? [17-18]
   ______ Communicate with a faculty member via e-mail? [19-20]

13. How many times have you talked with a career advisor or attended a program concerning your career during this academic year? [21-22]

14. How many times have you been to the library this academic year? [23-24]

15. On average, how many hours each day do you spend on a computer?
   ______ For academic and course work (research, writing papers, programming, etc.) [25-26]
   ______ For personal use (e-mail to friends, games, Internet surfing, etc.) [27-28]

16. Did you have either an off-campus or an on-campus (work study, PACE, student employment) part-time job this year? (check one) [29]
   ______ (1) off-campus
   ______ (2) on-campus
   ______ (3) neither off-campus nor on-campus

17. How many of your five best (closest) friends currently attend Ohio University? [30]

Questions 18 through 22 ask you to respond by placing the letter corresponding to the response that best describes your feelings in the blank provided.

18. How sure are you that you made the right choice in attending Ohio University [31]
   A. Definitely Right Choice  D. Probably Wrong Choice
   B. Probably Right Choice   D. Definitely Wrong Choice
   C. Not Sure

19. How important is it to you that you graduate from Ohio University? [32]
   A. Extremely Important   C. Somewhat Important
   B. Very Important        D. Not At All Important
20. How important is it to you that you graduate from any university? [32]
   A. Extremely Important  C. Somewhat Important
   B. Very Important  D. Not At All Important

21. Will you return to Ohio University next fall? [34]
   A. Definitely Will Return  D. Probably Will Not Return
   B. Probably Will Return  E. Definitely Will Not Return
   C. Not Sure

22. How would you rate the quality of instruction at Ohio University? [35]
   A. Very Satisfactory  D. Somewhat Unsatisfactory
   B. Somewhat Satisfactory  E. Very Unsatisfactory
   C. Neutral

Questions 23 through 59 have two parts. First, please rate how important each item is to you here at Ohio University by circling the best response. Second, rate how satisfied you are with each item here at Ohio University by circling the best response. Use the following scales:

<table>
<thead>
<tr>
<th>Importance</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Very Important</td>
<td>1 Very Satisfied</td>
</tr>
<tr>
<td>2 Somewhat Important</td>
<td>2 Somewhat Satisfied</td>
</tr>
<tr>
<td>3 Neutral/Don't Know</td>
<td>3 Neutral/Don't Know</td>
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<tr>
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<td>4 Somewhat Dissatisfied</td>
</tr>
<tr>
<td>5 Not at all Important</td>
<td>5 Not at all Satisfied</td>
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Social Involvement

<table>
<thead>
<tr>
<th>Importance</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Very Important</td>
<td>1 Very Satisfied</td>
</tr>
<tr>
<td>2 Somewhat Important</td>
<td>2 Somewhat Satisfied</td>
</tr>
<tr>
<td>3 Neutral/Don't Know</td>
<td>3 Neutral/Don't Know</td>
</tr>
<tr>
<td>4 Somewhat Unimportant</td>
<td>4 Somewhat Dissatisfied</td>
</tr>
<tr>
<td>5 Not at all Important</td>
<td>5 Not at all Satisfied</td>
</tr>
</tbody>
</table>

23. Establishing Personal Relationships with Peers at Ohio University
   1 2 3 4 5 1 2 3 4 5 [1, 2]
24. Having Close Friends at Ohio University
   1 2 3 4 5 1 2 3 4 5 [3, 4]
25. Getting Involved in Student Organizations
   1 2 3 4 5 1 2 3 4 5 [5, 6]
26. Getting Involved in Campus Activities
   1 2 3 4 5 1 2 3 4 5 [7, 8]
27. Attending Cultural Events on Campus
   1 2 3 4 5 1 2 3 4 5 [9, 10]
28. Interacting with International Students
   1 2 3 4 5 1 2 3 4 5 [11, 12]
29. Interacting with People of Different Races
   1 2 3 4 5 1 2 3 4 5 [13, 14]
30. Getting Involved in Religious Activities
   1 2 3 4 5 1 2 3 4 5 [15, 16]
31. Having a Job while Enrolled
   1 2 3 4 5 1 2 3 4 5 [17, 18]
32. Other ________________________________
   1 2 3 4 5 1 2 3 4 5 [19, 20]

Academic Involvement

<table>
<thead>
<tr>
<th>Importance</th>
<th>Satisfaction</th>
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</thead>
<tbody>
<tr>
<td>1 Very Important</td>
<td>1 Very Satisfied</td>
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<tr>
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<td>2 Somewhat Satisfied</td>
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<tr>
<td>3 Neutral/Don't Know</td>
<td>3 Neutral/Don't Know</td>
</tr>
<tr>
<td>4 Somewhat Unimportant</td>
<td>4 Somewhat Dissatisfied</td>
</tr>
<tr>
<td>5 Not at all Important</td>
<td>5 Not at all Satisfied</td>
</tr>
</tbody>
</table>

33. Instruction in My Major Courses
   1 2 3 4 5 1 2 3 4 5 [21, 22]
34. Instruction in My Non-Major Courses
   1 2 3 4 5 1 2 3 4 5 [23, 24]
35. Faculty Availability Outside Class
   1 2 3 4 5 1 2 3 4 5 [25, 26]
36. Social Contacts with Faculty
   1 2 3 4 5 1 2 3 4 5 [27, 28]
37. Academic Advising
   1 2 3 4 5 1 2 3 4 5 [29, 30]
38. Other ________________________________
   1 2 3 4 5 1 2 3 4 5 [31, 32]

Campus Atmosphere

<table>
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<th>Satisfaction</th>
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<tbody>
<tr>
<td>1 Very Important</td>
<td>1 Very Satisfied</td>
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<tr>
<td>2 Somewhat Important</td>
<td>2 Somewhat Satisfied</td>
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<td>3 Neutral/Don't Know</td>
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<tr>
<td>4 Somewhat Unimportant</td>
<td>4 Somewhat Dissatisfied</td>
</tr>
<tr>
<td>5 Not at all Important</td>
<td>5 Not at all Satisfied</td>
</tr>
</tbody>
</table>

39. Adequate Personal Security
   1 2 3 4 5 1 2 3 4 5 [33, 34]
40. Adequate Physical Environment on Campus
   1 2 3 4 5 1 2 3 4 5 [35, 36]
41. Adequate Social Atmosphere
   1 2 3 4 5 1 2 3 4 5 [37, 38]
42. Adequate Academic/Intellectual Atmosphere
   1 2 3 4 5 1 2 3 4 5 [39, 40]
43. Fitting into the Campus Community
   1 2 3 4 5 1 2 3 4 5 [41, 42]
44. Other ______________________________

<table>
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<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

**Personal Goals**

45. Making Progress Toward Personal Goals

| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

46. Making Progress Toward Academic Goals

| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

47. Making Progress Toward Career Goals

| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

48. Adjusting Academically to College

| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

49. Adjusting Socially to College

| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

50. Adjusting Emotionally to College

| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

51. Managing Personal Stress

| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

52. Developing my Self-Esteem & Confidence

| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

53. Developing Personal Values & Beliefs

| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

54. Developing a Philosophy of Life

| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

55. Developing Spirituality

| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

56. My Personal Motivation for Academic Success

| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

57. My Personal Achievement of Academic Success

| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

58. Being Interested in My Studies

| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

59. Other ______________________________

| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

(next page)

Please return this form to your R.A. or Staff Office by March 8. Thank you for taking the time to complete it.

If you wish to make further comments about your experience at Ohio University, please use this space. For example, tell us what was your most satisfying experience at Ohio University, and what was your least satisfying experience.

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