ABSTRACT

Title of Document:	ACADEMIC SELF-EFFICACY FOR SOPHOMORE STUDENTS IN LIVING-LEARNING PROGRAMS
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This thesis explored which pre-college background characteristics and in-college involvement experiences contributed to academic self-efficacy for sophomore students who participate in living-learning programs compared to sophomores who do not participate in living-learning programs. Using secondary data from the National Study of Living-Learning Programs, 4,700 sophomores were included in the analyses. Two hypotheses were tested. A t-test revealed a significant difference in academic self-efficacy for living-learning and non-living learning students. Astin's Input-Environment-Outcome (I-E-O) model was used as a guiding framework for the second hypothesis. Multiple regression analysis revealed that specific background characteristics, an academic self-efficacy pre-test measure, social environments, academic environments, and positive perceptions of residence hall climates accounted for 26.9% of the variance in academic self-efficacy for living-learning sophomores. For non-living-learning sophomores, these same factors accounted for 17.9% of the variance. Implications for practice and future research are discussed.

ACADEMIC SELF-EFFICACY FOR SOPHOMORE STUDENTS IN LIVING-LEARNING PROGRAMS

By

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DEDICATION

I would like to dedicate this thesis to my family—John, Peggy, Amy, and Brad. You are the first and most important learning community in my life. Without your love and support, none of this would have been possible.

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CHAPTER ONE: INTRODUCTION

In his eloquent description of sophomore students, Margolis (1976) stated "they fulfill the naming of their second year—the sophomore—the wise fool—as they become philosophers, questioners of their own personal meaning, building a credence the world will accept and limit" (p. 135). Sophomore students are in a challenging time in their collegiate career. They face difficult developmental tasks such as choosing a major, becoming more involved on campus, and deciphering their career interests. However, sophomore students are often not given the same amount of institutional support as first-year students (Sanchez-Leguelinel, 2008). This combination of events often causes sophomores to "slump" meaning they become confused, uncertain, and disorganized about the direction in which to proceed (Furr & Gannaway, 1982). Furthermore, much of what happens during the sophomore year is a mystery since little empirical research to date has focused on the sophomore year experience.

Because the sophomore slump causes a decrease in confidence in their overall ability level ((Furr & Gannaway), sophomore students' academic abilities can certainly be affected. Examining academic self-efficacy, or self-confidence in academic abilities (Bandura, 1997), may be particularly important for this population of students. Specifically, researchers and practitioners must find interventions that may help sophomores feel more confident in their academic abilities.

One possible intervention strategy may be sophomore involvement in living-learning programs. Past research has demonstrated that involvement in living-learning programs has increased levels of academic self-efficacy for first-year students (Inkelas, Soldner, & Szelényi, 2008). The current research seeks to understand if this same

phenomenon exists for second year students in addition to determining which collegiate environments may foster greater levels of self-efficacy. By coming to an increased understanding of academic self-efficacy for sophomores, outcomes such as academic achievement (e.g., Elias & Loomis, 2004; Lent, Larkin, & Brown, 1989; Multon, Brown, & Lent, 1991) and retention may be increased (Multon et al. ,1991; Torres & Solberg, 2001).

A Background on Living-Learning Programs

Living-learning programs are becoming increasingly popular at colleges and universities across the United States. Living-learning programs seek to tie students' residential, curricular, and co-curricular experiences together for a more seamless learning environment (Gabelnick, MacGregor, Matthews, & Smith, 1990, Lenning & Ebbers, 1999). Some have suggested that living-learning programs have increased in popularity in response to the national debate over the quality of higher education (Gabelnick, MacGregor, Matthews, & Smith, 1990). Especially at large research institutions, "huge enrollments, diverse students and faculty, competing missions, an increasing number of part-time faculty and students, and enormous specialization and fragmentation in the curriculum, many institutions are not experienced by students or faculty as an educational community" (Gabelnick et al., p. 10). Living-learning programs attempt to resolve these issues through their smaller size, close interaction with faculty, specific program foci, and curricular and co-curricular programming in addition to the developmental outcomes discussed above.

Living-learning programs, also known as residential learning communities, are only *one* type of learning-community (Lenning & Ebbers, 1999); other types of learning

communities include paired or clustered courses, cohorts in large courses or first-year interest groups, and team-taught courses (Shapiro & Levine, 1999). According to Shapiro and Levine (1999), learning communities have several basic characteristics despite their different typologies: students and faculty are organized in smaller groups, students establish academic and social support networks, curriculum is integrated both inside and outside the classroom, students are socialized into the expectations of college within the program environment, faculty are brought together in meaningful and intentional ways, there is a clear focus on learning outcomes, and a setting is created for community-based delivery of academic support programs. Specifically, in *living-learning* programs, the residential component enhances some of the underlying structures within learning communities because of the intimate environment in which the students live and learn together (Shapiro & Levine).

Living-learning programs take on the goal of integrating students' living and academic environments. Programming in the residence hall demonstrates that not all learning takes place in a classroom setting. A significant amount of what students learn stems from their daily living experiences, which provides an intersection for students' academic and social learning (Shapiro & Levine, 1999). Living-learning programs are more than theme halls composed of students with similar interests or majors living on the same floor within the residence hall. Intentional programming with specified curricular components in a space that is dedicated to the program is a necessary component of living-learning programs (Shapiro & Levine). Because the students live in residence halls together, there are ample opportunities for co-curricular activities and programming. Activities can range from community service projects to activities designed to smoothly

transition into the college environment—however, often, the specific types of activities will depend on the type of living-learning program in which the students are involved (Schroeder, 1994). For example, a living-learning program focused on civic engagement may organize more politically-based activities than a living-learning program focused on women in science and engineering.

Living-learning programs challenge traditional curricular structures since they require collaboration and cooperation between faculty, residence hall administrators, and students in a way that is different from the rest of the university or college. More responsibility is also placed on the students for shaping both their living *and* learning experience (Shapiro & Levine, 1999). Through "promoting integration and cooperation, [learning communities] counteract the isolating tendencies of education and the curricular 'dis-integration' that results when knowledge is compartmentalized into competing disciplines and isolated courses" (Gabelnick, MacGregor, Matthews, & Smith, 1990, p. 90). Not only is the connection between disciplines encouraged, but sharing knowledge and problem-solving skills can be developed through this environment (Gabelnick et al.). In addition to the learning that occurs outside the classroom, living-learning programs often have a structured curricular component where students participate in some shared academic endeavor. Because of this curricular component, student-faculty interaction is strengthened. While most faculty do not live in the residence halls like they do in traditional residential colleges (Shapiro & Levine, 1999), they may teach their course in the same physical building in which the students live. Living-learning programs may also increase informal faculty interaction as well, leading

to mentoring relationships that are important for student success and retention (Pascarella & Terenzini, 2005).

Because of the integrative focus placed on combining learning and living with other students, residents in these programs often benefit from increased levels of academic self-efficacy (Inkelas & Associates, 2007). Academic self-efficacy was the outcome of interest in the current study. For the purpose of this study, academic self-efficacy refers to students' confidence in their academic abilities. The operationalization of this concept will be discussed in greater detail below.

Living-Learning Programs as an Intervention for Sophomore Students

A majority of the empirical research that examines the outcomes of living-learning participation to date has been focused solely on first-year student populations (e.g., Inkelas & Weisman, 2003; Inkelas et al., 2008; Stassen, 2003). The first year is a crucial time in a student's transition to the collegiate environment. Institutions across the country have designed and implemented a variety of first-year experience programs that contribute to the overall success and retention of first-year students, including living-learning programs. However, some practitioners are beginning to shift their focus to second-year students and have begun developing a better understanding of what their needs are and what environments need to be implemented to best meet their needs (Schaller, 2005). As described earlier in this chapter, "choosing a major, questioning parents' values, and searching for meaning and closeness to other students become more important" during the second year of college (Gahagan & Hunter, 2006, p. 17). Sophomore students do in fact participate in living-learning programs; however, little is known about second-year population that some practitioners refer to as being "invisible"

(Pattengale & Schreiner, 2000). In fact, one of the recommendations for living-learning programs given by Inkelas, Zeller, Murphy, and Hummel (2006) was that collaborative and integrative contexts of living-learning programs should continue beyond the first-year. Gaff (2000) also stated that learning communities may be an important intervention for practitioners to use with this population to combat the difficulties of sophomore year. This research clearly indicates a shift of focus for practitioners to examine the student experience beyond the first year vis-à-vis living-learning programs.

The Intersection of Student Development in Understanding Sophomore Self-Efficacy

Using a student development lens, the tasks that sophomores face are indeed different from first-year students. For example, Lemons and Richmond (1987) applied Chickering's (1969) vectors to second-year students. They found that sophomore students tended to struggle in four areas, specifically: achieving competence, developing autonomy, establishing identity, and developing purpose. To *achieve competence,* sophomore students are no longer satisfied by feeling competent living on their own; instead, they switch their focus to areas such as superior academic performance, athletic ability, or involvement in co-curricular activities (Lemons & Richmond). They may also "establish a new standard of competence in the intellectual, manual skill, and interpersonal realms that exceed those adequate for high school and even the first year of college" (Boivin, Fountain, & Baylis, 2000, p. 12). Lemons and Richmond assert that in terms of *developing autonomy*, many sophomore students struggle since they are financially reliant on their parents and cannot easily break away from their reach. However emotionally, they are more autonomous from their parents yet struggle to have an "adequate sense of interdependence and support within the campus community to

supplant the loss of parental and former peer group dependence" (Boivin et al., p. 12). This lack of support places them in a difficult position. Sophomores also grapple with the task of *establishing identity*, which is one of the most central developmental tasks during college (Lemons & Richmond). Difficulties with other developmental tasks may hinder identity development—especially achieving competence and autonomy, which may ultimately affect identity formation, self-esteem, and self-concept (Boivin et al., 2000). Lastly, achieving competence, developing autonomy, and establishing identity come together in the vector of *developing purpose*. Developing purpose may be difficult for sophomore students—tasks such as choosing a major, a future career, as well as making decisions regarding which co-curricular activities to become involved in may be difficult without enough foresight or reflection (Lemons & Richmond).

In terms of cognitive development, sophomores are most likely still thinking dualistically (Perry, 1970). This means they tend to believe there is one correct answer to all questions and approach issues with a "right or wrong" framework. As they move through the transition issues faced during this year, they bring this dualistic mode of thinking with them, which can cause an extreme amount of anxiety about making the "right" choice in terms of major or career (Boivin, et. al, 2000).

As mentioned previously, sophomores move through these developmental tasks with often less support to navigate these important transitions compared to their first year. Facing difficult developmental tasks alone may contribute to sophomore slump, which will be described in detail the following section. However, living-learning programs may provide specific collegiate environmental factors that allow students to progress through these tasks more seamlessly by increasing their levels of academic self-efficacy. Prior

research has not examined how sophomore participation in a living-learning program may affect these processes.

Problem Statement

Sophomores are "in between" in many ways (Pattengale & Schreiner, 2000). For example, many of them have not decided on a major, are still discerning many of their strengths and weaknesses, and are struggling to determine their career interests (Boivin et al., 2000). Combined with the developmental tasks described above, these factors often culminate into what researchers and practitioners' have labeled as the *sophomore slump* (Freedman, 1956). Sophomore slump is a widely used term to describe second-year students who lack motivation, feel disconnected, and struggle academically (Boivin et. al, 2000). It is often characterized as a time of confusion and uncertainty (Furr & Gannaway, 1982). This may result in a crisis in confidence—both in personal self-efficacy and academic self-efficacy. Because the second year of college can be tumultuous, coming to a greater understanding of interventions that may positively shape sophomores' success and confidence may be important. Because living-learning programs provide a supportive, integrative, and academically stimulating environment, understanding how sophomores fare in these programs can provide insights into this problem. However, little research has been conducted on sophomores who participate in these programs as mentioned above. Gaining an increased understanding of their experiences may be important for scholars, practitioners, and students themselves who may be interested in joining a living-learning program.

Purpose of the Study and Research Question

Sophomore year may create the "perfect storm" of events which cause students to struggle. Sophomores are faced with important choices like choosing a major and finding internship and career opportunities. In the background of these choices are the developmental tasks they face at this point in their collegiate career (e.g., achieving competency, developmental autonomy, moving to more complex ways of thinking). All of these factors may unite to cause a crisis in their confidence levels—the sophomore slump. However, living-learning programs may be a helpful antidote—providing the necessary amount of support, structure, and guidance for this population to better manage the slump. The issues that sophomores face are amplified by the fact that scholars and practitioners know little about this population of students compared to other groups of college students (Schreiner & Pattengale, 2000). Based on the limited information in the literature about sophomores described above, the purpose of the current study is to determine which factors predict academic self-efficacy for college sophomores who participate in living-learning programs compared to those who live in traditional residence halls. Previous research has documented the influence that living-learning programs can have on academic self-efficacy for first-year students (Inkelas et al., 2008); however, the influence of living-learning programs on the academic self-efficacy for sophomore students has yet to be determined. Gaining an increased understanding of this construct for sophomores has important implications for both theory and practice. There was one research question for this study:

> Which pre-college background characteristics and in-college involvement experiences were related to academic self-efficacy for sophomore students who

participated in living-learning communities compared to sophomore students who lived in traditional residence halls?

Definition of Key Terms

The following section outlines the definitions of living-learning programs, traditional residence halls, academic self-efficacy, and sophomore students. These were key terms in this study that will be referred to in the following chapters.

Living-learning programs were defined as "programs in which undergraduate students [lived] together in a discrete portion of a residence hall (or the entire hall) and [participated] in academic and/or extra-curricular programming designed especially for them" (Inkelas & Associates, 2007, p. 2).

Traditional residence hall referred to residence halls or portions of residence halls where students occupied university housing, but did not participate in a living-learning program. In the current study, students living in traditional residence hall environments were used as a comparison sample.

Academic self-efficacy was defined using the operationalization from the 2007 National Study of Living Learning Programs survey (described in greater detail below), which was how confident college students felt in their academic ability.

Sophomore students needed to be defined as there were variations of what this term meant depending on first-year course load, number of credits brought in through AP/IB exams, and transfer student credit levels. For the purposes of this study, Gahagan & Hunter's (2005) definition was used. They defined sophomores as "first-time, full-time students who have persisted into their second year of academic work" (p. 18).

Research Context

The current study used data collected from the National Study of Living-Learning Programs (NSLLP) to answer the research question discussed above. This is the only national, multi-institutional study of living-learning programs in the country. Because a constant critique of living-learning research is that studies only take place at a single institution, the NSLLP researchers have broadened what scholars and practitioners know about living-learning programs by collecting data from 47 different institutions across the United States (Inkelas & Associates, 2007). One of the main goals of the NSLLP was to determine the outcomes for students who participate in living-learning programs; academic self-efficacy was one of such outcomes. There have been two cycles of national data collection for the NSLLP: once in 2004, and again in 2007. The majority of respondents were first-year students; however, due to the large sample, there is noteworthy percentage of sophomore students (approximately 21.7%) who were used for data analyses. See Chapter Three for a complete overview of the methodology for this study.

Significance of the Study

This study has several potential implications for both theory and practice in the context of higher education. As mentioned previously, scholars and practitioners are starting to uncover more of what happens during the second year of college in order to understand what types of programs, environments, and supports need to be implemented to make this population of students successful and ultimately help them persist to graduation (Pattengale & Schreiner, 2000). However, little research to date has

addressed the developmental, social, and academic needs of second-year students. While this study does not purport to address all of these issues, it seeks to begin to untangle a complex interaction between living-learning program involvement and the relationship to academic self-efficacy. In addition to learning more about the sophomore year experience, this research contributes to the growing body on literature of living-learning programs. Within the context of living-learning program research, academic self-efficacy (and the predictors of academic self-efficacy) has yet to be thoroughly addressed. While it has been measured in past research as one of many outcomes (e.g., Inkelas & Associates, 2004; 2007), this research seeks to paint a clearer picture of this construct and the relationship to environmental variables that are related to participation in living-learning programs.

In addition to filling a gap in the literature, this research may potentially influence practitioners' work with sophomore students in general. Practitioners will benefit from their ability to create effective and challenging programming to help advance the psycho-social and cognitive development of sophomore college students. Understanding that sophomores can in fact slump, causing a crisis in confidence, having a greater understanding of academic self-efficacy may help give them ideas for strategies to implement. Once the relationship between academic self-efficacy and environmental factors is determined, practitioners can use that knowledge to intervene in a way that will positively affect students. Moreover, the findings from this study can specifically help faculty members and administrators who work in living-learning programs, or who may be considering developing living-learning programs. Knowing how sophomore students

experience living-learning programs may inform teaching choices, practices, and policy decisions made by living-learning administrators.

Gaining an increased understanding of how living-learning program involvement fosters academic self-efficacy in general is important for faculty and staff to understand in order to inform their practice. For example, specific programs may be developed in order to address students' lack of academic confidence at certain points during their collegiate career or group interventions can be organized in order to increase students' feelings of confidence. In the end, students themselves may benefit from an increased understanding of their academic experience during college. A student needs to feel confident in his or her own ability to be academically successful and complete college. Academic success is both a shared goal of students as well as the university. Therefore, at the micro and macro level, practitioners, scholars, and students themselves can benefit from an increased understanding of this relationship. As greater insights are formed about sophomore students, living-learning program participation, and how specific outcomes like academic self-efficacy are shaped by the collegiate environment, many different people (e.g., faculty, student affairs staff, living-learning program administrators, and students), places, and programs may be affected.

Summary

This chapter provided a brief introduction to living-learning programs, sophomore students, and academic self-efficacy for college students. It highlighted the purpose of the current research, which was to investigate which pre-college background characteristics and in-college involvement experiences were related to academic self-

efficacy for sophomore students who participated in living-learning programs compared to those sophomores who do not. Additionally, the research context within the NSLLP was provided. Implications for both theory and practice were mentioned as support for the research. Chapter Two will provide a detailed examination of the literature related to this study.

CHAPTER 2: LITERATURE REVIEW

This chapter will provide an overview of the literature on living-learning programs in U.S. colleges and universities, academic self-efficacy, and sophomore students. While this study specifically sought to examine factors that are related to academic self-efficacy for sophomore students, limited previous research exists on this population. Therefore, a majority of the research that will be presented will not solely focus on sophomore students, but instead will provide an overview of how students in general interact with living-learning programs and academic self-efficacy during their collegiate experience. Astin's (1993) I-E-O model was the theoretical framework for the current study. Therefore, a brief overview of this model will be given first. This will be followed by a review of living-learning programs, academic self-efficacy, and the sophomore student literature. Finally, the chapter will conclude with a synthesis of how the relevant findings from the literature inform the purpose of this study.

Astin's I-E-O Model

The Input-Environment-Outcome (I-E-O) model was developed by Astin (1993) as a guiding framework for assessing the impact that college has on students. Astin's model was underscored by the premise that an assessment was not complete unless the student inputs (I), the educational environment (E), and the student outcomes (O) were examined together. This approach controlled for differences that students brought with them to college (the inputs), which resulted in a more accurate assessment of the effects of the learning environment on the outcome of interest. The following section will provide a brief overview of inputs, environments, and outputs.

Inputs

Astin (1993) described inputs as "those personal qualities that the student brings initially to the education program (including the student's initial level of developed talent at the time of entry)" (p. 18). Examples of student inputs might be gender, race, age, educational background, degree aspirations, reasons for selecting a particular institution, socio-economic status, disability status, career choice, or field of study (Astin). As mentioned briefly above, inclusion of inputs into the I-E-O model was crucial because the inputs directly influenced both the environments and the outcomes.

Environment

Environment "refers to the student's actual experience during the educational program" (Astin, 1993, p. 18). In other words, the environment included anything that happened during the collegiate experience that may influence the student, and therefore the outcomes measured. Environmental factors could include a program, personnel, curriculum, faculty members, facilities, campus climate, peers, roommates, co-curricular activities, or organizational affiliations (Astin).

Outcomes

Astin (1993) defined outcomes as "the 'talents' we are trying to develop in [the] educational program" (p. 18). Outputs were outcome variables that include consequences, posttests, or end results (Astin). The current study had one outcome—academic self-efficacy—that was examined holding the input characteristics constant in order to understand the effect that the environments of interest contribute. Taken together, the I-E-O model served as the general framework for the study and played an important role in data analysis. This will be discussed in detail in Chapter Three.

Living-Learning Programs

As Pike (1999) described, living-learning programs are designed to produce "environments that promote greater student involvement, improved faculty-student interaction, and a more supportive peer climate. They are also designed to assist students in integrating diverse curricular and co-curricular experiences" (pp. 270-271). Other researchers indicated that, in addition to greater student-faculty interaction, peer interaction, and increased involvement in curricular and co-curricular activities, living-learning programs also create a positive residence hall climate that affects living-learning students as well (e.g., Pascarella, Terenzini, & Blimling, 1994). The following section on living-learning programs will provide a brief overview of living-learning programs and students, and will then discuss the five factors mentioned above: faculty-student interaction, peer interaction, residential climate, co-curricular involvement, and curricular involvement. Lastly, a brief overview will be given of outcomes associated with living-learning program participation.

Types of Living-Learning Programs

The 2007 NSLLP Report described a thematic typology of living-learning programs based on over 300 living-learning programs in the United States. The NSLLP researchers extended the previous typology created from the 2004 data collection cycle (see Inkelas & Associates, 2004; Inkelas & Longerbeam, 2008 for a complete description). Six raters placed the living-learning programs in categories based on the program's title, goals and objectives as well as using ratings from the program directors of various learning outcomes for their program. The 2004 typology was used as the guiding framework (Inkelas & Associates, 2007). This analysis resulted in 17 different

program types: (a) civics and social leadership programs, (b) disciplinary programs, (c) fine and creative arts programs, (d) general academic programs, (e) honors programs, (f) cultural programs, (g) leisure programs, (h) umbrella programs, (i) political interest programs, (j) residential colleges, (k) research programs, (l) Reserve Officer Training Corps (ROTC) programs, (m) sophomore programs, (n) transition programs, (o) upper-division programs, (p) wellness programs, and (q) women's programs. It is important to note that for the purposes of the current study, a majority of these programs focused their work with first-year students. Specifically within the 2007 NSLLP, 70.6% of students are first-year students. However, there is still an obligation to examine the remainder of the living-learning population—a majority of which will be sophomore students. Sophomore students comprised 21.7% of the living-learning population in the 2007 NSLLP cycle, and represented the largest group of students involved in living-learning programs after freshmen. As living-learning programs continue to grow in scope and popularity, they have the potential to become home to second-year students who would either like to continue their living-learning experience from their first year or participate in the program starting in their sophomore year. Regardless, little literature to date has given this population of students a thorough review.

Characteristics of Students in Living-Learning Programs

Researchers have determined that students who self-select to participate in living-learning programs may be slightly different from the general student population. Pascarella and Terenzini (1991) stated that living-learning participants generally have higher levels of high school achievement and may be more interested in intellectual endeavors than non-living-learning students. Zheng, Saunders, Shelley, and Whalen

(2002) noted that living-learning students "tend to be more motivated, or may come from families in which their parents have higher expectations" (p. 7) compared to the general population of college students. It makes sense that high-achieving high school students who are intellectually curious would be drawn to a living-learning program. However, the possibility remains that living-learning students and non-living-learning students differ in ways that have not been explored by researchers. This is important to keep in mind while reviewing the scholarship on living-learning programs presented below.

Components of the Living-Learning Program Environment

Student-Faculty Interaction

Researchers have demonstrated that participation in a living-learning program allowed students greater opportunities for student-faculty interaction (Inkelas, 1999; Pascarella, Terenzini, & Blimling, 1994; Pascarella & Terenzini 1980; Pike, 1999). When students interacted with faculty, it shaped their educational aspirations, their retention, as well as their post-graduation plans (Pascarella & Terenzini, 2005). Faculty interaction may be intentional, organized, and related to the classroom context such as students visiting their office hours, asking questions about their course, or communicating with them via email (Inkelas & Longerbeam, 2008). Students may also build a mentoring relationship with faculty through discussion of future plans, assisting the faculty member with research, or doing an independent study with the faculty member (Inkelas & Longerbeam). Pascarella and Terenzini (1976) found that the frequency and quality of student-faculty interaction (specifically examining informal interactions) significantly predicted first-year academic outcomes—specifically college satisfaction and retention. Because students who were involved in living-learning

programs reported high levels of faculty interaction, coupled with the positive effects of such interaction, this suggests that living-learning programs provide students with increased opportunities for learning outside the classroom (Schroeder, 1994).

While many studies examined the frequency of student-faculty interaction within living-learning programs, few have intentionally analyzed the quality of these interactions. Garrett and Zabriskie (2004) specifically examined the quality of student-faculty interactions at the living-learning programs at a single, public research university in the Midwest. Similar to past research, they found that living-learning students were more likely to have both more informal and formal interactions with faculty members than non-living-learning participants. The authors posited that living-learning students had easier access to faculty members due to the program structure as well as the type of student who chose to be in a living-learning program versus a traditional residence hall. Informal interaction was found to be the most frequent type of interaction, but the authors warned, however, that average mean for this question was 1.75 (with one being "never" and two indicating "a few times a semester"). While data for these analyses were gathered over three years, it was still a single institution study. Therefore, the results should be interpreted carefully.

Previous research on student-faculty interaction within living-learning programs had been mainly focused on first-year students (e.g., Pascarella & Terenzini 1980; Pascarella & Terenzini, 1976). This means that little is known about what sophomore participants in living-learning programs need in terms student-faculty interaction. Gaff (2000) examined the curricular needs of sophomore students (not in living-learning programs), and noticed that many sophomores had not had close faculty interaction in

order to form a special relationship yet. However, because of the integrated nature of living-learning programs, sophomores who participate may have a different experience than the general population.

Little research to date has examined the relationship between student-faculty interaction and academic self-efficacy. While the construct of academic self-efficacy will be discussed in greater detail later in this Chapter, Bandura (1997) posited that social persuasion (when people are told by others that they possess the capabilities to master given tasks) was one way to increase efficacy levels. Faculty members who work with students may send these types of messages constantly during class or through one-on-one interaction. Through the use of social persuasion combined with the sheer importance of student-faculty interaction (which can affect such outcomes as college satisfaction and retention), one could imagine that this type of interaction could contribute to a student's academic self-efficacy.

Peer Interaction

Examples of peer interaction within the living-learning context were forming study groups, being roommates, or participating in co-curricular activities together (Inkelas & Longerbeam, 2008). Pike (1999) demonstrated that living-learning participation increased peer interaction. In his study of 626 first-year students in living-learning programs, living-learning students had significantly higher levels of peer interaction than students who lived in traditional residence halls (comparison sample) in addition to being more involved and integrated on the campus. Pike also explored greater gains in intellectual development, which will be discussed in greater detail below.

Bransford, Brown, and Cocking (2000) posited that the increased opportunity for peer interaction provided by learning communities resulted in the development of richer, increasingly complex ways of thinking so that students learn at a deeper level. While the authors were not specifically examining living-learning programs, these effects may be even greater among living-learning students, who have even more intimate interactions resulting from the residential component of their program. Peer interaction had in fact been linked to many important outcomes, such as cognitive development (Pascarella & Terenzini, 2005). According to Astin (1993), "the students' peer group is the single most potent source of influence of influence on growth and development during the undergraduate years" (p. 398). Especially in the living-learning context, the closeness of the peer experience may strengthen the effect (Astin).

The majority of research on peer interaction within living-learning contexts has focused exclusively on first-year students (e.g., Pike, 1999). While little is known about second-year students, it seems likely that peer interaction would play a similarly important role to college sophomores. Schaller (2005) noted that second year students often times begin questioning the relationships they developed during their first year and may be seeking a new peer circle. Combined with the developmental tasks of choosing a major or becoming involved in student organizations, peers may play an increasingly important role as sophomores navigate this process. However, the current literature has yet to examine this phenomenon. Additionally, little is known about the link between academic self-efficacy and peer interaction. As described in the above section on student-faculty interaction, social persuasion may also occur among peers in a living-learning program, which would increase efficacy levels for these students. Vicarious

experiences (Bandura, 1997) may also affect students' efficacy levels, where students see students similar to themselves succeeding academically. Within the intimate residential climate in which these students live and learn together, vicarious experiences may be powerful for living-learning students. In the end, these types of interactions and experiences can positively affect students' feelings of efficaciousness, yet current empirical research has yet to make this link clear for living-learning students.

Residential Climate

Living-learning programs provided both socially supportive residence hall climates as well as more academically stimulating residence hall environment (Inkelas, 1999; Inkelas & Weisman, 2003; Pascarella, Terenzini, & Blimling, 1994). Inkelas and Longerbeam (2008) described socially supportive environmental factors that included students who support one another to create an overall atmosphere for appreciating differences and a satisfaction with the social environment. An academically supportive environment was portrayed by a clear emphasis on studying and facilitating academic success through peer support, study groups, as well as academic advising. Lenning and Ebbers (1999) suggested that the overall residence climate created by the living-learning program had a positive effect on student learning. In a review of past literature on living-learning research, Pascarella, Terenzini, and Blimling (1994) stated that living-learning students reported a more personally satisfying social climate in their living arrangements than non-living-learning students.

In a single institutional study of living-learning program participants compared to students who lived in traditional residence halls, Inkelas (1999) found that living-learning students were more likely to perceive their residence hall environment as both socially

and academically supportive. Specifically, she found that "sixty-one percent of the living-learning students found their residence halls to be socially supportive and tolerant, while only 55 percent of non-living-learning students felt the same about their residence environments. Nearly 60 percent of living-learning students also found their halls to be academically supportive as well, eight percent more than those students who are not living-learning participants" (p. 32). Similarly, in a multi-institutional study of living-learning program outcomes for first-year students (part of the NSLLP), Inkelas, Soldner, and Szelényi (2008) found that living-learning first-year students perceived their residence hall environments to be more academically and socially supportive than their peers who were non-living-learning participants. The authors found that living-learning program participants were more proactive in using residence hall resources, study groups, or computer labs than non-living-learning students.

Inkelas and Weisman (2003) studied three different types of living-learning programs: (a) Transitions programs (focused on helping mainly first-year students transition from high school to college), (b) Academic Honors programs (focused on providing demanding academic programs to highly talented students through specialized coursework and projects), and (c) Curriculum-Based programs (focused on specific areas of study or research). They found that all three program participants found their residence environment to be more supportive than non-participants in their control sample. However, there were differences by program type. Students in the Transitions and Curriculum-Based programs were significantly more likely to find their residence halls more academically supportive, whereas students in the Honors and Curriculum-Based programs were significantly more likely to find their residence hall environment to

be socially supportive. The authors posited that since Curriculum-Based participants found their environments both academically *and* socially supportive, they "appear to be sustaining the healthiest living atmosphere of the participants in the three programs and in comparison to the control sample" (p. 346). Because the authors only used a single institution in their study, results should be generalized carefully.

While it was clear that living-learning students benefit from socially and academically supportive residence hall climates, the research to date tended to examine the experience of first-year students only; it is yet to be determined whether residence hall climates play a significant role in the lives of sophomore students. Due to the developmental task of choosing a major, is an academically supportive climate more important for sophomores than a socially supportive residence hall, for example? Furthermore, academically and socially supportive residence hall climates may foster students' sense of confidence in their ability to succeed academically, yet the link between academic self-efficacy and residential climates has not been examined.

Co-Curricular Involvement

Schroeder (1994) stated that, "a true learning community encourages, expects, and rewards broad-based student involvement" (p. 175). While intentional programming was a core part of the living-learning experience (Shapiro & Levine, 1999), co-curricular involvement was important as well. As students' involvement increased, they benefited more from their educational experiences (Astin, 1993). Co-curricular involvement had been shown to have a significant impact on students' critical thinking scores (Inman & Pascarella, 1998). Pike, Schroeder, and Berry (1997) concluded that membership in a living-learning program enhanced students' overall involvement in educationally

purposeful activities, which in turn directly and positively influenced their success in college. In fact, they found that living-learning students tended to be involved at higher levels compared to traditional residence hall students (their comparison sample). Similarly, Pike (1999) found that living-learning students had significantly higher levels of involvement than traditional residence hall students in their sample. Furthermore, Pike discussed indirect effects of living-learning participation, namely that higher scores on "integration of course information" for living-learning students were associated with "positive effects of those communities on involvement in clubs and organizations, involvement in the residence halls, [and] interaction with faculty and peers" (p. 281). While indirect, there was a link between students' out-of-class and in-class experiences. The integration may have affected levels of students' academic self-efficacy as well. Because students were integrating course material based on activities in which they engage outside the classroom, they may feel more confident in their ability to understand and master the academic content in the classroom.

Researchers who examined sophomore students emphasized the difficulty that sophomores have with co-curricular involvement (Graunke & Woosley, 2005; Pattengale & Schreiner, 2000). Many students were attempting to figure out what types activities in which to become involved to further their career or major interests, which could indeed become stressful (Schaller, 2005). Some sophomores felt disengaged from co-curricular involvement because there were few positions available for campus leadership (Graunke & Woosley). Further, they received little attention from student affairs practitioners (Pattengale & Schreiner). While living-learning programs may mediate these effects,

second year students may still be in a difficult developmental position in which they need more support.

Curricular/Academic Involvement

Living-learning programs were often created around a common curricular component (Schroeder, 1994). Because of the living and learning environment, Schroeder posited that these students were "more likely to help one another with study problems and test preparation and would be more likely to discuss choice of major and career opportunities" (p. 178). Because of the residential component of living-learning programs, there was a deliberate link made for these students (Shapiro & Levine, 1999). For example, academic activities were often scheduled in residence halls, and students' classroom may have been in the same building in which they lived. In the 2007 NSLLP Report, Inkelas and Associates found that living-learning students across 47 different institutions were statistically more likely to spend more time attending their classes and studying and doing their homework than students in a control sample. In Pike's (1999) comparison of first-year living-learning program students (labeled as RLC in this study) and traditional residence hall (TRH) students, living-learning students "reported making greater gains in general education than did TRH students which was associated with RLC students' involvement in art, music, and theatre, interaction with peers, and integration" (p. 281). It was clear from the results of this study that the blending of the living-learning environment shaped students' curricular experiences in a positive manner. A majority of empirical research linked participation in living-learning programs with higher levels of academic achievement; this literature will be reviewed in the following section.

Outcomes Associated with Living-Learning Programs

While academic self-efficacy was the outcome of interest in this study, researchers have focused on other outcomes associated with participation in living-learning programs, such as academic achievement, retention, civic engagement, transition to college, and attitudes toward diversity. Because academic achievement outcomes appear to have the most direct link to academic self-efficacy, this literature will be reviewed in detail below.

Past research demonstrated that living-learning programs have been shown to increase students' retention and academic achievement (e.g., Pasque & Murphy, 2006; Pike, 1999; Stassen, 2003). In Stassen's (2003) examination of several different types of living-learning programs, she found that living-learning participant first-semester GPAs were significantly higher than those in the non-living-learning comparison sample. The living-learning program participants also had a higher retention rate when the researchers looked at both voluntary withdrawal (the students themselves chose to leave) and required withdrawal (the institution forced them to leave). Similarly, Pasque and Murphy (2006) found that living-learning participation was a significant predictor for both academic achievement and intellectual engagement even while controlling for past academic achievement, socio-economic status, and demographic variables. The effect size was very small (delta r-squared are 1% for academic achievement and 2% for intellectual engagement), so while the results are statistically significant, there may not be much practical application for the study.

Interestingly, Pike et al. (1997) found that living-learning participation "did not directly or indirectly enhance students' academic achievement" (p. 164). The factors

predicting academic achievement were no different for living-learning and non-living-learning students. However, results of this study should be interpreted cautiously for several reasons. This study was based on research that was conducted at a single institution with first-year students at only one point in time. Additionally, this study was conducted during the first year of the living-learning program, and therefore, "many of the initiatives to improve achievement were not completely implemented" (p. 166).

While the majority of research on living-learning program participation had focused on academic achievement, some recent work has focused on academic self-efficacy. In a rare examination of academic self-efficacy among living-learning first-year students, Inkelas et al. (2008) found that living-learning program students "reported greater confidence in their academic skills ($p < .01$), and their likelihood of successfully completing college ($p < .001$) than their peers in traditional residence hall environments. However, living-learning students were less likely to report having a positive work-life balance after graduation" (p. 58). While these results were important, the authors caution that the effect sizes were small for all of these findings. Again, these results only focus on the first-year student experience, so little is known about the sophomore experience of academic self-efficacy within the living-learning community.

In addition to greater academic outcomes, living-learning participation was linked to other collegiate outcomes. In a study of civic engagement, Rowan-Kenyon, Soldner, and Inkelas (2007) found that living-learning program participants who were involved in a civically-based living-learning program endorsed significantly higher levels of civic engagement compared to students in other types of living-learning programs as well as students who lived in traditional residence halls. However, the authors found that the

strongest predictor of civic engagement was not participation in a living-learning community, but rather students' pre-collegiate ideas about the importance of co-curricular involvement *and* students' involvement in civically-minded activities (e.g., student government).

Participation in living-learning communities may also influence a student's transition to college. In Inkelas and Weisman's (2003) study discussed previously, the authors also examined ease of transition by program type. They found that all living-learning students experienced a smoother transition than the comparison sample. The authors posited that this was a result of the environment that the living-learning program provided. For students in the Transitions Program and Curriculum-Based Programs, an academically supportive residence hall facilitated the transition whereas students in the Honors Program and the Transition Program, a socially supportive climate was important for a smooth transition. Inkelas, Daver, Vogt, and Leonard (2007) examined the impact of living-learning program participation on the academic and social transition of first-generation college students. These authors found that "first-generation college students in [living-learning] programs had statistically significantly higher estimates of ease with academic and social transitions to college compared to first-generation college students who were not participants in a [living-learning] program" (p. 423). While the effect size for living-learning participation on both academic and social transition was low, differences were still found between the two groups.

Lastly, Longerbeam and Sedlacek (2006) examined civic-type living-learning program students' attitudes toward diversity. They followed students over three semesters in college. They found that these living-learning students did not differ in their

attitudes toward diversity from how they felt before coming to college up until the end of the third semester. Interestingly, living-learning students also did not differ in their attitudes from a comparison sample. While the authors longitudinally followed their participants over several semesters, results from this study are still based on a single institutional study, and therefore, results should be interpreted carefully.

Academic Self-Efficacy

Academic self-efficacy was the outcome of interest for the current study. The following section will outline the general concept of self-efficacy. Then, literature on academic self-efficacy will be reviewed, noting both predictors and outcomes associated with it.

Bandura (1997) defined self-efficacy as "the belief in one's capabilities to organize and execute courses of action required to produce given attainments" (p. 3). Self-efficacy influenced choice of activities, retention, the amount of energy expended, and goal-setting (Bandura, 1986). People with high self-efficacy were more likely to expend more effort, persist longer, and choose more challenging tasks than people with low self-efficacy (Schunk, 1990). Similarly, self-efficacy led to higher goals being set (Zimmerman, Bandura, & Martinez-Pons, 1992). Bandura (1997) suggested that levels of self-efficacy were developed through four sources of influence: mastery experiences (success tasks can build levels of self-efficacy); vicarious experiences (seeing someone similar to self succeed by sustained effort raises one's own beliefs that he/she could master comparable activities); social persuasion (people are told by others that they possess the capabilities to master given tasks); and through psychological and emotional states (how people interpret their physical and emotional reactions to a task). However,

an individual's *own* performance (e.g., mastery experiences) offered the most reliable source for assessing self-efficacy (Bandura, 1986). Initially, successes raised self-efficacy and failures lowered it, but once a high level of self-efficacy was developed, failure did not have substantial impact (Bandura).

While the concept of self-efficacy had been applied to many different contexts and populations, self-efficacy beliefs had been studied widely in educational settings as they related to students' beliefs in their ability to succeed in the classroom. Self-efficacy has been related to many outcomes in the classroom, including goal-setting (e.g., Elliot & Dweck, 1988), information processing (e.g., Pintrich & DeGroot, 1990; Schunk, 1989), modeling (e.g., Schunk & Hanson, 1985), and attibutional feedback (e.g., Schunk, 1989). Although these studies specifically focused on elementary and middle school students, this research provides an important framework for understanding self-efficacy in the collegiate classroom.

Multon, Brown, and Lent (1991) conducted a meta-analysis of 36 studies conducted between 1977 and 1988 that examined general self-efficacy beliefs as they related to academic performance outcomes. They found that self-efficacy was related to academic performance (r =.38) as well as to persistence (r =.34), and accounted for approximately 14% of the variance in students' academic performance and approximately 12% of the variance in their academic persistence. The strongest effects were obtained by "researchers who compared specific efficacy judgments with basic cognitive skills performance measures, developed highly concordant self-efficacy/performance indexes, and administered them at the same time" (Pajares, 1996, p. 555). While these results demonstrated the relationship between self-efficacy beliefs, the majority of the studies

used in the meta-analysis were conducted at elementary schools (60.6%). Only 28.9% of the studies were conducted in a college or university setting, which limits the applicability of the results to the present study.

Bandura's (1997) general construct of self-efficacy was where the construct of *academic self-efficacy* was derived. Because self-efficacy was an extremely flexible construct, it must be evaluated at a level that is domain specific (Bandura, 1986; Pajares, 1996). Therefore, Pajares argued that in academic settings, academic self-efficacy should be measured rather than generalized or global self-efficacy beliefs. Academic self-efficacy refers to "a learner's judgment about his or her ability to a successfully attain educational goals" (Bandura, 1977, p.12). Students with a high sense of academic-self-efficacy willingly undertook challenging tasks, expended greater effort, showed increased persistence in the presence of obstacles, had lower anxiety levels, displayed flexibility in the use of learning strategies, demonstrated accurate self-evaluation of their academic performance, had greater intrinsic interest in academics, and self-regulated their academic behaviors better than other students. Because of this, they attained higher levels of intellectual achievement (Pajares & Urdan, 2006). Conversely, students with lower levels of academic self-efficacy preferred to complete only simple, uncomplicated academic tasks to which they applied minimal effort and persistence, or they chose to avoid the completion of the assignment. For these reasons, Bandura (1997) stated that, "perceived self-efficacy is a better predictor of intellectual performance than skills alone" (p. 216).

While academic self-efficacy can be clearly linked to academic achievement, these are two distinct constructs. Academic achievement is a measure of how well

students are performing in school, most often indicated by grades (Pascarella & Terenzini, 2005). Undergraduate grades were the single best predictor of retention, graduate school attendance, or earning other advanced degrees (Pascarella & Terenzini). However, academic self-efficacy plays a vital role in students' levels of confidence in their abilities to earn those grades (e.g., Bong, 2001, Elias & Loomis, 2004, Hackett, Betz, Casas, & Rocha-Singh, 1992).

Predictors of Academic Self-Efficacy

High School Experience

High school grade point average, standardized test scores, and high school rank have been shown in past academic self-efficacy research to predict collegiate levels of academic self-efficacy. Since mastery experiences are the best way to increase efficacy beliefs (Bandura, 1997), researchers studied the effects of past performance on current levels of academic self-efficacy in college students. Elias and MacDonald (2007) found that high school performance was a significant predictor of college students' academic self-efficacy beliefs. When students performed well in high school, their efficacy beliefs for their college abilities were greater. Conversely, when students' prior high school achievement was poor, academic self-efficacy beliefs in college suffered. Elias and MacDonald's work had been one of the only empirical works that examines antecedents to academic self-efficacy in college students. Past academic self-efficacy research linked collegiate efficacy levels to standardized test scores. For example, in Lent, Brown, and Larkin's (1984) examination of academic self-efficacy's relationship to academic achievement and retention in science and engineering majors, they found that students' math PSAT score and high school rank were predictors of efficacy levels in college.

Demographics

Gender. Gender differences in efficacy levels have been studied at a variety of grade levels, but the focus to date has been mainly on K-12 education. In a study of high school students, Pajares and Johnson (1996) found that female students perform as capably as male students in a variety of academic tasks but report lower levels of academic self-efficacy especially at higher grade levels. In a study of gifted female middle school students who were in mainstream math classes, Pajares (1996) found that the gifted females out-performed the gifted males in the class, but did not differ in levels of efficacy. Gifted students reported higher levels of math self-efficacy and lower math anxiety levels than the mainstreamed students. Although most students in the class (gifted and mainstream males and females) tended to be biased in their own over-confidence, gifted females were under-confident in their abilities. While these findings highlight gender differences, these findings should be applied cautiously to higher education settings since the age of the participants and environment differs dramatically.

Using a sample of university participants, Pajares and Miller (1994) examined gender differences in math self-efficacy levels. Men reported higher math self-efficacy levels than women and had higher average scores on the performance measures, however there were no differences in levels of prior math experience. The authors found that "self-efficacy levels mediated the effect of gender and prior experience on math self-concept, perceived usefulness of math, and math problem-solving performance" (p. 200). In other words, poorer performance and lower self-concept of female students were due to lower judgments of their capabilities.

Race. Little research has analyzed differences in academic self-efficacy levels by race. When examining differences in academic confidence by race, Strage (1999) found no significant differences across Hispanic, White, or Asian American students. However, other research had produced different findings. Graham (1994) conducted a meta-analysis of 140 empirical studies that examined African Americans and motivation. When summarizing the expectancy beliefs that African American students have, she stated, these students "maintain undaunted optimism and positive self-regard even in the face of achievement failure….but the data from motivation research in support of these analyses are relatively weak" (p. 103).

In a rare study that examined academic outcomes for second-year students, Hurtado, Carter, and Spuler (1996) found that for Hispanic students, "high school grade point average was not significantly related to academic adjustment in the second year of college" (p. 145). The authors attributed this difference from the previous literature on that basis that college-specific academic experiences were more powerful than pre-collegiate measures for this student population. For example, being accustomed to the amount and difficulty of school work, managing time, and the diversity of the institution were more important to successful academic adjustment for this population. While this study was not directly related to academic self-efficacy (the authors do not explicitly discuss it), increasing efficacy levels may be a related construct to the experience of these Hispanic students.

Parental education. While no research to date has examined difference in academic self-efficacy levels resulting from parental education, past research has shown that differences in parental education affected collegiate academic performance (e.g.,

Ting & Robinson, 1998). It seems likely that parental education would play a role in students' levels of academic self-efficacy due to the ways in which students develop their efficacy levels (e.g., vicarious experiences or social persuasion). Additionally, differing levels of parental education had been cited as difference between living-learning population samples and comparison samples (Zheng et al, 2002), and was, therefore, included in the analyses.

Outcomes of Academic Self-Efficacy

Academic self-efficacy was an important collegiate outcome to examine for several reasons. Past research demonstrated that academic self-efficacy had significant positive relationships with such constructs as collegiate GPA (e.g., Lent, Larkin & Brown, 1989; Hackett, Betz, Casas, & Rocha-Singh, 1992; Zajacova, Lynch, & Espenshade, 2005), adjustment to college (Chemers, Hu, Garcia, 2001), retention (e.g., Multon, Brown, & Lent, 1991), and selection and retention in a major (e.g., Betz & Hackett, 1983; Lent, Brown, & Larkin, 1984). An increased understanding of factors that increase students' levels of academic self-efficacy may influence these related constructs in positive ways. The following section will outline each of these constructs in turn.

Collegiate GPA

It is not surprising that academic self-efficacy was positively associated with grades in college (Bong, 2001; Elias & Loomis, 2004; Lent, Larkin & Brown, 1989; Hackett, Betz, Casas, & Rocha-Singh, 1992; Multon, Brown, & Lent, 1991). In studying academic self-efficacy beliefs in college students, Zajacova, Lynch, and Espenshade (2005) examined academic self-efficacy and stress in predicting academic outcomes for

immigrant and minority first-year college students. Surprisingly, they found that stress had a negative, but insignificant relationship with GPA and no relationship to the amount of credits in which students were enrolled. Their findings supported past research in that academic self-efficacy was the strongest predictor of college GPA (while holding high school performance and demographic variables constant). However, they found that academic self-efficacy did not have a significant effect on students' persistence into their second year. With the little research that examines second-year students, this study highlighted the fact that there may be other reasons besides students' beliefs about their academic abilities that cause them to drop out during sophomore year. However, it was beyond the scope of Zajacova et al.'s (2005) investigation to examine why this phenomenon exists.

Adjustment to College

Academic self-efficacy has also been shown to affect students' adjustment to college. Chemers, Hu, and Garcia (2001) conducted a longitudinal study of first-year year students to understand how academic self-efficacy affected students' adjustment to college as well as their academic performance. They measured students during their first quarter of college and again at the end of the year. Highly efficacious first-year students were more likely to perceive academic work demand to be more of a challenge than a threat, had greater expectations, performed better academically, and were more optimistic than other students (holding high school GPA constant). Similarly, Ramos-Sanchez and Nichols (2007) examined how academic self-efficacy predicted adjustment for first-generation students compared to non-first generation students. Non-first-generation students had higher levels of academic self-efficacy at both the start and the end of the

first year; however, efficacy levels did not increase significantly over the year for either group of students. When specifically looking at first-generation students, confidence in one's academic ability was related to better adjustment in college for this population of students. Results from this study should be interrupted cautiously since the population came from a private institution and is based on a relatively small sample size.

Retention

Academic self-efficacy had also been found to have a positive association with retention (Multon, Brown, & Lent, 1991; Torres & Solberg, 2001). If academic-self efficacy was low, expectations for finishing college were not as favorable, placing students with low self-efficacy at risk for leaving college (Kahn & Nauta, 2001). In other words, academic self-efficacy influenced student retention. Kahn and Nauta found that high school rank, ACT score, and first-semester university GPA significantly predicted continuation to the second year of college. In their study, academic self-efficacy beliefs were *not* a significant predictor of retention. Because the authors felt that self-efficacy could change dramatically as a result of their first-semester experiences and could have been a result of the timing of the assessment, they conducted a second analysis where they measured second-semester academic self-efficacy, outcome expectations, and performance goals. In this second analysis, they found that second-semester academic self-efficacy beliefs were significant predictors of students returning for their sophomore year. Therefore, efficacy beliefs did relate to freshmen-to-sophomore retention but only when measured after students had completed one semester of college.

In a meta-analysis of research that examined psychosocial and study skills factors (PSFs) that predicted college outcomes, Robbins, Lauver, Le, Davis, and Langley (2004)

examined 109 studies. Academic self-efficacy was one of nine constructs used to operationalize psychosocial and study skills factors (PSFs). Academic self-efficacy, along with academic goals and academic-related skills, were shown to be the strongest predictors of college retention. Even when traditional predictors of college success were added into the regression equation (SES, high school GPA, and ACT/SAT scores), academic self-efficacy and these other PSFs maintained a positive relationship with retention (accounting for 8% of the variance). Albeit an important finding, the results of this meta-analysis were based on a small number of studies (six studies for academic self-efficacy). Additionally, Robbins and his colleagues did not consider any difference in institutional type when conducting their analyses (residential versus commuter). Not only do these campuses contain different demographic compositions, but retention rates would be different between these two types (Weissberg & Own, 2005). These limitations restricted the generalizability of Robbins et al.'s results.

Selection and Retention in Major

Betz and Hackett (1983) investigated how academic self-efficacy would influence students' selection of a major. The researchers found that academic self-efficacy was a strong predictor of picking mathematics as a course of study at the university. Past research had also linked academic self-efficacy beliefs with retention in a selected major. Lent, Brown, and Larkin (1984) found that engineering students who possessed a higher level of scientific and technical self-efficacy persisted longer in their majors. They posited that students possessing higher levels of scientific and technical self-efficacy achieved higher grades within their engineering major as well. Elias and Loomis (2004) sought to expand upon the work on Lent and his colleagues to examine whether academic

self-efficacy would influence students' retention in their academic majors across a wide variety of fields. They hypothesized that students with higher levels of academic self-efficacy would be less likely to change their majors. They found that "students' academic self-efficacy beliefs remain consistent for general courses, physical education courses, and milestones. This indicates that although students might possess differing levels of efficacy for differing academic issues, their efficacy beliefs in general will be uniform" (p. 453). Similar to Lent et al.'s findings with the engineering students, there was a direct relationship between students' GPA and students' milestone and course work efficacy scale scores. The authors posited that the "importance of this finding cannot be understated because, although a causal relationship cannot be drawn from a correlation coefficient, it does reveal that students are likely to have a higher grade point average when they believe in their ability to successfully complete most academic tasks" (p. 453). These findings highlighted the impact that academic self-efficacy had in students' success and retention within their selected majors.

Sophomore College Students

As mentioned in Chapter One, the sophomore year had traditionally been classified as a time of uneasiness and confusion. In Freedman's (1956) seminal work, he discussed the "sophomore slump" by describing the developmental trajectory of students at Vassar College who were unsatisfied. This term is defined as lack of inertia or disorganization and may begin as early as the second semester of the first year (Freedman). Similarly, Furr and Gannaway (1982) reinforced the idea of the sophomore slump by describing it as a "period of confusion and uncertainty" (p. 340). Sanchez-Leguelinel (2008) noted the vast amount of supports that are put in place during the first

year (e.g., academic support programs, peer mentoring programs, social development initiatives, and promoting faculty-student interaction); however, most of these supports were curtailed during the second year, causing sophomores to feel ignored by the institution. Attrition rates can be high during sophomore year, which may result in sophomores being incapable (or feeling incapable) of getting out of their slump in order to re-engage with collegiate life (Pattengale & Schreiner, 2000).

Juillerat (2000) examined sophomores compared to freshmen, juniors, and seniors to examine if their needs and expectations differed using over 118,700 undergraduates at both public and private colleges across the country. She found that certain areas received the higher importance scores from sophomores than from any other class. These included "feeling a sense of belonging and pride, reasonable add/drop policies, and the fairness of student disciplinary procedures" (p. 24). When specifically compared to first-year students, sophomores endorsed campus life issues (e.g., adequate residence hall space/conditions, caring staff, sufficient number of weekend activities, and opportunities for involvement), effectiveness of staff services, financial aid issues, opportunities for intellectual growth, approachable faculty and administrators, safety/security issues, and campus climate issues significantly higher than first-year students.

More recently, Schaller (2005) examined sophomores through a developmental lens. She conducted a qualitative study of sophomores at the University of Dayton and found that four stages emerged as students developed during their sophomore year. She describes the stages as random exploration, focused exploration, tentative choices, and commitment. Few sophomores in the study were still in the random exploration stage. This was characterized by students learning about environment and the challenges around

them. Students explored to learn more about themselves and their interests. They also understood they were delaying decision-making in terms of career or major. In the focused exploration stage, students questioned the choices they made during random exploration—especially around major selection. Crises also occurred around exploration of their own identity or relationships they have formed during the first year. Schaller noted that the longer students persisted in this stage, the "more comprehensive their exploration became" (p. 19). In the tentative choices phase, students made choices that set a tentative direction for the rest of their collegiate career (e.g., after switching majors several times, a student finally decided on a major). The last stage was commitment. Few sophomores in the study actualized into the commitment stage. Sophomores in this stage pushed past the anxiety in the previous stage to make a commitment. In this stage, students clearly begin to plan for the future, took responsibility for their decisions, and were clear about what they wanted. While Schaller presented a developmental model, it was based on her small, qualitative sample which limits the applicability and generalizability to other groups.

Most relevant to the current study was sophomores' experience with academics. Pattengale and Schriner (2000) posited that the sophomore year is a time when students disengage from academic life, which can cause adverse effects on their GPA (attributable to the sophomore slump). According to Gardner (2000), sophomores were less likely than other groups of students to be actively involved in their own learning or to perceive faculty as actively committed to or engaged in their academic or personal success. Furthermore, sophomores spent less time than other students (freshmen, juniors, or seniors) engaged in academic-related activities (Gardner).

Graunke and Woosley (2005) also conducted a quantitative study of second-semester sophomores to examine how their experiences and attitudes affected their academic success. They found that commitment to an academic major and satisfaction with faculty interactions were the two most important predictors of academic performance (GPA). While this study was based on a small sample size at a single institution, it appeared to be one of the few studies that measured academic success for this population of students.

Living-Learning Participation and Academic Self-Efficacy

While previous empirical studies on living-learning programs to date have not focused solely on academic self-efficacy as the outcome of the investigation, several studies have examined it in addition to other outcome measures. As mentioned previously, Inkelas et al. (2008) found that living-learning program students "reported greater confidence in their academic skills ($p < .01$), and their likelihood of successfully completing college ($p < .001$) than their peers in traditional residence hall environments" (p. 6). However, they were examining a host of other outcomes in addition to academic self-efficacy. Additionally, their investigation specifically focused on first-year students whereas the population of interest for the current study was second-year students. Similarly, both the NSLLP final reports (Inkelas & Associates, 2004; 2007) examined living-learning program participants' academic self-efficacy beliefs. However, these findings were not broken down by academic year to see levels for freshmen, sophomores, or any upperclassmen in the sample. The research to date has yet to demonstrate the effects of living-learning participation on levels of academic self-efficacy for second-year students specifically.

Additionally, it has yet to be seen how collegiate environments within the living-learning context, such as faculty interaction, peer interaction, residential climate, co-curricular involvement, and curricular involvement relate to academic self-efficacy. Previous research demonstrated their overall importance and influence for the student experience within living-learning programs, yet the explicit link to academic self-efficacy has yet to be determined. Lastly, background characteristics, which previous research has linked to self-efficacy such as high school achievement levels, gender, race, and parental education, have not been examined within the sophomore living-learning student population. While the current literature provides support for the current study, there are clearly gaps within the literature that can be filled from the analyses conducted in this study.

Summary of Literature

Involvement in a living-learning program affected college students' interactions with faculty members, peer interactions, residence hall climates, co-curricular involvement, and curricular involvement. As described above, academic self-efficacy was also an important construct that influenced students' experiences in terms of collegiate grade point average, transition to college, retention, and selection and retention within a specific major. Academic self-efficacy was the outcome of interest because researchers often used it to predict students' academic performance while in college (Elias & Loomis, 2004).

While there has been a significant amount of empirical research conducted on the construct of academic self-efficacy, little research had focused specifically on second-year college students. While few studies addressed academic self-efficacy and living-

learning program participation, this relationship must be better understood through additional research. The current study seeks to fill gaps in the literature base by examining a population of sophomore students about whom researchers and practitioners know little, and seeks to examine them in an environment, living-learning programs, which has not been previously examined through the lens of academic self-efficacy. In the next chapter, the research methodology for this study will be presented.

CHAPTER 3: METHODOLOGY

This chapter contains an overview of the research design for the study. The research question and hypotheses, theoretical framework for the study, description of the NSLLP 2007 data collection, the sampling strategy, variables of interest, and data analysis strategies will be discussed.

Research Question and Hypotheses

Employing a cross-sectional, causal-comparative design, this *ex post facto* study used multiple regression analysis in order to understand which pre-college background characteristics and in-college involvement experiences were related to academic self-efficacy for sophomore students who participated in living-learning communities compared to sophomore students who lived in traditional residence halls. While previous literature had not explicitly tied higher levels of academic self-efficacy in sophomore students to participation in a living-learning community, there was a substantial amount of empirical evidence on the benefits of living-learning programs on student outcomes, such as academic self-efficacy. Consistent with the research of Inkelas and Associates (2004) and (2007), Pascarella et al. (1994), Pascarella and Terenzini (1980), Pike (1999), Pike et al. (1997), Pasque and Murphy (2006), and Stassen (2003) discussed previously, the following hypotheses were used:

Hypothesis 1: Sophomore participation in a living-learning program will be related to higher levels of academic self-efficacy compared to sophomores who do not participate in a living-learning program.

Hypothesis 2: The following factors will be significantly related to academic self-efficacy: faculty interaction, peer interaction, positive perceptions of the

social residence hall climate, positive perceptions of the academic residence hall climate, co-curricular involvement, and curricular involvement.

Hypothesis 2a: Furthermore, it is hypothesized that the independent variables identified in Hypothesis 2 will be stronger predictors of academic self-efficacy for sophomores in living-learning programs than for sophomores in traditional residence halls.

Research Context

As discussed in Chapter One, this study was part of a larger research program, the National Study of Living-Learning Programs (NSLLP), which studies how participation in living-learning programs affects a variety of student outcomes—academic, social, and developmental (Inkelas & Associates, 2007). There have been two cycles of data collection within the NSLLP in 2004 and 2007. This study used secondary data analysis with data collected during the 2007 cycle (Spring, 2007 semester). The goals of the 2007 data collection were to examine a trend analysis of living-learning programs by comparing data collected in 2004 and 2007 and gather follow-up longitudinal data from those students who participated in the 2004 cycle to investigate any long-term effects of living-learning participation. There was also a specific focus on STEM fields in the 2007 wave; however, since that was not a main focus of the current research, no further detail will be given. The Survey Science Group (SSG) was responsible for the data collection and emails that were sent to prospective participants. Forty-seven colleges with living-learning programs across the nation participated, resulting in a total sample size of 22,519 respondents. For the current study, data from 4,700 students who self-reported as sophomores (2,155 living-learning participants and 2,545 in the non-living-learning

comparison sample) from the 47 participating institutions were used in this analysis (see the *Sampling* section for additional information).

Analyzing secondary data from the NSLLP was used for several reasons. First, the NSLLP is the only multi-institutional, national study of living-learning programs, the focus of this study. Second, the NSLLP instrument is the only kind in the country that assessed outcomes of living-learning populations, which made the outcome of interest (academic self-efficacy) extremely easy to measure since the instrument directly focused on this outcome. Third, the NSLLP contains a substantial number of sophomore students who are in a living-learning program and a matching comparison sample of sophomores who are not living-learning participants; since little is known about this population (in the context of living-learning programs or students' traditional residence hall experience during this time period), using these data may be able to provide insights for both theory and practice. Lastly, examining data from multiple institutions allowed the findings from this research to be generalizable to sophomores at institutions across the country.

Theoretical Framework

Both the 2004 and 2007 NSLLP survey administrations used Astin's (1993) I-E-O model to guide the measurements and analyses (Inkelas & Associates, 2004; 2007). As discussed above, the current study also used Astin's I-E-O model as the theoretical framework. Briefly, this framework explores the effect of college environments on student outcomes, by controlling for inputs, or students' pre-college characteristics. Hierarchical multiple regression was employed for the statistical analyses within the I-E-O framework (Astin, 1991). Using multiple regression analysis, the researcher can control for a large number of input characteristics: while holding input characteristics

constant, the researcher can enter the environmental variables into the equation. The effects of the environmental variables on the outcome can then be evaluated to determine the amount of variance that is attributable to each environmental component of the model.

While Astin's I-E-O model helps examine college impact in a general sense, this study focuses on a specific program (i.e., living-learning program) with a specific outcome (i.e., academic self-efficacy). Therefore, this study included elements in the model that are particular to living-learning programs and students' development in a residential environment. The current study used high school achievement levels (high school GPA and SAT scores), race/ethnicity, gender, and parental education as student inputs. These were pre-collegiate experiences and factors that may affect their levels of academic-self efficacy while in college (Elias & MacDonald, 1997; Graham, 1994; Hurtado, Carter, & Spuler, 1996; Lent, Brown, & Larkin, 1984; Pajares & Johnson, 1996; Ting & Robinson, 1998). The environments that were used were residence hall climates, peer interaction, faculty interaction, curricular involvement, co-curricular involvement, and living-learning participation. These were components of the collegiate experiences that were hypothesized to shape students' academic self-efficacy levels (e.g., Inkelas, Soldner, & Szelényi, 2008; Inkelas, 1999; Pasque & Murphy, 2006; Pike, Schroeder, & Berry, 1997; Stassen, 2003). The operationalization of these constructs will be discussed later in this chapter.

Sampling Strategy

As discussed previously, the sample used for this study was taken from the 2007 cycle of the National Study of Living Learning Programs (NSLLP). The following section will describe the larger institutional and total student samples for the 2007 NSLLP followed by how the current study sampled participants from the larger, parent study.

Institutional Sample

Colleges and universities across the nation that had residential living-learning programs were eligible to participate in the study (Inkelas & Associates, 2007). The 47 total institutions in this study came from a variety of Carnegie classifications: Research University (4 institutions), Research University high (14 institutions), Research University very high (22 institutions), Masters Larger (7 institutions), Masters Small (1 institution), and Baccalaureate Arts and Sciences (1 institution). The number of living-learning programs at each institution was also noted: less than 10 living-learning programs (28 institutions), 10-20 living-learning programs (15 institutions), and greater than 20 living-learning programs (6 institutions).

Sample of Students

After receiving IRB approval on each individual campus, SSG worked with housing administrators to gather lists of students' names, demographic information, and contact information in addition to specifying whether the student was a participant in a living-learning program or was not a living-learning participant (used for comparison sample). The living-learning student sample included either the entire population of living-learning participants at the respective campus or was selected randomly, and the

non-living-learning comparison sample was selected to match the living-learning sample as closely as possible in terms of race, gender, academic standing, and residence hall location. Data collection yielded a total of 22,519 total respondents, which was a 20.3% response rate: 11,606 respondents were living-learning participants and 10,913 were in the non-living-learning comparison group. Of the living-learning population, 43.5% was male, 56.5% was female, and 0.1% identified as transgendered compared to 44.5% male, 55.4% female, and 0.1% transgendered in the comparison sample. In the living-learning sample, 5.6% were African American, 8.7% identified as Asian or Pacific Islander, 0.3% were American Indian or Alaskan native, 3.8% were Hispanic/Latino, 73.9% were White, 6.5% identified as multi-racial or multi-ethnic, and 1% did not include their race. In the comparison sample, 7.9% identified as African American, 6.8% identified as Asian or Pacific Islander, 0.3% were American Indian or Alaskan Native, 4.2% were Hispanic/Latino, 74.4% identified as White, 5.2% identified s multi-racial or multi-ethnic, and only 0.8% did not include their race (Inkelas & Associates, 2007).

Sample for Current Study

From the total 22,519 total students in the sample, 4,700 students self-identified as sophomore students (21.7% of the total sample), and was used as the sample for this study since the focus is specifically examining sophomore students. Of these 4,700 sophomores, 2,155 were currently participating in a living-learning community during their sophomore year and 2,545 were non-living-learning participants. General demographic information such as gender and race/ethnicity will be presented in Chapter 4.

The NSLLP Instrument

Instrument Development

Dr. Karen Kurotsuchi Inkelas, in conjunction with a research team housed at the University of Maryland and the University of Wisconsin, Madison, developed the NSLLP instrument called the Residence Environment Survey (RES). Inkelas, Vogt, Longerbeam, Owen, and Johnson (2006) described the development of the NSLLP instrument. During the winter of 2003, the NSLLP team chose four institutions with living-learning communities (Universities of Illinois, Maryland, Michigan, and Wisconsin) to pilot test their survey instrument. Living-learning participants were randomly sampled from the University of Maryland, and all living-learning participants at the other institutions were asked to participate. The researchers also contacted an equal number of randomly selected students who lived in the residence halls but were not participants in living-learning programs and who approximated the living-learning sample by gender, race/ethnicity, academic class standing, and residence hall location (the comparison sample).

Participants for the pilot test were contacted via email, and were sent several follow-up emails that invited them to complete the survey. The emails contained a link to a web-based survey; the web-based survey had 58 questions with several sub-divided sections for the respondents to complete. Survey constructs for the pilot instrument were developed from the literature on specific college environments that were most salient for living-learning participants. The research team included items which asked about peer interaction, faculty interaction, residence hall environments, campus involvement, and campus climate. In addition, the survey included items to measure specific outcomes in

which they were interested, such as intellectual abilities, growth in cognitive development, self-confidence, and appreciation of diversity. Lastly, the researchers included items that asked about students' pre-college input characteristics (gender, race, ethnicity, parents' education, and pre-college academic ability). A total of 5,437 students participated in the pilot study.

Validity and Reliability

Validity. Content validity of the items was assessed by 15 living-learning program directors on a variety of college campuses before the 2003 pilot survey administration. Additionally, a student focus group at one of the participating institutions reviewed the items to ensure the items were comprehendible. Two survey methodologists reviewed the items for scale construction. After each administration of the NSLLP instrument, content was reexamined and the questions were rewritten for increased clarity.

To determine construct validity, the research team examined correlations to ensure that a certain construct had a strong relationship with scales that were conceptually related to it. For example, there was a strong correlation between "discussed socio-cultural issues with peers" and "discussed academic and career issues with peers," which had a correlation of .60 (Inkelas et al., 2006; Longerbeam, 2005). This strong correlation was expected given the research on the impact of peer discussions (Astin, 1993). Additionally, the researchers checked for discriminant validity—that two scales that were not theoretically related were not statistically related. For example, researchers found a weak correlation between the scales relating to physical correlations of alcohol and discussing socio-cultural issues with peers (r = -.04) (Longerbeam, 2005).

Again, theoretically and conceptually, it made sense that these two constructs were not related, and the low correlation indicated that they indeed were not.

Reliability. The research team examined the internal consistency of the items. Exploratory factor analysis and reliability tests resulted in 28 different scales representing various facets of the collegiate environment and student outcomes. Cronbach alpha reliabilities of the scales ranged from .623 to .898 in the 2003 pilot administration. In 2004, national data using the NSLLP instrument described above was collected from 34 different institutions across a variety of Carnegie classifications (as opposed to only large public research universities in the pilot study). The reliability of the scales was also re-examined within the 2004 data, and Cronbach alpha ranged from .624 to .918. The 2007 NSLLP instrument used many of the same items as the 2004 instrument, but it also included a number of scales (not discussed here) related to science, technology, engineering, and mathematics education. Cronbach alpha scores for this instrument ranged from .631 to .945. See Inkelas, Vogt, Longerbeam, Own, and Johnson (2006) for a complete discussion of the pilot investigation.

Data Collection

This study used data already collected as part of the 2007 NSLLP. For the 2007 NSLLP administration, depending on the participating institution's academic schedule, data collection was scheduled at different times of the 2006-07 academic year. A majority of the data was collected during the Winter and Spring 2007 semesters, however, at one institution, data collection was conducted the following Fall 2008. Data collection efforts revolved around the academic calendar such as spring breaks or exam periods and lasted for approximately five weeks on each campus. Since the survey was

web-based, participants were contacted via email with a request to participate. Within the body of the email, a link was embedded that directed them to the survey instrument. Each survey was given a unique survey identification number that the respondents used to access the survey; the use of this number allowed students to return to uncompleted parts of the survey in addition to finishing the survey over a period of time. Participants who did not respond to the survey or who had an incomplete survey were notified via email requesting that they complete the survey. A student who did not complete the survey was sent three reminder emails, but some institutions chose to send more emails in order to increase the response rate. Additionally, some institutions offered remuneration for completing the survey such as gift certificates or small electronic devices (e.g., PDA) in order to increase the response rate. If remuneration was offered to the participants, it was mentioned in all email communication that the students received (Inkelas & Associates, 2007).

Study Variables

The current study used specific input, environmental, and outcome variables in its multiple regression analysis based on the literature reviewed in Chapter Two. The independent variables were grouped into blocks for either input or environment variables while the dependent variable—academic self-efficacy—was the output variable for the study.

Input Variables

The input variables used in this study were the students' demographic characteristics: gender, race/ethnicity, parents' education level, and high school

achievement levels (defined in this study as high school GPA and standardized test scores) in addition to a quasi pre-test measure.

Gender. On the RES, students reported their gender as male, female, or transgendered. For the purposes of analysis, this variable was coded into one dummy variable with male being the reference group. If a person was a male, he was coded 0 for male. If the person was female, then she was coded as 1 for this variable. Students could also identify as transgendered, however, due to the low number of respondents (n=5), they were removed from the sample.

Race/Ethnicity. On the RES, students identified as any of seven different options for their race/ethnicity: (a) African American/Black, (b) Asian or Pacific Islander, (c) American Indian/Alaskan Native, (d) Hispanic/Latino, (e) White/Caucasian, (f) Multi-racial or multi-ethnic, or (g) Race/ethnicity not included. Similar to the gender variable described above, this variable was dummy coded into six separate variables for each race for the purpose of analyses where each racial category received its own variable name. White/Caucasian was not one of the six variables as it served as the reference group. If a student indicated that she or he was White, she or he was identified as such by receiving zeros in all of the other categories. For the other six races variables (African American/ Black; Asian/Pacific Islander; American Indian/Alaskan Native; Hispanic/Latino; and Multi-racial/Multi-ethnic), a one was marked if a student identified as that race. A zero was given to all the other categories. This process was repeated for the entire sample of students. Because students endorsed multiple options for the race category, anyone who checked multiple races was placed into the Multi-racial/multi-ethnic category described

above. If students did not indicate a race (Race/ethnicity not included), they were removed from the sample.

Parental education. For both their mother and their father, students indicated the following levels: (a) don't know, (b) high school or less, (c) some college, (d) Associates degree, (e) Bachelor's degree, (f) Masters degree, and (g) Doctorate or professional degree. There were a large number of respondents who did not know both their mother and father's level of parental education (n=111 for father's education, n=70 for mother's education). The respondents who did not know *both* their mother's and father's levels of education would have to be removed from the analysis, which would create a smaller sample. Instead of losing a large percentage of the respondents, mother's education only was used to represent this construct because it had more respondents than father's education. By only including one parental education variable, it also reduced potential problems of multicollinearity in the multiple regression analysis, since the educational attainment of respondents' mothers and fathers were likely to be intercorrelated.

High school GPA. Students endorsed one of seven different responses: (a) A+ or A, (b), A- or B+, (c) B, (d) B- or C+, (e) C or C-, (f) D+ or lower, or (g) no high school GPA. Those students who did not indicate a high school GPA were removed from the sample (n=14, which is only .3% of total sample). A negative relationship between the two constructs signified that higher high school GPAs were equated to higher academic self-efficacy.

Standardized test scores. Students wrote in their SAT or ACT score on the survey instrument. If the students indicated they took the ACT, the NSLLP research

team converted their ACT scores into SAT scores. The converted SAT score equivalents were used for these students in the analysis.

Pre-test measure. This study used a quasi pre-test measure. Students were asked about their pre-collegiate perceptions of their ability to perform well academically. Specifically, they were asked "thinking back to before you started college, please rate how important you imagined these aspects of college would be: doing well academically in college." Respondents were given a Likert-type scale (1=not at all important, 2=somewhat important, 3=important, 4=very important) to answer this question. While this was not precisely the same as academic self-efficacy, it served as a close proxy concept to be used as the pre-test. Because this was not the exact construct nor was it a true pre-test given the cross-sectional nature of the data, the limitations section will address both of these issues.

Environment Variables

The environmental variables used were peer interactions, faculty interactions, perceptions of residence hall climate, co-curricular involvement, and curricular involvement.

Peer Interaction. On the RES, students indicated the extent to which they discussed academic and career issues with peers through the following items: (a) discussed something learned in class (b) shared concerns about classes and assignments, and (c) talked about current news and events. The participants responded to these items using a 4-point Likert scale ranging from one indicating "never," two indicating "a few times a semester," three indicating "a few times a month" and four indicating "once or more per week." This three item scale had a Cronbach alpha of .809 in the 2007 NSLLP

data collection (Inkelas & Associates, 2007). In the sample used for the current study, Cronbach alpha was .801. Students also indicated the extent to which they discussed socio-cultural issues with peers using the following items: (a) discussed social issues such as peace, human rights, justice, (b) discussions with students whose political opinions are very different, (c) discussions with students whose personal values are different, (d) held discussions with those with different religious beliefs, (e) discussed views about multiculturalism and diversity. The same 4-point Likert scale from above was used (1=never, 2=a few times a semester, 3= a few times a month, 4=once or more per week). The Cronbach alpha for these items was .884 in the 2007 national data collection (Inkelas & Associates). The Cronbach alpha for the sample used for this study was .877.

Faculty interaction. The respondents answered four questions about their course-related faculty interaction (a) visited informally with instructor before/after class, (b) made an appointment to meet instructor in his/her office, (c) asked instructor for information related to course, and (d) worked with instructor involving research. Students also responded to three items about faculty mentorship: (a) discussed personal problems or concerns with instructor, (b) discussed career plans and ambitions with instructor, and (c) visited informally with instructor on social occasion. For both course-related faculty interaction and faculty mentorship items, students used the 4-point Likert-type scale described as (1=never, 2=a few times a semester, 3= a few times a month, 4=once or more per week). The Cronbach alpha for the course-related interaction was . 743 and .743 for the mentorship-related items in the 2007 NSLLP data collection (Inkelas & Associates). For the sample used in the current study, Cronbach alpha was .740 for course-related interaction and .734 for mentorship.

Residence hall climate. Using a 4-point Likert-type scale (1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree), students responded to items that asked about the academic and social climate of the residence hall. There were four items that measured the extent to which the residence hall was academically supportive: (a) environment supports academic achievement, (b) most students study a lot (c) it's easy to form study groups, and (d) staff helps with academics. Additionally, students answered six questions that measured the extent to which the residence hall was socially supportive: (a) help and support one another, (b) appreciate different religions, (c) intellectually stimulating environment, (d) appreciate different races/ethnicities, (e) would recommend this residence hall (f) different students interact with each other, and (g) peer academic support. The Cronbach alpha for the academically supportive residence hall environment was .798 and .977 for the socially supportive residence hall environment based on 2007 administration (Inkelas & Associates, 2007). Using the sample for the current study, Cronbach alpha was .787 for academically supportive and .873 for socially supportive.

Co-curricular involvement. Students indicated the amount of time they spent on various co-curricular activities including (a) fraternity/sorority, (b) arts or music performances/activities, (c) intramural/club sports, (d) varsity sports, (e) student government, (f) political/social activism, (g) religious clubs/activities, (h) ethnic/cross-cultural clubs/activities, (i) media activities, (j) work-study or work on-campus, (k) work off-campus (l) community service, and (m) other. All of the various activities were recoded into one co-curricular variable that measured overall participation. If the students indicated they participated in the activity, they were coded as a 1 for

participation (and coded as 0 if they did not participate). Then the sum over 13 variables was taken in order to compute the amount of involvement, where 0 would indicate participation in no curricular activities while 13 would mean the student participated in all of these activities.

Curricular involvement. Similar to co-curricular involvement explained above, students indicated the amount of time spent on curricular involvement. Two items, (a) attending class and (b) studying/doing homework, were listed on the RES. Students used a 6-point scale measuring involvement in hours where they engaged in these two activities (1=none, 2=1-5 hours, 3=6-10 hours, 4=11-15 hours, 5=16-20 hours, and 6=21 or more hours).

Outcome Variable

One outcome was used, which was academic self-efficacy. The items used to measure academic self-efficacy will be described below. The academic self-efficacy scale, labeled *College Confidence*, was used on the 2007 version of the NSLLP survey instrument only. While not precisely the same as Bandura's conception of academic self-efficacy, the NSLLP research team composed items that did measure students' self-confidence in a variety of academic abilities and outcomes (this will be addressed in greater detail in the limitations section in Chapter 5). The construct was measured by seven items in which the respondents used a 4-point Likert scale (1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree) to indicate the degree to which they agreed with the following questions: (a) do well academically, (b) make at least a B average, (c) complete your degree, (d) complete your degree on time, (e) be admitted to graduate school, (f) graduate with honors, (g) fail one or more courses. This scale was found to

be reliable with an overall Cronbach alpha of .782 (Inkelas & Associates, 2007). For the sample used in the current study, Cronbach alpha was .778.

Data Analysis

This study used block-entry multiple regression statistical analysis to determine which factors were related to academic self-efficacy among sophomore students who did and did not participate in a living-learning program. Before the regression analysis was run, descriptive statistics were obtained in order to describe the sample using a cross-tabulation table to show the demographic characteristics of the sample, broken down by living-learning and the non-living learning comparison sample (See Chapter 4 for a complete table). A chi-square test of independence was also employed to determine whether there were any group differences between the living-learning sample and the control sample. Additionally, the reliability of all the scales used in the study were recomputed using the sophomore sample only as reported in the section above.

Hypothesis Testing

A t-test was employed to address Hypothesis 1 in order to determine whether or not there was a significant difference between the levels of academic self-efficacy for sophomores who participated in living-learning programs compared to those who lived in traditional residence halls. According to Pallant (2007), for independent samples t-test, equality of variances (Levene's test) must be checked in order to assure that the variance of the scores for the two groups is the same. Next, the effect size of the independent-sample t-test was calculated. The procedure for calculating Eta squared was used from Pallant:

$$\text{Eta squared} = \frac{t^2}{t^2 + (N12 + N2 - 2)}$$

The Eta square value obtained was compared to the guidelines provided by Cohen (1988).

Multivariate analyses were employed in order to test Hypothesis 2. Hierarchical multiple regression was used, which is the analysis of choice for the Astin (1993) I-E-O model. For the hierarchical multiple regression analysis, the variables were entered in blocks. Using Astin's (1993) I-E-O model, independent variables that were most distal to the dependent variable were entered first followed by the variables that were more proximal to the dependent variable. Lastly, the intermediate outcome variables were entered (Astin). Intermediate outcomes are factors that are influenced by a student's collegiate environments that may influence the outcome variable (academic self-efficacy). Based on the literature reviewed above, the blocks were entered in the following order. The first blocks would address the input variables from the I-E-O model. Block 1 consisted of all the demographic variables (gender, race/ethnicity, high school GPA, standardized test scores, and levels of parental education). Block 2 consisted of the academic self-efficacy pre-test measure as described above. Because this was a cross-sectional study, there was no true pre-test measure, but a quasi pre-test measure of academic self-efficacy was utilized instead. The next group of blocks addressed the environmental components of the I-E-O model. Block 3 consisted of social environments (i.e., peer interaction and co-curricular involvement). Block 4 consisted of academic environments (i.e., faculty interaction and curricular involvement). The final block entered was perceptions of residence hall climate, which was an intermediate outcome (Astin, 1993).

Before the analysis was conducted, regression diagnostics were examined to ensure that the assumptions underlying regression were met. Multicollinearity and singularity, outliers, normality, linearity, homoscedasticity, and independence of residuals all needed to be checked (Licht, 1995). For multicollinearity, the VIF values were examined (Pallant). To check outliers, normality, linearity, homoscedasticity, and independence of residuals, the normal Probability Plot (P-P) of the regression standardized residuals was examined (Pallant). Outliers were checked using this plot as well as Cook's Distance (Pallant). The results on these tests will be presented in Chapter 4.

This same multivariate analysis was repeated using the traditional residence hall sample of sophomore students. The same assumptions were checked with this population of students as with previous regression model before the multivariate analysis began (sample size, multicollinearity and singularity, outliers, normality, linearity, homoscedasticity). The results of these tests will be presented in Chapter 4.

Once the two regression models were created for the living-learning students and the traditional residence hall students, an independent sample t-test of the unstandardized coefficients was conducted in order to determine whether there were significant differences between the two groups (living-learning versus non-living learning) in order to test Hypothesis 2a. The following equation was used to conduct the analysis (G. R. Hancock, personal communications, September 18, 2006):

$$t = \frac{\beta_1 - \beta_2}{SE}$$

Standard error is defined as the difference between two independent slopes, and was computed as $\sqrt{SE_1^2 + SE_2^2}$ and had n1+n2-4 degrees of freedom.

Summary

This chapter outlined the methodology for current study that sought to investigate which factors contributed to academic self-efficacy for sophomore students who participated in living-learning programs and sophomores who lived in traditional residence halls. The research question and hypotheses, theoretical framework, description of the NSLLP 2007 data collection, the sampling strategy, variables, and data analysis were discussed. The next chapter will summarize the results of the analyses.

CHAPTER 4: RESULTS

The purpose of this study was to determine which pre-college background characteristics and in-college experiences contributed to academic self-efficacy for sophomores who did and did not participate in living-learning communities. In this Chapter, sample characteristics and demographic characteristics will be discussed. Additionally, the results from the hypothesis testing will be examined in detail.

Sample Characteristics

Of the respondents, 45.9% (n=2155) identified themselves as belonging to a living-learning program and 54.1% (n=2545) identified themselves as a non-living-learning student (comparison sample). Of the total sample, 58.3% (n=2743) were female and 41.6% (n=1957) were male. When looking at the sample by race/ethnicity, 8.7% (n=411) identified as African American; 9.8% (n=458) identified as Asian; 1.7% (n=79) identified as American Indian; 5.9% (n=276) identified as Hispanic; 79.3% (n=3,715) identified as White; and 1.4% (65) identified as other ethnicity.

In terms of parental education (with mother's education being used as a proxy for this construct as described in Chapter 3), 15.4% (n=723) indicated their mother had completed high school or less; 15.8% (n=740) indicated their mother had completed some college; 9.7% (n=457) indicated their mother had obtained an Associate's degree; 34.2% indicated (n= 1606) indicated their mother had completed a Bachelor's degree; 19.9% (n=935) indicated their mother had completed a Master's degree; 4.7% (n=223) of

the respondents indicated their mother had received a Doctorate or other professional degree (JD, MD, PhD).

When examining the sample by grades in high school, 47.7% (n=2242) received A+ or A; 36.7% (n=1724) indicated they received A- or B+; 10.8% (n=507) indicated they earned Bs in high school; 3.8% (n=177) earned B- or C+; 0.9% (n=42) earned C or C-; and 0.1% (n=3) earned D+ or lower in high school.

Table 4.1 describes the sample characteristics of the living-learning and non-living learning sophomore students used in the analyses. A chi-squared test was employed to discover if there were any differences between living-learning and non-living learning students. Based on the analyses, there were significant differences between living-learning and non-living learning students on the several of the variables. African American/Black and Asian/Pacific Islander racial groups were significantly different between the living-learning and non-living-learning sample with Asian/Pacific Islander students being overrepresented in the living-learning population and African American/Black students being underrepresented in the living-learning sample. Parental education levels and high school GPA were also significantly different between the two groups. However, these are differences are consistent with past research examining differences between living-learning students and the general student population that show that living-learning students tend to have higher levels of high school achievement, have higher levels of parental education, and where Asian students are overrepresented (e.g., Inkelas & Associates, 2007; Pascarella & Terenzini, 1991; Zheng et al, 2002).

Table 4.1 Sample Characteristics in Percentages of Living-Learning and Non-Living Learning Students (N=4,700)

	Living-Learning	Non-Living Learning	LL vs. Non-LL
Gender			$\chi^2(1)=.244$
Men	889	1068	
Women	1266	1476	
Race/Ethnicity			
African American/Black	157	254	$\chi^2(1)=10.504$*
Asian/Pacific Islander	253	205	$\chi^2(1)=18.239$*
American Indian	38	41	$\chi^2(1)=.170$
Hispanic/Latino	121	156	$\chi^2(1)=.536$
White/Caucasian	1702	2013	$\chi^2(1)=.000$
Multi-racial	32	33	$\chi^2(1)=.654$
Parental Education			$\chi^2(5)=14.562$*
High school or less	297	426	
Some College	334	407	
Associates Degree	210	246	
Bachelor's Degree	774	862	
Masters Degree	440	495	
Doctorate/Professional	122	202	
High School GPA			$\chi^2(5)=42.745$**
A+ or A	1129	1114	
A- or B+	732	992	
B	212	296	
B- or C+	61	116	
C or C-	17	25	
D+ or lower	3	0	

*$p < .05$. **$p < .01$, *** $p < .001$

Regression Analysis

This section will first present the results from testing the assumptions of multiple regression followed by the results from the regression models for living-learning and non-living learning students. For the living-learning model, multicollinearity was examined first. For this study, VIF values of the independent variables were examined to ensure that they were less than 10, the maximum acceptable limit (Pallant, 2007). To check for outliers, normality, linearity, homoscedasticity, and independence of residuals, the normal Probability Plot (P-P) of the regression standardized residuals was examined. According to Pallant, all the points need to "lie in a reasonably straight diagonal line from bottom left to top right" (p. 156). Upon inspection of the P-P plot, the diagonal line followed this general pattern, meaning there were no major deviations from normality (Pallant). In the scatterplot of standardized residuals, the residuals needed to be in a rectangular-shaped distribution concentrated in center (Pallant), and for this study, the residuals met this depiction. Outliers were also checked using this plot (Pallant), and none were found. Outliers were also checked using Cook's Distance. The value for Cook's Distance was less than one, which indicated that there were no abnormal cases that would influence the results (Pallant). The same procedure was repeated for the non-living-learning regression model, and all of these assumptions were met. The VIF value was less than one (multicollinearity), the P-P plot of the regression standardized residuals appeared normal, the scatter plot was shaped correctly, and Cook's test was less than one.

While some factors in the regression model were significant at the $p < .01$ and $p < .05$ levels, these results should be interpreted cautiously since the sample size was so large; therefore, a significance level of $p < .001$ was established for hypothesis testing due to the large sample size. Table 4.2 presents a comprehensive summary of all the

variables included in the regression model for living-learning students. The results of the regression indicated that background characteristics, pre-college experiences, and in-college environments account for 27.9% of the variance in academic self-efficacy (R^2 = .279). R^2 is the amount of variance in the dependent variable (academic self-efficacy), which is explained by the independent variables. Table 4.3 portrays a model summary of the overall regression equation.

The same analysis was conducted for the comparison group (non-living-learning students). Again, a significance level of $p < .001$ was used. Table 4.4 presents a detailed summary of the variables included in the regression model. For non-living-learning students, background characteristics, pre-college experiences, and in-college environments account for 18.9% of the variance in academic self-efficacy (R^2 = .189). Table 4.5 presents a model summary of the regression equation for non-living-learning students.

Table 4.2 Predictors of Academic Self-Efficacy for Living-Learning Students

Model		Unstandardized Coefficients		Standardized Coefficients	*T*	Sig.
		B	SE β	B		
Block 1	*Demographics*					
	Gender	.298	.129	.056	2.309	*
	African American	.186	.360	.018	.518	
	Asian	.031	.334	.003	.092	
	American Indian	-.315	.454	-.016	-.693	
	Hispanic	-.236	.360	-0.18	-.657	
	White	.761	.321	.107	2.369	*
	Other Ethnicity	.094	.641	.004	.146	
	Mother's Education	.158	.045	.087	3.550	***
	Grades in High School	-.818	.085	-.254	-9.653	***
	Standardized Test Scores	.003	.000	.167	5.905	***
Block 2	*Pre-test measure*					
	Academic Self-Efficacy Pre-test Measure	1.119	.126	.215	8.857	***
Block 3	*Social Environments*					
	Peer Social Interaction	0.14	0.20	.022	.712	
	Co-curricular Involvement	.056	.037	.038	1.518	
Block 4	*Academic Environments*					
	Academic Peer Interaction	.059	.039	.044	1.512	
	Faculty-Related Course Interaction	.139	.032	.136	4.339	***
	Faculty-Related Non-Course Interaction	-.012	.022	.078	2.416	
Block 5	*Intermediate Outcomes*					
	Residence Hall Climate-Social	0.54	.022	.078	2.418	*
	Residence Hall Climate-Academic	-.032	.035	-.030	-.930	

**p < .05, ** p < .01, ***p < .001*

Table 4.3 Model Summary for Living-Learning Students

Block/Description	R	R Square	Adjusted R Square	R Square Change	F Change	Sig F Change
1. Demographic information	.444	.197	.191	.197	32.690	.000***
2. Pre-test measure	.493	.243	.237	.046	79.554	.000**
3. Social environments	.508	.258	.251	.014	13599	.000***
4. Academic environments	.525	.275	.267	.016	10.589	.000***
5. Intermediate Outcomes	.528	.279	.269	.002	3.315	.037*

**p < .05, ** p < .01, ***p < .001*

Table 4.4 Predictors of Academic Self-Efficacy for Non-living-Learning Students

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	SE β	B	*t*	Sig.
Block 1	*Demographics*					
	Gender	.493	.141	.083	2.309	***
	African American	.837	.383	.084	2.187	*
	Asian	.000	.380	.000	.000	
	American Indian	-.890	.490	-.042	-1.816	
	Hispanic	-.278	.355	0.21	.783	
	White	.769	.343	.102	2.238	*
	Other Ethnicity	-.862	.663	-.031	-1.301	
	Mother's Education	.131	.047	.066	2.750	**
	Grades in High School	-.599	.086	-.175	-6.987	***
	Standardized Test Scores	.004	.001	.190	6.991	***
Block 2	*Pre-test measure*					
	Academic Self-Efficacy Pre-test Measure	.680	.131	.124	5.203	***
Block 3	*Social Environments*					
	Peer Social Interaction	0.10	0.21	.014	.487	
	Co-curricular Involvement	.064	.040	.038	1.614	
Block 4	*Academic Environments*					
	Academic Peer Interaction	.150	.038	.111	3.933	***
	Faculty-Related Course Interaction	.048	.037	.039	1.317	
	Faculty-Related Non-Course Interaction	.036	.055	.019	.643	
Block 5	*Intermediate Outcomes*					
	Residence Hall Climate-Social	0.66	.025	.081	2.609	**
	Residence Hall Climate-Academic	-.068	.039	-.053	-1.725	

*$p < .05$. **$p < .01$, *** $p < .001$

Table 4.5 Model Summary for Non-Living-Learning Students

Block/Description	R	R Square	Adjusted R Square	R Square Change	F Change	Sig F Change
1. Demographic information	.379	.144	.138	.144	26.232	.000***
2. Pre-test measure	.402	.161	.155	.017	32.554	.000***
3. Social environments	.416	.173	.166	.012	11.398	.000***
4. Academic environments	.430	.185	.177	.012	7.518	.000***
5. Intermediate Outcomes	.434	.189	.179	.004	3.405	.033*

*$p < .05$, ** $p < .01$, ***$p < .001$

Hypothesis Testing

Hypothesis 1

In order to address whether or not there was a difference in academic self-efficacy levels between living-learning and non-living learning students, an independent-samples t-test was employed as described in Chapter 3. Equality of variances (Levene's test) was assumed since the significance value was larger than .05 (Pallant, 2007). There was a significant difference between the two groups, t (4289) = -7.161, $p < .001$. Therefore, this hypothesis was confirmed. However, the effect size (Eta-squared= 0.11) was extremely low, meaning the effect of the difference was small (Cohen, 1998). While statistically significant, there may be limited practical applicability to this finding. This will be discussed further in Chapter Five.

Hypothesis 2

Hierarchical multiple regression analysis was employed to address which factors would be significantly related to academic self-efficacy: background characteristics, faculty interaction, peer interaction, perceptions of the social residence hall climate, perceptions of the academic residence hall climate, co-curricular involvement, and curricular involvement. For living-learning students, mother's education, grades in high school, standardized test scores, the academic self-efficacy pre-test, and faculty-related course interaction were positively associated with their academic self-efficacy and were significant at the $p < .001$ level. For non-living-learning students, gender (female), grades in high school, standardized test scores, the academic self-efficacy pre-test measure, and academic-related peer interaction were all positive significant predictors at the $p < .001$ level. Because not all the factors (faculty interaction, peer interaction,

perceptions of the social residence hall climate, perceptions of the academic residence hall climate, co-curricular involvement, and curricular involvement) listed in Hypothesis 2 were significant predictors, this hypothesis is only partially supported.

Hypothesis 2a

In order to test whether the variables listed in Hypothesis 2 were stronger predictors for living-learning students than non-living-learning students, a t-test of the unstandardized coefficients was conducted as described in Chapter 3. For each of the factors, a t-value comparing the living-learning and non-living learning models was generated. The results of t-test are portrayed in Table 4.6.

Table 4.6 T-test for Living-Learning and Non-Living Learning Factors

Variable	β_1 (living-learning)	β_2 (non-living-learning)	***t* value**	**Significance level**
Gender	.298	.493	.1330	
African American	.186	.837	.2328	
Asian/Pacific Islander	.031	.000	.2313	
American Indian	-.315	-.890	.5222	
Hispanic	-.236	-.278	.2692	
Other Ethnicity	.761	.769	.5716	
Mother's Education	.094	.131	.0496	
Grades in High School	-.818	-.599	.0753	
SAT Scores	.003	.004	.0005	
Academic Self-efficacy Pre-test	1.119	.680	.1214	
Peer Interaction-Social	.140	.100	.0198	
Co-curricular involvement	.056	.064	.0365	
Peer Interaction-Academic	.059	.150	.0366	
Faculty Interaction-Course Related	.139	.480	.3431	
Faculty Interaction-Non-Course Related	-.012	.036	.0507	
Academically Supportive Residence Hall Climate	.540	.660	.0277	
Socially Supportive Residence Hall Climate	-.032	-.068	.9781	

*$p < .05$. **$p < .01$, *** $p < .001$

None of the t-values were significant, and therefore, Hypothesis 2a was not supported. The implications of this result will be discussed in Chapter 5.

Model Summary

The regression models created for living-learning and non-living learning students contained five different blocks in an attempt to explain the variance in academic self-efficacy. Even though there were not statistically significant differences between the models created for living-learning and non-living learning students, the models appear to be slightly different in their predictive ability. Overall, the model explained 26.9% of the living-learning sample's variance in academic self-efficacy. The same model explained only 17.9% of the comparison's sample's variance in academic self-efficacy. The R^2 and the adjusted R^2 value for the living-learning model was .279 and .269; since these values were fairly close, it demonstrated that the model is fairly strong and does not contain many extra variables (Licht, 1995). For the non-living-learning model, the R^2 and adjusted R^2 values were also close at .189 and .179 respectively. Again this demonstrated the strength of the variables included in the model since the two values were close.

For the demographic block (gender, race/ethnicity, mother's education, high school GPA, and SAT scores), 19.7% of the variance was explained for living-learning students while this same block explained only 14.4% of the variance for non-living-learning students. The academic self-efficacy pre-test block explained an additional 4.6% of variance for living-learning students and 1.7% for non-living-learning students. Social environments (social peer interaction and co-curricular activities) explained an additional 1.4% of the variance in academic self-efficacy scores for living-learning students and only 1.2% of the variance for non-living-learning students. Academic

environments (course-related faculty interaction, non-course-related faculty interaction, curricular involvement) explained an additional 1.6% of the variance in the model for living-learning students and 1.2% for non-living learning students. Finally, the intermediate outcomes (social residence hall environment and academic residence hall environment) explained only .2% of the variance for living-learning students and .4% of the variance for non-living-learning students. Given the higher R-squared value for the living-learning sample (26.9% compared to 19.7% for non-living-learning), all of the independent variables appear to be stronger, overall, in predicting academic self-efficacy for living-learning students.

Conclusion

Chapter 4 provided the results of the study's findings. The sample characteristics, regression analysis, hypothesis testing, and model summary were all discussed. The following chapter will provide a discussion of these results.

CHAPTER 5: CONCLUSIONS AND IMPLICATIONS

This study examined which pre-college background characteristics and in-college involvement factors contributed to academic self-efficacy for sophomores who did and did not participate in living-learning programs. Based on the literature reviewed in Chapter Two, two hypotheses were developed. The first hypothesis questioned whether academic self-efficacy levels would be different for living-learning students compared to non-living learning students. The second hypothesis questioned which factors would predict academic self-efficacy using hierarchical multiple regression statistical analysis. A sub-hypothesis also tested to determine whether or not there would be significant differences in the regression models created for living-learning and non-living-learning students—specifically hypothesizing that the predictors of academic self-efficacy would be stronger for the living-learning sample. This chapter will discuss the implications of the findings from these two hypotheses, present implications for practice, describe the limitations of the research, and provide directions for future research.

Discussion

Hypothesis 1

For Hypothesis 1, a t-test revealed that there was a significant difference between academic self-efficacy levels for living-learning sophomores compared to non-living-learning sophomores. However, when the effect size was measured using Eta squared, the magnitude of the effect was small. In other words, the academic self-efficacy for living-learning sophomores and non-living-learning sophomores had only a small magnitude of difference between the two groups. Because of the large sample size used in this analysis, it was important to calculate the magnitude of the effect in order to better

understand the relationship between the two groups. Even though the results of the t-test were statistically significant, statistical significance is not always meaningful practically. Therefore, there is little practical significance to the differences between living-learning sophomores and non-living-learning sophomores in terms of their academic self-efficacy levels for practitioners to take note. It is surprising that the magnitude of this difference was small in light of previous research. Living-learning students are often times stronger academically in high school (Pascarella & Terenzini, 1991) than non-living-learning students, and high school grade performance (i.e., grade point average) was a significant predictor of collegiate academic self-efficacy beliefs (Elias & MacDonald, 2007). However, previous research has shown that gifted females may be biased in their under-confidence in their academic abilities (Pajares, 1996). While Pajares' (1996) research was conducted in a high school, the patterns of under-confidence may also translate into the college classroom. Since the living-learning sample was overwhelmingly female (approximately 58.7 %), this phenomenon may have affected the academic self-efficacy scores—making them appear more similar to the comparison sample. .

Hypothesis 2

Hypothesis 2 examined which collegiate environmental factors would be related to academic self-efficacy among faculty interaction, peer interaction, positive perceptions of the social residence hall climate, positive perceptions of the academic residence hall climate, co-curricular involvement, and curricular involvement. Because not all of these factors were related to academic self-efficacy (for living-learning and non-living learning sophomores), this hypothesis was only partially supported. For living-learning students, the only statistically significant predictor among the college environments in the model

was faculty-related course interaction. Furthermore, the environments (social environments, academic environments, and intermediate outcomes) accounted for only a small percentage of the variance (3.2%) in academic self-efficacy net of background characteristics and the academic self-efficacy pre-test measure. Similarly, for non-living-learning students, the only significant predictor among the college environments of academic self-efficacy was academic peer interaction. Social environments, academic environments, and the intermediate outcomes only accounted for 2.8% of the variance in academic self-efficacy excluding background characteristics and the academic self-efficacy pre-test measure. It is interesting to note, however, that living-learning and non-living learning students had different significant predictors for academic self-efficacy. For living-learning students, course-related faculty interaction was significant and for non-living-learning students, academic peer interaction was important. Living-learning students may interact academically with peers more often due to the nature of the living-learning program, and therefore, not be affected by this interaction like non-living-learning students were. Academic peer interaction was defined by activities such as discussed topics learned in class, shared concerns about classes and assignments, and talked about current issues and events. Many of these activities are built into the foundation of living-learning programs, and therefore, living-learning students may always be immersed in these types of activities. However, non-living-learning students may need to purposefully seek these types of activities out on campus. This is an area in which practitioners may be able to make a difference in their referral of resources or suggestions they make to students. Based on past research by Gardner (2000), sophomores spent less time on average engaged in academic-related activities than other

students. Without the structure of the living-learning program, non-living-learning students may fall victim to this problem. However, findings from this study demonstrate that when they do interact with peers about academic issues, sophomore students' (who are not in a living-learning program) academic self-efficacy is affected.

It was beyond the scope of the current study to untangle in what ways non-living-learning sophomores' academic self-efficacy is affected through academically-related peer interactions. When they interact with their peers in academically-related ways, vicarious experiences may be the mechanism behind it. As students see students similar to themselves successfully discussing an academic topic they learned in class, they themselves may feel more able to be academically successful in the future. It may also be mastery experiences (Bandura, 1997) that occur during this type of interaction. As peers are discussing issues or topics learned in class, it may give students a chance to understand those topics and process them at a deeper level, which would increase efficacy levels. Finally, social persuasion (Bandura) may be a third mechanism within peer interactions, where peers provide encouragement of other peers during the discussions of shared issues or concerns happening in a particular course.

The difference in course-related faculty interaction as a significant predictor for living-learning students (and not non-living-learning program students) may also be explained by the difference in living-learning program participation. Living-learning students in fact have more faculty interaction than non-living-learning students (Inkelas, 1999; Pascarella et al, 1994; Pascarella & Terenzini, 1980; Pike, 1999). Therefore, they are seemingly more likely to have more *course-related* faculty interaction than their non-living-learning peers. Course-related faculty interaction was defined by such encounters

as visiting informally with their faculty before/after class, making an appointment for office hours, asking the instructor about information related to the course, or working with the instructor involving research. For living-learning students, it may be the sheer proximity to the faculty that allows them to do this successfully or have this type of interaction affect their academic self-efficacy. Faculty may spend more time in the living-learning residence halls (e.g., to teach a class or participate in a living-learning program event) that allows living-learning students to interact with faculty members in such ways. While it was beyond the scope of this study to determine which specific efficacy mechanisms affected academic self-efficacy in terms of course-related faculty interaction, again, mastery experiences (Bandura, 1997) may affect this. When living-learning sophomore students engage in course-related faculty interaction, they may have more opportunity to talk about the course material with an "expert" or ask questions to gain deeper understanding. If the material they are learning in class is able to be integrated and woven into other aspects of their collegiate experience (e.g., through doing research or other practical experiences), they may learn material at a deeper level, which allows them to feel more confident about their ability to be academically successful. Additionally, social persuasion (Bandura) may also cause the living-learning sophomores to increase academic self-efficacy. If they interact with faculty at greater frequencies *and* have a faculty member encourage their ability to learn the material during these interactions, it is easy to see how that may affect living-learning students' feelings of confidence.

When examining non-living-learning students, they may not be interacting with their faculty members in such ways. Past research illuminates the importance of faculty

interaction during the sophomore year. Graunke and Woosley (2005) found that faculty interaction along with academic major selection were two of the most important predictors of academic success during the sophomore year. Because non-living learning students may not have the same frequency of course-related faculty interaction, it may be the reason why such interaction is not a significant predictor of academic self-efficacy. Non-living-learning sophomores may also be relying on their peers instead of faculty based on the finding discussed above. However, if non-living-learning sophomores are encouraged or given more opportunities to interact with faculty in meaningful ways, this may lead to increases in academic self-efficacy based on the findings from the *living-learning* sample. Though this finding was statistically significant and seems intuitive, it may have limited practical significance since the amount of academic self-efficacy variance accounted for within the living-learning sample was small—approximately only 1.3 percent. Additionally, this study did not specify with *which* faculty members the living-learning students were interacting that caused the relationship with academic self-efficacy. It may be that specific living-learning program faculty were the making the difference (which would help explain why it was a predictor for living-learning students and not the comparison sample). However, it may also be their general interaction with all faculty members that affects academic self-efficacy. Future research should work to address this question.

It is clear from both the non-living learning students and the living-learning students that a majority of the variance in academic self-efficacy is accounted for using past experiences and background characteristics. For living-learning students, demographic characteristics and the academic self-efficacy pre-test measure accounted

for 24.3% of the variance in academic self-efficacy and 15.5% for non-living learning students. For living-learning students, mother's education, grades in high school, and SAT scores were significant demographic predictors in addition to the academic self-efficacy pre-test. For non-living-learning students, gender, grades in high school, SAT scores, and the academic self-efficacy pre-test were all significant predictors. Based on the findings from past academic self-efficacy research, it is not surprising that many of these factors are significant predictors. Both SAT scores and high school GPA have been shown to predict collegiate levels of academic self-efficacy (Elias & MacDonald, 2007; Lent et al, 1984). Because mastery experiences are the best way to increase self-efficacy levels (Bandura, 1997), it makes sense that students who felt confident in their academic abilities in high school still feel confident in their academic abilities in college.

There are some findings that are slightly surprising given past research. For example, for non-living-learning students, gender (in this study, being female) was found to be a significant predictor of academic self-efficacy. Past research had identified gender differences in academic self-efficacy levels for males and females; while females may out-perform males on academic tasks they tend to be under-confident in their abilities (Pajares, 1996; Pajares & Johnson, 1996; Pajares & Miller, 1994). However, academic self-efficacy research to date has not revealed that gender is a predictor of academic self-efficacy levels at college.

Additionally, the academic self-efficacy research to date has yet to link parental education levels to academic self-efficacy. Past research has linked parental education to academic achievement levels (Ting & Robinson, 1998), but the current research takes a step further. For living-learning sophomores, parental education (mother's education

specifically) was a significant predictor of academic self-efficacy in college. While the exact efficacy mechanism was not determined, social persuasion or vicarious experience (Bandura, 1997) may help students develop higher levels of academic self-efficacy. Through social persuasion, parents may be more apt at reinforcing their children's academic abilities possibly since the parents themselves tended to be more educated (Zheng et al., 2002,) thus giving living-learning students increased confidence in their own academic abilities. Additionally, living-learning students may benefit from vicarious experience—they see that their parents obtained baccalaureate (or higher) degrees, and therefore, they believe that they, too, can accomplish academic tasks in college successfully. For non-living-learning students, parental education level was significant at the $p < .01$ level, which indicates that there may also be a relationship, but it was not as strong as the living-learning students.

Hypothesis 2a

Hypothesis 2a posited that the independent variables in Hypothesis 2 (faculty interaction, peer interaction, residence hall climates, co-curricular involvement and curricular involvement) would be stronger predictors of academic self-efficacy for sophomores in living-learning programs compared to sophomores in traditional residence halls. Based on the results of the *t*-test of the unstandardized residuals from the two regression models, none of the *t*-tests was statistically significant, and this hypothesis was not supported. Therefore, the independent variables were not stronger predictors for living-learning sophomores than sophomores in traditional residence hall arrangements.

While the hypothesis was not supported, it is interesting to note the implication of this finding. Living-learning program participation may promote higher levels of

collegiate outcomes such as retention (Stassen, 2003), academic achievement (Pasque & Murphy, 2006), or academic self-efficacy levels (Inkelas et al., 2008) for first-year students. However, academic self-efficacy may not be an outcome that is nurtured by living-learning program participation during the sophomore year. While the current study did find a significant difference in academic self-efficacy for living-learning sophomores compared to non-living-learning sophomores, the effect size was small, so the difference is hardly practically significant. When examining the collegiate environments that were significantly related to academic self-efficacy levels for sophomores (living-learning *and* non-living-learning), course-related faculty interaction and academic peer interaction are both experiences that can happen outside the auspices of living-learning programs. While the inherent structure of living-learning programs may make some of these interactions happen more easily—such as discussing academic issues with peers or faculty—they can certainly happen in other places and in other ways.

Based on the results of the current research, it is difficult to determine the effects of living-learning program participation during the sophomore year. Little research to date has examined this experience in depth, and the current research is only able to contribute minimal support for this idea. Perhaps other outcomes, such as academic achievement and retention, need to be examined to paint a more complete picture of sophomore involvement in living-learning programs. It is also possible that living-learning programs are truly only effective during the first year of college. The supportive and protective factors may not benefit students into their second year of the program as strongly as they did during the first year. It may also be possible that the effects of living-learning programs need to be measured later in students' development in order to

give them *more* time to assimilate and digest the impact of their living-learning participation on these various outcomes. Particularly when examining academic self-efficacy as an outcome, this study revealed that a significant amount of variance in the scores is accounted for by factors that students bring with them to college; living-learning program participation may not be necessary to develop higher levels of academic self-efficacy.

It is also interesting to note how much variance is left unaccounted for in the measurement of academic self-efficacy. While many independent variables were entered into the regression equation, approximately 72% and 82% of the variance in living-learning program and non-living-learning sophomores' academic self-efficacy scores is left unexplained. Other factors that were not considered in the current research are contributing—possibly in much more significant ways than the environments typically associated with living-learning programs (faculty interaction, peer interaction, residence hall environments, co-curricular and curricular involvement). Future research should attempt to unravel and reveal what these factors are.

Limitations

There are several limitations within the methodology. Because of NSLLP's quasi-experimental design, there was no way to prove causation between living-learning program participation and academic self-efficacy. Additionally, this study in particular relied on pre-determined groups and non-random assignment; students were already participants within a living-learning program or were traditional residence hall students. However, there may be underlying differences between these groups of students that may affect the findings of the study. Critics of living-learning research have been quick to

point out that there may be a "self-selection" effect like the one described here that may affect findings related to living-learning effectiveness. This vulnerability in the study design remains a limitation for this investigation. While the two groups were matched as best as possible in terms of many demographic characteristics, the Chi-squared results revealed that the samples were not exactly the same. As discussed previously, Asian/Pacific Islander students were overrepresented in the living-learning sample while African American/Black students were underrepresented in the living-learning sample. Furthermore, it is unknown whether the living-learning sophomores were also participants during their first year of college, or if any sophomores in the non-living-learning sample were once participants in living-learning programs during their first year. Knowing more about the students' past and present living-learning participation may allow for a clearer interpretation of the results and could also help explain while there were little differences between the two groups. The students in the living-learning sample belonged to a variety of different living-learning programs—the type and quality of which were not examined in the current investigation. Because the type and quality of living-learning program experiences could vary greatly, this may help explain why there is a lack of significant difference in academic self-efficacy scores between the two groups. Future research should work to address this limitation.

Because the study was *ex post facto*, the variables of interest are part of a much larger study that measured many different outcomes of living-learning participation, not just academic self-efficacy. While it would have been ideal to ask the respondents more questions related to academic self-efficacy, it was not possible. The measures that the NSLLP used to operationalize academic self-efficacy were not exactly the same as

Bandura's conceptualization of the construct. While similar enough, this was a significant limitation of the current study. Future research into this topic may want to employ Bandura's measures for academic self-efficacy or examine domain-specific academic self-efficacy levels (e.g., Pajares, 1996).

While the I-E-O model provided a useful framework for the study, there were several limitations that must be taken into account. The I-E-O model normally requires the collection of longitudinal data (input and outcome) over a period of time (Astin, 1993). As Pascarella (2001) argues, many college impact investigations that rely on self-reports of students do not employ a true pre-test of students' pre-collegiate characteristics, which may ultimately influence the outcome measures of the dependent variable researchers are exploring. Because longitudinal investigations are time consuming and often expensive, he posits that asking retrospective questions that "take into account students' pre-college receptivity to educational experiences, as manifest in their disposition to report growth as the result of such experiences" is a must if this "shortcut" is to be used (p. 491). In this study, cross-sectional data was examined since the respondents did not complete a true pre-test/post-test longitudinal study as part of the portion of the NSLLP that this study utilized. Instead, respondents completed a survey at one time point during their collegiate career and answered questions retrospectively about their pre-collegiate experiences (e.g., pre-collegiate assessment of the importance of college involvement as well as college confidence). Lastly, the measure that was used as the pre-test measure was solely a proxy for their academic confidence and does not precisely measure students' pre-collegiate academic self-efficacy levels. A more accurate pre-test measure would specifically ask respondents about their *confidence* in

their collegiate academic abilities as opposed to the importance of doing well academically, which was what was included on the 2007 NSLLP instrument. Because of these limitations, results from the analyses should be read and applied carefully.

Directions for Future Research

There are several possibilities for research in the future based on the outcomes of this study in addition to the areas mentioned above. While the population of interest in the current research was sophomore students, little research (with the exception of Inkelas et. al, 2008) has examined academic self-efficacy broadly in living-learning programs. Examining how academic self-efficacy varies by year in college may be of interest in the future. Obtaining an increased understanding of this difference may provide increased insight for living-learning scholars and practitioners in addition to gaining a better understanding of student development while in college. Additionally, as mentioned in the previous section, deciphering which efficacy mechanisms are responsible for increasing efficacy levels will be important for future researchers to examine.

Gaining an increased understanding of domain-specific academic self-efficacy (e.g., math, writing, reading abilities) will be important for future research to examine. While the current study examined general or global self-efficacy beliefs, domain-specific beliefs are better measures of the construct (e.g., Parajes, 1996). In addition to examining domain specific beliefs for sophomore students (or other populations), it may also be interesting to examine these constructs by living-learning program type. For example, do students involved in a STEM-related living learning program have greater amounts of

math self-efficacy than students involved in a general living-learning program (as compared to a comparison of non-living-learning students)?

Additionally, within living-learning programs, future research may want to explore the concept of collective efficacy or collective academic efficacy. Collective efficacy examines a *group's* beliefs in its ability to be successful in a specific domain. Originally, this concept was created for teachers to measure beliefs about the collective efficacy in their classrooms (e.g., Goddard, 2001; Goddard, Hoy, & Woolfolk Hoy, 2000). However, the concept has yet to be applied to many other community-based settings such as living-learning programs. It would be interesting to explore how collective efficacy beliefs of living-learning students affect outcomes such as academic achievement, retention, or sense of belonging. Researchers could also explore whether the construct of collective academic efficacy is more powerful than personal, academic self-efficacy construct. This may also be interesting to examine across cultures—specifically looking at differences between collectivist versus individualistic cultures.

Lastly, a majority of research both on living-learning students as well as sophomore students has been gathered through quantitative analyses only. Future research could use a qualitative approach to explore this phenomenon in-depth. For example, sophomores with high amounts of academic self-efficacy could be interviewed to gain an increased understanding of the specific environmental factors that foster this feeling of confidence. With this increased understanding, scholars, practitioners, and researchers could use this in-depth knowledge and apply it to future empirical studies or in programming related to the sophomore slump, which will continue to happen in the future.

Conclusion

This chapter summarized the findings from the present study, discussed implications for practice, mentioned limitations of the research, and provided directions for future research. Using hierarchical multiple regression, the model created in the study for living-learning students predicted 27.9% of the variance in academic self-efficacy for living-learning students and 17.9% for non-living-learning students. While there were not significant differences in the strength of the predictive ability for the two models, several pre-college background characteristics and in-college involvement experiences were highlighted as important for second-year students. While more empirical research must be conducted on sophomores in living-learning programs in addition to academic self-efficacy, this research provides an initial step forward that will allow practitioners and scholars to work more effectively with sophomore students.

APPENDIX A

2007 NSLLP BASELINE QUESTIONNAIRE

General Programming Notes

1. Any words in all caps will be emphasized in bold blue text on the web. We have replaced all underlined emphasis with this format (it is our standard). We believe it is a better approach, but we can modify this if desired.
2. All questions are optional unless otherwise specified.
3. All questions are placed one per screen, unless otherwise noted or if specified as a "grid" question.
4. Support email address to display:
5. Short URL for survey should be:
6. Logo to use: Each school will have a unique logo to display.
7. SECTIONS AND HEADERS: {NOTE THAT QUESTION NUMBERS ARE NOT SEQUENTIAL . THE SECTIONS BELOW HOWEVER ARE IN ORDER EVEN IF IT APPEARS QUESTION NUMBERS ARE NOT. USE THE BELOW AS START AND END QUESTIONS WITHIN SECTIONS AND BLOCKS}
    1. "About You" = Q1 through Q27.5
    2. "Before College" = Q28a through Q30f
    3. "Academic Life" = Q31 through Q38e
    4. "College Environments & Campus Life"

        Q39 through Q43 (Block one)

        Q44 through Q49 (Block two)

        Q50 through Q53 (Block three)

        Q54 through Q62 (Block four)

        *** These four Blocks should have the questions within them in a fixed order and the blocks themselves should be randomized so that respondents see the three folders in a different order.
    5. "End" = Q63 – Q65

Welcome to the 2007 National Study of Living Learning Programs Survey

As you move through the survey, please use only the Previous Screen or the Next Screen button at the bottom of the page. Do not use the Back or Forward buttons on your browser.

Click here to view our Privacy Policy.

Click the “Start Survey” button to begin the survey.

CONSENT

The primary purpose of this study is to understand college students’ perceptions of their residence environments and the impact of residence environments on students’ academic and social development. This research will not help you personally. The researchers on this project believe that there are no short- or long-term effects associated with participation in this study.

Your participation in this study is voluntary, and you may skip any questions in the survey that you feel uncomfortable answering. For the purpose of understanding your collegiate experiences as a whole, some of your records will be obtained from your registrar and merged with your responses to this survey.

Please be assured that, to the extent permitted by law, personal information obtained for this project will remain confidential, and will not be shared with anyone not associated with this project. Any publications of the study will be based on grouped data and will not reveal your identity or your individual records.

We know how busy, and sometimes stressful, college life can be. In fact, some of the questions on the survey may trigger some personal and social emotions that you may like to discuss with someone who can assist you. In these circumstances, please call {INSERT SCHOOL COUNSELING CENTER NUMBER] where you can schedule an appointment to visit with a counselor.

If you have any questions about this study, please feel free to contact:

Karen Kurotsuchi Inkelas, PhD

3214 Benjamin Building

University of Maryland

College Park, MD, 20742

Phone: 301-405-0682

Email: info@livelearnstudy.net

QCON: I state that I'm 18 years or older and wish to participate in this study.

1 Yes
2 No

Q1. What is your gender?

1 Male
2 Female
3 Transgendered

Q2. Please indicate your sexual orientation.

1 Bisexual
2 Gay or Lesbian
3 Heterosexual

Q3. Are you…

(Select all that apply)

1 African American/Black (not of Hispanic origin)
2 Asian or Pacific Islander (includes the Indian sub-continent)
3 American Indian or Alaskan Native
4 Hispanic/Latino (Spanish culture or origin)
5 White/Caucasian (Persons not of Hispanic origin, having origins in any of the original peoples of Europe, North African, or the Middle East)
6 Race/ethnicity not included above

{PRG: GRID Q4a-Q4c}

Were the following individuals in your family born in the United States?

Q4a. You

1 Yes
2 No

Q4b. Mother

0 Yes

1 No

Q4c. Father

1 Yes
2 No

{PRG: DISPLAY 4d-4f ON SAME SCREEN}

{PRG: SHOW IF Q4a=2}

Q4d. Please indicate the country where you were born: [OPEN-END RESPONSE]

{PRG: SHOW IF Q4b=2}

Q4e. Please indicate the country where your mother was born: [OPEN-END RESPONSE]

{PRG: SHOW IF Q4c=2}

4f. Please indicate the country where your father was born: [OPEN-END RESPONSE]

{PRG: SHOW IF Q4a=2}

Q5. Which of the following statements applies to you?

I came to the United States

1 Before age 6

2 Between ages 6-12

3 Between ages 13-17

4 After age 17

Q6. What is your current religious affiliation? [OPEN-END RESPONSE]

Q7. How important is your religion in your life?

1 Not at all important
2 Somewhat important
3 Important
4 Very important

Q8. How would you describe your political views?

0	No political viewpoint
1	Very liberal
2	Slightly liberal
3	Middle of the road
4	Slightly conservative
5	Very conservative

{PRG: GRID 9a-9b}

What is the highest level of education completed by one or both of your parent(s) or guardian(s)?

Q9a. Father or Male Guardian

0	Don't know
1	High school or less
2	Some college
3	Associates degree
4	Bachelors degree
5	Masters degree
6	Doctorate or professional degree (JD, MD, PhD)

Q9b. Mother or Female Guardian

0	Don't know
1	High school or less
2	Some college
3	Associates degree
4	Bachelors degree
5	Masters degree
6	Doctorate or professional degree (JD, MD, PhD)

Q10. What is your best estimate of your parents' combined total income last year? Consider income from all sources before taxes.

1	Less than $25,000
2	$25,000 to $49,999
3	$50,000 to $74,999
4	$75,000 to $99,999
5	$100,000 to $124,999
6	$125,000 to $149,999
7	$150,000 to $174,999
8	$175,000 to $199,999
9	$200,000 or more

Q11. What were your average grades in high school?

1	A+ or A
2	A- or B+
3	B
4	B- or C+
5	C or C-
6	D+ or lower
7	No high school GPA

{PRG: GRID 12a-12b}

Did you take the SAT and/or ACT?

12a. SAT

1	Yes
2	No

12b. ACT

1	Yes
2	No

{PRG: SHOW IF 12A=1, OTHERWISE GO TO FILTER BEFORE Q13I1}

Q13a. Which version of the SAT did you take?

1	SAT Critical Reading, Math, and Writing
2	SAT Verbal and Math

{PRG: SHOW IF Q13a=1, OTHERWISE GO TO FILTER BEFORE Q13f1}

{PRG: SHOW 13B1-13E2 ON SAME SCREEN} {PRG: SHOW DON'T KNOW RESPONSES AS CHECK BOXES. ALSO MAKE CHECK BOXES MUTUALLY EXCLUSIVE FROM ITS ACCOMPANYING NUMERIC ENTRY}

Please indicate your SAT scores below:

Cumulative:

Q13B1.	[NUMERIC ENTRY RANGE 0-2400]
Q13B2.	Don't know

Critical Reading:

Q13C1.	[NUMERIC ENTRY RANGE 0-800]

Q13C2. Don't know

Math:

Q13D1. [NUMERIC ENTRY RANGE 0-800]

Q13D2. Don't know

Writing:

Q13E1. [NUMERIC ENTRY RANGE 0-800]

Q13E2. Don't know

{PRG: SHOW IF 13A=2, OTHERWISE GO TO FILTER BEFORE Q13I}

{PRG: SHOW 13F1-13H2 ON SAME SCREEN}

{PRG: SHOW DON'T KNOW RESPONSES AS CHECK BOXES. ALSO MAKE CHECK BOXES MUTUALLY EXCLUSIVE FROM ITS ACCOMPANYING NUMERIC ENTRY}

Please indicate your SAT scores below:

Cumulative:

Q13F1. [NUMERIC ENTRY RANGE 0-1600]

Q13F2. Don't know

Verbal:

Q13G1. [NUMERIC ENTRY RANGE 0-800]

Q13G2. Don't know

Math:

Q13H1. [NUMERIC ENTRY RANGE 0-800]

Q13H2. Don't know

{PRG: SHOW IF Q12b=1, OTHERWISE GO TO Q14}

{PRG: SHOW Q13I1 and Q13I2 ON SAME SCREEN}

Q13I1. Please indicate your ACT score below:

[NUMERIC ENTRY 0-36]

Q13I2. Don't know {PRG: DISPLAY AS CHECK BOX NAD MAKE MUTUALLY EXCLUSIVE FROM Q13I1}

Q14. What is your current class level?

1 First year
2 Sophomore
3 Junior
4 Senior
5 Graduate student
6 Other

Q15. Did you receive financial aid in 2006-2007 in the form of:

(Select all that apply)

0 Not receiving financial aid {PRG: MUTUALLY EXCLUSIVE RESPONSE}
1 Loans
2 Need-based scholarships or grants
3 Non-need-based scholarships or grants
4 Work-study
5 Athletic scholarship
6 Other (SPECIFY)

Q16. How many majors do you currently have?

0 Undecided/undeclared
1 1
2 2
3 3 or more

Q17. In the following questions, we ask you to identify {IF Q16=0 or NULL RESTORE "the major which you are considering most seriously", IF Q16=1 RESTORE "your current major", IF Q16=2 or 3 RESTORE "your primary major". To locate a major, first select the broad category below in which the major belongs. You will then be taken to a list of majors under that category where we ask you to select your specific major.

2 Undecided {PRG: SHOW THIS CODE IF Q16>0}

10 Agriculture

20 Architecture and Building Trades

30 Area, Ethnic, Cultural, And Gender Studies

40 Biological Sciences (Biology, Botany, Zoology, etc.)
50 Business Administration

60 Communications and Journalism

70 Computer or Information Sciences

80 Education

90 Engineering
100 English Language And Literature

110 Family and Consumer Sciences or Human Services

120 Foreign Languages and Linguistics

130 Health, Pre-Health, and Wellness

140 History

150 Law, Criminal Justice, or Safety Studies

160 Mathematics and Statistics

170 Natural Resources and Conservation

180 Personal, Hospitality, and Culinary Services

190 Philosophy, Theology, and Religion

200 Physical Sciences (Chemistry, Physics, etc.)

210 Social Science and Public Administration

220 Visual and Performing Arts

{SHOW 230 IF Q16=0}

230 I don't know

{PRG: SHOW IF Q17>9; OTHERWISE GO TO FILTER BEFORE Q17.5}

Q17a. Please identify your major below

{PRG: IF Q17=10 SHOW 10_101 TO 10_999}

10_101 Agribusiness

10_102 Agricultural Communication/Journalism

10_103 Agricultural Economics

10_104 Agronomy and Crop Science

10_105 Animal Sciences

10_106 Food Science

10_107 Horticultural Science

10_108 Landscaping and Groundskeeping

10_109 Plant Sciences

10_110 Soil Science and Agronomy

10_999 General Agriculture or Other Specialty

{PRG: IF Q17=20 SHOW 20_102 TO 20_999}

20_106 Building Trades or Construction Services

20_104 City/Urban, Community and Regional Planning

20_105 Drafting or Design

20_102 Interior Architecture

20_103 Landscape Architecture

20_999 General Architecture or Other Specialty

{PRG: IF Q17=30 SHOW 30_101 TO 30_999}

30_101 African-American/Black Studies

30_102 American Indian/Native American Studies

30_103 American Studies

30_104 Asian Studies

30_105 Asian-American Studies

30_106 European Studies

30_107 Gay/Lesbian Studies

30_108 Hispanic-American, Puerto Rican, Mexican-American, or Chicano Studies

30_109 Latin American Studies

30_110 Near and Middle Eastern Studies

30_111 Russian or Slavic Studies

30_112 Women's Studies

30_999 Other Specialty

{PRG: IF Q17=40 SHOW 40_101 TO 40_999}

40_101 Anatomy or Physiology

40_102 Biochemistry, Biophysics or Molecular Biology

40_103 Bioinformatics

40_104 Botany, Plant Biology, or Plant Genetics

40_105 Cell Biology

40_106 Conservation and Wildlife Biology

40_107 Developmental Biology and Embryology

40_108 Ecology or Environmental Biology

40_109 Entomology

40_110 Exercise Physiology or Kinesiology

40_111 Genetics

40_112 Marine Biology and Biological Oceanography

40_113 Microbiology or Bacteriology

40_114 Neurobiology, Neurophysiology, or Neuroscience

40_118 Zoology/Animal Biology

40_999 General Biology or Other Specialty

{PRG: IF Q17=40, 110 OR 130 SHOW 40_115}

40_115 Nutritional Sciences or Studies

{PRG: IF Q17=40 OR 130 SHOW 40_116 AND 40_117}

40_116 Pathology

40_117 Pharmacology

{PRG: IF Q17=50 SHOW 50_101 TO 50_999}

50_101 Accounting or Auditing

50_102 Finance, Banking or Financial Support Services

50_105 International Business, Trade, or Marketing

50_106 Labor and Industrial Relations

50_107 Logistics, Supply Chain, or Materials Management

50_108 Management or Management Information Systems

50_109 Marketing or Marketing Management

50_110 Non-Profit Management

50_111 Operations Management

50_112 Organizational Behavior

50_999 General Business Administration or Other Specialty

{PRG: IF Q17=50 OR 210 SHOW 50_103}

50_103 Human Resources Development or Training

{PRG: IF Q17=50 OR 110 SHOW 50_113}

50_113 Secretarial Sciences

{PRG: IF Q17=60 SHOW 60_101 TO 60_999}

60_102 Communication, Speech or Rhetoric

60_103 Journalism

60_104 Mass Communications

60_105 Organizational Communication

60_106 Photojournalism

60_999 Other Communications or Journalism Specialty

{PRG: IF Q17=50 OR 60 SHOW 60_101 AND 60_107}

60_101 Advertising

60_107 Public Relations/Image Management

{PRG: IF Q17=50 OR 200 SHOW 60_108}

60_108 Radio and Television

{PRG: IF Q17=70 SHOW 70_101 TO 70_999}

70_101 Artificial Intelligence and Robotics

70_102 Computer and Information Systems Security

70_103 Computer Graphics

70_104 Computer Programming

70_105 Computer Systems Networking and Telecommunications

70_106 Database Administration and Data Modeling or Warehousing

70_107 Data Processing and Data Processing Technology

70_108 Library, Information, or Archival Sciences

70_109 Information Technology

70_111 System Administration

70_112 Web Page, Digital/Multimedia and Information Resources Design

70_999 Computer and Information Sciences or Other Specialty

{PRG: IF Q17=80 SHOW 80_101 TO 80_999}

80_101 Adult and Continuing Education

80_102 Early Childhood Education

80_104 Elementary Education

80_105 Middle School Education

80_106 Secondary Education

80_107 Special Education

80_108 K-12 School Library Media Specialist

80_999 General Education or Other Education Specialty

{PRG: IF Q17=90SHOW 90_101 TO 90_999}

90_101 Aerospace, Aeronautical, or Astronautical Engineering

90_102 Agricultural/Biological Engineering and Bioengineering

90_103 Architectural Engineering

90_104 Biomedical/Medical Engineering

90_105 Chemical Engineering

90_106 Civil Engineering

90_107 Computer Engineering

90_108 Construction Engineering

90_109 Electrical, Electronics and Communications Engineering

90_110 Electronics or Mechanics

90_111 Environmental/Environmental Health Engineering

90_112 Industrial Engineering

90_113 Materials Engineering

90_114 Mining and Mineral Engineering

90_115 Naval Architecture and Marine Engineering

90_116 Nuclear Engineering

90_117 Operations Research

90_118 Structural Engineering

90_999 General Engineering or Other Specialty

{PRG: IF Q17=100 SHOW 100_101 TO 100_999}

100_101 American Literature

100_102 Creative Writing

100_103 English Composition

100_104 World Literature

100_105 Literature

100_999 English or Other Specialty

{PRG: IF Q17=50 OR 100 THEN SHOW 100_106}

100_106 Technical and Business Writing

{PRG: IF Q17=110 SHOW 110 _101 TO 110_999}

110_101 Apparel and Textile Manufacturing

110_102 Child Care Management

110_103 Child Development

110_104 Family and Community Studies

110_106 Gerontology or Gerontological Services

110_109 Textile Science

110_999 Other Family, Consumer, or Human Service Specialty

{PRG: IF Q17=80 OR 110 SHOW 110_107}

110_107 Adult or Human Development

{PRG: IF Q17=110 OR 210 SHOW 110_108}

110_108 Social Work

{PRG: IF Q17=120 SHOW 120 _101 TO 120_999}

120_101 American Sign Language

120_102 Ancient Near Eastern and Biblical Languages

120_103 East Asian Languages

120_104 Linguistics

120_105 Modern Languages

120_106 Romance Languages

120_107 Russian or Slavic Languages

120_999 Other Foreign Language or Linguistic Specialty

{PRG: IF Q17=130 SHOW 130_101 TO 130_999}

130_101 Art, Dance, or Music Therapy

130_102 Audiology and Speech-Language Pathology or Therapy

130_103 Communication Disorders

130_104 Community Health and Preventive Medicine

130_105 Dental/Pre-Dental

130_106 Emergency Medical Services and Technology

130_107 Health Care or Medical Records Administration

130_109 Medicine/Pre-Medicine

130_110 Mental Health or Rehabilitation

130_111 Nursing/Pre-Nursing

130_112 Occupational or Rehabilitation Therapy

130_114 Pharmacy/Pre-Pharmacy

130_115 Public Health Education and Promotion

130_116 Recreation and Leisure

130_117 Veterinary/Pre-Veterinary

130_999 Other Health, Pre-Health, and Wellness Specialty

{PRG: IF Q17=110 OR 130 SHOW 130_108}

130_108 Marriage and Family Therapy

{PRG: IF Q17=140 SHOW 140_101 TO 140_999}

140_101 United States History

140_102 African History

140_103 Asian History

140_104 European History

140_105 History of the Americas (North, Central or South)

140_106 Near or Middle Eastern History

140_999 Other History Specialty

{PRG: IF Q17=150 SHOW 150_101 TO 150_999}

150_101 Correction Administration

150_102 Criminal Justice/Law Enforcement Administration

150_103 Criminology

150_104 Fire Protection and Safety Technology

150_105 Forensic Science and Technology

150_106 Law Enforcement

150_107 Law/Pre-Law Studies

150_108 Paralegal Studies

150_999 Other Law, Criminal Justice, or Safety Specialty

{PRG: IF Q17=160 SHOW 160_101 TO 160_999}

160_101 Mathematics

160_102 Statistics

160_999 Other Mathematical or Statistical Specialty

{PRG: IF Q17=170 SHOW 170_101 TO 170_999}

170_101 Environmental Science or Studies

170_102 Fishing and Fisheries Sciences and Management

170_103 Forest/Forest Resources Management

170_104 Natural Resources Management and Policy

170_105 Soil Conservation

170_106 Water, Wetlands and Marine Resources Management

170_999 Other Natural Resources and Conservation Specialty

{PRG: IF Q17=180 SHOW 180_101 TO 180_999}

180_101 Culinary Arts

180_102 Food Service and Dining Room Management

180_103 Funeral Service and Mortuary Science

180_104 Hotel and Restaurant Management

180_105 Restaurant, Culinary, and Catering Management

180_106 Travel and Tourism

180_999 Other Personal, Hospitality, or Culinary Specialty

{PRG: IF Q17=190 SHOW 190_101 TO 190_999}

190_101 Divinity or Ministry

190_102 Ethics

190_103 Philosophy

190_105 Theology

190_999 Other Philosophical, Theological, or Religious Specialty

{PRG: IF Q17=200 SHOW 200_101 TO 200_999}

200_101 Astronomy or Planetary Science

200_102 Astrophysics

200_103 Atmospheric Sciences and Meteorology

200_104 Chemistry

200_105 Geologic or Earth Science

200_106 Hydrology and Water Resources

200_107 Oceanography

200_108 Paleontology

200_109 Physics

200_999 Other Physical Science Specialty

{PRG: IF Q17=210 SHOW 210_101 TO 210_999}

210_101 American Government and Politics

210_102 Anthropology

210_103 Archeology

210_104 Cartography

210_105 Economics

210_106 Geography

210_107 International Relations, Affairs, and Development

210_108 Military Sciences or Studies

210_109 Political Science and Government

210_110 Psychology

210_111 Public Administration

210_112 Sociology

210_113 Urban Studies/Affairs

210_999 Other Social Science or Public Administration Specialty

{PRG: IF Q17= 220 SHOW 220_101 TO 220_999}

220_101 Acting or Directing

220_102 Animation or Digital Imaging

220_103 Art History, Criticism, and Conservation

220_104 Dance

220_105 Drawing or Painting

220_106 Fashion or Apparel Design

220_107 Film/Cinema Studies

220_108 Graphic Design

220_109	Music History, Literature, and Theory
220_110	Music Performance
220_111	Photography
220_113	Sculpture
220_114	Theater Crafts and Art
220_115	Voice or Opera
220_999	Other Visual or Performing Art Specialty

{PRG: IF Q17=100 OR 200 SHOW 220_112}

220_112	Playwriting or Screenwriting

[MAJOR QUESTION LOOP – ITEMS DELETED FOR BREVITY]

{JUMP TO Q27 IFQ16>1 AND Q17=9}

Q18. Was {PRG: INSERT RESPONSE FROM Q17a} your major when you started college?

1	Yes
2	No

Q19. How many classes in {PRG: INSERT RESPONSE FROM Q17a} have you completed?

3	None
1	1
2	2
3	3
4	4
5	5
6	6+

Q20. How many semesters, quarters, or terms have you been a {PRG: INSERT RESPONSE FROM Q17a} major?

4	None
1	1
2	2
3	3
4	4
5	5+

Q21. How likely is it that you will complete a degree in {PRG: INSERT RESPONSE FROM Q17a}?

1 Not at all likely
2 Somewhat likely
3 Likely
4 Very likely
5 I have already completed all requirements for this major.
6 Not sure

{PRG: IF Q18=2 SHOW Q22, OTHERWISE GO TO Q18_2}

Q22. When you first started college, did you INTEND to major in {PRG: INSERT RESPONSE FROM Q17a}?

1 Yes.
2 No, I changed from another major.
3 No, I was undecided when I began college.
4 No, I added this major in addition to another.

[MAJOR QUESTION LOOP – ITEMS DELETED FOR BREVITY]

Q24. How many semesters, quarters, or terms were you in {PRG: INSERT RESPONSE FROM Q23a} before you changed your major?

0 None
1 1
2 2
3 3
4 4
5 5+

Q25. Why did you discontinue your pursuit of {PRG: INSERT RESPONSE FROM Q23a} (Check ALL that apply)

1 My institution required choosing a major when I entered college, and I subsequently chose a different major.
2 I received information about a more interesting major.
3 It takes too long to finish a degree in this major.
4 Faculty in this major were not supportive.
5 I could not meet GPA requirements.
6 The coursework in this major was too competitive.

7 There are too few women in this field.
8 There are too few minorities in this field.
9 I received inadequate or inappropriate advising.
10 I didn't think there would be jobs for me when I graduated.
11 I didn't want this major in the first place.
12 I lost interest in the subject area of my major.
13 Other [OPEN END RESPONSE]

Q26. How many times, since your first major, did you change your major?

0 None

1 1

2 2

3 3

4 4

5 5+

{PRG: IF Q16>1 SHOW Q18_2, OTHERWISE GO TO Q27}}

Q18_2. Was {PRG: INSERT RESPONSE FROM Q17.5a} your major when you started college?

1 Yes
2 No

Q19_2. How many classes in {PRG: INSERT RESPONSE FROM Q17.5a} have you completed?

5 None

1 1
2 2
3 3
4 4
5 5
6 6+

Q20_2. How many semesters, quarters, or terms have you been a {PRG: INSERT RESPONSE FROM Q17.5a} major?

0 None

1 1

2 2

3 3

4 4

5 5

6 6+

Q21_2. How likely is it that you will complete a degree in {PRG: INSERT RESPONSE FROM Q17.5a}?

1 Not at all likely
2 Somewhat likely
3 Likely
4 Very likely
5 I have already completed all requirements for this major.
6 Not sure

{PRG: IF Q18_2=2 SHOW Q22_2, OTHERWISE GO TO Q27}

Q22_2. When you first started college, did you INTEND to major in {PRG: INSERT RESPONSE FROM Q17.5a}?

1 Yes.
2 No, I changed from another major.
3 No, I was undecided when I began college.
4 No, I added this major in addition to another.

[MAJOR QUESTION LOOP – ITEMS DELETED FOR BREVITY]

Q27. What is your cumulative GPA on a 4-point scale? (Please enter the number, (e.g., 3.6) in the space) [OPEN END RESPONSE]

Q27.5. To decrease the total number of questions we need to ask you, we would like to access some of your school records. Please know that all information collected will be held in the strictest of confidence and securely stored so that only the researchers associated with this study will be authorized to access it.

Would you be willing to allow us to access some of your records?

1 Yes

2 No

{PRG: GRID 28a-28f}

Q28. Thinking back to BEFORE YOU STARTED COLLEGE, please rate how important you imagined these aspects of college would be.

1=Not at all important	2= Somewhat important	3=Important	4=Very important

Q28a. Communicating with instructors outside class	1	2	3	4
Q28b. Getting to know other people in the residence hall	1	2	3	4
Q28c. Exploring the meaning of facts when introduced to new ideas	1	2	3	4
Q28d. Applying something you learn in one class to another	1	2	3	4
Q28e. Ability to critically analyze ideas & information	1	2	3	4
Q28f. Developing own values & ethical standards	1	2	3	4

{PRG: GRID 28g-28k}

Q28g. Openness to views that you oppose	1	2	3	4
Q28h. Learning about people from backgrounds other than your own	1	2	3	4
Q28i. Volunteering and/or performing community service	1	2	3	4
Q28j. Feeling a sense of belonging to your campus	1	2	3	4
Q28k. Doing well academically in college	1	2	3	4

{PRG: GRID 29a-29f}

Thinking back to BEFORE YOU STARTED COLLEGE, how prepared did you feel for

	Very unprepared				Very prepared	N/A
29a. Math courses?	1	2	3	4	5	99
29b. Science courses?	1	2	3	4	5	99
29c. English courses?	1	2	3	4	5	99
29d.Engineering courses?	1	2	3	4	5	99
29e.College writing courses?	1	2	3	4	5	99
29f. Social science courses (e.g., sociology, political science)?	1	2	3	4	5	99

{PRG: GRID 30a-30f}

Looking back to BEFORE YOU STARTED COLLEGE, how did you think each of the following would affect your academic success?

1= Less Helpful 2= No Effect 3= More helpful

Q30a. Your racial or ethnic background	1	2	3
Q30b. Your gender	1	2	3
Q30c. Your age	1	2	3
Q30d. Your religion	1	2	3
Q30e. Your sexual orientation	1	2	3
Q30f. Your citizenship status	1	2	3

{PRG: GRID Q31a-Q31f}

Please indicate how you felt the following activities to be during your first year in college.

	Very Difficult					Very Easy
Q31a. Seeking academic or personal help when you needed it	1	2	3	4	5	6
Q31b. Making new friends	1	2	3	4	5	6
Q31c. Communicating with instructors outside of class	1	2	3	4	5	6
Q31d. Forming study groups	1	2	3	4	5	6
Q31e. Getting along with your roommate(s)	1	2	3	4	5	6
Q31f. Getting to know other people in your residence hall	1	2	3	4	5	6

{PRG: SHOW Q32 IF Q16>0}

{PRG: GRID Q32a-Q32e}

{PRG: IF Qmajor1_Stem=1 OR Qmajor2_Stem=1 DISPLAY "For the questions below please focus on the following major: {RESTORE Q17.5 IF QMAJOR1_STEM=1} {RESTORE Q17.5A IF QMAJOR2_STEM=1 AND QMAJOR1_STEM=2}

To what extent did each of the following encourage or discourage you in your pursuit of your major?

	Greatly Discouraging				Greatly Encouraging
Q32a. Mother	1	2	3	4	5
Q32b. Father	1	2	3	4	5
Q32c. Sibling	1	2	3	4	5
Q32d. High school peers	1	2	3	4	5
Q32e. Precollege teacher	1	2	3	4	5

{PRG: GRID Q47f-Q47j}

{PRG: IF Qmajor1_Stem=1 OR Qmajor2_Stem=1 DISPLAY “For the questions below please focus on the following major: {RESTORE Q17.5 IF QMAJOR1_STEM=1} {RESTORE Q17.5A IF QMAJOR2_STEM=1 AND QMAJOR1_STEM=2}

To what extent did each of the following encourage or discourage you in your pursuit of your major?

	Greatly encouraging				Greatly Discouraging
Q32f. High school guidance counselor	1	2	3	4	5
Q32g. Someone who works in engineering, math or sciences	1	2	3	4	5
Q32h. Residence hall staff	1	2	3	4	5
Q32i. Residence hall faculty	1	2	3	4	5
Q32j. College professor (not in residence hall)	1	2	3	4	5

{PRG: GRID Q32k-Q32o}

{PRG: IF Qmajor1_Stem=1 OR Qmajor2_Stem=1 DISPLAY “For the questions below please focus on the following major: {RESTORE Q17.5 IF QMAJOR1_STEM=1} {RESTORE Q17.5A IF QMAJOR2_STEM=1 AND QMAJOR1_STEM=2}

To what extent did each of the following encourage or discourage you in your pursuit of your major?

	Greatly encouraging				Greatly Discouraging
Q32k. Graduate student or teaching assistant	1	2	3	4	5
Q32l. College peers outside your residence hall	1	2	3	4	5
Q32m. College peers in residence hall	1	2	3	4	5
Q32n. Study group	1	2	3	4	5

{PRG: GRID Q32p-Q32r}

{PRG: IF Qmajor1_Stem=1 OR Qmajor2_Stem=1 DISPLAY “For the questions below please focus on the following major: {RESTORE Q17.5 IF QMAJOR1_STEM=1} {RESTORE Q17.5A IF QMAJOR2_STEM=1 AND QMAJOR1_STEM=2}

To what extent did each of the following encourage or discourage you in your pursuit of your major?

	Greatly encouraging				Greatly Discouraging
Q32p. Number of female faculty in the major	1	2	3	4	5
Q32q. Number of men in the major	1	2	3	4	5
Q32r. Number of women in the major	1	2	3	4	5

{PRG: GRID Q33a-33f}

For the activities listed below, please indicate how often you engaged in each during the current academic year.

1= Never 2=Occasionally 3=Often 4=Very often

Q33a. Participated in an internship experience	1	2	3	4
Q33b. Been a mentor or “buddy” to another student	1	2	3	4
Q33c. Been a tutor	1	2	3	4
Q33d. Attended a lecture/presentation by a professional in my intended field	1	2	3	4
Q33e. Visited the work setting of a professional in my intended field	1	2	3	4
Q33f. Worked with outreach to high school students	1	2	3	4

{PRG: GRID Q34a-Q34e}

Q34. What is your best guess as to the chances that you will:

1= No chance 2= Very little chance 3=Some chance 4= Very good chance

Q34a. Fail one or more courses?	1	2	3	4
Q34b. Graduate with honors?	1	2	3	4
Q34c. Make at least a "B" average?	1	2	3	4
Q34d. Drop out of this college or university temporarily (excluding transferring)?	1	2	3	4
Q34e. Drop out permanently (excluding transferring)?	1	2	3	4

{PRG: GRID Q34f-Q34i}

What is your best guess as to the chances that you will

1= No chance 2= Very little chance 3=Some chance 4= Very good chance

Q34f. Do well academically?	1	2	3	4
Q34g. Be admitted to graduate school in your chosen field?	1	2	3	4
Q34h. Complete your degree?	1	2	3	4
Q34i. Complete your degree on time (i.e. 4-5 years)?	1	2	3	4

{PRG: GRID Q34j-Q34l}

What is your best guess as to the chances that you will

1= No chance 2= Very little chance 3=Some chance 4= Very good chance

Q34j. Get a good job in your field with your degree?	1	2	3	4
Q34k. Achieve success in your career?	1	2	3	4

Q34l. Combine a professional career with having a balanced personal life?	1	2	3	4

{PRG:GRID Q35a-Q35f}

How confident are you in your abilities in your:

	Not at all confident				Extremely confident	N/A
Q35a. Math courses?	1	2	3	4	5	99
Q35b. Science courses?	1	2	3	4	5	99
Q35c. English courses?	1	2	3	4	5	99
Q35d. Engineering courses?	1	2	3	4	5	99
Q35e. College writing courses?	1	2	3	4	5	99
Q35f. Social science courses (e.g. sociology, political science)?	1	2	3	4	5	99

Q36. Are you taking or have you taken college courses in biology, physics, engineering, chemistry, or mathematics?

1 Yes
2 No

{PRG: SHOW IF Q36=1; OTHERWISE GO TO Q39}

{PRG: GRID Q37a-Q37e}

Compared to WOMEN in YOUR biology, physics, chemistry, engineering, or mathematics classes, how would you complete the following:

1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree

5= Strongly agree

In these classes…

Q37a. I spend more time and effort on my classwork	1	2	3	4	5
Q37b. I better understand concepts	1	2	3	4	5
Q37c. I am better at solving problems	1	2	3	4	5
Q37d. I work better with other people	1	2	3	4	5
Q37e. I have more confidence in my abilities	1	2	3	4	5

{PRG: GRID Q38a-Q38e}

Compared to MEN in YOUR biology, physics, chemistry, engineering, or mathematics classes, how would you complete the following:

1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree

5= Strongly agree

In these classes…

Q38a. I spend more time and effort on my classwork	1	2	3	4	5
Q38b. I better understand concepts	1	2	3	4	5
Q38c. I am better at solving problems	1	2	3	4	5
Q38d. I work better with other people	1	2	3	4	5
Q38e. I have more confidence in my abilities	1	2	3	4	5

{PRG: Grid Q39a-Q39f}

During the past year, how much time did you spend during a typical week involved in the following activities?

	None	1-5hrs	6-10hrs	11-15hrs	16-20hrs	21+hrs
Q39a. Attending classes	1	2	3	4	5	6
Q39b. Studying/doing homework	1	2	3	4	5	6
Q39c. Fraternity/sorority	1	2	3	4	5	6
Q39d. Arts/music performances & activities	1	2	3	4	5	6
Q39e. Intramural or club sports	1	2	3	4	5	6
Q39f. Varsity sports	1	2	3	4	5	6

{PRG: GRID 39g-39o}

During the past year, how much time did you spend during a typical week involved in the following activities?

	None	1-5hrs	6-10hrs	11-15hrs	16-20hrs	21+hrs
Q39g. Student government	1	2	3	4	5	6
Q39h. Political or social activism	1	2	3	4	5	6
Q39i. Religious clubs and activities	1	2	3	4	5	6
Q39j. Ethnic/cross-cultural activities, clubs	1	2	3	4	5	6
Q39k. Media activities (e.g., newspaper, radio)	1	2	3	4	5	6
Q39l. Work-study or work on-campus	1	2	3	4	5	6
Q39m. Work off-campus	1	2	3	4	5	6
Q39n. Community service activity	1	2	3	4	5	6

Q39o. Other (specify) [OPEN END RESPONSE]

{PRG: IF Q39o >1 SHOW Q39o_oth}

Q39o_oth. Please specify the other activity you are involved in during a typical week.

[OPEN END]

{PRG: GRID Q40a-40e}

During interactions with OTHER STUDENTS OUTSIDE OF CLASS, how often have you done each of the following during the CURRENT school year?

1=Never 2=A few times a semester 3= A few times a month 4=Once or more a week

Q40a. Discussed something learned in class	1	2	3	4
Q40b. Discussed academic problems or concerns	1	2	3	4
Q40c. Talked about current news events	1	2	3	4
Q40d. Shared your concerns about classes and assignments	1	2	3	4
Q40e. Held discussions with students whose personal values were very different from your own	1	2	3	4

{PRG: GRID Q40f-Q40i}

During interactions with OTHER STUDENTS OUTSIDE OF CLASS, how often have you done each of the following during the CURRENT school year?

1=Never 2=A few times a semester 3= A few times a month 4=Once a week, or more

Q40f. Discussed major social issues such as	1	2	3	4

peace, human rights, and justice				
Q40g. Held discussions with students whose religious beliefs were very different from your own	1	2	3	4
Q40h. Discussed your views about multiculturalism and diversity	1	2	3	4
Q40i. Held discussions with students whose political opinions were very different from your own	1	2	3	4

{PRG: GRID Q41a-Q41d}

About how often have you done each of the following WITH AN INSTRUCTOR during the CURRENT school year?

1=Never 2=A few times a semester 3= A few times a month 4= Once a week, or more

Q41a. Asked for information related to a course you were taking	1	2	3	4
Q41b. Visited informally before or after class	1	2	3	4
Q41c. Made an appointment to meet in his/her office	1	2	3	4
Q41d. Visited informally during a social occasion (e.g. over coffee or lunch)	1	2	3	4

{PRG: GRIDQ41e-Q41h}

About how often have you done each of the following WITH AN INSTRUCTOR during the CURRENT school year?

1=Never 2=A few times a semester 3= A few times a month 4=Once or more a week

Q41e. Discussed your career plans and ambitions	1	2	3	4
Q41f. Discussed academic problems or concerns	1	2	3	4
Q41g. Discussed personal problems or concerns	1	2	3	4
Q41h. Worked on a research project	1	2	3	4

{PRG: GRID Q42a-Q42d}

Q42. During a typical week last semester/quarter, how often did you study in the following ways?

1=Never 2=Occasionally 3=Often 4=Very often

Q42a. On your own	1	2	3	4
Q42b. With one other person	1	2	3	4
Q42c. In the library or other facility on campus	1	2	3	4
Q42d. With a small group of people	1	2	3	4

{PRG: If Q42d=2, 3, 4 show Q43; otherwise go to Q44}

Q43. If you studied with other people, what was the gender composition of your study group?

1	All males
2	Mostly males
3	About half males, half females
4	Mostly females
5	All females

{PRG: GRID Q44a-Q44d}

How often do you utilize the following resources or participate in the following activities inside your residence hall?

1=Never 2= A few times a semester 3=A few times a month 4=Once a week, or more

9=Not available in my residence hall

Q44a. Computer labs	1	2	3	4	99
Q44b. Academic advisors	1	2	3	4	99
Q44c. Peer counselors	1	2	3	4	99
Q44d. Interactions with professors	1	2	3	4	99

{PRG: GRID Q44e-Q44h}

How often do you utilize the following resources or participate in the following activities inside your residence hall?

1=Never 2= A few times a semester 3=A few times a month 4= Once a week, or more

9=Not available in my residence hall

Q44e. Seminars and lectures	1	2	3	4	99
Q44f. Peer study groups	1	2	3	4	99
Q44g. Career workshops	1	2	3	4	99
Q44h. Community service projects	1	2	3	4	99

{PRG: GRID Q45a-Q45f}

Consider how well each of the following statements describes your residence hall Environment

1=Strongly disagree 2=Disagree 3=Agree 4=Strongly agree

Q45a. I find that students in my residence environment have an appreciation for people from different races or ethnic groups.	1	2	3	4

Q45b. Students in my residence environment are concerned with helping and supporting one another.	1	2	3	4
Q45c. Life in my residence environment is intellectually Stimulating.	1	2	3	4
Q45d. I would recommend this residence environment to a friend.	1	2	3	4
Q45e. I find that students in my residence environment have an appreciation for people from different religions.	1	2	3	4
Q45f. I see students with different background having a lot of interaction with one another in my residence environment.	1	2	3	4

{PRG: GRID Q45g-45k}

Consider how well each of the following statements describes your residence hall Environment

1=Strongly disagree 2=Disagree 3=Agree 4=Strongly agree

Q45g. I have enough peer support in my residence environment to do well academically	1	2	3	4
Q45h. Most students in my residence environment study a lot	1	2	3	4
Q45i. My residence environment clearly supports my academic achievement	1	2	3	4
Q45j. I think the staff in my residence environment spend a great deal of time helping students succeed academically	1	2	3	4
Q45k. I think it's easy for students to form study groups in my residence environment	1	2	3	4

Q46. Custom #1

What is the name of the residence hall you are currently living in?

[INPUT DATA THAT SCHOOLS PROVIDE]

{PRG: SHOW IF QPRE4=1}

{PRG: ALLOW MULTIPLE MENTIONS}

Q47. Please specify which living-learning program(s) you have EVER participated in while in college. (Select all that apply)

{PRG: SHOW IF QPRE4=1 OTHERWISE GO TO Q50}

Q48. Custom #3

Which living-learning program are you currently participating in? {PRG: SELECT ALL THAT APPLY}

[INPUT DATA THAT SCHOOLS PROVIDE]

{PRG: GRID Q49a-Q49e}

To what degree did each of the following influence your decision to participate in your current living-learning program?

	Did not influence my decision at all				Greatly influenced my decision
Q49a. Wanted to be part of a smaller group on campus	1	2	3	4	5

Q49b.	Wanted to make friends with other students in my field	1	2	3	4	5
Q49c.	Wanted to live in a specific residence hall	1	2	3	4	5
Q49d.	Knew someone else in the program	1	2	3	4	5
Q49e.	Was encouraged to participate in the program by my advisor	1	2	3	4	5

{PRG: GRID Q49f-Q49j}

To what degree did each of the following influence your decision to participate in your current living-learning program?

		Did not influence my decision at all				Greatly influenced my decision
Q49f.	Wanted the academic enrichment	1	2	3	4	5
Q49g.	Having access to supportive study groups	1	2	3	4	5
Q49h.	Ability to participate in special workshops in my major area	1	2	3	4	5

Q49i.	Informal help or tutoring in difficult subjects	1	2	3	4	5
Q49j.	More likely to get advice and info about possible careers in my field	1	2	3	4	5

{PRG: GRID Q50a-50e}

Please indicate the level to which you agree with the following statements

1=Strongly disagree 2=Disagree 3=Agree 4=Strongly agree

Q50a.	I frequently question or challenge professors' statements and ideas before I accept them as "right"	1	2	3	4
Q50b.	There have been times when I have disagreed with the author of a book or article that I am reading	1	2	3	4
Q50c.	I consider the best teachers to be those who can tie things learned in class to the things that are important to me in my personal life	1	2	3	4
Q50d.	I enjoy discussing issues with people who don't agree with me	1	2	3	4
Q50e.	I try to explore the meaning and interpretations of the facts when I am introduced to a new idea.	1	2	3	4

{PRG: GRID 50f-50k}

Please indicate the level to which you agree with the following statements

1=Strongly disagree 2=Disagree 3=Agree 4=Strongly agree

Q50f. A good way to develop my own opinions is to critically analyze the strengths and limitations of different points of view.	1	2	3	4
Q50g. I have become excited about a specific field or academic major as a result of taking a course in that field.	1	2	3	4
Q50h. When I discover new ways of understanding things, I feel even more motivated to learn.	1	2	3	4
Q50i. Something I learned in one class helped me understand something from another class.	1	2	3	4
Q50j. I often have discussions with other students about ideas or concepts presented in classes.	1	2	3	4
Q50k. I have applied material learned in a class to other areas in my life, such as in my job, internship, interactions with others.	1	2	3	4

{PRG: GRID Q51a-Q51e}

In thinking about how you have changed during college, to what extent do you feel you have grown in the following areas?

1=Not grown at all 2=Grown somewhat 3=Grown 4=Grown very much

Q51a. Developing your own values and ethical standards	1	2	3	4

Q51b. Understanding yourself and your abilities, interests, and personality	1	2	3	4
Q51c. Improving your ability to get along with people different than yourself	1	2	3	4
Q51d. Ability to put ideas together and to see relationships between ideas	1	2	3	4
Q51e. Ability to critically analyze ideas and information	1	2	3	4

{PRG: GRID 51f-51i}

In thinking about how you have changed during college, to what extent do you feel you have grown in the following areas?

1=Not grown at all 2=Grown somewhat 3=Grown 4=Very much grown

Q51f. Learning more about things that are new to you	1	2	3	4
Q51g. Openness to views that you oppose	1	2	3	4
Q51h. Ability to discuss controversial ideas	1	2	3	4
Q51i. Motivation to further explore ideas presented in class	1	2	3	4

{PRG: GRID Q52a-Q52f}

Now that you have been in college for a while, how confident do you feel in the following areas?

1=Not at all confident 2=Somewhat confident 3=Confident 4=Very confident

Q52a. Writing ability	1	2	3	4
Q52b. Math ability	1	2	3	4

Q52c. Working independently	1	2	3	4
Q52d. Research ability	1	2	3	4
Q52e. Computer ability	1	2	3	4
Q52f. Problem-solving ability	1	2	3	4

{PRG: GRID Q52g-Q52k}

Now that you have been in college for a while, how confident do you feel in the following areas?

1=Not at all confident 2=Somewhat confident 3=Confident 4=Very confident

Q52g. Library skills	1	2	3	4
Q52h. Expressing ideas orally	1	2	3	4
Q52i. Working as part of a team	1	2	3	4
Q52j. Reading skills	1	2	3	4
Q52k. Test-taking skills	1	2	3	4

{PRG: GRID Q53a-Q53d}

In your experiences at this college or university during the current school year, about how often did you do each of the following?

1=Never 2=Occasionally 3=Often 4=Very often

Q53a. Used a campus learning lab or center to improve study or academic skills (reading, writing, etc.)	1	2	3	4
Q53b. Dropped a class	1	2	3	4

Q53c. Did not do as well as you expected in a course	1	2	3	4
Q53d. Changed how you prepare for tests	1	2	3	4

{PRG: GRID Q53e-Q53g}

In your experiences at this college or university during the current school year, about how often did you do each of the following?

1=Never 2=Occasionally 3=Often 4=Very often

Q53e. Received career counseling	1	2	3	4
Q53f. Skipped more than two classes of the same course	1	2	3	4
Q53g. Felt overwhelmed by your coursework	1	2	3	4

{PRG: HEADER—CAMPUS LIFE}

{PRG: GRID Q54a-Q54f}

To what extent have you done the following with STUDENTS FROM A RACIAL/ETHNIC GROUP THAT IS DIFFERENT FROM YOUR OWN?

1=Not at all 2=A little 3=A lot 4=All of the time

Q54a. Studied together	1	2	3	4
Q54b. Shared a meal together	1	2	3	4
Q54c. Attended social events together	1	2	3	4
Q54d. Had intellectual discussions out of class	1	2	3	4
Q54e. Shared personal feelings and problems	1	2	3	4
Q54f. Had meaningful discussions about	1	2	3	4

race relations outside of class

{PRG: GRID Q55a-Q55c}

Please indicate the extent to which you agree or disagree with the following statements

1=Strongly Disagree 2=Disagree 3=Agree 4=Strongly Agree

9=Don't know/Never thought about this

Q55a. Since coming to college, I have learned a great deal about other racial/ethnic groups.	1	2	3	4	9
Q55b. I have gained a greater commitment to my racial/ethnic identity since coming to college.	1	2	3	4	9
Q55c. Since coming to college, I have become aware of the complexities of inter-group understanding.	1	2	3	4	9

{PRG: GRID 56a-56d}

Please indicate your agreement or disagreement with the following items

1=Strongly Agree 2= Disagree 3=Agree 4=Strongly agree

(For the items that refer to a "community" please refer to the community to which you feel the most affiliated, whatever that may be)

Q56a. It is important to me that I play an active role in my community.	1	2	3	4
Q56b. I volunteer my time to the community.	1	2	3	4
Q56c. I believe my work has a greater purpose for the larger community.	1	2	3	4
Q56d. I work with others to make my community a	1	2	3	4

better place.

{PRG: GRID Q57a-Q57d}

Please indicate the extent to which you agree or disagree with the following statements

1= Strongly disagree 2=Disagree 3=Agree 4=Strongly agree

Q57a. I feel comfortable on campus.	1	2	3	4
Q57b. If I had to do it over again, I would choose the same college or university.	1	2	3	4
Q57c. I feel that I am a member of the campus community.	1	2	3	4
Q57d. I feel a sense of belonging to the campus community.	1	2	3	4

Q58. How did your drinking habits change from high school to college?

1 I don't drink alcohol and I never have
2 I started drinking in college
3 I am drinking less in college
4 I am drinking more in college
5 I stopped drinking in college
6 No change

{PRG: IF Q58>1 SHOW Q59, OTHERWISE GO TO Q62}

Q59. Think back over last semester. During a typical two week period, how many times did you have {PRG IF Q1 = 1 RESTORE "5 OR MORE DRINKS" OTHERWISE IF Q1=2 RESTORE "4 OR MORE DRINKS" OTHERWISE RESTORE "5 OR MORE DRINKS (MEN) OR 4 OR MORE DRINKS (WOMEN)} in a row?

6 None
7 Once
8 Twice
9 3-5 times
10 6-9 times
11 10 or more times

Q60. What factors influence how much you drink on a given occasion?

(Select all that apply)

1 As a reward for working hard
2 To fit in or to feel more comfortable in social situations
3 If everyone else is drinking
4 If it is free or cheap
5 If it is a special occasion
6 If I'm having a bad day or got a bad grade
7 To get away from my problems and troubles
8 To get drunk
9 None of the above

{PRG: GRID Q61a-61f}

Since the beginning of the school year, how many times have any of the following happened to you as a result of your own alcohol use?

1= Not at all 2= Once 3=Twice or more

Q61a. I have missed or performed poorly in class.	1	2	3
Q61b. I have been confronted by a residence hall staff member.	1	2	3
Q61c. I have had a hangover.	1	2	3
Q61d. I have passed out.	1	2	3
Q61e. I have had memory loss or blackouts.	1	2	3
Q61f. I have damaged property.	1	2	3

{PRG: GRID Q61g-Q61k}

Since the beginning of the school year, how many times have any of the following happened to you as a result of your own alcohol use?

1= Not at all 2= Once 3=Twice or more

Q61g. I have received a citation or been arrested.	1	2	3
Q61h. I have regretted getting sexually involved with someone.	1	2	3

Q61i. I have been ashamed of my behavior.	1	2	3
Q61j. I have fallen behind in my studies.	1	2	3
Q61k. I have regretted losing control of my senses.	1	2	3

{PRG: GRID Q62a-Q62e}

Since the beginning of the school year, how often have you experienced any of the following because of OTHERS' drinking?

1= Not at all 2= Once 3=Twice or more

Q62a. I have been harassed, insulted, or humiliated	1	2	3
Q62b. I have had a serious argument or quarrel	1	2	3
Q62c. I have been pushed, hit, or assaulted	1	2	3
Q62d. I have had my property damaged	1	2	3

{PRG: GRID Q62f-Q62j}

Since the beginning of the school year, how often have you experienced any of the following because of OTHERS' drinking?

1= Not at all 2= Once 3=Twice or more

Q62e. I have had my studying or sleep interrupted.	1	2	3
Q62f. I have experienced an unwanted sexual advance .	1	2	3
Q62g. I have been the victim of sexual assault or date rape.	1	2	3
Q62h. I have been inconvenienced from vomit in the hallway or bathroom.	1	2	3
Q62i. I have been affected by the behavior of guests who are drinking.	1	2	3

Q63. Which of the following activities do you plan to participate in while in college that you have not participated in yet? (Select all that apply)

1	Practicum, internship, field experience, co-op experience, or clinical assignment
2	Community service, volunteer work, or service-learning
3	Research with a professor
4	Taking a leadership position
5	Study abroad
6	Independent research
7	Self-designed major
8	Culminating Senior Experience (e.g., capstone course, thesis project, comprehensive exam, etc.)
9	None of the above

Q64. Do you plan to return to the same college or university next fall?

1	Yes
2	No, I am graduating this year
3	No, I am enrolling at a different college or university
4	No, I will not be pursuing any form of education next fall
5	Undecided

Q65. Is there anything else you would like to share about your residential experiences?

[OPEN END RESPONSE]

Appendix B

2007 NSLLP Participating Institutions

Name of Institution	Carnegie Classification	Number of Living-Learning Programs
Arizona State University	Research University very high	<10
Baylor University	Research University high	<10
Bloomsburg University	Master's Larger	<10
Bowling Green State University	Research University high	10-20
Clemson University	Research University high	10-20
Colorado State University	Research University very high	10-20
Florida State University	Research University very high	<10
George Mason University	Research University high	10-20
The George Washington University	Research University high	>20
Georgia Southern University	Research University	<10
Illinois State University	Research University	10-20
Indiana University	Research University very high	>20
Louisiana State University	Research University very high	<10
Lynchburg College	Master's Small	<10
Miami University (Ohio)	Research University high	10-20
Michigan State University	Research University very high	10-20
New Mexico State University	Research University high	<10
New York University	Research University very high	>20
Northeastern University	Research University high	10-20
Northern Arizona University	Research University high	<10
Northern Illinois University	Research University high	<10
The Ohio State University	Research University very high	>20

Oregon State University	Research University very high	<10
Saint Joseph's University	Master's Larger	<10
San Jose State University	Master's Larger	<10
Seattle University	Master's Larger	10-20
Sonoma State University	Master's Larger	<10
Texas A & M University	Research University very high	<10
Texas Woman's University	Research University	10-20
University of Arizona	Research University very high	10-20
University of Colorado, Boulder	Research University very high	< 10
University of Florida	Research University very high	<10
University of Idaho	Research University high	10-20
University of Illinois, Urbana-Champaign	Research University very high	<10
University of Maryland, Baltimore County	Research University high	10-20
University of Maryland, College Park	Research University very high	10-20
University of Massachusetts, Amherst	Research University very high	<10
University of Michigan	Research University very high	<10
University of Missouri, Columbia	Research University very high	>20
University of Richmond	Baccalaureate Arts and Sciences	<10
University of San Francisco	Research University	10-20
University of South Carolina	Research University very high	10-20
University of Toledo	Research University high	<10
University of Washington	Research University very high	<10
University of Wisconsin, Madison	Research University very high	<10
University of Wisconsin, Whitewater	Master's Larger	<10
Virginia Polytechnic Institute and State	Research University very high	<10

University		
Winthrop University	Master's Larger	<10

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