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LOYOLA UNIVERSITY CHICAGO

BEYOND RETENTION:
EXPLORING MENTAL HEALTH BENEFITS OF
LIVING LEARNING PROGRAMS

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE GRADUATE SCHOOL
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

PROGRAM IN CLINICAL PSYCHOLOGY

BY

CHRISTOPHER WERNER ZADDACH

CHICAGO, IL

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ABSTRACT

The transition to a university setting can be a particularly challenging and stressful experience for a significant proportion of first-year students who may struggle to cope with dramatic changes in academic and social demands. Despite available resources and services, universities continue to report significant attrition rates and increases in severity and intensity of mental health issues among first-year students. Living learning communities (LLCs) have long been recognized as programming options with the ability to support students' academic and social adjustment. The current study aimed to expand the literature on LLCs by examining the possible mental health benefits of living learning programs for first-year students. The purpose of this study was to determine if participation in LLCs at a residential university impacts students' self-reported levels of depression, anxiety, stress, and self-esteem across their first year of college. Results indicated that, with respect to mental health outcomes, students involved in LLCs experienced limited benefits compared to traditional residential setting students and may be at a relative disadvantage as they transition into emerging adulthood. Limitations and implications of this study's findings are explored.

CHAPTER ONE

INTRODUCTION

Transition to College and Student Mental Health

For many teenagers, the transition to college represents a significant developmental milestone as youth transition from adolescence to adulthood (Arnett, 2007; Zaleski, Levey-Thors, & Schiaffino, 1998). The transition to a university setting can be a particularly challenging and stressful experience for a significant proportion of first-year students who may struggle to cope with dramatic changes in academic and social demands (Lu 1994; Shaver, Furman, & Buhrmester, 1985; Shea, 2002; Swenson, Nordstrom, & Hiester, 2008; Tinto, 1999). Thus, it is not surprising that first-year students are disproportionately more vulnerable to emotional maladjustment and mental health concerns, and are at higher risk for academic failure (DeBerard, Spielman, & Julka, 2004; Gerdes & Mallinckrodt, 1994; Higher Education Research Institute [HERI], 2011; McDonald, Pritchard, & Landrum, 2006).

The last twenty years has witnessed increased attention on college student mental health as college administrators and researchers report an apparent rise in both the onset and severity of stress-related emotional and mental health problems (Hunt & Eisenberg, 2010; McDonald et al., 2006). Specifically, among first-year students, counseling centers and administrators have reported increases in the number of students seeking counseling for depression, anxiety, academic problems, as well as more severe mental health issues

(American College Health Association-National College Health Assessment [ACHA-NCHA], 2009; Benton, Robertson, Tseng, Newton, & Benton, 2003). These increases in demands for services are generally attributed to students struggling to meet the academic and social demands associated with college, as well as universities failing to provide effective services (McDonald et al., 2006). But research also suggests that a significantly higher proportion of students present with mental health issues prior to starting college (HERI, 2011), and more students are generally entering college less prepared to tackle the academic and social demands (Levine & Cureton, 1998). In the long-run, students who find themselves struggling to successfully meet the demands of their first year are more likely to drop out of college (Mohr, Eiche, & Sedlacek, 1998; Smith, 1991). Notably, among first-year students, up to a quarter will fail to proceed to a second academic year (Hamilton & Hamilton, 2006).

To ensure the overall success of incoming students, it is essential that universities provide effective methods to support students' emotional health (McDonald et al., 2006). Unfortunately, the individual- and institutional level treatment-oriented approaches currently employed on college campuses may not be sufficient (Stone and Archer, 1990; Tyrrell, 1997). Although most universities have infrastructures in place to support students who experience emotional, personal, and mental health concerns (McDonald et al., 2006), the options for students are often limited to counseling centers or medical clinics that make referrals to other mental health professionals (Benton et al., 2003). Such resources are representative of a system of care that is primarily focused on treatment of existing problems. In fact, scholars argue that the current 'treatment oriented' approach to assisting students with emotional and mental health concerns may

be putting students and the university community at a disadvantage (McDonald et al., 2006; Shea, 2002). While counseling centers are an important resource for students struggling with difficulties, universities cannot solely rely on them for the well-being of the student population. In particular, scholars argue that counseling centers are generally not geared towards providing primary prevention of symptoms; rather they are focused primarily on assisting students who have already developed some type of problem (Brown, 2002). Moreover, not all students who require support for mental health concerns (i.e., experiencing both lower levels of distress) will seek out necessary services (Corrigan, et al., 2000; Golberstein, Gollust, & Eisenberg, 2009). Accordingly, in response to these criticisms, and the fact that universities continue to report significant rates of attrition and academic failure despite available treatment options, scholars have argued that universities need to change their approach to treating student mental health. In particular, the focus needs to shift from a reactive treatment oriented approach to a preventative system of care (McDonald et al., 2006).

Preventive mental health interventions for college students are meant to buffer students against the development of emotional problems and maladjustment (Brown, 2002; Duffy & Wong, 2003). Accordingly, preventative methods and programs should focus on factors that have been identified as predictive of maladjustment and mental health problems in college students (McDonald et al., 2006). For first-year students, many of the factors that predict maladjustment are considered integral to the transition and first year of college (e.g., moving away from home, loss of support from friends and family, increased rigor of academics). Therefore, these are considered generally difficult to prevent or avoid. Other factors can be more easily addressed through successful

preventative measures. In particular, the impact of stress associated with the above factors can (theoretically) be attenuated, addressed, and/or diminished (McDonald et al., 2006). Therefore, preventative efforts aimed at diminishing the impact of stress may help prevent a variety of negative outcomes, including emotional distress, among first-year students.

Preventive mental health programs have shown to be effective for a variety of populations and outcome variables (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2010). Prior to college, school-based prevention programs have shown to prevent conduct problems, internalizing symptoms (e.g., anxiety, depression), and substance abuse, and promote higher self-esteem, and interpersonal skills. The effectiveness of similar prevention and promotion programs aimed at college students – especially incoming first-year students- is still unclear.

Interventions aimed to assist first-year students with the transition and adjustment to college primarily focus on common problem areas, including substance use (Carey, Scott-Sheldon, Carey, & DeMartini, 2007; Pederson, Blumenthal, Dever, & McCrady, 2006) and sexual health and relationship violence (Anderson & Whiston, 2005). First-year seminars and orientation programs are also popular options for assisting students with the academic and social demands of their first year (Phinney, 2011; Upcraft, 1989). Generally such programs show some promise related to retention rates (Cone, 1991; Jamelske, 2009), increased familiarity with resources and services (Fidler & Hunter, 1989), GPA (Hyers & Joslin, 1998; Maisto & Tammi, 1991), and improved study skills (Wilkie & Kuckuck, 1989). Commonly cited limitations related to interventions for first-year students include the reduced scale of available programs (e.g., either focusing solely

on academic or social outcomes) and the difficulties with reaching the larger student population. Moreover, prevention programs often face serious roadblocks related to limited resources (i.e., funding, staffing) and disinterested administrators, who are often more focused on academic rather than mental health outcomes (McDonald et al., 2006). Thus, it may be important to design programs that have an academic focus (which is central to the college mission), can easily be integrated into the existing structure and curriculum, and can support a variety of students' needs including social and emotional. These types of programs might not be mental health programs per se, but could buffer some of the challenges of transitioning to college and hence improve students' emotional and personal adjustment in response to various stressors.

Living Learning Communities (LLCs) are university-based programs intended to bridge students' classroom academics with out-of-classroom residential and social opportunities, to allow for a more "integrated and mutually supportive" learning experience (Kuh, 1996, p.141). Students in LLCs are required to reside and take several courses together as well as participate in out-of-class programs that increase students and student-faculty interactions. LLCs are assumed to primarily benefit first-year students' academic achievement and social engagement (Inkelas, Vogt, Longerbeam, Owen, & Johnson, 2006). Through shared residential and academic experiences, LLCs are theorized to promote an overall environment conducive to building a strong, cohesive peer support system, which is not supported by stand-alone prevention programs.

Overall, the structure and programs offered by LLCs are expected to provide first-year students with abundant opportunities to adjust successfully across academic and social domains. Accordingly, outcome research on LLCs has focused primarily on

the direct academic and social benefits of these programs (Inkelas et al., 2006).

Generally, students in LLC programs demonstrate higher academic achievement and retention, as well as higher levels of overall academic engagement and involvement (Inkelas et al., 2006). Though participation in LLCs may provide students with direct academic and social benefits (Inkelas, Soldner, Longersbeam, & Leonard, 2008; Inkelas et al., 2006), it is still unclear whether they provide students with direct or indirect benefits related to personal emotional well-being (Inkelas, 2011). LLCs' promotion of students' academic and social adjustment may indirectly support first-year students' emotional wellbeing. In fact, related research has long linked individual components built into LLCs, including mentoring relationships, student-faculty support, academic advising, academic support, to positive mental health outcomes (House, 1981; Kramer & Spencer, 1989; McDonald et al., 2006; Pascarella & Terenzini, 1991; Sarason, Shearin, Piece, & Sarason, 1987; Tinto, 1993).

To date, only a single (Brower et al., 2011) study has investigated whether participation in LLCs promotes healthier emotional or personal development in first-year students. Thus, the proposed research study attempts to expand the literature on whether participation in living learning programs relates to students' emotional and psychosocial adjustment over the course of their first year at college. The current study also aims to highlight the benefits of providing students (and the university at large) with a learning environment that supports the development of the whole student. In other words, as soon as students begin their education, everyone who is involved in their learning, including peers, faculty, and staff, becomes part of a learning community that support students' academic, social, and emotional development. Accordingly, the present research study

also aims to examine how students' level of engagement in LLC programs relates to positive student adjustment across social, academic, and emotional domains. Findings from the proposed study will provide universities with invaluable information regarding how specific programs could impact the domain of student psychological adjustment beyond academic and social outcomes.

CHAPTER TWO

LITERATURE REVIEW

Transition to College

The transition from high school to college represents a significant milestone in youths' personal, emotional, and social development (Kadison & DiGeronimo, 2004). For many, it involves a transition from the dependence and security of home and family to increased independence and responsibility in a new environment (Kadison & DiGeronimo, 2004; Kramer & Spencer, 1989; McDonald et al., 2006). Before starting college, youths' developing identity and sense of self is primarily formed within the context of their family and social experiences and, by the time they begin college, many present with a strong sense of self and purpose (Kadison & DiGeronimo, 2004). As students begin college, they are presented with a multitude of new challenges, demands, and avenues to explore their world and their identity. This process is considered developmentally normative for those who attend college, and the majority of students meet the demands and challenges with few setbacks (Arnett, 2007). Yet for many students, the transition to college, and particularly the first year can be especially challenging (Kadison & DiGeronimo, 2004; McDonald et al., 2006; Kitzrow, 2003). In fact, the transition to college provides youths with a number of growth opportunities, as well as risks, which can have both short and long-term effects on their personal and emotional well-being. (Schulenberg, Maggs, & Hurrelmann, 1997).

Emerging Adulthood

The transition to college generally coincides with the beginning of a significant developmental stage in youths' lives: emerging adulthood (Arnett, 2000; 2007). Arnett described the time period between ages 18-25 as one of instability and exploration (2000). This developmental period is considered empirically and theoretically distinct from both adolescence and adulthood (Arnett, 2000). In terms of security and constancy, this stage is viewed as extremely volatile, with youth often experiencing increased independence and responsibility for the first time. Emerging adulthood is also marked by increased instability and insecurity as youths find themselves making multiple life changes and transitions over the course of just a few years (Arnett, 2000, Levinson, 1978).

While these developmental tasks make this time period “an especially full and intense time of life for many people” (Arnett, 2000, p. 474), exploration in identity and adult roles can also be unpleasant and stressful. Engaged in exploration, emerging adults often face rejection, failure, and disappointment as they are forced to pursue goals and options “without the daily companionship [and support] of their family of origin [and previously established peer groups] (Arnett, 2000, Morch, 1995).

Based on Arnett's conceptualization of this period in youths lives, it stands that students' move to college coincides with their transition into emerging adulthood. This transition marks drastic changes in social and academic roles. For instance, with the move to college, students often leave established support networks (i.e. family, peers) and are required to navigate and establish new relationships and sources of support. Simultaneously, academic explorations, choices, requirements, and expectations increase

as well (Frazier & Schauben, 1994). With the physical move also come changes in the degree to which youth are supervised as youths day-to-day lives are no longer monitored by caregivers and they become increasingly responsible for time management, finances, and self-care (Arnett, 2000; White, McMorris, Catalano, Fleming, Haggerty, & Abbott, 2006).

Indeed, research suggests that academic and social roles present as the most challenging demands to maneuver (Heins, Fahey & Leiden, 1984). Moreover, Schulenberg and Zarrett (2006) argued that, for some emerging adults, transitions and changes and the decline in structure and support that often accompanies post high-school life could be debilitating. The transition can overwhelm one's coping capacities or create a mismatch between individual needs and what the context can offer. As such, the possibility increases for the appearance and development of mental health issues in response to stressors and demands (Schulenberg, & Zarrett, 2006).

Academic Demands

Regardless of students' pre-college academic characteristics and abilities, the first year of college will inevitably require students to adjust to new academic demands. First-year students must quickly adjust to more rigorous work (Frazier & Schauben, 1994), increased time pressures, (Heins et al, 1984, Frazer and Kohn, 1986), internal and external expectations for achievement and academic success (Kadison and DiGeronimo, 2004), and managing extracurricular demands that interfere with their academics (Landow, 2007). Incoming students may also struggle with feelings of inadequacy and inferiority because of discrepancies between high school and college performance and struggle with meeting self-imposed expectations (Landow, 2007). As the work load

increases over the course of the semester, first-year students may experience difficulty managing academic stress and social demands (Landow, 2007; Murphy & Archer, 1996). Many first-year students also become disillusioned with the idea of college over the course of the first semester. In fact, the “freshman myth” refers to the fact that the average entering first-year student will have expectations concerning college that are generally more positive than their actual experience in college (Baker et al., 1985). The most significant drop in expectations regarding both academic and non-academic aspects of the college occurs within the first few months of the first year (Baker et al., 1985). Researchers argue that student’s disillusionment with the academic aspects of college stems from a general inaccurate perception of what is likely to happen during their first year. Studies also reveal, that in terms of academic demands, students are entering college less prepared and they require more remedial and developmental education (Levine & Cureton, 1998). Moreover, studies have shown that a large proportion of today’s students are generally unaware of how to effectively manage their time or how to maneuver in an unstructured learning environment (Gibney, Moore, Murphy, & O’Sullivan, 2011).

Impact of academic demands. Accordingly, research findings support the notion that academic demands are considered by first-year students as among the most significant stressors they experience in college (Schafer, 1996). First-year students consistently report that the most stressful daily hassles in their lives are primarily related to school (i.e., writing term papers, taking tests, constant pressures of studying) (Bouteyre, Maurel, & Bernaud, 2007; Schafer, 1996). Moreover, compared to juniors and seniors, first-year students are more likely to negatively react to these types of stressors

(Misra & McKean, 2000). Their belief that they can perform and meet academic demands are indirectly related to increased level of stress (Hirsh & Ellis, 1996), and when academic stress is perceived negatively by first-year students, they are more likely to experience both physiological and psychological impairment (Murphy & Archer, 1996). In fact, over time, continuous exposure to academic stressors (especially if students do not have resources to cope or effectively meet the demands) has been linked in first-year students to elevated levels of anxiety, and depression (Bouteyre et al., 2007; Misra & McKean, 2000). Moreover, among first-year students academic related stress has also been linked to more frequent incidents of health concerns and illness, including difficulty sleeping and substance use (Lesko & Summerfield, 1989; Sax, 1997). Overall, it is clear that academic demands and stressors can have a significant impact on first-year students' adjustment and success over the course of the transition and first year of college. But, the fact is that first-year students will also be confronted with other demands over the course of their first year, namely, social demands.

Social Demands

The transition to college and the first year also involves significant changes in relationships, personal connections, and sources of social support. For a significant proportion of incoming students, the transition to college means moving away from their families and well-established social support networks of siblings, peers, and mentors (Kadison & DiGeronimo, 2004; Murphy & Archer, 1996). First-year students are quickly confronted with having to adapt to new social environments and demands with limited support and contact from family and peers (McDonald et al., 2006). They have to live with other students who present with different lifestyles, backgrounds, cultures, races,

and personal values. First-year students may come to find that their new role models may clash with their personal expectations and past experiences (Kadison & DiGeronimo, 2004). And while this should be an opportunity for growth, it can also be a source of distress and anxiety (Howard, Schiraldi, Pineda, & Campanella, 2006). Difficulty in this area makes the development of an autonomous adult identity a difficult challenge. Societally, first-year students are expected to become more autonomous and independent, but many students find it difficult to develop new connections and end up finding themselves struggling to find new sources of support, comfort, and guidance (Kadison & DiGeronimo, 2004). First-year students may also find it difficult to separate from the comfort of their home base and rely exclusively on these new relationships; indeed, some may fail to develop new and more adaptive sources of support to help them cope with the multitude of challenges and demands of college (Kadison & DiGeronimo, 2004).

Other students may struggle to adjust to living with others (Howard et al., 2006). For many, the first year at college represents the first time they have had to live with someone else, as well as live with people who do not share similar backgrounds (Howe & Strauss, 2003). Students may experience problems with roommates and struggle with managing issues in an effective manner (Howard et al., 2006). One of their tasks for healthy development and adjustment involves learning how to get along with others, problem-solve, and live in new surroundings independently.

Finally, many first-year students enter college with certain assumptions as to what college social life will entail, a time of rebellion, testing boundaries, and experimentation (McDonald et al., 2006). This view of college life often includes engaging in risky behaviors, including increased drug and alcohol use and unprotected sexual activity.

While these behaviors may appear to be an integral part of college life, they are also considered a source of stress with possible long-term negative effects in health and personal-emotional development.

Impact of social demands. As is the case with academic stressors (Bouteyre, Maurel, & Bernaud, 2007; Lesko & Summerfield, 1989; Misra & McKean, 2000; Sax, 1997), difficulties with adjusting to the social demands of college can be linked to increased experiences of physiological and psychological distress in first-year students (Howard et al., 2006, Pressman, Cohen, Miller, Rabin, Barker, & Treanor, 2005). The importance of peer support and students' social integration into the social and academic 'fabric' of an university has been well documented (Astin, 1993; Pascarella & Terenzini, 1991). Feldman and Newcomb (1969; as cited by Howard et al., 2006) notes that social relationships in the first year of college has the potential to (1) provide or withhold emotional support; (2) support or impede student's academic achievement; (3) give students practice in getting along with others; and (4) help students achieve independence from home and family. If students fail to develop adaptive social connections, or if they do not feel socially integrated into the various realms of college life, they are less likely to experience any of the benefits noted above (Feldman & Newcomb, 1969) and more likely to experience higher levels of psychological and physiological distress, including less positive affect, poor health habits, loneliness, anxiety, anger, depression, and poor self-esteem (Baumeister & Leary, 1995; Lee & Robbins, 1998; Pressman et al., 2005). The increased likelihood of mental health issues related to relationship stressors underscores the importance of assisting students with developing a certain level of social connectedness and helping them integrate into both the academic and social components

of college life. Accordingly, any program intended to support students' transition to college and prevent psychological concerns, should not only address academic stressors, but also relationship stressors (Howard et al., 2006; McDonald et al., 2006).

Student Mental Health in the First Year

All first-year students will, to some extent, experience stress related to academic (e.g., examinations, workload, pressure to succeed), and social demands (e.g., developing and maintaining interpersonal relationships, lack of time with friends and family) (Abouserie, 1994; Frazer & Kohn, 1986; Heins, Fahey, & Leiden, 1984; Howard et al., 2006; Pratt et al., 2000). If unable to manage the demands and developmental tasks associated with this period in their lives, students are at risk for maladjustment or developing psychological/emotional problems (National Mental Health Association [NMHA], 2011). In the long run, first-year students who experience emotional problems and related difficulties, due to increased stressors, are at higher risk for academic failure (Tinto, 1998).

Indeed, reports suggest that the mental health of college students is a growing concern on college campuses (Benton et al., 2003, Eisenberg, Golberstein, & Gollust, 2007; Gallagher, 2006; Hunt & Eisenberg, 2010). For example, the Healthy Campus 2010 report (American College Health Association, 2002) cites a variety of high priority health issues for college students that administrators need to address. These health issues include student mental health (i.e., substance abuse, stress, depression, anxiety), pressure to achieve, low self-esteem, lack of social support, sexual health, and physical health (ACHA, 2002). Sax (1997) highlighted similar health concerns as requiring the most

immediate attention because of the serious repercussions these issues can possibly have for individual students and the university community at large.

This increased focus on student mental and emotional health stems from studies consistently reporting that today's college students are being diagnosed with more severe psychological issues than earlier generations (American College Health Association [ACHA], 2009). For example, between 30% (Higher Education Research Institute (HERI), 2011; Haas et al., 2003) and 76% (Shea, 2002) of first-year students reported feeling overwhelmed by the demands of college and 22% reported feeling so depressed that they could not function (Shea, 2002). These numbers are comparably higher than what was observed twenty years ago when 16% of first-year students reported feeling overwhelmed by the demands of college (Shea, 2002). In addition, other studies suggest that a significant proportion of students experience an assortment of mental health issues once they begin college. For example Cooke, Bewick, Barkham, Bradley, and Audin (2006), found that across their first year at college, students repeatedly experienced greater psychological strain compared to their pre-college level of psychological well-being. Moreover, psychological well-being decreased across the academic year, with anxiety and depression being experienced by the majority of their first-year sample (Cooke et al., 2006).

Also, in 2010, the Cooperative Institutional Research Program (CIRP) at the Higher Education Research Institute at UCLA (Ruiz, Sharkness, Kelly, DeAngelo, & Pryor, 2010), released their findings from the 'Your First College Year' study on the experiences of first-year students across the United States. The study assessed three types of psychological health: emotional self-confidence, depression, and stress. The data

revealed that 40% of first-year students reported frequently feeling overwhelmed by all they had to do, 11% reported that they frequently felt depressed, and 10% reported feeling frequently lonely or homesick (Ruiz et al., 2010). Past CIRP studies have revealed that, across administrations, student emotional health has dropped steadily. In 1997, Sax (1997) found that students' emotional self-confidence dropped from 60% to 53% between 1985 and 1995, reports of depression rose from 8% to 10% over the same period, and reports of feeling overwhelmed rose from 16% to 25% (Sax, 1997). Focusing on the most recent findings (Ruiz et al., 2010), data reveal that students' emotional health continues to be of concern despite the implementation of various interventions and mental health services.

The apparent rise in severity of mental health needs among college students is also repeatedly reflected in data and reports provided by college counseling center directors (McDonald et al., 2006; Gallagher, 2006). In the past two decades, counseling center directors have reported both significant increases in demand for services as well as increases in the severity of caseloads (Benton et al., 2003; Gallagher, 2006; Hunt & Eisenberg, 2010). Data collected in 2004 from over 300 college and university counseling centers indicate that 85.8% of directors believe that in recent years there has been an increase in the number of center clients with severe psychological problems, and 90.6% believe that students with significant psychological disorders are a growing concern on campus (Gallagher, 2004). In 2008, the same survey revealed that 95% of directors of campus counseling center reported a significant increase in 'severe' psychological problems among students (Gallagher, 2008). Moreover, counseling centers also reported

a steady increase in the demand for psychological services in the past thirteen years (Benton et al., 2003).

Apparent Increase in Rates of Mental Health Issues

The apparent rise in severity and incidence of students presenting with mental health issues has become a significant concern for college mental health providers and administrators (Kitzrow, 2003; Shea, 2002). While the data would suggest that, over the past thirty years, there has been a steady increase in the severity of mental health issues on college campuses, arguments have been raised to explain and challenge the validity of these observations. For example, Kitzrow (2003) argued that the observed peak of mental health issues during the first year may not solely be explained by college-based factors, but rather by the fact that many psychological disorders such as major depression, bipolar disorder, and schizophrenia first begin to appear around this developmental period. While this may explain high rates of mental health issues during this particular time period, it does not explain why college administrators have witnessed a general increase in the presence and severity of mental health issues.

In response to observations that the severity of mental health issues appear to have increased in the past decades (Gallagher et al., 2001, HERI, 2011), authors conversely argue that these figures may actually suggest that students are receiving appropriate services prior to college allowing for further academic success. Kitzrow (2003) also noted that students are more likely to enter post-secondary education already taking prescription medication to address mental health concerns. In 2004, for example, the American College Health Association reported a 38% increase in the number of students taking medication for depression, which is a significant increase over the past 25

years. More generally, it appears that colleges are now admitting a subset of students who may not have been able to attend college in the past (Berger, 2002) and may subsequently struggle to meet the demands of college (Haas et al, 2003; Shea, 2002). This argument is supported by changes in laws requiring colleges to make accommodations to become more accessible to students with mental disabilities (e.g. modifications to academic/course requirements, extensive college services, test-taking facilitation, assessment to determine functional level, and accommodation for participation in co-curricular activities directly related to educational goals; (Haas et al., 2003)

Increases in perceived severity of psychopathology across college students have also been attributed to the possibility that mental health services have become more readily available and accessible to students (Kitzrow, 2003). With the increase in available services and the quality of care that can be provided on college campuses, it may be that students have become more open to seeking services as needed. In addition, a reduction in the stigma associated with mental health problems and help-seeking may have contributed to an increase in self-referrals for services (Eisenberg, Downs, Golberstein, & Zivin, 2009).

Researchers have also argued that the apparent increase in the severity of students' presenting psychological problems may not be as clear-cut as previously noted. In particular, Kettmann, Schoen, Moel, Cochran, Greenberg, & Corkery (2007) and Sharkin (1997) question whether increases in practitioner-reported severity and duration of mental health problems are accurate. For example, Kettmann, et al. (2007) argued that studies have focused solely on therapist or client perceptions rather than on objective data. Despite arguments raised by Kettmann et al. (2007), methodologically sound studies

and surveys spanning longer time periods (e.g. 10 years or longer) continue to suggest that college mental health practitioners are indeed increasingly confronted with student populations presenting with more severe mental health issues (Benton, Robertson, Tseng, Newton, & Benton, 2003; HERI, 2010). Consequently, universities are required to respond to meet the changing needs of the student population, specifically, incoming first-year students.

University Response to Mental Health Needs of First-Year Students

The changing landscape of mental health needs of first-year students poses significant challenges for faculty, staff, and institutions. Relying solely on counseling centers to assist students has proven to no longer be a viable and sufficient option (Kitzrow, 2003; McDonald et al., 2006). At the same time, administrators continue to debate how much responsibility schools should be taking for the emotional health of their students (Kadison & DiGeronimo, 2004). Often colleges and universities are primarily considered institutions of learning responsible for assisting students meet their academic and career goals, and not treatment resources for students with mental health issues (McDonald et al., 2006). Scholars and authors have long noted that institutions place too little focus on students' mental health and emotional wellbeing (Landow et al., 2006; Shea, 2002). Accordingly, the overall approach and attitude towards student mental health is one of treating existing problems rather than preventing them. In fact, the majority of mental health resources on university campuses are set up to provide services to individual students who have already developed some level of distress, discomfort, or maladjustment (McDonald, et al., 2006). As such, this approach inadvertently places much of the responsibility on students to identify and solve problems that have impacted

them. While, in many cases, this model and approach may be appropriate, the emphasis on treatment comes at the expense of preventative measures and services. Moreover, for first year students, it comes at the expense of supporting and promoting adaptive behaviors and skills that can support long-term success.

Counseling centers. Counseling centers have long been considered the main avenue for students to address psychological and emotional difficulties (Benton, Robertson, Tseng, Newton, & Benton, 2003). Over the years, they have evolved to become the primary resource to address the psychological problems most often experienced by college students, including stress, depression, isolation, eating disorders, suicidal feelings, and personality problems that interfere with social and academic adjustment (McDonald et al., 2006). Although college counseling centers are an important resource which provide an invaluable service, critics argue that continuing to rely solely on these centers to promote and maintain students' mental health is no longer a viable option for the student community, administrators, and college mental health providers. The main issues and limitations lie in the way counseling centers are expected to assist students. The role of counseling centers is usually not to provide students with primary prevention; rather, services are generally focused on providing students with services aimed at tackling mental health issues that have already arisen and have produced some form of distress. This approach creates an atmosphere of care which requires students to be responsible for seeking out help when experiencing mental health issues or maladjustment. Unfortunately, not all students who experience mental health issues or emotional distress will seek treatment. This may be particularly true for first-year students because they have not had to be self-reliant and responsible for their well-

being in the past. For example, Garlow and colleagues (2008) found that the majority of students with moderately severe to severe depression (85%) or current suicidal ideation (84%) were not receiving treatment. Moreover, looking at students across the academic year, Zivin and colleagues found that for students who presented with mental health problems at baseline and follow-up, fewer than half had received any form of treatment between time points (Zivin, Eisenber, Gollust, & Golberstein, 2009).

On a more administrative level, college counseling centers also report that limited staffing, poor resources, budget cuts, and institutional attitudes toward student mental health issues have made it increasingly difficult to meet the needs of an ever-changing student population (Shea, 2002). Shockingly, 38% of colleges do not provide their students with psychiatric or mental health services (Gallagher, 2001). On college campuses with mental health services, the increase in demand has led to a significant reduction in the number of sessions and drastic changes in the focus of services (Shea, 2002). A direct effect of limited resources is that colleges are putting limited effort to seek out students at risk who have not sought help voluntarily (Hass, et al., 2003).

High profile incidents on college campuses (e.g. MIT, University of Virginia), data suggesting increases in levels of student distress, and significant ongoing attrition rates, especially among first-year students, have prompted universities to adopt a different approach to helping students and promoting overall well-being. Scholars argue for changing or “fixing” institutions so that they can become environments that support the existence of happy, healthy, and educationally committed students (Tinto, 1999; Brown, 2002; Kitzrow, 2003). In particular, they argue for the development of a comprehensive set of integrated campus services that support and promote healthy

student development (Kitzrow, 2003). Moreover, scholars argue that administrators need to take a more of a preventive approach to helping students. In particular, institutions should invest more resources into developing and maintaining effective preventive mental health interventions and programs. Such programs would require the active support of top level administrators who are ready to make student mental health needs a top priority (Kitzrow, 2003). But even more important is the need for the realization that students' emotional well-being is the responsibility of everyone involved at an institution, including staff, faculty, administrators, and the students themselves (Kadison & DiGeronimo, 2004). Therefore, effective preventive or supportive interventions should not only rely on standalone programs or services but, rather, should include different programs and services aimed at addressing a variety of domains relevant to student development. Universities do indeed offer a variety of options for supporting students as they transition into their new environment, and many demonstrate positive outcomes. It is our argument, that many of these programs can be combined so as to offer student not only academic support and services but also services that buffer against the development of emotional health problems. The following sections highlight common programming options offered to incoming first-year students to assist them in their first year. The review will set up the argument for combining the various programming options into a comprehensive programming option that could support student's academic, social, and emotional success in the first year at college.

University-based preventative programs. For the last 40 years, various iterations of the ecological perspective have been used to develop programming options and interventions to support first-year students' development across the academic and

social domains (Banning 1979; Upcraft, Gardner, & Associates, 1989.). The majority of these options were developed and implemented with the understanding that incoming first-year students may students require increased support as they experienced a major “ecological transition” (Bronfenbrenner, 1979). Bronfenbrenner (1979) argued that persons undergo an ecological transition whenever their position in the ecological environment is altered via a change in role, setting, or both. Any ecological transition can be very stressful and an unsuccessful transition is more likely to lead to stress and overall failure.

To support student success across this transition, one must understand how the collegiate ecological environment can influence and impact student development. By accomplishing this, institutions will be better able to assure more positive academic, social, and mental health outcomes for first-year students. For example, in her review of research on the influence of environmental impact, Upcraft (1984) found that several environmental conditions have a positive influence on student success. This included interaction among students (e.g., collaborative learning), strong faculty-student contact (e.g. academic advising; mentoring relationships), availability of on-campus housing, and extensive extracurricular activity options (Upcraft, 1984). Based on these findings and Bronfenbrenner’s ecological transition theory (1979), interventions have been developed and implemented to assist students’ successful adjustment by focusing on strengthening environmental conditions. On the majority of university campuses, these interventions are mainly provided to assist with and increase students’ academic achievement and retention. Research though, has demonstrated that a variety of these programming options can also provide positive mental health outcomes (e.g., peer mentoring programs;

Sarason, Shearin, Piece, & Sarason, 1987). Furthermore, a review of the individual program options will highlight how combining these programs may be most beneficial for first-year students' academic, social, and emotional health and success.

Orientation programs. The most common and basic programming/assistance options for incoming students on college campuses are orientation programs. Orientation programs include any effort to help first-year students manage the transition from their previous environment to their new collegiate environment and therefore enhance their success (Upcraft et al., 1984). These programs vary greatly across institutions in terms of scope, purpose, length, timing, and content. But, at its most basic, orientation programs provide first-year students with information about facilities, programs, services, and allow students to meet faculty, staff, and other students (Upcraft, 1989). Orientation programs have a variety of goals. The most important goal of orientation programs is to assist first-year students in succeeding academically by familiarizing students with academic requirements and the demands in and outside the classroom. Orientation programs are also intended to help students with their personal development by familiarizing them with the developmental challenges they may encounter and the available university services to help them.

Academic advising and mentoring programs. As previously noted, academic demands are a main source of stress for the majority of incoming first-year students (Kadison & DiGeronimo, 2004). Most first-year students are generally unfamiliar with college resources, their major, the faculty, the course work, academic expectations, and progress requirements in their academic field (Kramer & Spencer, 1989; Upcraft et al., 1989). To begin helping students confront and manage some of these demands first-year

students are assigned academic advisors. Academic advisors are assigned to individual students to provide first-year students assistance in course scheduling and selection, identify academic support needs, and familiarize them with academic departments and faculty (Kramer & Spencer, 1989). Students' interaction with academic advisors provides them with an opportunity to develop some form of attachment to a person in the institution and therefore increasing feelings of belonging (Gilbreath, Kim, & Nichols, 2009; Williams, 1986). Often though, the interaction between academic advisors and individual students is limited both in quality and quantity (Thomas, Murrell, & Chickering, 1984). Therefore, another way universities have come to increase the possibility of students feeling attached to some person in the institution is through mentoring programs (Thomas, Murrell, & Chickering, 1984).

The role of mentors is defined as a one-to-one learning relationship between an older person (e.g., student, faculty, or staff) and a younger person that is based on modeling behavior and extended discussion (Phinney, Campos, Kallemeyn, & Kim, 2011). The mentoring relationship is more individualized, both formal and more informal, all of which gives the contact between mentor and student greater significance and depth (Upcraft et al., 1989). Mentors play many roles including information source, friend, attentive listener to problems, academic advisor, activities advisor, and problem solver (Cosgrove, 1986). Mentoring of first-year students has picked up in popularity in the past decades starting with early reports in the 1980's recommending increased faculty involvement with first-year students and out-of-class activities (Upcraft et al., 1989). In fact, increased interaction with staff, faculty, and mentor-like figures, are viewed as vital components for increasing first-year student involvement and success across various

domains (Pascarella & Terenzini, 1991). Mentoring programs and relationships may be particularly suited for incoming freshmen because mentors can generally provide increased personal support that addresses psychosocial, as well as academic needs (Phinney et al., 2011; Swail, Cabrera, & Lee, 2004)

Research on the effectiveness of mentoring programs may be hampered by the fact that, across institutions, mentoring programs vary greatly in terms of who is the mentor (faculty vs. upperclass student), as well as the program's scope, duration, and activities involved (DuBois & Karcher, 2005). Nonetheless, research that has focused on the processes that explain the effects of mentoring relationships indicate that both the quality and quantity of time spent with a mentor can greatly influence outcomes (Barrera & Bonds, 2005; DuBois & Neville, 1997).

In college settings, mentoring programs have traditionally utilized faculty members, advisors, and counselors as mentors (Phinney et al., 2011). Peer mentoring is a rarely explored alternative that utilizes older peers who have themselves recently experienced being a new college student. Proponents of peer mentoring programs argue that peer mentors are better able to relate to and form relationships with students compared to faculty or academic advisors (Phinney et al., 2011; DuBois & Karcher, 2005). Peer mentoring is also considered to possess a more holistic focus than tutoring or academic advising since the peer mentor is more likely to provide more social and emotional support to a mentee in addition to academic assistance (DuBois & Karcher, 2005). Contact with peer mentors, compared to academic advisors or tutors, also occurs in a wider range of contexts, allowing for more frequent and deeper connections (Upcraft et al., 1989). Findings on the impact of mentoring relationships for first-year students

indicate that mentored students experience a variety of benefits not seen in non-mentored students. In particular, findings suggest both academic and mental health benefits (Phinney et al., 2011). For example, focusing on at-risk students, Phinney and colleagues (2011) found that mentored first-year students decreased in both depression and stress across the academic year and demonstrated increased levels of academic motivation compared to non-mentored controls. Moreover, mentored students consistently report feeling more connected to the university community, a factor associated with improved mental health outcomes (Phinney et al., 2011; Soucy & Larose, 2000).

While some studies found that mentoring programs (especially when faculty were mentors) were related to better academic outcomes and increased rates of retention (Campbell & Campbell, 1997), programs that use peers as mentors do not show positive academic outcomes as consistently (Phinney, et al., 2011). In fact, authors argue that peer-based mentoring relationships are more likely to provide psychosocial than academic benefits since peers are less likely to be viewed as a source of academic support by first-year students (Phinney et al., 2011). Therefore, authors argue that to support first-year students' overall success and development, mentoring options should only constitute one component of any intervention (McDonal et al., 2006; Upcraft et al., 1989). Other components should focus on residential and extracurricular activities intended to support both academic and social engagement in and out of the classroom setting (McDonald et al., 2006).

On-campus residential halls. Residence halls and campus wide activities are further avenues and means by which universities can assist first-year students' successful adjustment and transition to college (McDonald, 2006; Upcraft, 1989). Overall,

residential halls should be viewed as more than just a simple housing option, as they have the potential to enhance student development across social, academic, and emotional domains. Research has clearly established a link between living on campus and increased learning and personal development, academic success, satisfaction with relationships/interactions, and social life (Astin, 1973; 1977; Chickering, 1974). But the manner in which residential halls influence student development and success is quite complex. Understanding how residential halls can impact student success is crucial for any intervention intended to assist student adjustment.

The majority of authors argue that students' interaction with each other and their living environment explain the impact of residential halls on their academic, social, and emotional well-being (Mable, Terry, & Duvall, 1980; Upcraft et al., 1989). Peer groups develop easily within residential halls due to residents' collective attitudes, values, norms, needs, and experiences as they maneuver through their first year (Upcraft et al., 1989). Students also have a significant amount of influence over each other and peer groups can help first-year students achieve independence from home and family, support or hamper educational goals, provide emotional support, and change or reinforce personal values. Finally, and possibly most importantly, peer groups have the power of developing social norms and guidelines which can have both positive and negative effects on students' academic and personal lives (Upcraft et al., 1989). This is especially apparent in residential halls.

For first-year students, friendships that develop within residence halls, especially between roommates, can have the potential to influence individuals' behaviors, attitudes, and values. Accordingly, adjustment problems related to mismatches in relationships can

have significant consequences on students' well-being. Research suggests that, at one end of the spectrum, peer-relationships in residential settings have the potential to challenge individuals' confidence and self-understanding, force individuals to be more tolerant and accepting, and affect each other's attitudes and behaviors across domains (Upcraft, 1985). On the other end of the spectrum, first-year students can influence each other in negative ways (McCabe, 1997; Upcraft et al., 1989). For example, peers can negatively influence each other's health choices (e.g., reinforce risky behaviors), study habits, and academic pursuits. Moreover, when friendships fail to develop, the results can be destructive both academically and emotionally (Upcraft, et al., 1989).

Universities have the ability to structure residence-hall environments in ways that reinforce positive group influences and promote healthy development. Options include strategically assigning students to live together based on a set of criteria that have been shown to enhance success. While these choices are intended to increase the likelihood of academic success, they can also indirectly support students' emotional health and prevent the development of related mental health issues.

With respect to assignment of students, research suggests that first-year students should be assigned to live together by major (Upcraft, 1985). Evidence suggests that when students are assigned by major, academic achievement is improved, and students report increased satisfaction with their living environment (Upcraft, 1985). Moreover, research suggests that when assigning students, first-year students should be assigned based on academic ability (Peltier, Laden, & Matranga, 1999). Matching peers based on academic achievement and abilities has been shown to lead to living environments that are more conducive to study and informal educational discussions (Upcraft, 1985).

Finally, to further enhance social adjustment, universities should assign students based on a set of preferred characteristics that can enhance compatibility. These may include background characteristics such as socioeconomic background, pre-college academic achievement, and self-reported health habits. Generally, research suggests that increased compatibility between roommates predicts greater satisfaction with social interaction and a sense of community, which can indirectly predict student emotional health and wellbeing (Upcraft, 1985; 1989).

The individual program options available to students to support their adjustment across the transition to college appear to show substantial promise. But, despite their availability on the majority of campuses, we are still observing significant attrition rates and mental health concerns related to academic and social stressors (Shea, 2002). Unfortunately, despite the availability of the above options, it has been found that first-year college students *under-utilize* services offered to them (Friedlander, 1980; Walter & Smith, 1990), particularly those students who are in most need of support (Abrams & Jernigan, 1984; Knapp & Karabenick, 1988). Taken together, this set of findings strongly suggests that (a) institutions should deliver academic support *actively*—by *initiating* contact with students and aggressively bringing support services *to them*, rather than offering services passively and hoping that students will come and take advantage of them on their own accord; and (b) institutional support should be delivered *proactively*—*early* in the first year of college in order to intercept potential first-year attrition, rather than responding reactively to student difficulties after they occur. Finally, since various interventions provide different positive outcomes, it may be vital to develop interventions that combine a variety of components that can simultaneously address and benefit academic, social, and emotional

demands. One such option, and the focus of the current proposed study, is the utilization and development of Living Learning Communities (LLCs) on college campuses.

Living Learning Communities

What are Learning Communities?

Learning communities have been established at various higher education institutions to improve undergraduate learning. The main goal of a learning community is to create a well-rounded and integrated learning experience that links students' in-class and out-of-class learning activities. Generally, there are four major types of learning communities (Shapiro & Levine, 1999) which share the underlying goal of integration: (a) paired or clustered courses; (b) cohorts in large courses or first-year interest groups; (c) team-taught courses, and (d) residence-based learning communities (living-learning communities). In a LLC, students not only enroll in coordinated curriculum based activities (i.e. shared classes, study groups, seminars) but also live together in a specific residence hall. In this shared residential environment, students are also provided with further shared programming and services, which allow for a more intensive and supported learning experience. Often, residential services include academic courses offered in the residential hall, course specific tutoring, residential and academic advising, interest-specific events and activities, (i.e. field trips), and peer mentoring. The intention of this added component to the curriculum-focused foundation is to further connect and integrate material that is learned in the classroom with out-of-class experiences. While academically-based components, including living assignments based on academic interests and academic advising, are meant to support adjustment to novel academic demands, the residentially-based components and peer mentoring are suited to help

students cope with social demands. Moreover, the residential component allows for the development of a learning environment that encourages greater faculty and peer interaction and academically and socially supportive learning opportunities (Inkelas & Weisman, 2003).

In their 2011 review of the national survey on living learning programs (NSLLP), Brower and colleagues noted that while the actual definition of living learning programs may be elusive, the majority of learning communities share vital components meant to address the needs of a changing student population (Brower, Inkelas, Crawford, & Fink, 2011). In particular, they found that living-learning communities shared three distinct features: programs possessed clear academic objectives, students lived together in a discrete portion of a residence hall, and staff, curricular and co-curricular programming, and resources were dedicated to the living learning program only (vs. used throughout the entire residence hall; Brower et al., 2011).

Living learning programs have been utilized on campuses across the United States and the United Kingdom since the 1920s, with an increased interest in the past 20 years as students' needs changed. These types of programs have been applied across community colleges, 2-year, and 4-year universities. The popularity of living learning communities is most evident among larger sized campuses as administrators attempt to create opportunities for students to feel connected or part of a 'community' in what can be a new and sometimes overwhelming environment. Therefore, it is not surprising that these types of programs are primarily offered to incoming first-year students to help them successfully transition and adjust to college life.

Theoretical Basis for the Impact of Living Learning Communities

A primary goal of the proposed study is to assess how student involvement in a Living-Learning Community (LLC) affects specific student outcomes (e.g. psychological well-being, psychopathology, self-efficacy, psychosocial development, academic achievement). While various college impact models have been developed, Astin's Inputs-Environment-Output (I-E-O) model provides a concrete conceptual and methodological framework to assess student change through involvement in a specific program such as living-learning communities (Pascarella & Terenzini, 2005). Astin's model incorporates various factors related to the student (e.g. student characteristics, attributes, motivation) and the environment (e.g. resources available at the university, programs, services, peer groups, faculty) to explain and describe student outcomes. In particular, the model views student outcome as a function of three different factors: *inputs*, *environment*, and *output* (Pascarella & Terenzini, 2005).

Inputs consist of various components related to the student, including family background, students' demographic characteristics, and personal, social and academic experiences. In other words, the input factor describes attributes that students possess as they enter college and that could significantly interact with elements related to the college environment. For example, first-generation underrepresented students are expected to experience the transition and adjustment to college as more challenging compared to other students (Terenzini, Rendon, Upcraft, Millar, Allison, Gregg, & Jalomo, 1994; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). This observation is explained by the notion that first-generation minority students may lack the familial support and experiences that other first-year students may possess (Terenzini et al., 1994).

Environment, captures “the full range of people, programs, policies, cultures, and experiences” (Pascarella & Terenzini, 2005) that students find themselves interacting with and encountering while in college.

Finally, Astin posited that Outputs captures students’ behaviors, beliefs, values, identity, and development as they finish college (1984). Astin (1984) argued that students’ outputs could be directly related to student input or indirectly through the interaction between student’s input and the manner in which they engaged in their environment.

Astin (1984) further posited that student outcomes (i.e., student achievement) are directly related to the level of student involvement. He argued that the main goal of university programs and instructors should be to encourage, support, and increase students’ academic and social involvement in their environment. Based on his own research, Astin developed a “Theory of Involvement” to explain how students change and develop in college. The basic premise of this theory is that students learn and develop by becoming involved both in the academic and social components of their education (1984). More specifically, Astin noted five basic hypotheses: (1) involvement requires the investment of psychological and physical energy in “objects of some sort” (such as tasks, people, or activities); (2) involvement is a continuous concept, (3) involvement has both quantitative and qualitative features; (4) the amount of learning or development is directly proportional to the quality and quantity of involvement; and (5) educational effectiveness of any policy or practice is related to its capacity to induce student involvement (Astin, 1984; Pascarella & Terenzini, 2005).

Building off of Astin's theory of student involvement and student interaction with the environment, Tinto (1975, 1987, 1998) attempted to use student and environment centered factors to explain student retention and departure. Much like Astin, Tinto argued that students enter the college experience with "a variety of patterns of personal, family, and academic characteristics and skills" (Pascarella and Terenzini, 1994, p. 54). These include but are not limited to students' initial dispositions and intentions related to personal goals, intentions, and commitment. Tinto found that students' intentions and goals are not constant (1998). Rather, as students interact with the structures and members of their academic and social environment of a specific institution, these intentions and commitments are repeatedly altered. Tinto (1987) further added to Astin's theory by noting that students' involvement and personal goals are not solely impacted by their immediate social and academic environment, arguing that non-institutional environments including family, friends, and other commitments also play an important role in shaping students' short and long-term development.

Tinto posited that when students experience rewarding encounters with the "formal and informal" environments of an institution (Pascarella and Terenzini, 1994, p.54), be it social or academic, they will become more integrated and engaged in these systems. He argued that the more students feel integrated within their social and academic environment, the more likely it is that they will become involved learners and persist in their education. In other words, if students feel as though peers and faculty in the institution share "their normative attitudes and values," they are more likely to become committed to their own personal goals as well as those of the institution. Inversely, Tinto (1997) argued that negative encounters or experiences within both the

social and academic environments of an institution would cause students to distance themselves from institutional and personal goals and commitments.

Astin's IEO model, theory of student involvement (1985) and Tinto's theory of student departure (1975, 1987, 1998) have been widely applied to measure student's academic development and outcomes with different student populations and at a variety of institutions (Pascarella & Terenzini, 2005) Moreover, Pascarella and Terenzini (1994) noted that these models and theories could be utilized to assess other student outcomes and change in both social and psychological areas. Indeed, Fawcett (1993) described the IEO model as a *grand theory* that can be applied to assess a multitude of student outcomes in relation to their interactions with a specific environment. As such it is possible that these models could be used to explain how student involvement in living learning communities could impact not only their academic and social development but also their overall emotional well-being.

What is the change mechanism of LLCs? At its most basic, first-year students involved in living-learning communities are expected to benefit from their interaction with interventions aimed at supporting their academic and social development. Applying Astin's I-E-O model to explain the impact of living-learning communities it is clear that the individual programs and residential components attributed to living-learning communities encompass the *Environment* factor. Astin (1985) argued that students' interaction with such environmental factors will impact their development and successful adjustment. Program offerings such as peer and faculty mentoring, increased extra-curricular activities, collaborative and shared learning opportunities, and residential assignments based on major are expected to increase the likelihood that students will be

more involved in both social and academic aspects of college life. Proponents argue that living-learning communities primarily create environments that support the development of positive social relationships based on shared experiences and academic interests (Brower et al., 2011; Inkelas & Weisman, 2003). Moreover, the focus on academics and shared learning are expected to support students' development of academic self-efficacy. In turn, it will allow students to successfully overcome academic demands, which have been attributed to academic failure and increased stress-related problems (Pascarella & Terenzini, 2005). Finally, the inherent social relationships that form between peers based on living arrangements and shared programming is expected to help first-year students form solid support networks which can buffer and protect against any stress related mental health issues. Since relationships are based on shared academic, learning, and extra-curricular experiences, it is argued that these will be more profound and substantial than tentative relationships in traditional residential settings (Astin, 1985; Inkelas & Weisman, 2003; Pascarella & Terenzini, 2005). These social relationships are, in turn, expected to provide individual students with the support to overcome both academic and social demands associated with the transition and help students become more involved and engaged in their new environment.

Research on Living Learning Communities

The rationale and theoretical basis for Living Learning Programs is to provide first-year students with an all-encompassing supportive learning and living environment that fosters intellectual and personal development and long-term success. Studies have highlighted the academic and social benefits of such programs (Inkeals & Weisman, 2003; McDoanld et al., 2006; Shapiro & Levine, 1999). The next reasonable step is to

explore whether living learning communities have the potential to promote positive emotional health or prevent the attenuate the development of mental health issues commonly associated with the transition to college (McDonald et al., 2006).

Before discussing the impact and benefits of participating in living-learning community, it is worthwhile to first outline findings on the role of traditional residence hall living settings. After all, the aim of this study is to argue for the development and support of more academically and socially integrated residential settings which can benefit emotional adjustment. Accordingly, to do so effectively, one must first explore the benefits and limitations of traditional residence hall settings and why they may not be sufficient to foster students' emotional health and well-being.

Various studies have found that, compared to living off-campus, residence hall living arrangements affords students with benefits that put students at a distinct advantage both in the early transition to college and the subsequent four(+) years. Overall, researchers have found that students in residential living do better than their counterparts (Chickering, 1974; Upcraft & Pilato, 1982). For example, after taking pre-college characteristics into account, Chickering (1974) found that students who lived in college residence halls were more involved in academics, extracurricular and social activities, and performed better. Moreover, students in residential living were found to be more satisfied with the overall college experience (Chickering, 1974).

In their review of the pertinent literature, Upcraft and Pilato (1982) found multiple studies supporting the varying benefits of living in residence halls. Studies indicated that students who live in residence halls are less likely to drop out of college (Astin, 1973; Chickering 1974; Upcraft, Peterson, & Moore, 1981), have more contact

with faculty (Astin, 1973), have more contact with peers and report having a more satisfied social life (Astin, 1973), experience fewer emotional health problems and report higher self-esteem (Lundgren & Schwab, 1979). Clearly the literature indicates that living in on-campus residential settings affords students with multiple benefits that are not present for their counterparts.

So, with this being said, what incremental benefit does participation in a living learning community provide students above and beyond residence halls? The fact is that not all residence hall settings are created equal. Pascarella and Terenzini (1991; 2005) argued that the quality of residential environments varied significantly. In particular, they argue that residential settings vary in the ability to foster and support interactions between peers and faculty members (Pascarella & Terenzini, 1991; 2005). It is the aim of living learning programs to facilitate and encourage social- and academic-focused interaction between peers and faculty members so as to allow for a more fully integrated learning experience/environment. Compared to traditional residence hall living arrangements, students in living-learning communities are immersed in a residential environment that requires them to work, learn, and live collaboratively (Brower et al., 2011). By structuring the living environment and activities in a manner that forces students with similar interests to live and work in close proximity under the guidance of faculty members and residential advisors, it is argued that students will become more engaged in learning.

Academic benefits. Institutional research on the academic outcomes of Living Learning programs suggests that students' involvement in LLCs is related to higher academic performance and retention compared to first-year students in typical residence

halls. Indeed, studies have found significant differences in outcomes between participation in living-learning communities and living in traditional residence halls (Brower et al., 2011; Inkelas & Weisman, 2003). Though a review of the pertinent literature also reveals that, much like outcomes for traditional residence halls, the impact of living-learning communities on student outcomes is not universally beneficial. One cannot just “drop” a learning community program within a residence hall or university and expect positive outcomes (Henry & Schein, 1998; Shapiro & Levine, 1999). The successful outcome of the program will ultimately depend on how well residential and academic components collaborate and how interactions between peers and faculty are facilitated and encouraged.

Pascarella, Terenzini, and Blimling (1994) reviewed single-institution studies of living-learning programs that were published before the 1990s. They concluded that students in these programs were more likely to persist, demonstrate stronger academic achievement, and interact academically with their peers and faculty members as compared to students in traditional residence halls (Pascarella et al., 1994).

In their assessment of living learning communities, Inkelas, Vogt, Longerbeam, Owen, and Johnson, (2006) used a survey by the National Study of Living-Learning Programs (NSLLP) to measure perception of intellectual abilities, growth in cognitive development, self-confidence, appreciation of diversity, and affective/ behavioral outcomes (e.g., behaviors associated with alcohol consumption, perceived satisfaction and sense of belonging). Results support related research suggesting higher educational and development outcomes for students involved in living-learning programs. In terms of student outcomes, students in the learning communities were more likely to perceive that

they were able to critically analyze information, apply learned information to different contexts, and pursue and enjoy intellectually challenging endeavors. Students in living learning communities also indicated significantly higher academic self-confidence. Finally, the study's findings supported the notion that living-learning community students are more engaged or involved in their learning environment. Such students were more likely to discuss academic/career and cultural issues with peers (Inkelas et al., 2006).

Inkelas and Weisman (2003) compared three different living-learning programs (Transition program, Academic Honors Program, Curriculum Based Program) to a comparison sample and found that at the end of the academic year, students involved in the various learning communities reported a smoother academic transition to college during the first year and were significantly more likely to enjoy more challenging academic pursuits (Inkelas, & Weisman, 2003). Moreover, students involved in the various living-learning programs reported feeling more academically supported compared to first-year students in traditional residence halls.

Finally, the most recent review by the NSLLP (Brower et al., 2011) reveals that students involved in learning communities reported being more academically engaged and invested compared to traditional students. In particular, students reported engaging in more academic discussions with peers and faculty, and planning on continuing to pursue academic aspirations. Intellectually, students, in living learning programs reported experiencing a smooth transition into the academic rigors of college, and compared to non-living learning community students reported significant gains in critical thinking and application of knowledge (Brower et al., 2011). Interestingly though, researchers found no differences in self-reported academic self-confidence, at the end of the first academic

year (Brower et al., 2011). It was not until students' third year at college that LLC students reported more significant academic self-confidence suggesting that participation in such programs can set the foundation for later gains and benefits.

Social benefits. Within Living Learning Communities, the research suggests that students report increases in a variety of types of interactions and relationships. Pascarella and Terenzini (1991) noted that LLCs create an environment that facilitates both increased student-student interactions and student-faculty interactions, well beyond what is seen in traditional residence halls. In general, findings suggest that LLCs provide students with opportunities and environments that support the formation of relationships that focus both on academic development and social support. Garrard (2006) argued that LLCs provided students with better “educational practices”, including active learning, increased student-faculty interactions, and cooperation among students. These were more consistently supported in LLCs than in traditional Residential Halls (Garrard, 2006). Inkelas and Weismann (2003) found that students in Curriculum-based Living Learning Programs tended to interact more with peers and faculty compared to students in other types of Living Learning Programs (Honor's based programs) and described their relationships as more academically and socially supportive.

Pike and Kuh (2006) found that, compared to students living in traditional residence halls, students in residential Living Learning Communities demonstrated higher levels of involvement and interaction with peers and faculty, greater integration of information acquired in and outside of class, and overall greater gains in general education. Data suggest that significant differences in integration of material and greater gains in general education were best explained by higher levels of

involvement/engagement and increased interaction with peers and faculty (Pike & Kuh, 2006). Accordingly, Garrett and Zabriskie (2003), studying the impact of LLC on student-faculty interaction, reported that students participating in LLC experienced a significant increase in both informal and formal student-faculty interaction compared to non-LLC students.

Focusing on a smaller subgroup of students, first-generation students, Inkelas (2007) found that participation in Living Learning Communities facilitated both perceived social and academic transitions to college, particularly, compared to first-generation students who lived in traditional residence halls. Among first-generation students, perceived academic and social success was significantly related to level of perceived support in the residential environment and the quality of student-faculty interactions.

The most recent and comprehensive review of living learning communities (Brower et al., 2011) supports many of findings related to social benefits reported above. Students involved in living learning communities reported experiencing more fulfilling faculty mentoring relationships, social discussions with peers in a socially supportive environment, and more positive social outlooks (Brower et al. 2011).

Argument for Emotional and Mental Health Benefits

While research findings indicate that participation in living learning programs provides first year students with academic and social support, research on health and emotional wellbeing in this populations is rather limited. The NSLLP only recently added items to identify any mental health benefits associated with living learning communities (NSLLP, 2008; 2009). In their latest report, Brower and colleagues (2011) explored

whether participation in living learning communities enhanced students positive self-regard (items included: ‘happy’, ‘life has a sense of direction’ ‘like your personality’), contributed to lower negative self-regard (items included: ‘little interest/pleasure in doing things’, ‘feeling down or hopeless’, ‘feeling bad about yourself’, ‘trouble concentrating’, ‘better off dead’), and was associated with physiological symptoms of depression (items included: ‘trouble falling asleep’, ‘feeling tired’, ‘poor appetite’). Results indicated that compared to traditional students, students involved in living learning communities only presented with significantly higher positive self-regard (Brower, et al., 2011) and revealed no significant differences between samples with respect to negative self-regard and physiological symptoms of depression. Interestingly, in an earlier sample from 2008, researchers found that students in traditional residential settings demonstrated fewer physiological symptoms of depression compared to living-learning community students and no significant differences in terms of positive self-regard.

The current study aims to further explore whether living learning communities can be utilized to promote healthy emotional and personal adjustment in first-year students’ transition to college. Clearly studies suggest that participation in a living learning community can benefit students’ social and academic adjustment and success (e.g., Inkelas & Weissman, 2003). Yet because of these benefits one cannot simply assume that participation in living learning communities will also benefit students’ emotional well-being in their first year at college. And the limited research has only demonstrated a few direct mental health benefits (Brower et al., 2011).

Interestingly, research does indeed suggest that individual components which make up living-learning communities are linked to improved mental health outcomes, in

particular, peer mentoring, collaborative learning, and structured activities (Cuseo, 2011; McCabe, 1997). Moreover, academic and social benefits associated with participation in living learning communities are expected to facilitate emotional adjustment in students as they confront novel demands (e.g., social support, academic self-efficacy).

Components Related to Mental Health Benefits

The following section highlights research findings on how individual features of LLCs including peer mentoring, collaborative learning, and structured activities relate to improved mental health and emotional wellbeing in students.

Peer mentoring. Authors argue that the establishment of formal peer mentoring relationships between older students and first-year students can accomplish more than just facilitating student academic success and institutional retention (McDonald et al., 2006). Peer mentoring relationships may go as far as being viewed as forms of preventative mental health. Since first-year students are more likely to feel isolated, they are also more likely to experience greater stress and related mental health concerns. Helping students develop strong relationships with older peers, may help students feel more integrated but also potentially reduce the stress and isolation experienced by first-year students. Tinto (1993) noted that supportive relationships such as those developed through peer mentorships may prevent and reduce the harmful effects of stress. Older students may, for example, help new students develop effective coping skills to manage new stressors. Unlike same-aged peers, older students may provide advice and support based on personal experiences- having already navigated the demands of the freshman year. McDonald, et al., (2006) also argues that the mentoring relationship provides students with the needed emotional support that cannot always be found in peer

relationships at the start of the first-year. Therefore, the emotional support that is developed through the mentorship may not only reduce the likelihood that first-year students will experience unhealthy levels of stress, but also support other positive outcomes. In particular, LLCs may increase students' self-esteem and self-efficacy (House, 1981) as well as their over-all well-being during a difficult period in their lives (Sarason, Shearin, Piece, & Sarason, 1987).

As noted previously, universities should rely on both faculty and peer mentors, as both have been shown to provide different types of benefits and positive outcomes for students. Providing incoming students (not just at-risk students) with the opportunity to connect with faculty or older peers may be an effective and cost-effective way of promoting student success as well as positive mental health. Evaluations of peer and faculty mentoring programs (Lamonthe, Currie, Alistat, & Sullivan, 1995; Phinney et al., 2011) suggest that the students involved in these programs adjust better to university life and develop better emotional skills. Accordingly, peer mentoring components included in living-learning programs are expected to provide students with mental health benefits and possibly buffer against the negative effects of increased stress.

Collaborative learning. Students learn by many different methods. At the core of living learning communities is the assumption that students benefit most from shared or collaborative learning methods. Research supports the use of such learning approaches with respect to students' ability to retain information. In fact, compared to other learning methods (i.e., lecture, reading, audio visual, demonstration), students exposed to collaborative learning methods (i.e., discussion groups, practice by doing, and teaching others) consistently show higher average retention rates (National Training Lab, 2011).

Living learning communities have been repeatedly shown to encourage and support collaborative learning between student and faculty members both inside and outside the classroom (Brower et al., 2011; Inkelas, Vogt, Longerbeam, Owen, & Johnson, 2006; Inkelas, Soldner, Longerbeam, & Leonard, 2008; Jamelske, 2009). The same studies support the relationship between collaborative learning and academic and social adjustment among first-year students (Brower et al., 2011; Inkelas, Vogt, Longerbeam, Owen, & Johnson, 2006; Inkelas, Soldner, Longerbeam, & Leonard, 2008; Jamelske, 2009). More recently though, researchers have begun to look at the effects of cooperative learning on psychological traits among undergraduate students including increased self-esteem (Kocak, 2008; McDonald et al., 2006). Kocak (2008) and McDonald et al., (2006) argued that cooperative learning encourages students to work together for a common purpose and interest (e.g., subject of interest) and help each other in learning. Moreover, students form positive dependencies with each other that foster academic success, respect, self-expression, and increased self-esteem (review cited in Kocak, 2008). Kocak (2008) focused on investigating the potential benefits of collaborative learning on first-year students' level of loneliness, social anxiety, and perceived happiness. Results supported the use of cooperative learning to increase individual perceived happiness and decrease loneliness and anxiety compared to classical methods of learning (Kocak, 2008).

Support from faculty and peers. As noted previously, the transition to college naturally involves stress but, unlike other transitions in adolescents' lives, it involves a serious upheaval and flux in social support networks. Adolescents undergoing this transition often lose access to well-developed protective environments of the family and peers. With the loss of individual's resources to cope with demands, first-year students

are at higher risk for increased stress and associated mental health concerns. As stress increases, aspects of students' lives may suffer, including the ability to create new friendships and to form new social support systems. The development of new social support networks is vital for the overall successful adjustment and development of adolescents undergoing this transition. In particular, support from others has been widely shown to protect people from psychological distress in response to stressful life events. Therefore, it is essential that social support and adjustment is fostered from the beginning as it may serve as a preventive, as well as adaptive function for incoming students (Hays & Oxley, 1986). Living Learning Programs afford first year students with social benefits that support the development of various social networks and connections. These are generally aimed at facilitating academic development, but theoretically they can also help to buffer against students experiencing mental health concerns in response to increased stress levels.

Living learning programs' focus on providing students with increased opportunities to develop close relationships with faculty and like-minded peers can be considered a great option for facilitating student success and institutional retention but also a form of preventative mental health outreach for first-year students. In researching the possible indirect benefits of social support afforded by participation in living learning program, researchers argue that it is vital to look at the contextual factors including the type of social support afforded and present stressors. For example, it may hold true that across the academic year, different sources of social support (e.g., peers, faculty, or advisors) may provide different benefits related to emotional adjustment. Moreover, it may turn out, that the best predictor of psychological adjustment in response to increased

levels of stress may not be the actual size of the support network available to students, rather the satisfaction and quality of the available support that student receive. Therefore, one of the purposes of the current study is to differentiate between the various sources of support afforded to students by living learning programs and how these relate to student adjustment across the transition to college. One underlying assumption of the current study, is that providing students with peer and faculty support based on students' academic interest will prevent the likelihood of mental health concerns associated with increased levels of stress.

Tinto (1997) and Astin (1993) argue that as students become more academically and socially engaged in their learning environment, the likelihood that they will remain and succeed in college rises dramatically. In particular, Tinto (1997) noted that students' success is significantly related to both the quality and quantity of interactions students experience with both peers and faculty. As such, educational institutions are seeking ways through which they can foster and promote collaborative and engaging learning experiences for their students. Living Learning programs aimed at first-year students are viewed as a viable option for educational institutes to accomplish these goals. In particular, by having first year students living together in the same residence and enrolling them in multiple academic courses together, the expectation is that students will form close relationships with peers and faculty members. Through special programming and events organized and led by faculty, first year students are also expected to benefit from more "mentor-like" relationships with faculty members and upperclassmen. Specifically, in LLCs that are broken down based on themes or areas of interests (Astin, 1985; Schroeder & Mable, 1994), staff and faculty members are able to provide students

with more direct academic-based support and guidance leading to more frequent and beneficial interactions.

The existing literature supports the notion that frequent, meaningful interactions between students and faculty is important for students' personal and educational development (Astin, 1977, 1985, 1993; Bean & Kuh, 1984; Pascarella & Terenzini, 2005; Tinto, 1993). Astin (1993) argued that, generally, the more contact students report experiencing with their teachers both inside and outside the classroom, the greater their development and overall satisfaction. On the other hand, it is important to note that the type of contact between students and faculty members can have differential impact on student development and success (Kuh & Hu, 2001). In fact, it is both the frequency and nature of student-faculty interaction combined that is thought to have the greatest impact on students' development (Pascarella & Terenzini, 1991). Research suggests that when interactions between students and faculty have an intellectual or substantive focus, rather than an exclusively social focus, students will benefit more both academically and emotionally. In traditional collegiate settings, these types of supportive interactions only become more frequent as students move into the later years of higher education and as they come to rely more on the support and direction that comes with such interactions (Kuh & Hu, 2001). While faculty-student interaction may be beneficial to students who are further along with their education and about to transition out of post-secondary education, theorists argue that incoming students who are transitioning from high-school into college may similarly benefit from increased interaction with faculty and staff (Kuh & Hu, 2001). From a preventative health stance, it holds that such types of interactions should be promoted early in students' academic careers. Promoting strong supportive

relationships between first-year students and faculty, as well as peers, may help prevent and reduce the harmful effects of stress generally seen among first-year students. Such support could be extremely valuable in the first year. It is during this initial period of transition that students tend to over rely on support from family members and old friends, who truthfully, may not be the most adept at providing the necessary types of functional support. Therefore, it is our hypothesis that social support provided by engagement in living learning communities will provide students with mental health benefits.

Critique of Research on Living Learning Communities

Unfortunately, a review of the literature indicates that studies in this area of research often suffer from various limitations, which restrict the generalizability and reliability of findings. For example, studies often fail to account for pre-existing differences between students living in LLCs versus those living in Typical Residential Housing. Students are not randomly assigned to learning communities but, rather, self-select whether they want to participate in such a program. Moreover, students are aware of the extra requirements and demands that come with participation in living learning communities. So, while involvement in a learning community might indeed be related to stronger academic achievement, it is possible that students who self-select into living learning communities may have a higher level of motivation to learn or perform better. Indeed, an oft cited study, the National Study of Living Learning Programs (NSLLP, 2008), indicated that, compared to students in traditional residence halls, students involved in living-learning programs attained higher grade-point averages. Unfortunately, the authors of this study did not take into account how differences in pre-existing factors such as pre-college achievement or students' level of motivation may have impacted

findings. Therefore, we argue that it is of vital importance that any differences between samples before participation in living learning communities be identified and taken into account.

A final issue that has to be taken into consideration in reviewing outcome research is the specific manner in which living-learning communities impact student academic, social, and psychological development. While institutions will be quick to attribute any changes or improvements to programs as a whole, it is likely that specific components may work to directly or indirectly impact specific student outcomes. Determining which program factor(s) have an impact on which outcomes becomes more difficult when considering the fact that learning-communities are not universal or constant across universities or even programs. For example, the amount and quality of peer or faculty interaction across living learning communities in a single university or across multiple universities may differ considerably. The heterogeneity of learning communities across institutions impacts the generalizability of research findings beyond individual institutions. Brower and colleagues found that 71% of programs were housed within one discrete portion of the university residence hall; 52% of programs included no form of academic coursework, and 15% had no involvement from student affairs staff (2011). Their review also highlighted factors that have been identified as predicting strongest outcomes. Of vital importance are a strong academic focus throughout the program (e.g., credit bearing courses, study groups, co-curricular activities) and the development of an intimate community for learning (e.g., smaller sized programs, faculty involvement in formal and informal aspects, peer mentoring) (Brower et al., 2011). The current study aims to address how both the academic and social benefits associated with

participation in a living learning community may benefit students mental health and emotional wellbeing.

Current Study

Due to the fact that there is not a large body of empirical research that has examined the possible psychosocial benefits of Learning Communities for first-year students, the proposed study aims to better understand how participation in these specialized programs impacts students' adjustment and overall mental health. A priori hypotheses are proposed for the following research questions, despite the fact that limited research is available. Specifically, hypotheses are formed based on findings from empirical research in the fields of higher education, developmental psychopathology, and emerging adulthood. Moreover, some of the research questions, will explore important issues that have yet to receive attention in empirical research. This study appears to be the first to examine the possible mental health benefits of a Living Learning Communities (LLC), making it a valuable contribution to the literature.

Research Question 1

How do first year students involved in LLCs differ from non-LLC first-year students across academic, social, and emotional domains? Students are generally not randomly assigned to living learning programs; rather, students self-select into these communities prior to the beginning of the academic year. To more accurately assess the possible benefits of the living learning community it is essential to first identify any possible differences between students who self-select into living learning communities. Available research suggests that students who select to participate in LLCs may differ significantly with respect to various characteristics compared to students who opt out of

such programs. In particular, adolescents may differ with respect to academic achievement and engagement (e.g., participation in extracurricular activities) prior to enrolling. On the one hand, they may decide to enroll in LLCs because such programs provide environments for students who prefer more academically centered living arrangements (McCabe et al., 2007). In fact, many university based LLCs require students to meet more stringent academic requirements and compete for limited available slots. On the other hand, LLCs may provide students who present with less developed academic interests or records with the necessary academic resources and supports to ensure academic success and eventual retention. Research suggests that students who choose to participate in living learning programs tend to present with higher pre-college grade point averages (GPA) and standardized test scores (i.e., ACT, SAT). Research also suggests that LLC may provide at-risk students with necessary support and benefits to help them catch up with higher achieving peers. Along the same lines, students may also decide to join specialized programs such as LLCs because of the social support they may provide. As such, students who are more likely to struggle forming new relationships or meeting the social demands of college may be disproportionately represented in living learning programs.

It is unclear whether living learning programs attract a wide variety of students or whether they attract students from relatively homogenous backgrounds. However, it is important to better understand the background of individuals who choose to join living learning programs because it can have important implications for the interpretation of results and future research (e.g., which students should be targeted for participation in living learning programs in their first-year; which students benefit most from living

learning programs.) The proposed study will collect important pre-college demographic information on students, their academic background, family characteristics, and outcome variables of interest, to better understand the characteristics of participants in living learning communities and in typical residential settings. Information will be gathered prior to the beginning of the academic year to have an accurate description of how pre-college characteristics relate to findings across times of data collection.

Students involved in LLCs will be matched to non-LLC students on various demographic variables including, gender, ethnicity, and family income. Students in LLCs will be compared to non-LLC students on variables related to academic achievement and academic aspirations prior to the start of the academic year. Any significant differences will be entered as covariates in longitudinal analyses.

Hypothesis 1. Students who decide to participate in a LLC will have higher academic achievement scores (e.g., GPA, ACT) and aspirations (e.g., plans for continuing with their education, exploring academic interests, and becoming involved in their academic majors prior to the start of the academic year than students who decide not to participate in LLCs.

Research Question 2

A second research question that has not been thoroughly explored in the literature is whether living learning programs provide any benefits beyond academic and social domains. In particular, the proposed study will explore the possible benefits of living learning programs related to student's emotional wellbeing during a period of increased stressors (e.g., transition to college, academic demands, social demands, and developmental demands).

The literature suggests that participation in living learning programs provides students with direct benefits related to academic achievement and social adjustment in college. Unfortunately, researchers have not explored how participation in living learning programs may provide students with benefits related to emotional adjustment and mental health. Accordingly, this study will explore possible emotional benefits of participating in living learning programs. To best explore this question, it is imperative to first explore whether students in living learning programs experience the same amount and sources of stress as students in typical residential settings. Since students in living learning programs may present as more academically ambitious and driven, it stands that they may present with increased sources of academic related stress. If students in living learning programs do present with higher levels of stress, these differences will be taken into account statistically in our analyses.

Hypothesis 2a. Students involved in LLCs will significantly differ in levels of stress compared to regular first-year students at the end of the first semester or subsequent times of data collection. It is hypothesized that students in LLCs will report higher levels of academic related stress at the end of the first semester compared to non-LLC students.

Hypothesis 2b. It is hypothesized that students involved in LLCs will present with significantly higher mean academic adjustment scores, social adjustment scores, and emotional well-being at the end of the first semester and the academic year compared to regular first-year students. This will hold true after controlling for pre-college levels of academic achievement and emotional well-being.

Hypothesis 2c. Participation in LLCs will moderate the relationship between stressors experienced during the transition to college and mental health problems at Time 3 of data collection. In response to increased stressors associated with the transition to college, students in LLCs are expected to present with significant less mental health concerns (i.e., anxiety, depression per DASS-21) compared to regular students who present with increased stressors.

Research Question 3

A third research question that will be addressed in the proposed study is whether any benefits associated with participation in LLCs continue to be detected across students' first-year. Researchers and administrators are particularly interested in investigating whether benefits, are solely present at the end of the first semester and whether typical students eventually "catch up" with LLC students by the end of the academic year. This scenario would suggest that the impact of LLCs may be strongest at the cusp of students' transition to college. Research suggests that the first months of college are particularly difficult for students as this is the period in which demands and stress peak. Moreover, most students who drop out of college make this decision by the end of the first semester. Therefore, LLCs would be viewed favorably if they provide direct benefits and support during this transitional period. Along the same lines, LLCs may provide at-risk students with the necessary support and services to succeed in college and make it through this initial transitional period.

Accordingly, as students become accustomed to the demands and requirements of college, it is likely that the initial benefits associated with participating in living learning programs may taper off as the academic year progresses. Therefore, it is expected that

students in traditional residential and academic programs may come to appear as though they “caught up” to students in living learning communities by the end of the academic year. The current study, with its access to longitudinal data, will be able to assess whether the strength of this difference diminishes significantly across time points. If this is the case, this information will be vital for the development of targeted intervention and prevention programs.

Hypothesis 3. Benefits of participation in LLCs (vs. not participating) across social, academic, and emotional domains are expected to hold across semesters after controlling for initial differences between samples. Observed significant differences across domains are expected to be present at the end of the first and second semester. Benefits of participation in Living Learning Programs across social, academic and emotional domains are expected to hold constant across semesters. At the end of the second semester, the differences between Living Learning Program student and regular first year students will be reduced but still significant. It is expected that the impact of Living Learning Programs will be most evident at the end of the first semester.

Research Question 4

For the current study, it was of interest to determine whether increased social and academic adjustment and support may account for a significant portion of the relationship between participation on LLCs and subsequent emotional and personal wellbeing. While social adjustment and support have been consistently linked with improved emotional and mental well-being, it is our assumption that academic adjustment would also relate to and predict students’ emotional adjustment and well-being. In fact, since much of students’ development and identity during this crucial time period revolves around

academics and academic self-efficacy, it is assumed that academic adjustment will also independently and significantly account for a portion of the relationship between involvement in LLCs and student emotional and psychological adjustment.

Hypothesis 4. It is hypothesized that benefits in the social and academic domains will mediate the relationship between involvement in LLCs and student mental health and emotional well-being.

Research Question 5

How does the level of student engagement in LLCs relate to overall student adjustment across domains? A final research question will address how level of student engagement in LLC programming relates to mental health outcomes and success. For this analysis we will focus solely on students who are involved in LLCs.

Research on mental health promotion and prevention for college students would benefit from a closer analysis of the features of interventions that may lead to stronger gains for participants. Beyond just comparing intervention participants to comparison participants, intervention research should attempt to tease apart elements of the intervention that contribute to stronger outcomes. Hirsh (2010) argued for the assessment of student engagement in the intervention and investigating how it relates to outcomes. In particular, in research on LLCs, researchers only recently found it important to explore how student engagement in the various intervention components relates to outcomes. Preliminary studies reveal that level of engagement and participation may differ across students and have a differential impact on student outcomes (Pike, 2008). Moreover, studies reveal that engagement in different components predicted different outcomes.

Hypothesis 5. Within LLCs, level of student engagement will moderate the relationship between stress levels and mental health problems at Time 3 of data collection. Students who present with high engagement and high stress will report significantly less mental health problems than students who present with high stress and low engagement.

CHAPTER THREE

METHOD

This chapter describes the methodology that was used in the study. First, participant recruitment and sampling will be outlined. Next, data collection procedures will be described. Third, measures that were used at each time of data collection will be presented.

Participants

The sample for the proposed research study was recruited from the 2010-2011 incoming first year undergraduate students at Loyola University Chicago, a mid-sized private urban Jesuit university. While all 2026 incoming first-year students were invited to complete the survey, the final sample for our analysis consisted of 650 first-year students who completed all necessary measures across all three times of data collection (A total of 1592 students completed the survey at Time 1 but failed to complete required measures across all time points of data collection). Of the 650 students who completed all necessary measures, 557 responders lived in traditional residential settings (Non-LLC Group) and 93 participated in living learning communities (LLC-Group). For our analyses, we created a matched sample of 93 non-LLC students (drawn from the pool of 557 non-LLC responders). In other words, ninety-three Non-LLC were matched based on demographic variables to the 93 LLC students. Samples were matched on (a) gender, (b) ethnicity, and (c) parental income.

Procedures

Timeline

Students were surveyed at multiple time points over the course of their first and second academic semesters. Time points included: the first weeks of school (August, Time 1), the end of the first semester (November/December, Time 2), and at the end of the spring semester (April, Time 3). After Time 3, eligible students (i.e. students who completed the survey at Time 1) were invited to complete the survey once each subsequent academic year (spring semester) as part of a follow-up assessment. To test the proposed analyses, we focused on data collected across the first three times of data collection.

Sample Recruitment

At time 1 of data collection, all incoming first-year students were invited to complete the online survey one week prior to orientation. Invitation e-mails originated from the Student Retention Coordinator in the Department of Residential Life. Students were asked to complete the survey prior to the beginning of classes. If students completed the survey at Time 1, they were invited to complete subsequent surveys at each time point throughout the academic year. At each time point of data collection, the survey remained available for completion for two weeks and students were sent automatic reminder emails as long as they had not begun to complete the survey within the appropriate time frame.

The study utilized online-based methods of collecting and storing data. The OPINIO system was used to create and host the survey. Students were sent emails at each time point with an individual link to access and complete the online survey. Before

students could answer any of the survey questions, they were directed to the welcome screen requiring them to read a description of the study including risks and benefits, and provide informed consent. Respondents had the option to stop the survey and complete it at a later time. Completion of the survey took between 30-45 minutes. At each time point, students who completed the survey were entered into a drawing for various prizes (e.g., t-shirts, water bottles, \$25, \$50, or \$100 gift certificate, Wii entertainment system, a \$200 flight voucher). Residential advisors whose residential floors had the highest participation rates received a choice of prizes (e.g. t-shirts and gift certificates).

Measures and Operational Definition of Variables

Several measures were used to examine the research questions and hypotheses of the proposed study. The section that follows presents information about the items included on each measure and the psychometric properties, if available. In addition, a copy of each measure can be found in the appendices.

Background Information

Items created for the proposed study were used to obtain information about demographic variables and other descriptive information relevant to this study. Relevant background information was also gathered from the institutional research department on campus. Information was collected regarding students' academic achievement prior to college. Groups were matched on gender, ethnicity, and parent income (A copy of these questions is provided in appendix A).

Sources of Stress

The Inventory of College Students' Recent Life Experience (ICSRLE; Kohn, Lafreniere & Gurevich, 1990) is a 49 item self-report measure intended to assess college

students' experience of "hassles" and "stressors". Respondents were asked to rate the frequency and severity of experiencing each item in the past month on a four point Likert scale with 1 = not at all part of your life and 4 = very much part of your life. Factor analyses (Kohn et al., 1990; Osman, Barrios, Longnecker & Osman, 1994) found a 49-item single second-order construct, as well as a 37-item structure of seven first-order factors to measure subscales. The 49-item scale total score can be used to measure a single construct, which Kohn et al. (1990) identified as "hassles". The seven subscales are labeled: developmental challenge, time pressure, academic alienation, romantic problems, assorted annoyances, general social mistreatment, and friendship problems. Reliability and validity have been found to be adequate, based on comparison with other stress measures. Alpha coefficients were .88 for males and .89 for females for the full scale (Kohn et al., 1990). The alpha coefficients for six of the seven subscales ranged between .68-.80 (Kohn et al., 1990). For the purposes of the current study, only the following subscales were used: academic alienation, full score of stress, and general social mistreatment (A copy of this measure is provided in Appendix B).

Mediator: National Student Living Learning Program Survey (NSLLP)

Various items from the NSLLP were selected and administered at times two and three to all students. The NSLLP assesses how participation in living learning programs influences academic, social, and developmental outcomes for college students. Selected items from this survey were combined to create three subscales. The NSLLP-Peer subscale (internal consistency, $\alpha = .80$; 5 items) assessed the quality of students' academically based interactions with peers, the NSLLP-Instructor subscale (10 items; internal consistency, $\alpha = .90$) assessed the quality of students' relationship with faculty

members, and the NSLLP-growth subscale (14 items) (internal consistency, $\alpha = .94$) assessed students' perceptions of their personal development (A copy of the selected items is provided in Appendix C)

Mediator: Student Adaptation to College Questionnaire (SACQ)

The Student Adaptation to College Questionnaire (SACQ) is a 67-item self-report questionnaire, which was used to measure overall adjustment to college, including social, academic, institutional, and personal/emotional domains. Respondents were asked to indicate to what degree each item relates to them, and how they were dealing with the issue in question (Baker & Siryk, 1989). The four subscales of the measure are academic adjustment, social adjustment, personal/emotional adjustment, and institutional attachment (which assess participants' feelings towards their own institution). The overall score of the measure assesses overall adjustment to college. The Cronbach's alpha for the measure is .80 (Baker & Siryk, 1989). For the current study, we utilized the academic adjustment, social adjustment, and institutional adjustment scores as mediators (A copy of the measure is provided in Appendix D).

Outcome Variable: Rosenberg Self-Esteem Scale (RSE)

The Rosenberg Self Esteem Scale (RSE; Rosenberg, 1989) is a 10-item self-report scale that measures self-esteem. Each item is answered on a four point Likert scale, ranging from strongly disagree to strongly agree. The scale was originally designed to be a Guttman scale, meaning that the items were meant to be presented as a continuum, ranging from statements that would be agreeable to individuals with low self-esteem to statements that are agreeable to individuals with high self-esteem. Higher scores represent higher self-esteem. The scale has demonstrated adequate reliability ($\alpha = .74$) and

adequate test-retest reliability ($\alpha=.85$) in previous studies (Silbert & Tippett, 1965). The validity of the scale has been supported by a significant correlation with the “Global Self Worth Scale” (Hagborb, 1994), thus supporting the validity of the Rosenberg. (Appendix E)

Outcome Variable: The Depression Anxiety Stress Scale-21 (DASS-21)

The Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995) is a self-report measure that provides an assessment of the affective states of depression, anxiety, and stress. Each of the three scales is comprised of seven items. The depression subscale measures dysphoria, devaluation of life, self-deprecation, lack of interest or involvement, anhedonia, and inertia. The anxiety scale measures respondents’ autonomic arousal, skeletal musculature effects, situational anxiety, and subjective experience of anxious affect. Finally, the stress scale assesses respondents’ difficulty with relaxing, nervous arousal, irritability, and being easily upset/agitated or reactive and impatient. Unlike the ICSRLE scale, it does not measure the source of stress, but rather the experience of stress related to increased demands. Respondents are asked to rate the frequency and severity of experiencing each negative emotion “over the past week” on a four point Likert scale with 0 = did not apply to me at all, and 3 = applied to me very much, or most of the time. Reviews have shown that the DASS-21 possesses good criterion and convergent validity in both research and clinical samples (Brown, Chorpita, & Barlow, 1998; Lovibond & Lovibond, 1995) and strong test-retest reliability (Depression = .92, Anxiety =.93, Stress = .89). A copy of the measure is provided in Appendix F.

Moderator: Engagement in Living Learning Communities

Those students who indicated that they participated in a living learning community were administered a set of questions created for the current study. Items assessed students' a) reason/motivation for joining a learning community, b) attendance at LC programming, c) self-perceived engagement and involvement, d) self-perceived interest, e) self-perceived connectedness, and f) overall satisfaction (Items are included in Appendix G).

Outline of Data Collection

For clarification purposes a copy of the data collection process is provided in table form (see Table 1).

Table 1. Outline of Data Collection

Construct Assessed	Time 1 (Fall)	Time 2 (Winter)	Time 3 (Spring)
Background Information	Demographic Questionnaire	Demographic Questionnaire	Demographic Questionnaire
Self-Esteem	RSES	RSES	RSES
Depression	DASS-21 (depression subscale)	DASS-21 (depression subscale)	DASS-21 (depression subscale)
Anxiety	DASS-21 (anxiety subscale)	DASS-21 (anxiety subscale)	DASS-21 (anxiety subscale)
Stress	DASS-21 (stress subscale)	DASS-21 (stress subscale)	DASS-21 (stress subscale)
Sources of Stress		ICSRLE	ICSRLE
Social Support		NSLLP (Peer) NSLLP (Instructor) NSLLP (Growth)	NSLLP (Peer) NSLLP (Instructor) NSLLP (Growth)
Social Adjustment		SACQ-social	SACQ-social
Academic Adjustment		SACQ-academic	SACQ-academic
Personal Adjustment		SACQ-personal/emotional	SACQ-personal/emotional
Engagement in LLC		LC Specific Items	LC Specific Items

CHAPTER FOUR

RESULTS

Data Preparation

Table 2 provides descriptive statistics for independent, dependent, moderator, and mediator variables used in the current analyses. Means, standard deviations, skewness statistics (Tabachnick & Fidell, 2006) as well as corresponding transformations, and corrected values are provided. If the variable failed to satisfy the assumption of normality, we used a square root transformation (SQRTX) for positively skewed data, and a reflection and square root transformation if the data was negatively skewed (SQRT $(x-(k+1))$). Skewness was assessed using the z distribution using the formula suggested by Tabachnick and Fidell, 2006. If the z value was larger than +/- 3.5 the distribution is significantly skewed and required transformation.

A review indicates that the majority of the data was moderately skewed and required some type of correction. Square root transformations were found to adequately correct the issues of non-normality (Tabachnick & Fidell, 2006). If a variable was collected across time-points and a transformation was necessary for one time point, the distribution for each time point was corrected using the same transformation.

Table 2. Means, Standard Deviations, and Transformations

Construct	Variable	<i>M</i>	<i>SD</i>	Skewness*	Transformation	<i>M</i>	<i>SD</i>	Median	Skewness after transformation
Depression	DASS_Depression_Time1	0.37	0.48	12.47	SQRT(X)	0.46	0.40	0.45	2.50
	DASS_Depression_Time2	0.52	0.56	9.66	SQRT(X)	0.59	0.41	0.53	1.33
	DASS_Depression_Time3	0.53	0.57	8.44	SQRT(X)	0.60	0.41	0.53	1.10
Anxiety	DASS_Anxiety_Time1	0.38	0.48	12.03	SQRT(X)	0.47	0.39	0.38	2.55
	DASS_Anxiety_Time2	0.42	0.54	9.55	SQRT(X)	0.49	0.42	0.38	2.70
	DASS_Anxiety_Time3	0.44	0.58	10.44	SQRT(X)	0.49	0.44	0.53	2.79
Stress	DASS_Stress_Time1	0.67	0.57	6.11	SQRT(X)	0.72	0.38	0.65	0.38
	DASS_Stress_Time2	0.69	0.59	5.66	SQRT(X)	0.72	0.41	0.75	0.92
	DASS_Stress_Time3	0.75	0.65	6.16	SQRT(X)	0.75	0.43	0.75	0.91
Self-esteem	RSE_Time1	2.18	0.53	1.65	None	-	-	-	-
	RSE_Time2	2.13	0.57	2.67	None	-	-	-	-
	RSE_Time3	2.13	0.55	2.18	None	-	-	-	-
Peer Support	NSSLP_Peer_Time2	3.22	0.58	-4.48	SQRT (5-X)	1.32	0.21	1.33	2.26
	NSSLP_Peer_Time3	3.22	0.62	-4.08	SQRT (5-X)	1.31	0.23	1.26	2.33
Instructor Support	NSSLP_Instructor_Time2	1.75	0.54	11.5	SQRT(X)	1.29	0.14	1.28	2.00
	NSSLP_Instructor_Time3	1.82	0.50	8.75	SQRT(X)	1.33	0.15	1.30	0.00
Social Adjustment	SACQ_SA_Time2	6.20	1.33	-3.0	None	-	-	-	-
	SACQ_SA_Time3	6.19	1.38	-3.2	None	-	-	-	-
Academic Adjustment	SACQ_AA_Time2	6.12	1.03	0	None	-	-	-	-
	SACQ_AA_Time3	6.09	1.07	0	None	-	-	-	-
Personal Adjustment	SACQ_PA_Time2	5.79	1.36	-1.20	None	-	-	-	-
	SACQ_PA_Time3	5.75	1.36	-1.72	None	-	-	-	-
Social Support	SSA_Total_Time1	3.44	0.43	-3.57	SQRT(5-X)	1.24	0.17	1.25	2.00
	SSA_Total_Time2	3.31	0.46	-1.63	SQRT(5-X)	1.28	0.17	1.25	0.00
	SSA_Total_Time3	3.28	0.47	-1.22	SQRT(5-X)	1.29	0.18	1.25	0.00
Source of Stress (Total)	ICSRLE_Total_Time2	0.89	0.43	6.30	SQRT(X)	0.91	0.22	0.90	1.12
	ICSRLE_Total_Time3	0.97	0.48	5.50	SQRT(X)	0.95	0.25	0.91	1.11
Source of Stress (Social)	ICSRLE_Social_Time2	0.75	0.67	6.10	SQRT(X)	0.74	0.44	0.73	-0.83
	ICSRLE_Social_Time3	0.79	0.69	5.70	SQRT(X)	0.76	0.45	0.74	-1.30
Source of Stress (Academic)	ICSRLE_Academic_Time2	0.84	0.70	4.7	SQRT(X)	0.79	0.46	0.78	-2.20
	ICSRLE_Academic_Time3	0.89	0.74	4.5	SQRT(X)	0.85	0.48	0.82	-2.20

Note: values larger than +/- 3.5 indicated significant skewness requiring transformation; z values provided

Final Sample

The final sample (n=186; 93 LLC students and 93 Non-LLC students) was compared to those students who completed the survey at Time 1 but were not used in our analyses (n= 1406). Groups were compared on outcome variables assessed at Time 1 using independent samples t-tests. Results indicated that students in the final sample presented with significantly higher high school grade point averages (GPA) than students who were not selected for analysis (see Table 4). Moreover, with respect to outcome variables, at Time 1, students in the final sample (n=186) presented with significantly

higher experiences of stress at Time 1 and lower levels of self-reported self-esteem (see Table 3). No significant differences were identified with respect to other outcome variables collected at Time 1. Results of these analyses suggest that any inferences on the generalizability of findings based on the final sample should be made with caution.

Table 3. Comparison of Final Sample to Those not Included in Final Sample at Time 1

Variable	Sample (n=186)		Students not included (n=1406)		Sig.
	M	SD	M	SD	
Age	18.49	0.38	18.5	0.44	<i>ns.</i>
High School GPA	3.81	0.37	3.70	0.41	0.00
DASS-Depression	0.37	0.48	0.31	0.45	<i>ns.</i>
DASS-Anxiety	0.38	0.47	0.31	0.42	<i>ns.</i>
DASS-Stress	0.66	0.57	0.57	0.52	0.02
DASS-Total	0.47	0.44	0.39	0.42	0.02
Rosenberg-Self-Esteem	2.18	0.52	2.26	0.49	0.03
Social Support-Total	3.43	0.42	3.44	0.41	<i>ns.</i>
Social Support-Friends	3.49	0.51	3.47	0.51	<i>ns.</i>
Social Support-Family	3.48	0.48	3.50	0.47	<i>ns.</i>
Social Support-General	3.34	0.50	3.35	0.47	<i>ns.</i>

Note: ns: non-significant

To assess for any limitations due to attrition, a series of independent samples t-tests were conducted to compare participants who completed all waves of data collection with participants who completed only wave 1. Separate analyses were conducted for LLC students (LLC students who completed all three waves compared to LLC students who completed only the first wave of data collection) and non-LLC students (non-LLC students who completed all three waves compared to non-LLC students who completed the first wave of data collection). Findings suggest that LLC students who were included in the final sample presented with higher high school GPAs than LLC students who only

completed Time 1. No significant differences were found between samples with respect to outcome variables assessed at Time 1 (see Table 4).

Table 4. Comparing LLC Students Who Completed all Time Points to Those Who Only Completed Time 1 (LLC Incomplete).

Variable	LLC completers (n=93)		LLC incomplete (n=96)		Sig.
	M	SD	M	SD	
Age	18.44	0.36	18.51	0.41	<i>ns.</i>
High School GPA	3.79	0.34	3.67	0.37	0.02
DASS-Depression	0.30	0.40	0.33	0.46	<i>ns.</i>
DASS-Anxiety	0.39	0.46	0.37	0.45	<i>ns.</i>
DASS-Stress	0.64	0.53	0.65	0.55	<i>ns.</i>
DASS-Total	0.44	0.40	0.45	0.44	<i>ns.</i>
Rosenberg-Self-Esteem	2.24	0.52	2.16	0.52	<i>ns.</i>
Social Support-Total	3.46	0.38	3.37	0.44	<i>ns.</i>
Social Support-Friends	3.50	0.46	3.46	0.50	<i>ns.</i>
Social Support-Family	3.51	0.48	3.41	0.55	<i>ns.</i>
Social Support-General	3.37	0.45	3.27	0.47	<i>ns.</i>

Note: ns: non-significant

Focusing on Non-LLC students, independent sample t-tests identified significant differences between Non-LLC students included in our sample and Non-LLC students who were not randomly chosen from our final pool of participants. First, Non-LLC students in the study's final sample reported experiencing significantly more symptoms of depression at the start of their academic year compared to non-LLC students who were not included in the final sample. No significant differences were noted with respect to the level of anxiety and stress. Moreover, with respect to self-esteem, both samples reported similar levels of positive self-esteem (see Table 5)

Table 5. Comparing Non-LLC Students in Sample to Those not Chosen from Available Pool

Variable	Non-LLC completers in dataset (n=93)		Non-LLC students not used in dataset (n=464)		Sig.
	M	SD	M	SD	
Age	18.54	0.41	18.48	0.36	<i>ns.</i>
High School GPA	3.84	0.41	3.79	0.40	<i>ns.</i>
DASS-Depression	0.44	0.55	0.31	0.38	<0.05
DASS-Anxiety	0.37	0.49	0.29	0.38	<i>ns.</i>
DASS-Stress	0.68	0.61	0.59	0.51	<i>ns.</i>
DASS-Total	0.50	0.49	0.40	0.37	0.03
Rosenberg-Self-Esteem	2.14	0.52	2.23	0.48	<i>ns.</i>

Note: ns: non-significant

In comparing Non-LLC students who were included in the final sample to those who failed to complete the survey across all time-points, analyses revealed that Non-LLC students in the final sample presented with significantly higher grade-point averages. Moreover, Non-LLC students in the final sample reported experiencing significantly more symptoms of depression and stress, and lower self-esteem compared to Non-LLC students who failed to complete the survey across all time points. (Table 6)

Table 6. Comparing Non-LLC Students in Sample to All Remaining Non-LLC Students

Variable	Non-LLC completers in dataset (n=93)		Non-LLC completers not in dataset (n=1108)		Sig.
	M	SD	M	SD	
Age	18.54	0.41	18.50	0.45	<i>ns.</i>
High School GPA	3.84	0.41	3.68	0.41	<0.05
DASS-Depression	0.44	0.55	0.30	0.47	<0.05
DASS-Anxiety	0.37	0.49	0.32	0.44	<i>ns.</i>
DASS-Stress	0.68	0.61	0.56	0.53	<0.05
DASS-Total	0.50	0.49	0.39	0.43	<0.05
Rosenberg-Self-Esteem	2.14	0.52	2.29	0.50	0.05

Note: ns: non-significant

Research Question 1

It was predicted that students who decided to participate in a LLC would present with higher academic achievement scores prior to the start of the academic year

compared to a matched sample of students who elected not to participate in LLCs.

Moreover, students who decided to participate in LLC were expected to present as being more academically engaged and motivated than non-LLC students. Finally, samples were also compared at time 1 of data collection on each outcome variable so as to assess for any significant differences that may have to be included as covariates in subsequent longitudinal statistical procedures.

Independent samples t-tests were conducted to evaluate the hypothesis that students in living learning communities would present with higher pre-college academic achievements and as more academically-focused. In terms of academic performance, based on High-school GPA, the test was non-significant, $t(183) = .794, p = .428$. Students in the LLC group ($M=3.79, SD = .338$) on average did not present with higher GPAs than students in the Non-LLC group ($M = 3.84, SD = .411$).

Across other indicators of academic achievement and motivation, independent samples t-tests showed no significant differences between groups. Students were compared on a variety of items assessing their perceived readiness to meet novel academic challenges associated with college and required to succeed. Both LLC and Non-LLC students rated their overall academic, mathematical abilities, and intellectual self-confidence as above average. No significant differences were noted between the two samples. In terms of how students approach academic endeavors, results showed no differences between groups (see Table 7).

Table 7. Academic Achievement and Preparedness at Time 1

Measure	<i>n</i>	Non-LLC		LLC		<i>t</i>	<i>df</i>	<i>p</i>
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
High School GPA	186	3.84	0.41	3.79	0.34	0.79	184	0.43
ACT score	152	27.9	2.85	27.1	3.50	1.49	150	0.14
Self-rating: Academic Ability	180	4.14	0.70	4.20	0.63	-0.66	184	0.51
Self-rating: Mathematical Ability	180	3.37	1.08	3.40	0.93	-0.22	184	0.83
Self-rating: Intellectual Self-confidence	180	3.63	0.85	3.69	0.86	-0.49	184	0.62
Ask questions in class	180	2.46	0.60	2.53	0.59	-0.88	184	0.38
Support opinions with logical argument	180	2.57	0.58	2.61	0.56	-0.57	184	0.57
Seek solutions to problems and explain them	180	2.58	0.54	2.63	0.49	-0.64	184	0.52
Revise papers to improve writing	180	2.53	0.64	2.56	0.64	-0.25	184	0.80
Evaluate quality of information received	180	2.39	0.57	2.45	0.62	-0.64	184	0.53
Look up scientific research articles and resources	180	2.14	0.70	2.19	0.64	-0.52	184	0.61
Explore topics on your own	180	2.25	0.67	2.35	0.68	-1.01	184	0.31
Seek feedback on academic work	180	2.45	0.62	2.52	0.61	-0.85	184	0.40
Take notes during class	180	2.73	0.52	2.84	0.40	-1.67	184	0.10
Work in groups	180	2.58	0.52	2.60	0.52	-0.34	184	0.73

Note: ns: non-significant

Finally, independent samples *t*-tests comparing students in LLCs to a matched sample of students who elected to live in traditional residential setting on outcome variables (i.e., depression, anxiety, stress-symptoms, and self-esteem) revealed that, at the start of college, non-LLC students ($M = 0.52$, $SD = 0.41$), on average, reported experiencing higher rates of depressive symptoms than students in LLCs ($M = 0.40$, $SD = 0.39$) $t(184) = 2.02$, $p < 0.05$. Across other measures, independent samples *t*-tests

identified no significant differences between groups. Table 8, presents the means and SDs of individual measures. Based on these findings, depression at Time 1 will be entered as a covariate in all subsequent longitudinal analyses.

Table 8. Independent Samples T-Tests Comparing Means at Time 1 Across Groups

Measure	<i>n</i>	Non-LLC		LLC		<i>t</i>	<i>df</i>	<i>p</i>
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Depression (DASS-21)	186	0.52	0.41	0.40	0.39	2.02	184	0.04
Anxiety (DASS-21)	186	0.47	0.39	0.49	0.38	-0.38	184	0.70
Stress (DASS-21)	186	0.73	0.39	0.71	0.37	0.45	184	0.66
Self-Esteem (RSE)	186	2.13	0.54	2.23	0.51	-1.34	184	0.18

Research Question 2

Hypothesis 2a. It was predicted that students involved in LLCs would significantly differ in levels of stress compared to regular first-year students at the end of the first semester. It was also hypothesized that students in LLCs would report higher levels of academic related stress at the end of the first semester compared to non-LLC students.

The Wilks' Λ of .969 was non-significant, $F(6,179) = .957, p = .456$, indicating that we cannot reject the hypothesis that the population means of the dependent variables were the same for the two groups. The multivariate $\eta^2 = .031$ indicated that only 3% of multivariate variance of the dependent variables was associated with the group factor.

Hypothesis 2b. It was predicted that students involved in LLCs would present with significantly higher mean academic adjustment scores, social adjustment scores, and emotional well-being at the end of the first semester and the academic year compared to regular first-year students. This was expected to hold true after controlling for pre-college levels of depression.

Results of the overall MANOVA: The test for homogeneity of dispersion matrices was non-significant, $F(55, 102317.475) = 1.011, p = .452$. The Wilks' Λ of .900 was significant, $F(10,168) = 1.865, p < .05$, indicating that we could reject the hypothesis that the population means in the dependent variables were the same for the two groups. The multivariate $\eta^2 = .100$ indicates that 10% of multivariate variance of the dependent variables was associated with the group factor.

Results of univariate ANOVAs revealed that at time 2 (end of First Semester) when controlling for Time 1 differences in depression, students in LLCs ($M = 1.32, SD = 0.14$) reported experiencing a significantly higher number of supportive interactions with instructors than non-LLC students ($M = 1.27, SD = 0.15$); $F(1,178) = 5.00, p < .05$ Table 9 contains the means and the standard errors on the dependent variables for the two groups at Time 2

Table 9. Means and Standard Error for Dependent Variables Time 2 (Controlling for Depression Time 1)

Variable	LLC		Non-LLC		Sig.*
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	
Academic Adjustment	6.27	0.10	6.04	0.10	<i>ns</i>
Social Adjustment	6.43	1.31	6.13	1.31	<i>ns</i>
Personal Adjustment	5.92	1.31	5.83	1.31	<i>ns</i>
Institutional Adjustment	7.10	1.37	6.77	1.37	<i>ns</i>
Depression	0.59	0.37	0.58	0.37	<i>ns</i>
Anxiety	0.53	0.40	0.44	0.40	<i>ns</i>
Stress symptoms	0.76	0.40	0.66	0.40	<i>ns</i>
Interaction with Instructors	1.32	0.15	1.27	0.15	.027
Interaction with Peers	1.30	0.21	1.34	0.21	<i>ns</i>

Note: ns: non-significant

At Time 3 results of the overall MANOVA: The test for homogeneity of dispersion matrices was non-significant, $F(55, 102317.475) = 1.094, p = .294$. The Wilks' Λ of .860 was significant, $F(10,168) = 2.74, p < .005$, indicating that we could reject the hypothesis that the population means in the dependent variables were the same for the two groups. The multivariate $\eta^2 = .140$ indicates that 14% of multivariate variance of the dependent variables was associated with the group factor.

Results of univariate ANOVAs revealed that at Time 3 (end of the academic year) when controlling for Time 1 differences, students in LLCs reported experiencing significantly higher rates of anxiety symptoms, $F(1, 177) = 1.07, p < .05$; stress symptoms, $F(1,177) = 12.37, p < .05$; and perceived supportive interactions with instructors $F(1,177) = 5.59, p < .05$. Conversely at Time 3, traditional residential students reported experiencing significantly higher perceived support from peers, $F(1,177) = 7.33, p < .05$; and overall personal adjustment, $F(1,177) = 5.73, p < .05$. At time 3, on average, students in LLCs did not differ from non-LLC students with respect to reported symptoms of depression, $F(1,177) = 2.47, p = .118$; academic adjustment, $F(1,177) = .01, p = .920$; perceived social adjustment, $F(1,177) = .05, p = .824$; and perceived institutional adjustment, $F(1,177) = .00, p = .956$. Table 10 contains the means and the standard errors on the dependent variables for the two groups.

Table 10. Means and Standard Error for Dependent Variables Time 3 (Controlling for Depression Time 1)

Variable	LLC		Non-LLC		Sig.*
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	
Academic Adjustment	6.08	0.11	6.09	0.11	<i>ns</i>
Social Adjustment	6.17	1.39	6.22	1.39	<i>ns</i>
Personal Adjustment	5.54	1.31	5.98	1.31	.018
Institutional Adjustment	6.81	1.32	6.80	1.32	<i>ns</i>
Depression	0.65	0.40	0.56	0.40	<i>ns</i>
Anxiety	0.58	0.44	0.42	0.44	.013
Stress symptoms	0.86	0.41	0.66	0.41	.001
Interaction with Instructors	1.35	0.15	1.30	0.15	.019
Interaction with Peers	1.27	0.23	1.36	0.23	.007

Note: ns: non-significant

Hypothesis 2c. It was predicted that participation in LLCs would moderate the relationship between stressors experienced during the transition to college and mental health problems at Time 3 of data collection. In response to increased stressors associated with the transition to college, students in LLCs were expected to present with significantly less mental health concerns (i.e., anxiety, depression per DASS-21) compared to regular students who presented with increased stressors.

To test this hypothesis, a set of multiple regressions were conducted to explore whether group participation (LLC vs Non-LLC) moderated the relationship between increased experience of various stressors and mental health outcomes. Moderation analyses were conducted for the following independent variables: Academic Stressors, Social Stressors, and Developmental Challenges. Outcome variables included reported symptoms of depression, symptoms of anxiety, and self-esteem. Results will be presented

separately by individual outcome variables. Multiple regression included the following three steps: Step 1, covariate was entered; Step 2, using the forward method, the centered independent and moderator variables were entered; Step 3, the interaction term was entered.

Depression. A multiple regression model was tested to investigate whether the association between academic stress and symptoms of depression was moderated by whether students were involved in LLCs. After centering academic stress and computing the academic stress-by-group interaction term (Aiken & West, 1991), the two predictors and the interaction were entered into a step-wise regression model. Results indicated that academic stress ($b = .077$, $SE_b = .084$, $\beta = .087$, $p = .363$) and group (LLC vs Non-LLC) ($b = .059$, $SE_b = .050$, $\beta = .072$, $p = .245$) were not significantly associated with rates and severity of depression at the end of the academic year. The interaction term between rate of academic stressors and group was also not significant ($b = -.027$, $SE_b = .108$, $\beta = -.021$, $p = .806$). Since there were no significant main or interaction effects, follow-up analyses (e.g., simple slopes) were not conducted.

A multiple regression model was also tested to investigate whether the association between social stress and symptoms of depression was moderated by group involvement. Results indicated that social stress ($b = .109$, $SE_b = .090$, $\beta = .116$, $p = .228$) and group (LLC vs Non-LLC) ($b = .051$, $SE_b = .049$, $\beta = .063$, $p = .295$) were not significantly associated with severity of depressive symptoms at the end of the academic year. The interaction term between rate of social stressors and group were also non-significant ($b = .204$, $SE_b = .113$, $\beta = -.143$, $p = .073$). Once again, since there were no significant main or interaction effects, follow-up analyses (e.g., simple slopes) were not conducted.

Finally, a multiple regression model was tested to investigate whether the association between developmental challenges and symptoms of depression was moderated by group involvement. Results indicated that stress associated with developmental challenges ($b = .059$, $SE_b = .068$, $\beta = .079$, $p = .390$) and group (LLC vs Non-LLC) ($b = .058$, $SE_b = .050$, $\beta = .071$, $p = .244$) were not significantly associated with severity of depressive symptoms at the end of the academic year. The interaction term between rate of developmental stressors and group was also non-significant ($b = .051$, $SE_b = .091$, $\beta = .046$, $p = .574$).

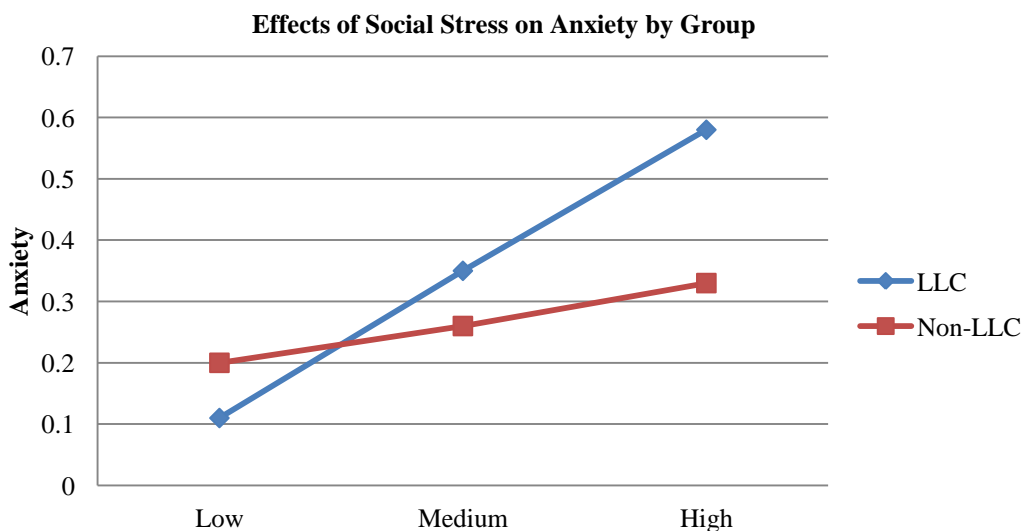
Anxiety. A multiple regression model was tested to investigate whether the association between academic stress and symptoms of anxiety was moderated by whether students were involved in LLCs. Results indicated that academic stress ($b = .071$, $SE_b = .089$, $\beta = .075$, $p = .428$) and group (LLC vs Non-LLC) ($b = .086$, $SE_b = .056$, $\beta = .097$, $p = .124$) were not significantly associated with severity of anxiety symptoms at the end of students' academic year. The interaction term between rate of academic stressors and group was not significant ($b = .116$, $SE_b = .119$, $\beta = .086$, $p = .334$).

Next, with respect to anxiety symptoms, a multiple regression model was tested to investigate whether the association between social stress and symptoms of anxiety was moderated by group involvement. Results indicated that social stress ($b = .137$, $SE_b = .085$, $\beta = .135$, $p = .110$) and group (LLC vs Non-LLC) ($b = .081$, $SE_b = .052$, $\beta = .092$, $p = .116$) were not significantly associated with severity of anxiety symptoms at the end of the academic year. Interestingly, the interaction term between rate of social stressors and group was significant ($b = .398$, $SE_b = .119$, $\beta = .258$, $p < .001$) suggesting that the impact of social stress on anxiety symptoms depended on whether students were involved in

LLCs. Simple slopes for the association between social stress and anxiety symptoms were tested for those in LLCs, and those not in LLCs. Simple slopes analyses revealed that for LLC students, severity of anxiety symptoms increased more significantly as levels of social stress increased, compared to non-LLC students. (Figure 1)

Finally, a multiple regression model was tested to investigate whether the association between developmental challenges and symptoms of anxiety was moderated by group involvement. Results indicated that stress associated with developmental challenges ($b = .009, SE_b = .074, \beta = .011, p = .904$) and group (LLC vs Non-LLC) ($b = .072, SE_b = .056, \beta = .082, p = .200$) were not significantly associated with severity of anxiety at the end of the academic year. The interaction term between rate of developmental stressors and group was also not significant ($b = .005, SE_b = .102, \beta = .004, p = .964$).

Figure 1. Moderating Relationship of Group on Relationship between Social Stress and Anxiety



Self-esteem. A multiple regression model was tested to investigate whether the association between academic stress and students' perceived sense of self-esteem was moderated by whether students were involved in LLCs. Results indicated that academic stress ($b = -.030$, $SE_b = .086$, $\beta = -.025$, $p = .727$) and group (LLC vs Non-LLC) ($b = -.011$, $SE_b = .052$, $\beta = -.010$, $p = .841$) were not significantly associated with students' perceived sense of self-esteem at the end of the academic year. The interaction term between rate of academic stressors and group was also not significant ($b = -.061$, $SE_b = .112$, $\beta = -.037$, $p = .589$). Since there were no significant main or interaction effects, follow-up analyses (e.g., simple slopes) were not conducted.

A multiple regression model was also tested to investigate whether the association between social stress and students' perceived sense of self-esteem was moderated by group involvement. Results indicated that social stress ($b = -.105$, $SE_b = .084$, $\beta = -.084$, $p = .215$) and group (LLC vs Non-LLC) ($b = .003$, $SE_b = .051$, $\beta = .003$, $p = .949$) were not significantly associated with students' perceived sense of self-esteem at the end of the academic year. The interaction term between rate of social stressors and group was also not significant ($b = -.217$, $SE_b = .117$, $\beta = -.113$, $p = .064$). Since there were no significant main or interaction effects, follow-up analyses (e.g., simple slopes) were not conducted.

Results indicated that stress associated with developmental challenges ($b = -.052$, $SE_b = .069$, $\beta = -.051$, $p = .456$) and group (LLC vs Non-LLC) ($b = -.009$, $SE_b = .052$, $\beta = -.004$, $p = .866$) were also not significantly associated with students' perceived sense of self-esteem at the end of the academic year. The interaction term between rate of developmental stressors and group was also not significant ($b = -.005$, $SE_b = .096$, $\beta = -.004$, $p = .955$).

Research Question 3

Hypothesis 3. It was predicted that the benefits of participation in LLCs (vs. not participating) across social, academic, and emotional domains would hold across each semester. Observed significant differences across domains were expected to be present at the end of the first and second semester even after controlling for Time 1 differences in depression. Benefits of participation in Living Learning Programs across social, academic and emotional domains were expected to hold constant across semesters. It was also predicted that at the end of the second semester, the differences between Living Learning Program students and regular first year students would be reduced but still significant. It was, therefore, predicted that the impact of Living Learning Programs would be most evident at the end of the first semester. To answer hypothesis 3, researchers conducted four separate two-way repeated measures analyses of variance; one for each outcome variable (i.e., depression, anxiety, stress symptoms, and self-esteem). Researchers entered ratings of depression at Time 1 as a covariate in each analysis except for when depression was also the outcome variable.

To control for the influence of depression differences at time 1 (for the remaining three outcome variables) researchers regressed each outcome variable (i.e. anxiety, stress symptoms, self-esteem) onto depression ratings at Time 1. The unstandardized residuals for each variable at the various time points were saved (each of which had a mean of 0). For each of the time-points the original levels of individual outcome variables (e.g., anxiety at time 2) was added to the respective unstandardized score (e.g., unstandardized residual score anxiety Time 2) so as to uncenter the value. This procedure allowed us to analyze the residuals using repeated-measures ANOVAS in a meaningful manner.

Depression. A two-way repeated measures analysis of variance was conducted to evaluate the effect of group participation on student rating of depressive symptoms. The between-subjects factor was group (LC or Non-LLC). A significant value for Mauchly's test of sphericity indicated that the assumption of sphericity was violated; therefore, the Greenhouse-Geisser correction adjustment was used. Tests of within-subjects effects indicated that there was a significant difference between mean levels of depression across students' academic year. We can report that, when using a ANOVA with repeated measures with a Greenhouse-Geisser correction, there was a main effect for time, $F(1.927, 352.598) = 13.71, p <.001$, and a significant interaction time by group, $F(1.927, 352.598) = 3.60, p <.001$. Tests of between subjects effects indicate that there was no significant main effect of Group $F(1,183) = .602, p = .439$.

To interpret the time by group interactions, paired samples t-tests were conducted to identify changes in self-reported depressive symptoms for each group. Analyses revealed that for students in Living learning communities self-reported rates of depressive symptoms were significantly higher at the end of the Fall and Spring semester compared to the start of the academic year. No significant differences were found between the end of fall and the end of the spring semester. In contrast, for students in traditional residential settings, rates of depression remained steady across the academic year (see table 11 for a summary of pair wise comparisons). Across groups, a significant difference in rates of depression was only identified at the start of the academic year, with Non-LLC students reporting significantly higher rates of depressive symptoms $t(1,184) = 2.02, p <.05$.

Table 11. Group Means (SD) for Repeated Measures ANOVAS (Depression)

	Fall (August)	Fall (November)	Spring (April)	ANOVA
LLC				
Depression	0.40 (0.38)	0.59 (0.93)	0.62 (0.43)	T1<T2**,T1<T3**
Non-LLC				
Depression	0.55 (0.41)	0.61 (0.42)	0.59 (0.39)	<i>ns</i>
Group Diff.	Non-LLC>LLC*	<i>ns</i>	<i>ns</i>	

Note. *ns*, nonsignificant, * $p < .05$, ** $p < .01$.

Anxiety. A two-way within-subjects analysis of variance was conducted to evaluate the effect of group participation on anxiety symptoms ratings when controlling for Time 1 differences in depression ratings. The between-subject factor was group (LC or Non-LLC). A non-significant value for Mauchly's test of sphericity indicated that the assumption of sphericity was not violated. Tests of within-subjects effects indicated that there was no significant difference between mean levels of anxiety across students' academic year, $F(2, 366) = .347, p = .707$, and no significant interaction time by group, $F(2, 366) = .625, p = .536$. Finally, tests of between subjects effects indicated that there was an overall significant main effect of Group $F(1,183) = 7.983, p = .005$. Students in LLCs consistently presented with higher rates of anxiety; Time 1: $t(1,184) = 2.16, p < .05$; Time 2: $t(1,184) = 2.04, p < .05$; and Time 3: $t(1,184) = 2.54, p < .05$ (see Table 12).

Table 12. Group Means (SD) for Repeated Measures ANOVAS (Anxiety) Controlling for Depression Time 1

	Fall (August)	Fall (November)	Spring (April)	ANOVA
LLC				
Anxiety	0.52 (0.30)	0.55 (0.40)	0.58 (0.44)	<i>ns</i>
Non-LLC				
Anxiety	0.43 (0.30)	0.44 (0.37)	0.42 (0.37)	<i>ns</i>
Group Diff.	LLC > Non-LLC*	LLC > Non-LLC*	LLC > Non-LLC*	

Note. *ns*, nonsignificant, * $p < .05$, ** $p < .01$.

Stress symptoms. A two-way within-subjects analysis of variance was conducted to evaluate the effect of group participation on stress symptoms ratings after controlling for time 1 depression. The between-subject factor was group (LC or Non-LLC). A non-significant value for Mauchly's test of sphericity indicated that the assumption of sphericity was not violated. Tests of within-subjects effects indicated that there was no significant difference between mean levels of stress across students' academic year. There was no main effect for time, $F(2,366) = 1.05, p = .352.$, but there was a significant interaction time by group, $F(2,366) = 3.54, p < .05.$ Tests of between subjects effects indicated that there was a significant main effect of Group $F(1,183) = 7.80, p < .05.$

To interpret the time by group interactions, paired samples t-tests were conducted to identify changes in self-reported stress symptoms for each group. Analyses revealed that for students in Living learning communities perceived stress symptoms were significantly higher at the end of the spring semester compared to the beginning and end of Fall semester. Moreover, it appears that the significant change occurred following the fall semester. In contrast, for non-LC students, symptoms of stress demonstrated a non-significant decrease in symptoms across time points and, at the end of the fall $t(1,184) = 1.99, p < .05,$ and spring semester $t(1,184) = 3.43, p < .005$ non-LLC students reported experiencing significantly fewer stress symptoms. (Table 13)

Table 13. Group Means (*SD*) for Repeated Measures ANOVAS (Stress) Controlling for Depression Time 1

	Fall (August)	Fall (November)	Spring (April)	ANOVA
LLC				
Stress Symp.	0.74 (0.30)	0.78 (0.35)	0.85 (0.39)	$T3 > T1^*$
Non-LLC				
Stress Symp.	0.70 (0.30)	0.67 (0.41)	0.66 (0.39)	<i>ns</i>
Group Diff.	<i>ns</i>	LLC > Non-LLC*	LLC > Non-LLC**	

Note. *ns*, nonsignificant, * $p < .05$, ** $p < .01$.

Self-esteem. A two way within-subjects analysis of variance was conducted to evaluate the effect of group participation on perceived levels of self-esteem after controlling for time 1 depression ratings. A non-significant value for Mauchly's test of sphericity indicated that the assumption of sphericity was not violated. Tests of within-subjects effects indicated that there was no significant difference between mean levels of self-esteem across students' academic year, $F(2, 366) = 2.034, p = .132$, and no significant interaction time by group, $F(2, 366) = .396, p = .673$. Finally, tests of between-subjects effects indicated that there was no significant main effect of Group $F(1, 183) = .337, p = .563$.

Research Question 4

Hypothesis 4. It was hypothesized that benefits in the social and academic domains would mediate the relationship between involvement in LLCs and student mental health and emotional well-being.

To test for possible mediation we first needed to establish whether there was any association between our independent, mediator, and outcome variables. Baron and Kenny (1986) and Judd and Kenny (1981) have discussed four basic steps that are required for

establishing mediation. Step 1 involves showing that the independent variable (i.e. group) was significantly correlated with mental health outcomes). This step establishes that there was an effect that may be mediated. Our analyses revealed that none of the outcome variables were associated with the independent variable. Most contemporary analysts argue that mediation can still be established even if this initial step is not met.

Accordingly, we continued with step 2, which required that we show that the independent variable (group) was correlated with the mediator (i.e. Student adjustment variables).

These analyses revealed that the group variable was not significantly associated with any of the mediator variables. Analysts argue that while step 1 is not required for establishing mediation, it is essential that step 2 be met (Kenny, Kashy, & Bolger, 1998).

Based on the fact that some of the basic steps for establishing mediation were not met, it was decided to not follow up with further bootstrapping analyses.

Research Question 5

The final question examined, was the role of student engagement and involvement in their learning communities on the impact of increased academic and social stressors.

We argued that when focusing solely on LLC students, level of student engagement will moderate the relationship between stress levels and mental health outcomes at the end of their academic year. Students who present with high levels of engagement and involvement in their LLCs will report lower levels of mental health problems in response to increased levels of college related stressors.

For these analyses, we focused solely on measures of overall stress, academic stress and social stress as the independent variables and student perceived engagement and satisfaction with peer, mentor, and faculty support as moderating variables. Our

discussion of results will focus primarily on the significant effects, but we also present data from all analyses in table format.

ICSRLE overall measure of stress. When students' overall score of rate of stress (ICSRLE Full score) was entered into moderation regression analyses as the independent variable, results revealed no significant main effects or interaction terms using engagement, and perceived support as moderating variables. See Tables 14-25 for individual analyses.

Table 14. Regression Results for Prediction of Depression from College Stressors and Student Engagement in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Depression T2 (C)	.610**	.610**	.372**	52.16**
Step 2: ICSRLE-Full	.122	.632	.009	1.24
Step 3: Student Engagement	.138	.625	.018	2.63
Step 4: ICSRLE x Student Engagement	.045	.633	.002	0.23

Note. ** $p < .001$ Dependent Variable: Depression T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 15. Regression Results for Prediction of Depression from College Stressors and Peer Connectedness in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Depression T2 (C)	.610**	.610**	.372**	52.16**
Step 2: ICSRLE-Full	.134	.619	.011	1.48
Step 3: Peer Connectedness	.025	.619	.001	0.08
Step 4: ICSRLE x Peer Connectedness	.096	.626	.009	1.24

Note. ** $p < .001$ Dependent Variable: Depression T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 16. Regression Results for Prediction of Depression from College Stressors and Mentor Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Depression T2 (C)	.610**	.610**	.372**	52.16**
Step 2: ICSRLE Full	.134	.619	.011	1.48
Step 3: Mentor Support	.043	.620	.002	0.25
Step 4: ICSRLE x Mentor Support	-.065	.623	.003	0.47

Note. ** $p < .001$ Dependent Variable: Depression T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 17. Regression Results for Prediction of Depression from College Stressors and Faculty Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Depression T2 (C)	.610**	.610**	.372**	52.16**
Step 2: ICSRLE-Full	.134	.619	.011	1.48
Step 3: Faculty Support	-.026	.619	.001	0.10
Step 4: ICSRLE x Faculty Support	.034	.620	.011	0.15

Note. ** $p < .001$ Dependent Variable: Depression T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 18. Regression Results for Prediction of Anxiety from College Stressors and Student Engagement in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Anxiety T2 (C)	.555**	.555**	.308**	39.12**
Step 2: ICSRLE-Full	.202	.580	.029	3.82
Step 3: Student Engagement	.102	.589	.010	1.28
Step 4: ICSRLE x Student Engagement	-.036	.590	.001	0.13

Note. ** $p < .001$ Dependent Variable: Anxiety T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 19. Regression Results for Prediction of Anxiety from College Stressors and Peer Connectedness in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Anxiety T2 (C)	.555**	.555**	.308**	39.12**
Step 2: ICSRLE-Full	.202	.580	.029	3.82
Step 3: Peer Connectedness	.111	.590	.011	1.49
Step 4: ICSRLE x Peer Connectedness	-.088	.596	.007	0.98

Note. ** $p < .001$ Dependent Variable: Anxiety T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 20. Regression Results for Prediction of Anxiety from College Stressors and Mentor Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Anxiety T2 (C)	.555**	.555**	.308**	39.12**
Step 2: ICSRLE Full	.175	.582	.030	4.00
Step 3: Mentor Support	.170	.598	.020	2.70
Step 4: ICSRLE x Mentor Support	-.024	.599	.000	0.06

Note. ** $p < .001$ Dependent Variable: Anxiety T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 21. Regression Results for Prediction of Anxiety from College Stressors and Faculty Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Anxiety T2 (C)	.555**	.555**	.308**	39.12**
Step 2: ICSRLE-Full	.202	.580	.029	3.82
Step 3: Faculty Support	.061	.584	.004	0.50
Step 4: ICSRLE x Faculty Support	-.126	.596	.015	1.93

Note. ** $p < .001$ Dependent Variable: Anxiety T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 22. Regression Results for Prediction of Self-Esteem from College Stressors and Student Engagement in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: RSE T2 (C)	.779**	.779**	.607**	135.82**
Step 2: ICSRLE-Full	-.149	.789	.016	3.69
Step 3: Student Engagement	-.025	.790	.001	0.14
Step 4: ICSRLE x Student Engagement	.047	.791	.002	0.39

Note. ** $p < .001$ Dependent Variable: RSE T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 23. Regression Results for Prediction of Self-Esteem from College Stressors and Peer Connectedness in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: RSE T2 (C)	.779**	.779**	.607**	135.82**
Step 2: ICSRLE-Full	-.149	.789	.016	3.69
Step 3: Peer Connectedness	.004	.789	.000	0.00
Step 4: ICSRLE x Peer Connectedness	.003	.789	.000	0.00

Note. ** $p < .001$ Dependent Variable: RSE T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 24. Regression Results for Prediction of Self-Esteem from College Stressors and Mentor Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: RSE T2 (C)	.779**	.779**	.607**	135.82**
Step 2: ICSRLE Full	-.149	.789	.016	3.69
Step 3: Mentor Support	-.065	.792	.004	0.95
Step 4: ICSRLE x Mentor Support	.002	.792	.000	0.00

Note. ** $p < .001$ Dependent Variable: RSE T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 25. Regression Results for Prediction of Self-Esteem from College Stressors and Faculty Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: RSE T2 (C)	.779**	.779**	.607**	135.82**
Step 2: ICSRLE-Full	-.149	.789	.016	3.69
Step 3: Faculty Support	-.067	.792	.004	1.02
Step 4: ICSRLE x Faculty Support	.037	.793	.001	0.29

Note. ** $p < .001$ Dependent Variable: RSE T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

ICSRLE academic stress. Entering students' perceived levels of academic stress as the independent variable, results indicate that higher rates of academic stress was predictive of several mental health outcomes, including severity of depressive symptoms, anxiety, stress, and self-esteem. Higher rates of academic stress were predictive of higher rates of self-perceived depressive symptoms ($b = .238$ $SE_b = .078$, $\beta = .266$, $p = .003$), higher rates of anxiety ($b = .052$ $SE_b = .060$, $\beta = .074$, $p < .000$), and lower rates of self-esteem ($b = -.268$ $SE_b = .074$, $\beta = -.239$, $p < .001$).

Results indicated that academic stress ($b = .245$, $SE_b = .077$, $\beta = .273$, $p < .05$) was related to severity of depressive symptoms at the end of the academic year. Analyses also revealed that LLC students' perceived sense of peer connectedness moderated the impact of academic stress on perceived levels of depression at the end of the academic year. That is, the interaction term between rate of academic stressors and 'peer connectedness' was significant ($b = .197$ $SE_b = .093$, $\beta = .170$, $p = .038$) suggesting that the impact of academic stress on severity of depressive symptoms depended on whether students felt connected to their LLC peers. Simple slopes for the association between academic stress and depressive symptoms were tested for low (-1 SD below the mean), moderate (mean), and high (+1 SD above the mean) levels of peer connectedness. Results indicated that students who experienced higher rates of academic stress and peer connectedness

reported higher rates of depressive symptoms. In contrast to what was expected, students who reported lower rates of peer connectedness reported significantly lower rates of depressive symptoms in response to increased levels of academic stress (Figure 2) (See Tables 26-37 for a summary of all analyses involving academic stress as a predictor.

Figure 2. Moderating Role of Peer Connectedness on Relationship between Academic Stress and Depressive Symptoms

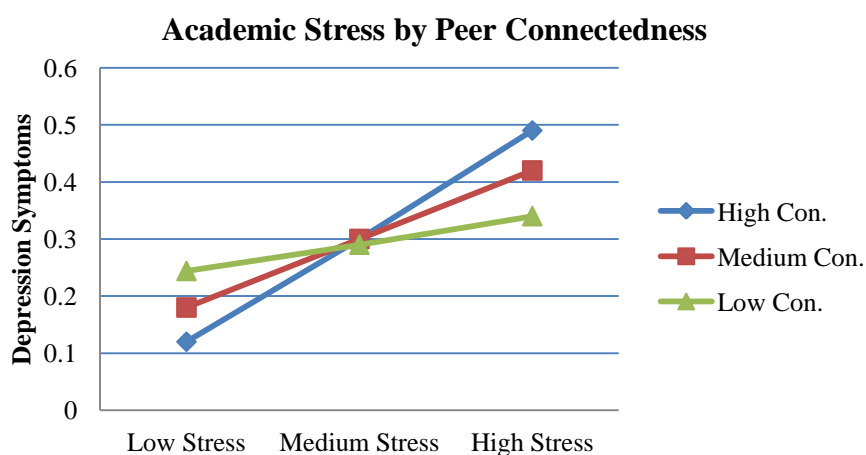


Table 26. Regression Results for Prediction of Depression from Academic Stressors and Student Engagement in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Depression T2 (C)	.610**	.610**	.372**	52.16**
Step 2: ICSRLE-Academic	.266**	.658**	.061**	9.36**
Step 3: Student Engagement	.115	.668	.013	1.97
Step 4: ICSRLE x Student Engagement	.031	.668	.001	0.15

Note. ** $p < .001$ Dependent Variable: Depression T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 27. Regression Results for Prediction of Depression from Academic Stressors and Peer Connectedness in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Depression T2 (C)	.610**	.610**	.372**	52.16**
Step 2: ICSRLE-Academic	.266**	.658**	.061**	9.36**
Step 3: Peer Connectedness	.018	.658	.000	0.05
Step 4: ICSRLE x Peer Connectedness	.170*	.679*	.028*	4.46*

Note. ** $p < .001$; * $p < .05$. Dependent Variable: Depression T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 28. Regression Results for Prediction of Depression from Academic Stressors and Mentor Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Depression T2 (C)	.610**	.610**	.372**	52.16**
Step 2: ICSRLE Academic	.266**	.658**	.061**	9.36**
Step 3: Mentor Support	.038	.659	.001	0.21
Step 4: ICSRLE x Mentor Support	-.044	.660	.002	0.29

Note. ** $p < .001$ Dependent Variable: Depression T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 29. Regression Results for Prediction of Depression from Academic Stressors and Faculty Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Depression T2 (C)	.610**	.610**	.372**	52.16**
Step 2: ICSRLE-Academic	.266**	.658**	.061**	9.36**
Step 3: Faculty Support	-.034	.659	.001	0.18
Step 4: ICSRLE x Faculty Support	.044	.660	.002	0.29

Note. ** $p < .001$ Dependent Variable: Depression T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 30. Regression Results for Prediction of Anxiety from Academic Stressors and Student Engagement in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Anxiety T2 (C)	.555**	.555**	.308**	39.12**
Step 2: ICSRLE-Academic	.326**	.641**	.103**	15.13**
Step 3: Student Engagement	.074	.645	.005	0.75
Step 4: ICSRLE x Student Engagement	.019	.645	.000	0.05

Note. ** $p < .001$ Dependent Variable: Anxiety T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 31. Regression Results for Prediction of Anxiety from Academic Stressors and Peer Connectedness in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Anxiety T2 (C)	.555**	.555**	.308**	39.12**
Step 2: ICSRLE-Academic	.326**	.641**	.103**	15.13**
Step 3: Peer Connectedness	.096	.647	.009	1.26
Step 4: ICSRLE x Peer Connectedness	-.044	.649	.002	0.27

Note. ** $p < .001$ Dependent Variable: Anxiety T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 32. Regression Results for Prediction of Anxiety from Academic Stressors and Mentor Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Anxiety T2 (C)	.555**	.555**	.308**	39.12**
Step 2: ICSRLE Academic	.326**	.641**	.103**	15.13**
Step 3: Mentor Support	.144	.656	.020	3.08
Step 4: ICSRLE x Mentor Support	-.026	.657	.001	0.10

Note. ** $p < .001$ Dependent Variable: Anxiety T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 33. Regression Results for Prediction of Anxiety from Academic Stressors and Faculty Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Anxiety T2 (C)	.555**	.555**	.308**	39.12**
Step 2: ICSRLE-Academic	.326**	.641**	.103**	15.13**
Step 3: Faculty Support	.049	.642	.002	0.35
Step 4: ICSRLE x Faculty Support	-.135	.656	.018	2.65

Note. ** $p < .001$ Dependent Variable: Anxiety T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 34. Regression Results for Prediction of Self-Esteem from Academic Stressors and Student Engagement in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: RSE T2 (C)	.779**	.779**	.607**	135.82**
Step 2: ICSRLE-Academic	-.238**	.812**	.053**	13.47**
Step 3: Student Engagement	-.013	.812	.000	0.04
Step 4: ICSRLE x Student Engagement	.071	.815	.005	1.28

Note. ** $p < .001$ Dependent Variable: RSE T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 35. Regression Results for Prediction of Self-Esteem from Academic Stressors and Peer Connectedness in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: RSE T2 (C)	.779**	.779**	.607**	135.82**
Step 2: ICSRLE-Academic	-.238**	.812**	.053**	13.47**
Step 3: Peer Connectedness	.008	.812	.000	0.02
Step 4: ICSRLE x Peer Connectedness	-.088	.817	.008	2.00

Note. ** $p < .001$ Dependent Variable: RSE T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 36. Regression Results for Prediction of Self-Esteem from Academic Stressors and Mentor Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: RSE T2 (C)	.779**	.779**	.607**	135.82**
Step 2: ICSRLE Academic	-.238**	.812**	.053**	13.47**
Step 3: Mentor Support	-.066	.815	.004	1.12
Step 4: ICSRLE x Mentor Support	.021	.815	.000	0.11

Note. ** $p < .001$ Dependent Variable: RSE T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 37. Regression Results for Prediction of Self-Esteem from Academic Stressors and Faculty Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: RSE T2 (C)	.779**	.779**	.607**	135.82**
Step 2: ICSRLE-Academic	-.238**	.812**	.053**	13.47**
Step 3: Faculty Support	-.061	.814	.004	0.91
Step 4: ICSRLE x Faculty Support	.015	.814	.000	0.06

Note. ** $p < .001$ Dependent Variable: RSE T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

ICSRLE social stress. Entering students' perceived levels of social stress as the independent variable, results indicate that higher rates of social stress was predictive of several mental health outcomes including severity of depressive symptoms, anxiety, stress, and self-esteem. Higher rates of social stress was predictive of higher rates of self-perceived depressive symptoms ($b = .476$ $SE_b = .086$, $\beta = .452$, $p < .001$), higher rates of anxiety ($b = .501$ $SE_b = .096$, $\beta = .438$, $p < .001$), stress symptoms, ($b = .471$ $SE_b = .098$, $\beta = .456$, $p < .001$), and lower rates of self-esteem ($b = -.477$ $SE_b = .088$, $\beta = -.364$, $p < .001$).

Results indicated that social stress ($b = .498$, $SE_b = .093$, $\beta = .436$, $p < .001$) was related to severity of anxiety symptoms at the end of the academic year while there was no significant relationship between level of perceived engagement and anxiety symptoms ($b = .072$, $SE_b = .056$, $\beta = .102$, $p = .198$). Analyses also revealed that LLC students' self-reported level of engagement in LLC programming over the course of the academic year

also moderated the impact of social stress on perceived levels of anxiety symptoms at the end of the academic year. That is, the interaction term between rate of social stressors and perceived engagement was significant ($b = .401$ $SE_b = .145$, $\beta = .218$, $p < .05$) suggesting that the impact of social stress on severity of anxiety symptoms depended on whether students were engaged in their LLCs. Simple slopes for the association between social stress and anxiety symptoms were tested for low (-1 SD below the mean), moderate (mean), and high (+1 SD above the mean) levels of engagement. Results indicated that students who experienced higher rates of social stress and reported higher rates of engagement reported higher rates of anxiety symptoms. In contrast to the hypothesis, students who reported lower rates of engagement reported significantly lower rates of anxiety symptoms in response to increased levels of social stress (Figure 3). See Tables 38-49 for a summary of all analyses involving social stress as the predictor

Figure 3. Moderating Role of Student Engagement on Relationship between Social Stress and Anxiety Symptoms

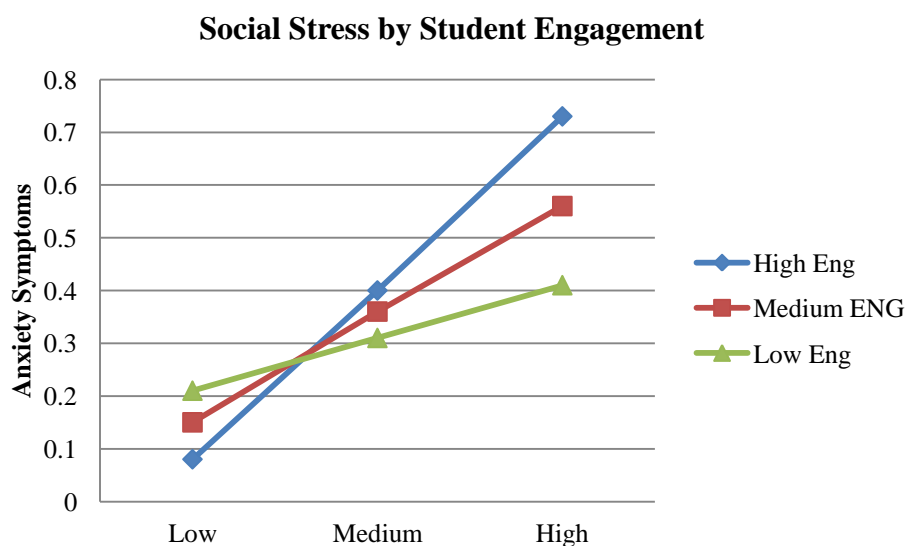


Table 38. Regression Results for Prediction of Depression from Social Stressors and Student Engagement in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Depression T2 (C)	.610**	.610**	.372**	51.53**
Step 2: ICSRLE-Social	.461**	.736**	.170**	31.81**
Step 3: Student Engagement	.107	.743	.011	2.10
Step 4: ICSRLE x Student Engagement	.059	.746	.003	0.62

Note. ** $p < .001$ Dependent Variable: Depression T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 39. Regression Results for Prediction of Depression from Social Stressors and Peer Connectedness in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Depression T2 (C)	.610**	.610**	.372**	51.53**
Step 2: ICSRLE-Academic	.461**	.736**	.170**	31.81**
Step 3: Peer Connectedness	.009	.736	.000	0.01
Step 4: ICSRLE x Peer Connectedness	.121	.745	.014	2.59

Note. ** $p < .001$; * $p < .05$. Dependent Variable: Depression T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 40. Regression Results for Prediction of Depression from Social Stressors and Mentor Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Depression T2 (C)	.610**	.610**	.372**	51.53**
Step 2: ICSRLE Academic	.461**	.736**	.170**	31.81**
Step 3: Mentor Support	-.024	.736	.001	0.10
Step 4: ICSRLE x Mentor Support	-.022	.737	.000	0.08

Note. ** $p < .001$ Dependent Variable: Depression T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 41. Regression Results for Prediction of Depression from Social Stressors and Faculty Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Depression T2 (C)	.610**	.610**	.372**	51.53**
Step 2: ICSRLE-Academic	.461**	.736**	.170**	31.81**
Step 3: Faculty Support	-.090	.741	.008	1.49
Step 4: ICSRLE x Faculty Support	.122	.751	.015	2.81

Note. ** $p < .001$ Dependent Variable: Depression T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 42. Regression Results for Prediction of Anxiety from Social Stressors and Student Engagement in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Anxiety T2 (C)	.555*	.555**	.308**	38.73**
Step 2: ICSRLE-Social	.438**	.688**	.165**	26.97**
Step 3: Student Engagement	.067	.691	.004	0.69
Step 4: ICSRLE x Student Engagement	.218*	.722*	.043*	7.63*

Note. ** $p < .001$; * $p < .05$ Dependent Variable: Anxiety T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 43. Regression Results for Prediction of Anxiety from Social Stressors and Peer Connectedness in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Anxiety T2 (C)	.555**	.555**	.308**	38.73**
Step 2: ICSRLE-Social	.438**	.688**	.165**	26.97**
Step 3: Peer Connectedness	.094	.694	.008	1.34
Step 4: ICSRLE x Peer Connectedness	.045	.695	.002	0.30

Note. ** $p < .001$ Dependent Variable: Anxiety T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 44. Regression Results for Prediction of Anxiety from Social Stressors and Mentor Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Anxiety T2 (C)	.555**	.555**	.308**	38.73**
Step 2: ICSRLE Social	.438**	.688**	.165**	26.97**
Step 3: Mentor Support	.075	.692	.005	0.87
Step 4: ICSRLE x Mentor Support	.126	.703	.015	2.53

Note. ** $p < .001$ Dependent Variable: Anxiety T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 45. Regression Results for Prediction of Anxiety from Social Stressors and Student/Faculty Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: Anxiety T2 (C)	.555**	.555**	.308**	38.73**
Step 2: ICSRLE-Social	.438**	.688**	.165**	26.97**
Step 3: Faculty Support	-.005	.688	.000	0.00
Step 4: ICSRLE x Faculty Support	.023	.688	.001	0.09

Note. ** $p < .001$ Dependent Variable: Anxiety T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 46. Regression Results for Prediction of Self-Esteem from Social Stressors and Student Engagement in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: RSE T2 (C)	.775**	.775**	.600**	130.54**
Step 2: ICSRLE-Social	-.364**	.838**	.102**	29.34**
Step 3: Student Engagement	.012	.838	.000	0.04
Step 4: ICSRLE x Student Engagement	-.051	.839	.003	0.71

Note. ** $p < .001$ Dependent Variable: RSE T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 47. Regression Results for Prediction of Self-Esteem from Social Stressors and Peer Connectedness in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: RSE T2 (C)	.775**	.775**	.600**	130.54**
Step 2: ICSRLE-Academic	-.364**	.838**	.102**	29.34**
Step 3: Peer Connectedness	.006	.838	.000	0.01
Step 4: ICSRLE x Peer Connectedness	-.042	.839	.002	0.48

Note. ** $p < .001$ Dependent Variable: RSE T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 48. Regression Results for Prediction of Self-Esteem from Social Stressors and Mentor Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: RSE T2 (C)	.775**	.775**	.600**	130.54**
Step 2: ICSRLE Social	-.364**	.838**	.102**	29.34**
Step 3: Mentor Support	-.016	.838	.000	0.07
Step 4: ICSRLE x Mentor Support	-.037	.839	.001	0.39

Note. ** $p < .001$ Dependent Variable: RSE T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

Table 49. Regression Results for Prediction of Self-Esteem from Social Stressors and Faculty Support in LLCs

Variable	β	R	ΔR^2	ΔF
Step 1: RSE T2 (C)	.775**	.775**	.600**	130.54**
Step 2: ICSRLE-Social	-.364**	.838**	.102**	29.34**
Step 3: Faculty Support	-.028	.838	.001	0.21
Step 4: ICSRLE x Faculty Support	-.008	.838	.000	0.02

Note. ** $p < .001$ Dependent Variable: RSE T3, Beta weights are standardized and indicate the direction of the effect at the step the predictor entered the equation. C = Control.

CHAPTER FIVE

DISCUSSION

The purpose of this study was to examine possible benefits of participation in Living Learning Programs (Stassen, 2003; Inkelas et al., 2006; Zhao & Kuh, 2004). In particular the current study examined the potential for LLCs to benefit first-year college students' mental and emotional health. Moreover, an underlying goal of this study also was to explore whether LLCs could be viewed as an effective preventive program aimed at diminishing the potential negative impact of increased stressors on first-year students. Overall, the study provided support for some hypotheses regarding the potential for LLCs to support student mental health across their first year in college, but mixed findings in relation to other hypotheses. Nonetheless, findings from the current study extend previous literature by providing both clinical and practical information that can shape future campus programming initiatives and research directions.

Main Findings

Contrary to researchers' hypothesis and past research (McCabe et al., 2007, Zhao & Kuh, 2004), students who chose to participate in LLCs did not significantly differ from their non-LLC counterparts in terms of pre-college academic performance (i.e. GPA, ACT cumulative score). Across the matched groups, incoming students presented as academically high achieving, earning, on average, both high grade marks and high standardized test scores. Moreover, students rated themselves as highly prepared to meet

the academic challenges required to succeed in college. More generally, our complete sample presented as able to effectively respond to stressors commonly associated with the transition and the first year.

In terms of outcome variables – mental health and emotional wellbeing – results further supported the hypothesis that students in our sample, and in particular students in LLCs, were well equipped to meet the demands of their first year. Results indicated that the sole difference lied in the observation that students in LLCs presented with less severe symptoms of depression at the start of the academic year. In terms of other mental health indicators explored in the current study (i.e., anxiety, stress symptoms, and self-esteem), our two groups did not significantly differ and reported feeling equally prepared to meet both the social and personal demands of college.

These preliminary findings would suggest that living learning programs may not necessarily attract students that differ from students who choose to live in traditional residential settings. While past researchers argued that living learning programs may attract students who are more academically-oriented (McCabe et al, 2007), findings from the current study suggest that students who chose to join living learning communities did not significantly differ from their traditional residential setting counterparts on pre-college mental health or academic outcomes. A possible caveat is that the current study did not assess students' attitudes and expectations for social aspects of their living environment. Since social exploration and recreational experiences play a vital role in student development, it is possible that students in these two groups may actually differ with respect to their expectations and wishes to engage in the social aspects of college life. Therefore, future studies would benefit from exploring whether students who choose

to join LLCs do so because they have different expectations with respect to how engaged they will become in the more social and non-academic aspects of college life.

Moreover, since no significant group differences were found across most measures of mental health except for depression, it appears that students who are considered to be at higher risk for mental or emotional health issues, are not necessarily more likely to seek out supportive programs such as LLCs. Interestingly, for both groups, mean and median values of severity of depressive symptoms were at the lower end of their range suggesting that, despite the significant difference in severity of depressive symptoms, both groups presented with very low severity of emotional distress overall (i.e., symptoms of depression, anxiety, stress, and self-esteem) at the start of college. In sum, our sample presented as academically and emotionally well-adjusted and prepared to meet the demands of college life, a fact that had a significant impact on the results of this study.

Because of the increased academic requirements associated with participation LLCs, it was hypothesized that LLC students would experience significantly more academic-related stress at the end of the first semester (November). Contrary to our expectations, students in LLCs and traditional residential settings reported experiencing similar amounts of college-related academic and social stress. On average, both groups, reported experiencing low levels of stress associated with navigating the social and academic demands of college.

As expected, though, students involved in LLCs reported significantly higher rates of academic, social, and institutional attachment at the end of their first semester. Moreover, they reported feeling more academically supported by their instructors, a

cornerstone of living learning programs. Across measures of adjustment and attachment, students in LLCs reported higher rates of successful adjustment to the novel social and academic demands of college and felt as though they were more successfully integrated into their collegiate environment. Notable though, is the fact that despite these differences in successful adjustment to demands and stressors, both groups continued to demonstrate comparably low rates of depressive, anxiety, stress related symptoms, and a strong sense of self-esteem across their transition to college.

Whereas a review of the literature suggests that incoming students present with significant rates of mental health issues and demands (e.g., Shea, 2002), the current study's sample presented as overall well-adjusted at the beginning of the academic year and to some extent across the academic year. In light of these findings, the benefits of participation in LLCs may actually depend on the degree to which the LLC prevents students from experiencing increased anxiety, depressive, and stress symptoms as they are introduced to novel academic and social stressors and navigate the increase in demands associated with their first year.

Surprisingly, findings indicated that, within LLCs, students tended to report increasing symptoms of depression across time, with students reporting higher rates of depressive symptoms at the end of both their fall and spring semesters compared to non-LLC students. Across time-points, students in LLCs also reported higher rates of anxiety symptoms when controlling for differences in depression. Moreover, moderation analyses revealed that students in LLCs demonstrated more significant increases in symptoms of anxiety in response to increases in social stress. A similar trend was not observed in the traditional residential setting group where symptoms of depression, anxiety, and stress

remained stable across the academic year. It could be argued that underlying constructs of LLCs (i.e., shared living environments, shared classes, and participation in shared activities) may be considered as both beneficial and detrimental to students' emotional well-being. The fact that students involved in LLC are required to spend proportionally more time with the same group of peers, may in turn make it more difficult for them to develop more diverse and maybe more beneficial support resources across campus; as may be the case for non-LLC students who are free to become involved in a variety of social circles. Students in LLCs primarily interacted and surrounded themselves with peers that shared similar interests and were involved in the same activities and events. While this fact may be particularly beneficial for students as they first enter college (i.e., first days, weeks), it may backfire over longer periods of time. As emerging adulthood is viewed as a time of transition, exploration, and change (Arnett, 2004), forcing students to live in an environment where everyone has similar interests and is engaged in similar activities, may hinder healthy exploration and development, and actually lead to conflict and increased stress. Anecdotally, administrators observed that students involved in LLCs were more likely to demonstrate "clique" like social behaviors which lead to increased conflict and reminded them of how students interacted in high school (A fact that was not observed among traditional students). Students in LLCs were also observed to be less likely to explore interest independently and venture beyond their individual LLC. Accordingly, as students were required to become more independent as the semester and academic year progressed, administrators observed students experiencing difficulties that traditional students were more likely to experience and overcome at an earlier stage in their transition to college.

Moreover, results suggested that involvement in LLCs had little impact on students' overall well-being at the end of students' first or second semester. In fact, analyses suggest that being involved in an LLC did not predict or relate to better mental health or emotional well-being at the end of both fall and spring semesters. Even more surprising, and contradictory to other studies (Friedlander et al., 2007), was the observation that participation in LLCs was not predictive of increased social and academic-adjustment, as well as increased involvement in academically-oriented supportive relationships throughout the academic year. Whereas students in LLCs did report higher rates of social and academic adjustment at the end of their first semester, these differences were not attributable to participation in LLCs. These findings might suggest that difference in adjustment could be attributable to factors not related to LLC programming. In fact, it may be that pre-college and environmental variables not captured by measures in this study may better predict student adjustment across domains. It may be that prior to college students in LLCs were more likely to hold accurate perceptions of what college life would entail, and were more prepared for the demands and expectations of college hence predicting better adjustment (Baker et al., 1985). It is unclear though which factor or construct should be investigated as possibly predicting adjustment difference once the academic year began. It may be that a more complex interplay between pre college and current environmental factors is responsible, one that cannot be captured solely by grouping students into LLC or non-LLC categories.

In analyses that focused solely on students in LLCs, results further contradicted our hypotheses. Contrary to past research suggesting positive outcomes related to participation in LLC programming (Inkelas, et al., 2008), the current study found that

students who demonstrated high levels of engagement in programming and relationships, tended to report significant increases in self-reported anxiety and depression in response to academic and social stressors. Although this result may appear somewhat contradictory and alarming for administrators and researchers attempting to justify the use of such programs as preventative options, it is unclear to what extent the severity of these symptom increases affect students' success or overall adjustment to college. In fact, as noted above, despite statistically significant findings, students in LLCs who reported increases in severity of mental health symptoms still experienced symptoms at the lower end of the range of severity. Therefore, these statistically significant findings may be of limited clinical or practical importance. Moreover, findings may be interpreted in light of the fact that LLC programming is considered more rigorous and academically demanding. As such, it would be expected that students in LLC programs will experience increased symptoms of stress, anxiety, and depression. The fact that we continued to observe low levels of severity across the academic year despite the increased demands and expectations, suggests that these programming options are effectively and successfully supporting students' adjustment. In other words, if students were not being supported in their LLC programming by the intrinsic nature of the programming (i.e. peer and faculty mentoring, collaborative learning, shared residential and academic space), we would expect more significant clinical changes in severity of symptoms in response to stressors in this subsample.

Importantly, the lack of a significant predictive relationship between participation in LLCs and positive mental health outcomes should in no way be viewed as an indication of a failure of such programs. In general, research findings are often mixed,

with more rigorous studies suggesting that the impact of LLCs may be less direct. In fact, the experiences of first year students are multifaceted and fluid; thus, researchers should not solely categorize students based on LLC participation. Moreover, researchers who have investigated the academic and social benefits of LLCs (Pike, 2008; Inkelas et al, 2004), suggest that we should focus more on the underlying constructs of LLCs (e.g., impact of shared living and class environment vs. increased independence; increased interaction with faculty vs. traditional relationships) as possible direct variables influencing student development. Moreover, the positive effects of learning communities may be significantly influenced by institutional and student characteristics (Pike, 2008).

Also, given the limited variability in mental health functioning in our sample, it was unlikely that the students in either group would experience either severe deterioration in emotional wellbeing or significant increases in personal and emotional adjustment. As such, the fact that students in both groups continued to show minimal variability or deterioration across the academic year could be viewed as an indicator of program effectiveness, particularly given that students in the LLC group were faced with greater academic demands.

Limitations, Recommendations, and Future Directions

Several limitations and future directions of the present study are worthy of mention and should be considered when interpreting the statistical and clinical implications of the current study. First, as noted throughout the discussion, the current study examined a relatively homogenous sample in terms of academic, social, and emotional adjustment variables. The sample was also predominantly Caucasian, female, and from high-earning families and less representative of a more diverse college

population. As such, they presented as possibly better equipped to meet the demands of college. Thus, it is likely that supportive programming options would have had a limited impact on their adjustment and add little benefit. We would expect that supportive and preventive measures such as LLCs would have had a more significant impact on a more diverse sample of students or on those who have been known to struggle across the transition to college including students who identify as being part of minority groups. Therefore, a future direction and next step in investigating the possible mental health benefits of LLCs would be to investigate more diverse samples, including non-traditional students. One such population would be first-generation and minority students who may be at higher risk for academic and social failure due to a lack of familiarity with higher education and related stressors. In fact, researchers argue that the transitional needs of first-generation students are not often met by traditional support services on college campuses. Indeed, LLCs aimed at these high-risk groups may provide significant benefits across several domains (Ramos-Sanchez & Nichols, 2007). Other groups that may be targeted are students who have been identified by high-school counselors as being at-risk for academic failure or in need of increased attention for social and emotional needs. This would require universities and administrators to begin open communication with students during the secondary school years.

Second, the current study's final sample was limited in that it may not have been representative of the larger population from which it was drawn. Specifically, our final sample presented as experiencing more severe symptoms of stress and lower levels of self-esteem, but also as having higher high school GPAs than those not in the final sample. As such, the generalizability of our findings to the larger population may be

limited. Focusing solely on LLC students, we found that our sample was generally representative of the larger LLC population, as the only difference between samples was with respect to high school GPA. Nonetheless, it is recommended that future studies work to increase the size of their samples and include more than one institution. Moreover, since some studies indicate that the benefits of LLCs (in terms of academics) are not evident until later in students' college career, it may be beneficial to follow samples across all of the college years.

A third and final limitation, and corresponding recommendation that requires closer attention involves the consistency in how LLCs were implemented in the current institution. Due to statistical and methodological reasons, individual thematically-oriented LLCs had to be combined into a single categorical variable for our analyses. The fact is that while all individual living learning communities had similar basic requirements (e.g., students had to take certain number of classes; live in same residence hall/floor, meet with mentors, meet in study groups), we did not assess the extent to which each LLC effectively implemented their programming and we also did not have data on differences in programming across LLCs. As such, future research endeavors should examine how effectively each component is implemented across LLCs. This will allow researchers to better identify: a) which components are required for individual benefits, and b) how level of implementation and support interact with student-related constructs to provide the highest level of benefits. For example, studies have found that socially-oriented activities may predict better mental health benefits as compared to academic oriented activities (Inkelas & Weisman, 2003; Zhao & Kuh, 2004). Therefore, it may be that these components of LLCs may require increased attention and support

from administrators. Moreover, it is likely that some students will benefit from more academically-oriented LLCs, while others will benefit from more social and liberal arts-oriented LLCs.

Living Learning Communities have been identified as successful resources for strengthening first-year student retention and academic achievement (Taylor, Moore, MacGregor & Lindblad, 2003). The research on the effectiveness of this type of supportive programming with respect to students' mental health is still in its infancy and findings of the current study suggest that such programs do warrant further research. Primarily, our findings suggest that universities should not rely solely on the possibility of greater academic benefits when deciding to implement LLCs. Rather, they should take a closer look at how such programs could both benefit as well as hinder students' emotional development. Findings from the current study suggest that not all students may necessarily benefit from LLC programs. In fact, we would argue, based on our findings, that for certain students, participating in a structured environment such as one created by LLCs programming might actually predict increased symptoms of distress in response to increased academic and social stressors. In light of certain limitations and shortcomings of this study, we suggest that researchers continue to investigate how LLCs assist students through this transitional and challenging period of development. Indeed, it is likely that more methodologically rigorous studies will shed light on how LLCs benefit different types of student population across academic, social, and emotional domains.

APPENDIX A
BACKGROUND QUESTIONS

Please provide the following information about yourself:

1. DOB: _____
2. Sex:
 - a. Male
 - b. Female
3. Race/Ethnicity group:
 - a. American Indian
 - b. Asian
 - c. Black
 - d. Hispanic
 - e. White
 - f. Other, specify: _____
 - f. Multiracial, specify: _____
4. Mother's highest level of education completed:
 - a. Grammar school or less
 - b. Some high school
 - c. High school graduate
 - d. Postsecondary school other than college/some college
 - e. College degree
 - f. Some graduate school
 - g. Graduate degree
5. Father's highest level of education completed:
 - a. Grammar school or less
 - b. Some high school
 - c. High school graduate
 - d. Postsecondary school other than college/some college
 - e. College degree
 - f. Some graduate school
 - g. Graduate degree
6. First generation status based on parent(s) with less than 'some college':
 - a. Yes
 - b. No
7. What is your best estimate of your parents income?
 - a. Less than \$10,000
 - b. \$10,000- 14,999
 - c. \$15,000- 19,999
 - d. \$20,000- 24,999
 - e. \$25,000- 29,999
 - f. \$30,000- 39,999
 - g. \$40,000- 49,999
 - h. \$50,000- 59,999
 - i. \$60,000- 74,999
 - j. \$75,000- 99,999
 - k. \$100,000- 149,999
 - l. \$150,000- 199,999
 - m. \$200,000- 249,999
8. High school GPA (available through University Records)
9. ACT score (available through University Records)

APPENDIX B

THE INVENTORY OF COLLEGE STUDENTS' RECENT LIFE EXPERIENCES

The following is a list of experiences which many students have some time or other. Please indicate for each experience how much it has been a part of your life over the past month.

Item	not at all part of my life	only slightly part of my life	distinct part of my life	very much part of my life
1. Conflicts with boyfriend's/girlfriend's/spouse's family	0	1	2	3
2. Being let down or disappointed by friends	0	1	2	3
3. Conflict with professor(s)	0	1	2	3
4. Social rejection	0	1	2	3
5. Too many things to do at once	0	1	2	3
6. Being taken for granted	0	1	2	3
7. Financial conflicts with family members	0	1	2	3
8. Having your trust betrayed by a friend	0	1	2	3
9. Separation from people you care about	0	1	2	3
10. Having your contributions overlooked	0	1	2	3
11. Struggling to meet your own academic standards	0	1	2	3
12. Being taken advantage of	0	1	2	3
13. Not enough leisure time	0	1	2	3
14. Struggling to meet the academic standards of Others	0	1	2	3
15. A lot of responsibilities	0	1	2	3
16. Dissatisfaction with school	0	1	2	3
17. Decisions about intimate relationship(s)	0	1	2	3
18. Not enough time to meet your obligations	0	1	2	3
19. Dissatisfaction with your mathematical ability	0	1	2	3
20. Important decisions about your future career	0	1	2	3
21. Financial burdens	0	1	2	3
22. Dissatisfaction with your reading ability	0	1	2	3
23. Important decisions about your education	0	1	2	3
24. Loneliness	0	1	2	3
25. Lower grades than you hoped for	0	1	2	3
26. Conflict with teaching assistant(s)	0	1	2	3
27. Not enough time for sleep	0	1	2	3
28. Conflicts with your family	0	1	2	3
29. Heavy demands from extracurricular activities	0	1	2	3
30. Finding courses too demanding	0	1	2	3
31. Conflicts with friends	0	1	2	3
32. Hard effort to get ahead	0	1	2	3
33. Poor health of a friend	0	1	2	3
34. Disliking your studies	0	1	2	3
35. Getting "ripped off" or cheated in the purchase of services	0	1	2	3

Item	not at all part of my life	only slightly part of my life	distinct part of my life	very much part of my life
36. Social conflicts over smoking	0	1	2	3
37. Difficulties with transportation	0	1	2	3
38. Disliking fellow student(s)	0	1	2	3
39. Conflicts with boyfriend/girlfriend/spouse	0	1	2	3
40. Dissatisfaction with your ability at written expression	0	1	2	3
41. Interruptions of your school work	0	1	2	3
42. Social isolation	0	1	2	3
43. Long waits to get service (e.g., at banks, stores, etc.)	0	1	2	3
44. Being ignored	0	1	2	3
45. Dissatisfaction with your physical appearance	0	1	2	3
46. Finding course(s) uninteresting	0	1	2	3
47. Gossip concerning someone you care about	0	1	2	3
48. Failing to get expected job	0	1	2	3
49. Dissatisfaction with your athletic skills	0	1	2	3

APPENDIX C
SELECTED NSLLP ITEMS

INTERACTIONS WITH PEERS

During interactions with other students outside of class, how often have you done each of the following during the *current* school year?

	1	2	3	4
	Never	A Few Times a semester	A Few Times a Month	Once or More a Week
Discussed something learned in class	1	2	3	4
Talked about current news events	1	2	3	4
Shared your concerns about classes and assignments	1	2	3	4
Talked about your future plans and career ambitions	1	2	3	4
Studied in groups	1	2	3	4

INTERACTIONS WITH INSTRUCTORS

About how often have you done each of the following during the *current* school year?

	1	2	3	4
	Never	A Few Times a semester	A Few Times a Month	Once or More a Week
Asked your instructor for information related to a course you were taking	1	2	3	4
Visited informally with an instructor before or after class	1	2	3	4
Made an appointment to meet with an instructor in his/her office	1	2	3	4
Communicated with your instructor using e-mail	1	2	3	4
Visited informally with an instructor during a social occasion (e.g., over coffee or lunch)	1	2	3	4
Discussed your career plans and ambitions with an instructor	1	2	3	4
Discussed personal problems or concerns with an instructor	1	2	3	4
Went to a cultural event (e.g., concert or play) with an instructor or class	1	2	3	4
Worked with an instructor on an independent project	1	2	3	4
Worked with an instructor involving his/her research	1	2	3	4

STUDENT GROWTH

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

	1	2	3	4
	Not Grown at all	Grown Somewhat	Grown	Very Much Grown
Becoming more aware of different philosophies, lifestyles, and cultures.	1	2	3	4
Developing your own values and ethical standards.	1	2	3	4
Understanding yourself and your abilities, interests, and personality	1	2	3	4
Improving your ability to get along with people different than yourself	1	2	3	4
Ability to put ideas together and to see relationships between ideas	1	2	3	4
Ability to learn on your own, pursue ideas, and find information you need.	1	2	3	4
Appreciation of racial/ethnic differences.	1	2	3	4
Ability to critically analyze ideas and information.	1	2	3	4
Learning more about things that are new to you.	1	2	3	4
Appreciation of art, music, and drama.	1	2	3	4
Gaining a broad general education about different fields of knowledge.	1	2	3	4
Openness to views that you oppose.	1	2	3	4
Ability to discuss controversial issues.	1	2	3	4
Motivation to further explore ideas presented in class.	1	2	3	4

APPENDIX D
STUDENT ADAPTATION TO COLLEGE QUESTIONNAIRE (SACQ)

These statements describe people's college experiences. Read each one and decide how well it applies to you at the present time (within the past few days). For each statement, choose the number along the continuum (1 – Applies very closely to me, 9 – Doesn't apply to me at all) that best represents how closely the statement applies to you.

1. I feel that I fit in well as part of the college environment.
2. I have been feeling tense or nervous lately.
3. I have been keeping up to date on my academic work.
4. I am meeting as many people and making as many friends as I would like at college.
5. I know why I'm in college and what I want out of it.
6. I am finding academic work at college difficult.
7. Lately I have been feeling blue and moody a lot.
8. I am very involved with social activities in college.
9. I am adjusting well to college.
10. I have not been functioning well during examinations.
11. I have felt tired much of the time lately.
12. Being on my own, taking responsibility for myself, has not been easy.
13. I am satisfied with the level at which I am performing academically.
14. I have had informal, personal contacts with college professors.
15. I am pleased now about my decision to go to college.
16. I am pleased now about my decision to attend this college in particular.
17. I'm not working as hard as I should at my course work.
18. I have several close social ties at college.
19. My academic goals and purposes are well-defined.
20. I haven't been able to control my emotions very well lately.
21. I'm not really smart enough for the academic work I am expected to be doing now.
22. Lonesomeness for home is a source of difficulty for me now.
23. Getting a college degree is very important to me.
24. My appetite has been good lately.
25. I haven't been efficient in the use of study time lately.
26. I enjoy living in a college dormitory. (Any university housing should be regarded as a dormitory. Please LEAVE BLANK if you do not live in a dormitory.)
27. I enjoy writing papers for courses.
28. I have been having a lot of headaches lately.
29. I really haven't had much motivation for studying lately.
30. I am satisfied with the extracurricular activities available at college.
31. I've given a lot of thought lately as to whether I should ask for help from the Psychological/Counseling Services Center (Wellness Center, University Ministry) or from a psychotherapist outside of college.
32. Lately I have been having doubts regarding the value of a college education.
33. I am getting along very well with my roommate(s) at college. (Please LEAVE BLANK if you do not have a roommate.)

34. I wish I were at another college or university.
35. I've put on (or lost) too much weight recently.
36. I am satisfied with the number and variety of courses available at college.
37. I feel that I have enough social skills to get along well in the college setting.
38. I have been getting angry too easily lately.
39. Recently I have had trouble concentrating when I am trying to study.
40. I haven't been sleeping very well.
41. I'm not doing well enough academically for the amount of work I put in.
42. I'm having difficulty feeling at ease with other people at college.
43. I am satisfied with the quality or caliber of courses available at college.
44. I am attending classes regularly.
45. Sometimes my thinking gets muddled up too easily.
46. I am satisfied with the extent to which I am participating in social activities at college.
47. I expect to stay at this college for a bachelor's degree.
48. I haven't been mixing too well with the opposite sex lately.
49. I worry a lot about my college expenses.
50. I am enjoying my academic work at college.
51. I have been feeling lonely a lot at college lately.
52. I am having a lot of trouble getting started on homework assignments.
53. I feel I have good control over my life situation at college.
54. I am satisfied with my program of courses for this semester/quarter.
55. I have been feeling in good health recently.
56. I feel I am very different from other students at college in ways I don't like.
57. On balance, I would rather be at home than here.
58. Most of the things I am interested in are not related to any of my course work at college.
59. Lately I have been giving a lot of thought to transferring to another college.
60. Lately I have been giving a lot of thought to dropping out of college altogether and for good.
61. I find myself giving considerable thought to taking time off from college and finishing later.
62. I am very satisfied with the professors I have now in my courses.
63. I have some good friends or acquaintances at college with whom I can talk about any problems I may have.
64. I am experiencing a lot of difficulty coping with the stresses imposed upon me in college.
65. I am quite satisfied with my social life at college.
66. I'm quite satisfied with my academic situation at college.
67. I feel confident that I will be able to deal in a satisfactory manner with future challenges here at college.

APPENDIX E

ROSENBERG SELF-ESTEEM SCALE

DEPRESSION ANXIETY STRESS SCALE-21

SELF EVALUATION

Please select the appropriate answer for each item, depending on whether you strongly agree, agree, disagree, or strongly disagree with it.

		1	2	3	4
		Strongly disagree	Disagree	Agree	Strongly agree
1.	On the whole, I am satisfied with myself.	1	2	3	4
2.	At times, I think I am no good at all.	1	2	3	4
3.	I feel that I have a number of good qualities.	1	2	3	4
4.	I am able to do things as well as most other people.	1	2	3	4
5.	I feel I do not have much to be proud of.	1	2	3	4
6.	I certainly feel useless at times.	1	2	3	4
7.	I feel that I'm a person of worth, at least on an equal plane with others.	1	2	3	4
8.	I wish I could have more respect for myself.	1	2	3	4
9.	All in all, I am inclined to feel that I am a failure.	1	2	3	4
10.	I take a positive attitude toward myself.	1	2	3	4

DEPRESSION ANXIETY STRESS SCALE-21

The rating scale is as follows:

- 0 Did not apply to me at all
- 1 Applied to me to some degree, or some of the time
- 2 Applied to me to a considerable degree, or a good part of time
- 3 Applied to me very much, or most of the time

I found it hard to wind down	0	1	2	3
I was aware of dryness of my mouth	0	1	2	3
I couldn't seem to experience any positive feeling at all	0	1	2	3
I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
I found it difficult to work up the initiative to do things	0	1	2	3
I tended to over-react to situations	0	1	2	3
I experienced trembling (eg, in the hands)	0	1	2	3
I felt that I was using a lot of nervous energy	0	1	2	3
I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
I felt that I had nothing to look forward to	0	1	2	3
I found myself getting agitated	0	1	2	3
I found it difficult to relax	0	1	2	3
I felt down-hearted and blue	0	1	2	3
I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
I felt I was close to panic	0	1	2	3
I was unable to become enthusiastic about anything	0	1	2	3
I felt I wasn't worth much as a person	0	1	2	3
I felt that I was rather touchy	0	1	2	3
I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
I felt scared without any good reason	0	1	2	3

APPENDIX F
LIVING LEARNING COMMUNITY ITEMS

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