

ABSTRACT

CHAFIN, CHRISTOPHER NEIL. The Impact of a Living Learning Community and Inquiry Guided Learning on First Year Students' Emotional Intelligence and Academic Achievement.

Nationally, data reveals that 33% of all first-year college students entering public colleges and universities will drop out before their sophomore year and an additional 20% are likely to drop out before completing their degree (Habley, 2002, ACT, 2002). 75% of students who drop out of college do so within the first two years and a majority of these fail to complete the first year. It is becoming critical that we seek to understand the forces behind successful academic adjustment, especially during the first-year of college (Boulter, 2002). One factor that has been shown to have a consistent relationship with retention is academic achievement (DeBerard, Spielmans, & Julka, 2002). Higher achieving students persist at a significantly greater rate than their lower achieving counterparts (Kirby & Sharpe, 2001; McGrath & Braunstein, 1997; Ryland, Riordan, & Brack, 1994). Recently, studies have shown that emotional intelligence (EI) can be predictive of academic success and greater retention rates. However, there has been no research that has studied the impact of a residential living learning community on emotional intelligence.

The current study did not find significant differences between students who participated in a living-learning community and those who did not regarding emotional intelligence gains or academic achievement. However, crucial questions were raised surrounding the timing of such instruments and the types of instruments used to measure emotional intelligence.

**THE IMPACT OF A LIVING LEARNING COMMUNITY
AND INQUIRY GUIDED LEARNING ON FIRST YEAR
STUDENTS' EMOTIONAL INTELLIGENCE AND ACADEMIC ACHIEVEMENT**

by

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The following work is Dedicated to the loving memory of

Emily Councilman Chafin

and to the promising futures of

Ashley Elizabeth Chafin and Alexandra Preston Chafin

BIOGRAPHY

Christopher Neil Chafin is a native North Carolinian who had lived in 7 of the state's cities before coming to Raleigh and N. C. State University. After obtaining a B.A. in Psychology from Wake Forest University in 1985, he worked primarily in the community agency field, serving as a residential counselor for troubled youth, a teacher-parent for autistic youth, and five years as the Director of a Children's Home in Concord N.C. with Lutheran Family Services of the Carolina's.

In 1992, guided by Dr. Norman Sprinthall, Chris recognized his passion for lifelong learning, developmental theory, and academia. He entered N.C. State University intent on furthering his education and returning to the community. During 1992-93, he again worked for Lutheran Family Services as an AIDS/HIV+ case manager for clients in the eastern part of the state. However, in 1994, he discovered a passion for working with college students. He began working as a counselor for the University Transition Program and, later, as a counseling intern at the University Counseling Center. He obtained an M.S. in Counselor Education in 1995, and immediately began working full-time as an academic adviser in First Year College, a new innovative program, at N.C. State. Through that position, he has helped many students in their quests for appropriate majors, taught classes, served on a variety of university committees, and has led several programming efforts in different realms of student development.

In 1997, after the birth of his second child, Chris returned to pursue his Ph. D. in Counselor Education in the department in which he had earned his master's degree. Nine years later, working full-time, taking one class at a time, relishing his role as a father, and suffering several difficult losses, this pursuit has come to fruition.

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I would like to acknowledge and thank this wonderful committee for providing me such an opportunity. First and foremost, my committee chair, Dr. Sui-Man "Raymond" Ting, who assumed this role only two years ago, has been instrumental in keeping me focused on the current research. For this, I will forever remain in your debt. Dr. Thomas Conway is the type of visionary leader who I admire and hope to emulate. His challenge and support to me over the years have been both inspirational and educational. Dr. Roger Callanan, a friend, colleague, and mentor over the past decade has been instrumental in my perspectives in areas that far exceed the boundaries of the college setting. Dr. Deb Luckadoo is a tireless advocate for students and her perspectives on student development have indeed aided in shaping the way in which I view the world of student affairs and how I conduct myself with my students each and every day. I would not be where I am today without the unique contributions that each of these individuals have made to my

life. I hope that my continued work will adequately reflect the influence that they have had on me. For this, I offer my deepest appreciation.

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CHAPTER ONE

INTRODUCTION

Background

As the costs of education continue to rise and increased attention has been given to financial accountability, college and university administrators have struggled with the issue of low student retention rates for over two decades. However, recent data still reveals that 33% of all first-year college students entering public colleges and universities will drop out before their sophomore year and an additional 20% are likely to drop out before completing their degrees (Habley, 2002, ACT, 2002). 75% of students who drop out of college do so within the first two years and a majority of these fail to complete the first year. Of students who entered four-year institutions in 1995-96, only slightly more than 50% graduated from those institutions within six years (NCES, 2003). Even when considering transfer rates to other four-year institutions, the six-year degree completion rate for this cohort of students was a mere 63% (NCES, 2003). It is becoming critical that we seek to understand the forces behind successful academic adjustment, especially during the first-year of college (Boulter, 2002).

A number of characteristics have been associated with high student attrition rates at four-year public institutions. Among these include first-generation college students, lack of rigorous high school preparedness, and disadvantaged students as measured by Pell Grant awards (NCES, 2003). However, one factor that has been shown to have a consistent relationship with retention is academic achievement (DeBerard, Spielmans, & Julka, 2002). Higher achieving students persist at a significantly greater rate than their

lower achieving counterparts (Kirby & Sharpe, 2001; McGrath & Braunstein, 1997; Ryland, Riordan, & Brack, 1994).

The current study focused on three theories and/or models that have been utilized in attempting to enhance academic achievement in college students. First, Arthur Chickering's (1969,1993) theory of College Student Development proposes seven developmental vectors that college students encounter as well as institutional factors that influence student development. Chickering's (1969,1993) Theory of College Student Development has been widely accepted by researchers and practitioners due to its conceptual and practical framework and has been empirically studied (White & Hood, 1989; Thieke, 1994; Martin, L., 2000). Second, living-learning communities, defined as "any one of a variety of curricular structures that link together several existing courses-or actually restructure the material entirely-so that students have opportunities for deeper understanding and integration of the material they are learning and more interaction with one another and their teachers as fellow participants in the learning enterprise" (Shapiro & Levine, 1999 from Gabelnick, MacGregor, Matthews, & Smith, 1990, p. 19) have been shown to be effective in promoting college student adjustment and achievement (Astin, 1993: Endo & Harpel, 1982: Franklin et al, 1995: Kuh, 1991, 1996: Lamport, 1993: Pascarella & Terenzini, 1991). Third, the theory of Emotional Intelligence, defined as " a multifactorial array of interrelated emotional, personal, and social abilities that help us cope with daily demands." (Bar-On, 1997) as a developmental construct has recently been shown to impact academic achievement and retention rates (Schutte, N. & Malouff, J., 2002; Parker, Summerfeldt, Hogan, and Majeski 2003; Parker, Duffy, Wood, Bond, and Hogan 2004).

Chickering

Arthur Chickering (1969,1993) proposes seven developmental vectors in his Theory of College Student Development. These vectors are specific to college students and are loosely based on Erikson's (1959) identity development stage. Each vector has its own developmental tasks and outcomes and the vectors shift upward in complexity. While not sequential in nature (vectors may overlap and students may move through them at different rates), the first three may be seen as foundational elements for successful movement through the latter ones. The seven vectors are: developing competence, managing emotions, developing autonomy, establishing identity, freeing interpersonal relationships, developing purpose, and developing integrity Chickering (1993). He later expanded upon this theory (Chickering and Reisser, 1993) to include subsequent research from a more diverse population.

In addition to the developmental vectors, Chickering (1969) postulated that there are several factors which have key influences over students during their college career: (1) Clear and Concise Institutional Objectives; (2) Institutional Size; (3) Student-Faculty Relationships; (4) Curriculum and Teaching; (5) Residence Hall Arrangements; (6) Friendships and Student Communities; (7) Student Development Programs and Services; and (8) Creating educationally powerful environments (Chickering, 1969, Chickering and Reisser, 1993).

White & Hood (1989) sought to assess the validity of Chickering's (1969) Theory of Student Development. Through factor analysis of the subscales of the Iowa Student Development Inventory (White & Hood, 1989), six instruments designed to measure six of Chickering's (1969) vectors, only five factors were identified that accounted for the

majority of the variance. Of these, only three (sense of self-direction, cognitive-ethical development, and sense of identity development) roughly paralleled Chickering's vectors of Developing Purpose, Developing Integrity, and Establishing Identity.

In an extensive study, Thieke (1994) sought to validate Chickering's (1969) theory of student development by assessing several of the vectors that Chickering (1969) described and by examining the factors that Chickering (1969) deemed as important in influencing those vectors. Results showed that significant positive developmental change was found for Purpose, Academic Autonomy, and Intimacy. This partially validates Chickering's (1969) theory in that it confirmed that development was occurring and that the environmental measures predicted to influence development, do have significant impacts on developmental change. Second, the study showed significant positive relationships between several of the environmental variables theorized to influence change in Chickering's (1969) vectors. Those environmental variables that showed significant impact in this study were in the areas of staff-faculty interactions, participation in activities, and peer interactions and residence arrangements. In a follow-up longitudinal study, (Martin, L., 2000) explored the relationship of college experiences to psychosocial outcomes in students. This was a repeated measures study conducted on fourth-year college students who had participated in the Thieke (1994) study during their first year in college. The earlier study had primarily looked at development over the freshman year while this study examined the group to determine whether evidence existed to support Chickering's (1969) hypothesis after four years of college. Results partially supports Chickering's (1969) hypothesis regarding the influence of college on student development, citing a clear relationship between student-faculty interaction and the

development of purpose as well as a sense of competence. These were also impacted by: student community factors, clubs and organizations, student acquaintances, topics of conversation, and information in conversation. This study showed little support for Chickering's (1969) hypothesis regarding the development of mature personal relationships. What is noticeably absent from these studies is validation of Chickering's (1969, 1993) "managing emotions" vector.

Learning Communities

Living-learning communities, defined as "any one of a variety of curricular structures that link together several existing courses-or actually restructure the material entirely-so that students have opportunities for deeper understanding and integration of the material they are learning and more interaction with one another and their teachers as fellow participants in the learning enterprise" (Gabelnick, MacGregor, Matthews, & Smith, 1990, p. 19 as cited in Shapiro & Levine, 1999) have been shown to be effective in promoting college student adjustment and achievement (Astin, 1993: Endo & Harpel, 1982: Franklin et al, 1995: Kuh, 1991, 1996: Lampion, 1993: Pascarella & Terenzini, 1991).

The first large scale assessment of learning communities was conducted in 1980 by the U.S. Fund for the Improvement of Post Secondary Education (FIPSE) through the solicitation of proposals on active learning (Lenning & Ebbers, 1999). From a review of the various project evaluation reports, it was determined by FIPSE staff that learning groups were the key variable accounting for successful learning across all projects. Since that time, it has been found (Astin, 1993: Endo & Harpel, 1982: Franklin et al, 1995:

Kuh, 1991, 1996; Lamport, 1993; Pascarella & Terenzini, 1991...) that learning communities can lead to much higher academic achievement, educational aspirations, maturity, self-understanding, and retention than otherwise.

In 2002-03, at North Carolina State University, the First Year College (FYC), an intensive program designed to aid “undecided” students in the selection of a major, instituted a residential-curricular living learning community. This community is termed the FYC Village and is the latest in a long tradition of innovative learning communities implemented at North Carolina State. The residential component is comprised of students living together within two adjacent residence halls. Upper-class Resident Mentors (RM’s) are also staffed within the residence halls and student’s academic advisers are also located in one of the residence halls. The curricular component consists of “linking” courses. *Introduction to University Education*, a one-hour class taught by the student’s academic adviser is paired with a First-Year Inquiry (FYI) course. FYI courses are three-hour “Inquiry Guided Learning” (IGL) seminar classes that fulfill general education requirements. Examples include *Sociology of the Family*, *Controversial Issues in Psychology*, and *Introduction to Music*. Ambrose (2003) found that students who participated in the “linked” classes within the FYC Village significantly outperformed those students who did not participate in the linked classes. Both groups outperformed those FYC students who did not live in the FYC Village. Subsequent research (Ambrose, 2004, 2005) has not demonstrated significant differences between the linked vs.non-linked group, but has continued to show significant differences between academic performance of those students residing in the FYC Village as opposed to FYC students living outside the Village.

Emotional Intelligence

Emotional Intelligence (EI) was first coined by Salovey and Mayer (1990) as “the ability to monitor and regulate one’s feelings and those of others and to use feelings to guide thought and action.” They defined it as “a type of information processing that includes accurate appraisal of emotions in oneself and others, appropriate expression of emotion, and adaptive regulation of emotion in such a way as to enhance living.” (Mayer, DiPaulo, and Salovey, 1990). Goleman (1995) defined EI as “the capacity for recognizing our own feelings and those of others, for motivating ourselves and managing our emotions well in ourselves and in our relationships.” Reuven Bar-On (1997) defines EI as a “multifactorial array of interrelated emotional, personal, and social abilities that help us cope with daily demands.”

Parker, Summerfeldt, Hogan, and Majeski (2003) found that higher achieving “successful” (3.0+ GPA) first-year students scored significantly higher on a measure of emotional intelligence than did the “middle” (2.0-3.0 GPA) and “unsuccessful” students (< 2.0 GPA). In a more comprehensive follow-up study, Parker, Duffy, Wood, Bond, and Hogan (2004) found a significant correlation between academic achievement and emotional intelligence. In particular, academically successful students had higher levels of interpersonal, adaptability, and stress management abilities, as well as overall emotional intelligence scores.

Need for the Study

There have been several studies that have sought to validate Chickering's (1969) proposed vectors of college student development. There is also research that indicates that living-learning communities on college campuses significantly impact a number of variables including academic success. More recently, studies have shown that emotional intelligence (EI) can also be predictive of academic success and greater retention rates. However, there has been no research that has studied the impact of a residential living learning community on emotional intelligence.

Purpose of the Study

The purpose of the current study is to examine the impact of first-year student's participation in a residential/curricular learning community on emotional intelligence and academic achievement. The study investigates the impact of a residential learning community on emotional development, as measured by the Baron EQ-I-s (Bar-On, 2002) on first-year undecided students at a large southeastern public university. The current study will also examine the predictive value of emotional intelligence on academic achievement, as measured by end of year grade point average (GPA).

Research Hypothesis

The researcher hypothesizes that first-year students who participate in a residential-curricular learning community will score higher on posttest measures of Emotional Intelligence (Interpersonal, Adaptability, Stress Management and Total EQ), as measured by the BarOn EQ-I-S (Bar-On, 2002) than a cohort of students who participated in the residential-learning community, without the curricular component, and a control group of students who did not participate in the learning community. Additionally, the researcher hypothesizes that pre-test Overall Emotional Intelligence scores and scale scores of Interpersonal, Adaptability, and Stress Management, as measured by the BarOn EQ-I-S (BarOn, 2002) and participation in an IGL class, would significantly predict academic achievement, as measured by end of year grade-point average (GPA).

Definition of Terms

For the purposes of this study the following definitions are offered:

Emotional Intelligence (EI) Theory: A multifactorial array of interrelated emotional, personal, and social abilities that help us cope with daily demands (BarOn, 1997).

Learning Community: Any one of a variety of curricular structures that link together several existing courses-or actually restructure the material entirely-so that students have opportunities for deeper understanding and integration of the material they are learning and more interaction with one another and their teachers as fellow participants in the

learning enterprise (Gabelnick, MacGregor, Matthews, & Smith, 1990, p. 19 as cited in Shapiro & Levine, 1999).

First Year College Village: A residential and curricular living-learning community that challenges and supports academic, personal, and social development of undecided First Year College students in Tucker and Owen Residence Halls at North Carolina State University.

Inquiry-guided learning (IGL): An array of classroom practices that promote student learning through guided and, increasingly, independent investigation of questions and problems for which there is no single answer.

This process involves the ability to formulate good questions, identify and collect appropriate evidence, present results systematically, analyze and interpret results, formulate conclusions, and evaluate the worth and importance of those conclusions. It may also involve the ability to identify problems, examine problems, generate possible solutions, and select the best solution with appropriate justification. This process will differ somewhat among different academic disciplines. A variety of teaching strategies, used singly or, more often, in combination with one another, is consistent with inquiry-guided learning: interactive lecture, discussion, group work, case studies, problem-based learning, service learning, simulations, fieldwork, and labs as well as many others. Inquiry-guided learning must also involve writing and speaking both in classroom instruction and in the methods used to evaluate students. (Prepared by Faculty Center for Teaching and Learning and Hewlett Steering Committee September 2000; Lee, 2004)

First-Year Inquiry (FYI) seminar: A course designed specifically for First Year students that serve as general education courses during their first year at NC State. Courses are small in size (maximum 22 students) and engage students in an “inquiry guided” learning experience.

Limitations

The current investigation involves a research study comprised of college students. Therefore, results will not be generalizable to non-college populations. Also, as the current proposed sample is one of “undecided” first-year students, results may not be generalizable to other types of college students (upper class, “decided”, etc.). Although, the selection of students were conducted randomly, some selection bias may be inherent in that the students were randomly chosen from a group who had already “chosen” their living quarters. Given that the design proposed is a pre-post test with the same instrument, it is possible that practice effects could occur during the post-test with students taking a familiar instrument.

Summary

Chickering’s (1969, 1993) Theory of College Student Development has gained wide acceptance by student development practitioners in its framework and appeal to understanding student success. In light of Chickering’s (1969, 1993) theory, living-

learning community models have been shown to positively impact student success and provide some of the factors that Chickering (1969, 1993) theorized were influences on student success. Recently, research has also shown that the construct of Emotional Intelligence is also predictive of academic achievement. This study proposes to examine the relationship between a residential-curricular learning community and student's emotional intelligence. It also proposes to examine the predictive value of emotional intelligence on academic achievement.

CHAPTER 2

Literature Review

The following review will describe and examine Arthur Chickering's (1969, 1993) theory of College Student Development followed by assessment measures and empirical studies that have sought to validate this theory. Second, models of living-learning communities will be presented as well as research that has been conducted in this area. Third, the theory of emotional intelligence will be discussed with supporting empirical research. Finally, based on these findings, research questions for the current study are proposed.

Chickering's Theory

Arthur Chickering (1969) proposes seven developmental vectors in his Theory of College Student Development. These vectors are specific to college students and are loosely based on Erikson's (1959) identity development stage. Each vector has its own developmental tasks and outcomes and the vectors shift upward in complexity. The seven vectors are: developing competence, managing emotions, developing autonomy, establishing identity, freeing interpersonal relationships, developing purpose, and developing integrity.

Developing competence includes intellectual competence, physical and manual competence, and social competence. As students are exposed to the college environment, the beginning question is "can I make it here?" A successful resolution to this question in the academic, physical, and social arenas may pave the way for movement and growth through the other vectors (Chickering, 1969). *Managing emotions* involves the task of

recognizing the range of emotions and impulses that are inherent in humans and learning to appropriately express them (Chickering, 1969). *Developing autonomy* includes the tasks of establishing emotional autonomy, attaining instrumental autonomy, and recognizing one's interdependence. Emotional autonomy is the task of moving away from approval/affection seeking to a more differentiated self who can trust one's thoughts and feelings and will rely on them as valid sources of information. Instrumental autonomy is the task of becoming self-directed and goal oriented and includes the ability to identify resources and use systematic problem solving methods. The recognition of interdependence can only be achieved after the student has a sense of independence. At this point, one can realize that there are different perspectives yet there are many connections (Chickering, 1969).

The central vector of *establishing identity* cannot proceed without progress through the first three vectors. If a student can successfully understand that they have competence, are aware of their thoughts and feelings as they impact behavior, and understand that they can rely on themselves, the issue becomes a more internalized "who am I?" question. Developing a clearer sense of purpose becomes apparent especially in delving into issues where internalized decisions must be made (Chickering, 1969).

Freeing of interpersonal relationships refers to an increased capacity to engage in relationships with others without a loss of self. Successful resolution of this vector is marked by an increase in ability to see other perspectives, empathy, and the ability to have intimate and nurturing relationships. Again, this cannot be done without first establishing autonomy and a clear sense of identity (Chickering, 1969). *Developing purpose* refers to the task of establishing a clear, internalized view of one's life goals,

primarily vocationally. Successful resolution involves an accurate assessment of what interests and abilities are necessary and compatibility between these and one's life's goals. This should not be confused with a stated goal or decision that has been made prior to the establishment of one's identity (Chickering, 1969). The last vector, *developing integrity*, refers to the task of identifying one's own value system and seeking to maintain congruence between this system and behavior (Chickering, 1969).

In addition to the developmental vectors, Chickering (1969) postulated that there are several factors which have key influences over students during their college career: (1) Clear and Concise Institutional Objectives; (2) Institutional Size; (3) Student-Faculty Relationships; (4) Curriculum and Teaching; (5) Residence Hall Arrangements; (6) Friendships and Student Communities; (7) Student Development Programs and Services; and (8) Creating educationally powerful environments (Chickering, 1969, Chickering and Reisser, 1993).

Measures Designed to Assess Chickering's (1969) Theory

The Student Developmental Task and Lifestyle Inventory (SDTLI) (Winston and Miller, 1987) was developed to collect students' self-reported behaviors, attitudes, and opinions regarding psychosocial topics that relate to Chickering's seven vectors. It is based substantially on Chickering's (1969) model and on the authors' own observations (Winston and Miller, 1987). It was originally developed as a counseling tool, but over several revisions, it has come to be used as a research and program evaluation tool as well. The SDTLI is organized into developmental tasks, subtasks, and scales. The authors define a developmental *task* as "an interrelated set of behaviors and attitudes which the

culture specifics should be exhibited at approximately the same time by a given cohort in a designated context.” A *subtask* is defined as a “specific component of a larger developmental task.” A *scale* is defined as “the measure of the degree to which students report possessing certain behavioral characteristics, attitudes, and feelings.” (Winston & Miller, 1987, p. 8). The tasks, subtasks, and scales of the SDTLI were identified using factor analysis and thus, do not equate to specific vector’s in Chickering’s (1969) model. However, vectors may be seen as relating most strongly to one or another task, subtask, or scale (Winston & Miller, 1987).

The task of establishing and clarifying purpose involve subtasks of educational involvement, career planning, lifestyle planning, life management, and cultural participation. The task of developing mature Interpersonal relationships include the subtask of peer relationships, tolerance, and emotional autonomy. The SDTLI also includes the task of academic autonomy and the scales of salubrious lifestyle and intimacy (Winston & Miller, 1987).

The College Student Experiences Questionnaire (Pace, 1984) (CSEQ) is an instrument that assesses the environmental and experiential factors that Chickering (1969) proposes are important in the development of the seven vectors. The CSEQ (Pace, 1984) is a self-report instrument wherein students report on the types of activities in which they have been engaged and the quality of the student’s effort in engaging in campus life. Independent variables on the CSEQ are: experiences with faculty, student union, athletic and recreational facilities, art, music, and theater, clubs and organizations, personal experiences, student acquaintances, campus residence, topics of conversation,

information in conversation, college environment, relationships with students, relationships with faculty, and relationships with administrative personnel.

During the 1980's, University of Iowa researchers designed the Iowa Student Development Inventory (ISDI) including six scales to assess the six developmental vectors proposed by Chickering (1969). These six scales are: the Developing Competency Inventory (DCI) (Hood and Jackson, 1983a), the Managing Emotions Inventory (MEI) (Hood and Jackson, 1983b), the Developing Autonomy Inventory (DAI) (Hood and Jackson, 1983c), The Erwin Identity Scale (EIS) (Erwin, 1979), the Mines-Jensen Interpersonal Relationships Inventory (M-JIRI)(Mines, 1977), and the Developing Purposes Inventory (DPI) (Barratt, 1978).

The DCI (Hood and Jackson, 1983a) contains 70 items that form three subscales: Self-Confidence, Competency in Math, and Competency in Writing. Reliability coefficients have been reported by the authors to range from .90 to .96 (Hood and Jackson, 1983a). The MEI (Hood and Jackson, 1983b) is a self report instrument containing 60 items that assess recognition, insight, and awareness related to five emotional states: happiness, personal attraction, anger, depression, and frustration. The instrument yields an overall Managing Emotions score and the authors report the reliability coefficient to be .95 (Hood and Jackson, 1983b). The DAI (Hood and Jackson, 1983c) consists of 90 items and is comprised of six subscales: Mobility, Time Management, Money Management, Interdependence, Emotional Independence-Peers, and Emotional Independence-Parents. The authors report reliability coefficients of .93 for the total inventory and a range of .77 to .88 for the subscales (Hood and Jackson, 1983c).

The M-JIRI (Mines, 1977) consists of 42 items that form two subscales: Tolerance and Quality of Relationships. Hood and Mines (1983) reported subscale reliability coefficients that ranged from .65 to .87.

Research in Validating Chickering's (1969) Theory of College Student Development

White & Hood (1989) sought to assess the validity of Chickering's (1969) Theory of Student Development through factor analysis of the subscales of the ISDI designed to measure six of Chickering's (1969) vectors. Students voluntarily completed the Developing Competency Inventory (DCI) (Hood and Jackson, 1983a), the Managing Emotions Inventory (MEI) (Hood and Jackson, 1983b), the Developing Autonomy Inventory (DAI) (Hood and Jackson, 1983c), The Erwin Identity Scale (EIS) (Erwin, 1979), the Mines-Jensen Interpersonal Relationships Inventory (M-JIRI)(Mines, 1977), and the Developing Purposes Inventory (DPI) (Barratt, 1978). A seventh inventory, the Parker Cognitive Development Inventory (PCDI) (Parker, 1984) was administered to yield an objectively scored measure of intellectual and ethical development according to Perry's (1970) theory. The PCDI (Parker, 1984) consists of 144 items divided among general content areas of education, religion, and career and are organized into Perry's (1970) nine positional groupings comprised of dualism, relativism, and commitment in relativism. Nine content positional scores are reported as well as composite scores for Dualism, Relativism, and Commitment. Parker (1984) reported that reliabilities for each content positional score ranged from .81 to .92. Finally, an additional 36-item

questionnaire was administered to gather demographic information and information related to individual college experiences.

The sample in this study comprised 255 students, of whom 230 were enrolled in a large mid-western university and 25 were students from two small bible colleges. Among the participants, 169 were students in a large educational psychology class and 61 were fraternity members. Students voluntarily completed the instruments, which were divided into three test “forms”. Data analysis included obtaining reliabilities between questionnaire responses on the 1) educational and vocational plans and commitments, 2) experience in various academic and extracurricular activities, and self-ratings on a number of areas of personal development and competencies and scores on the ISDI. Multivariate analyses of variance were conducted to study mean differences for gender, fraternity or sorority status, level of educational plans, and participation in various campus activities. A factor analysis of subscale scores was conducted in an attempt to validate Chickering’s (1969) seven vectors of student development.

The authors reported reliability coefficients in each of the ISDI scales to range from .61 to .95 with a median estimate at .85. Positive correlations were found in the DCI (Hood and Jackson, 1983a) subscales of Self Confidence and Competency in Writing subscales and students self-ratings of social development, personal development, educational progress, and ability to write and speak effectively. MANOVA results showed that students who reported voluntarily tutoring classmates obtained significantly higher scores on all three of the DCI (Hood and Jackson, 1983a) subscales than students who reported they had not served as voluntary tutors to classmates.

Scores on the MEI (Hood and Jackson, 1983b) were highly related to self-ratings of personal and social development. High scores on the MEI (Hood and Jackson, 1983b) were also found to be related to self-reports of progress in the area of understanding diverse philosophies, cultures, and ways of life. Students who rated their progress as substantial or exceptional in the area of critical thinking also scored high on the MEI (Hood and Jackson, 1983b).

Scores on the DAI (Hood and Jackson, 1983c) subscales of Time Management and Money Management reported that students who held part-time jobs assessed their time and money management abilities significantly better than those students who did not hold part-time jobs. Also, high scores on the Emotional Independence-Peers subscale was found to be related to progress in understanding diverse cultures and philosophies and high self-ratings on educational progress, personal development, and critical thinking. The authors report that relatively few data were obtained that provided evidence for the validity of the Emotional Independence-Parents and the Mobility subscales of the DAI (Hood and Jackson, 1983c).

Students who scored higher on the Confidence subscale of the EIS (Erwin, 1979) were more likely to be committed to a career choice and reported substantial progress in obtaining a background or specialization in a particular field of study as compared to students who scored lower on the EIS (Erwin, 1979). Students who scored higher on the Confidence subscale also reported greater personal development than students with low scores. The authors reported that less evidence was found for the construct validity of the Sexual Identity and Conceptions about Body Appearance subscales. However, students with high scores on the Conceptions about Body Appearance were found to be more

likely to participate in campus recreational activities than students with low scores on this subscale.

Scores on the Quality of Relationships and Tolerance subscales of the M-JIRI (Mines, 1977) were related to student's positive self-ratings on understanding philosophies, cultures, and lifestyles different from their own. It was also found that members of a fraternity or sorority who expressed commitment to religious beliefs scored lower than non-fraternity or sorority member on both scales, Quality of Relationships and Tolerance, of the M-JIRI (Mines, 1977).

Students who reported that they had made a commitment to a career choice scored high on all three subscales of the DPI (Barratt, 1978). Likewise, those students who reported being uncertain about their academic major possessed a less developed sense of vocational purpose and style of life as measure by the DPI (Barratt, 1978). These findings suggest that student's overall sense of purpose is related to commitment to an academic major and particular vocational path.

PCDI (Parker, 1984) scores supported Perry's (1970) model of cognitive development. Students who scored high in the relativistic positions were less likely to have committed to a particular religious belief and both the Relativism and Commitment positions were negatively correlated with the Dualism positions. Students who scored high on the Dualism positions reported that they had made little or no progress in understanding cultures and lifestyles different from their own.

Factor analysis was conducted on the 21 subscales used in the study using the iterated principal factor method. An orthogonal transformation of the factor loadings was

performed using the varimax procedure. Five major factors were identified that accounted for 69% of the variance.

Factor One, labeled “self-direction” accounted for 38.5% of the variance. This was identified by several dimensions of “inner-directedness” and was related to high scores on the MEI (Hood and Jackson, 1983b), the Commitment Positional rating of the PCDI (Parker, 1984), the DPI (Barratt, 1978), and the DAI (Hood and Jackson, 1983c) subscale of Autonomy. This factor was defined by the development of an awareness of ones interests, abilities, and values as they relate to recreation, work, and society. The authors reported that this factor roughly parallels Chickering’s (1969) vector of Developing Purpose.

Factor Two, labeled “cognitive-ethical development” accounted for 10% of the variance. This factor was identified by the Positional ratings of Dualism, Relativism, and Commitment on the DCPI (Parker, 1984) and the M-JIRI (Mines, 1977). The authors report the pairing of the DCPI (Parker, 1984) and M-JIRI (Mines, 1977) adheres to the idea of increasingly complex cognitive structures paired with commitments based on appreciation of diverse backgrounds, philosophies, and lifestyles of others. The authors stated that this factor roughly parallels Chickering’s (1969) vector of Developing Integrity.

Factor Three, labeled “identity” accounted for 8% of the variance. This factor was identified by the EIS (Erwin, 1979) and by the DAI (Hood and Jackson, 1983c) subscale of Emotional Independence-Peers. White and Hood (1989) found that the combination of these subscales led to idea of “the development of an awareness and acceptance of one’s unique abilities and limitations coupled with an increasing reliance on ones own values

and commitments.” The authors reported that this factor roughly parallels Chickering’s (1969) vector of Establishing Identity.

Factor Four, labeled “resource management” accounted for 6.5% of the variance. This was identified by the DCI (Hood and Jackson, 1983a) subscales of Time Management and Money Management with both subscales measuring a persons ability to manage limited resources effectively to achieve maximum gain. Factor Five, labeled “confidence” accounted for 6% of the total variance. This factor was identified in the DCI (Hood and Jackson, 1983a) subscales of Self-Confidence and Competency in Writing and the EIS (Erwin, 1979) subscale of Confidence. The authors reported “the combination of these subscales carries the notion of being self-assured in one’s relations with others, of being confident of ones’ abilities, and of having a positive self-concept.” The authors also state that this factor roughly parallels Chickering’s (1969) vector of Developing Competence.

In total, only five factors were identified that accounted for the majority of the variance. Of these, only four (sense of self-direction, cognitive-ethical development, sense of identity development, and confidence) roughly parallel Chickering’s vectors of Developing Purpose, Developing Integrity, Establishing Identity, and Developing Competence respectively.

In an extensive study, Thieke (1994) sought to validate Chickering’s theory of student development by assessing several of the vectors that Chickering described and by examining the factors that Chickering deemed as important in influencing those vectors. A causal model of affective student development was developed that identifies the relative contributions (both direct and indirect) and influences on development of several

pertinent factors of attending college as described by Chickering (1969). Three research questions were put forth: (1) What are the direct and indirect effects on affective student development of the following five influences: (a) living arrangements; (b) environmental influences; (c) peer experiences; (d) faculty-student interactions; and (e) extracurricular involvement based on Chickering's (1969) Theory of Student Development? (2) Does the resulting path model reflect the influences that Chickering deemed important in effecting affective student development? Does the resulting model validate Chickering's (1969) original hypothesis regarding development and its respective influences? (3) Which of the five influences in the model are most effective in producing positive developmental change given certain entry characteristics? Are there any implications for practical applications of this model of development (Thieke, 1994)?

The population studied was the entering freshman class of 1995 at a small, selective, religiously affiliated college. The SDTLI (Winston & Miller, 1987), was given to all freshman during orientation and a self-developed demographic questionnaire was also administered at this time to collect background information on the students as well as information on activities in high school and aspirational data. 354 student responses were completed representing an 87% sample of the entire freshman class. The sample was found to be representative of the entering class with respect to gender, ethnicity, socio-economic status, SAT score, and high school grade point average. At the end of the freshman year, the students were issued the SDTLI (Winston & Miller, 1987) again and the CSEQ (Pace, 1992). 242 of the 360 students still enrolled at the college completed the surveys and, again, this was found to be a representative sample of the freshman class. Only those students completing all instruments were included in the research sample,

leaving 194 students in the study. After electing to “take out” commuter students (only 7 within the sample) and removing data that contained significant missing data on one or more of the variables and controlling for those students that scored too highly on the response bias section of the SDTLI (Winston & Miller, 1987), the final sample contained 153 students that were found to be representative of the entire class in the aforementioned categories (Thieke, 1994).

Five separate path models were developed representing the five developmental scales as purported by the SDTLI (Purpose, Mature Interpersonal Relationships, Academic Autonomy, Salubrious Lifestyle, and Intimacy). Hypothesized paths in the model were determined, in part by direct references to the literature to known effects and common sense predictions of presumed effects. CALIS, a structural equation-modeling program was used. The model generates correlations, both direct and indirect, between variables along the paths that were hypothesized in the original model. Significance levels for the direct effects were calculated using standard t-tests. Significant levels of the indirect effects were estimated using Stepwise Multivariate Wald tests, which compare model significance first with all paths and then with some paths excluded. Chi-square statistics for each of the models were compared (Thieke, 1994).

There were a total of thirty-six variables derived from the three separate instruments. The aggregate variables environment, social peer relationships, intellectual peer relationships, interaction with faculty and participation in extracurricular activities were summed from more specific variables to form the independent variables represented in the predicted structural model (Thieke, 1994).

In brief, significant positive developmental change was found for Purpose, Academic Autonomy, and Intimacy (all at $p < .05$). Interestingly, Salubrious Lifestyle showed a slight decline, though not significant, over the first year of college. It was also found that Purpose (11%), Academic Autonomy (3%), and Salubrious Lifestyle (2%) showed an additional (total model variance when compared to the pre-test development level) explanation of the variance attributed to developmental change that had occurred (Thieke, 1994).

In looking at the environmental variables that were predicted to influence college student development, results indicated several significant relationships. Purpose and Academic Autonomy both showed that faculty-student interactions had a significant relationship with developmental level. Purpose and Salubrious Lifestyle indicated significant relationships between participation in activities and post-test developmental level. Academic Autonomy found a significant relationship between social peer interactions and post-test development. Only two of the independent variables examined, environment and peer intellectual interactions, showed no significant relationships with post-test development in any model (Thieke, 1994).

For the model describing Purpose, the dependent variable, developing a sense of purpose was found to have significant relationships with post-test development ($p < .001$), interaction with faculty ($p < .01$), and level of participation in extracurricular activities ($p < .05$). Significant indirect effects on the post-test for Purpose included pre-test development ($p < .01$) and combined SAT scores ($p < .05$). For the Mature Interpersonal Relationships model (MIR), several significant paths were found that characterized relationships between variables, however, none of the predicted

independent variables were related significantly to the post-test development scores. Indirect effects, however, included pre-test development ($p < .001$), ethnicity ($p < .10$), and SAT scores ($p < .01$) which all displayed significant relationships with post-test development on the MIR task (Thieke, 1994).

The model describing Academic Autonomy was found to have several significant paths describing relationships between variables in the model. Pre-test scores on the Academic Autonomy task were significantly related to post-test scores on the same task ($p < .001$). Also, gender was inversely related to gains in academic autonomy (indicating that men have higher gains in academic autonomy than women.). Peer Social Experiences was also significantly related ($p < .05$) to gains in Academic autonomy during the first year. Surprisingly, Interaction with faculty was found to have an inverse relationship with gains in academic autonomy. However, though this relationship may exist, the sample mean scores indicated that overall gains were still found. Indirect effects on Academic Autonomy were found for pre-test developmental level, ($p < .05$), and Combined SAT score ($p < .01$) (Thieke, 1994).

The model describing Salubrious Lifestyle was found to have several significant paths describing relationships between variables in the model and was found to have significant relationships with two other variables: pre-test development score ($p < .001$) and participation in extra-curricular activities ($p < .01$). The independent variable Participation in Extracurricular activities was related significantly to pre-test development and residence type ($p < .10$). While this relationship is somewhat weak, it indicates that students in single-sex residence halls participate in extracurricular activities moreso than those students in co-ed residence halls (Thieke, 1994).

Overall, this study concurs with others in several areas. Informal contact with faculty was found to significantly impact student development in 2 of the 5 models: Purpose and Academic Autonomy. Participation in extracurricular activities was found to significantly influence student development in the models of Purpose and Salubrious Lifestyle. Also, Peer Social Experiences were found to have significant effects on student development in Academic Autonomy (Thieke, 1994).

This partially validates Chickering's (1969) theory in that it confirms that development is occurring and that the environmental measures predicted to influence development, do have significant impacts on developmental change. Second, the study shows significant positive relationships between several of the environmental variables theorized to influence change in Chickering's (1969) vectors. Those environmental variables that show significant impact in this study were in the areas of staff-faculty interactions, participation in activities, and peer interactions and residence arrangements. This, the author states, is of great importance because it illustrates that "there is not only proof concerning Chickering's ideas regarding the process of development, but it also validates the *supposed causes* of development at the same time (Thieke, 1994).

Martin's (2000) longitudinal study explored the relationship of college experiences to psychosocial outcomes in students. This was a repeated measures study conducted on fourth-year college students who had participated in a similar study by Thieke (1994) during their first-year in college. The earlier study had primarily looked at development over the first-year while this study examined the group to determine whether evidence existed to support Chickering's (1969) hypothesis after four years of college.

Participants were 98 students who returned usable sets of questionnaires. These were obtained out of a possible 236 students who were still enrolled at the school from the original 354 students in the 1994 study. All participants were 21-22 years old (20 male and 78 female), 84% were residential students, and 90% were Caucasian. Students completed the SDTLI (Winston & Miller, 1987) and the CSEQ (Pace, 1992) to compare with their earlier scores (Martin, 2000).

Surprisingly, results indicated very weak SDTLI (Winston & Miller, 1987) correlations with student scores on the same instrument four years earlier. The correlation for the Purpose task was $r = -.21$, indicating that scoring on the Purpose task was higher for those who had scored lowest on this task when entering college. The Relationship task correlation coefficients were similar in strength, but in a positive direction, $r = .30$. This prompted closer attention to the raw scores, which showed that 26% of women and 30% of men actually declined on either the Purpose or Relationship tasks and two students scores decreased on both tasks. Declines occurred twice as frequently on the Relationship task as they did on the Purpose task (Martin, 2000).

When the SDTLI (Winston & Miller, 1987) was compared with the CSEQ (Pace, 1992), there were many relationships found between the CSEQ (Pace, 1992) experiences and the Purpose task and subtasks. Purpose was related to experience with the student union, $r = .27$, $p < .001$; Clubs and Organizations, $r = .36$, $p < .001$; Topics of Conversation, $r = .31$, $p < .01$; the College Environment, $r = .35$, $p < .001$; Experiences with Faculty, $r = .43$, $p < .001$, and Relationships with Faculty, $r = .28$, $p < .01$. The score on the Estimate of Gains (an outcome measure for student's sense of competence) also correlated with Purpose, $r = .41$, $p < .001$ (Martin, 2000).

CSEQ (Pace, 1992) scores were also found to correlate with the subtasks of Purpose. Educational Involvement correlated with Clubs and Organizations, $r = .45$, $p < .001$; Experience with Faculty, $r = .47$, $p < .001$; Relationships With Faculty, $r = .42$, $p < .001$, Topics of Conversation, $r = .33$, $p < .01$; Student Union, $r = .32$, $p < .01$; College Environment, $r = .29$, $p < .01$; Athletic and Recreational Activities, $r = .30$, $p < .01$; and Estimate of Gains, $r = .40$, $p < .001$ (Martin, 2000).

The dependent variable Estimate of Gains most strongly correlated with College Environment, $r = .51$, $p < .001$ and Relationships with Faculty, $r = .45$, $p < .001$. Athletic and Recreational Facilities, Clubs and Organizations, Student Acquaintances, Topics of Conversation, Relationships with Students, and Relationships with Administrative personnel also showed modest correlations with Estimate of Gains (r between .28 and .36). The authors suggest that this implies that student's estimate of their gains is directly related to their level of involvement in college life. It is important to note that the correlations of significance to the Relationship Task were Topics of Conversation, $r = .27$, $p < .01$ and Campus Residence, $r = .26$, $p < .05$ (Martin, 2000).

From this data, a series of stepwise regressions were performed to identify variables that contributed significantly to the explanation of the variance in the Purpose scores. In doing so, 32% of the variance was explained: Experiences with Faculty contributed 19% of the variance; The College Environment contributed 8%; and Clubs and Organizations contributed 5%. Using the same technique, Topics of Conversation explained 8% of the variance in the Relationship Task and Campus Residence that contributed 4% of the variance of the Relationship task. Forty-nine percent of the variance in the student's sense of competence (the Estimate of Gains) was accounted for by college experience factors:

The College Environment accounted for 26% of the variance; Student Acquaintances, 12%; Clubs and Organizations, 4.5%; Relationships with Faculty, 3.5%; and Information in Conversation, 3% (Martin, 2000).

The authors state that the study partially supports Chickering's (1969) hypothesis regarding the influence of college on student development, citing a clear relationship between student-faculty interaction and the development of purpose as well as a sense of competence. The influence of college is also impacted by: student community factors, clubs and organizations, student acquaintances, topics of conversation, and information in conversation. This study shows little support for Chickering's (1969) hypothesis regarding the development of mature personal relationships. No student community factors, other than Topics of conversation and campus residence, which were weakly related, were found. Gender was also found to be unrelated to any of these measures of development (Martin, 2000).

In answering the question of why there were students who scored lower as seniors than they did in the original study as first-year students, the authors offer several possible explanations. One possibility is that first-year scores are reflective of what Marcia (1966) terms identity foreclosure. While these students, as freshmen, have a "clear" sense of Purpose, it is based on external stimuli (such as parental expectations) rather than a true purpose based upon an internal striving for identity. Lower scores on Purpose during one's first-year may, in fact be those students who are not foreclosed but have yet to be engaged in the task of establishing one's own identity. Other explanations of these differences might include first-year students answering questions in what they believe to

be a more socially desirable manner or seniors having a redefined view of purpose and relationships that promote a more critical response (Martin, 2000).

Learning Communities

Chickering (1969) suggested that there are several critical factors that influence college students during their college career. These factors include clear and concise institutional objectives, institutional size, student-faculty relationships, curriculum and teaching, residence hall arrangements, friendships and student communities, student development programs and services, and creating educationally powerful environments. This notion has spurred college administrators and college student personnel to develop living-learning communities to address many of these issues.

Living-learning communities, defined as “any one of a variety of curricular structures that link together several existing courses-or actually restructure the material entirely-so that students have opportunities for deeper understanding and integration of the material they are learning and more interaction with one another and their teachers as fellow participants in the learning enterprise,” (Gabelnick, MacGregor, Matthews, & Smith, 1990, p. 19 as cited in Shapiro & Levine, 1999) have been shown to be effective in promoting college student adjustment and achievement (Astin, 1993; Endo & Harpel, 1982; Franklin et al, 1995; Kuh, 1991, 1996; Lampton, 1993; Pascarella & Terenzini, 1991).

Shapiro and Levine (1999) cited three instrumental research studies that laid the foundation for new ways of thinking about the undergraduate educational experience and its subsequent outcomes. Boyer (1987), in a study commissioned by the Carnegie

Foundation for the Advancement of Teaching, reported an increasing fragmentation in many different areas on college campuses in *College: The Undergraduate Experience in America*. These areas included forced choices that faculty must make between research and teaching, the division between liberal arts education and career oriented vocationalism, and the widening gap between student affairs and academic affairs. In this report, Boyer assailed the prevalent status quo and argued consistently for finding connections within the existing divisions. Specifically, he argued the need to “create an institution where the curricular and co-curricular are two aspects of a single mission.” (Boyer, 1987; p.195).

What Matters in College (Astin, 1993) is a landmark study that surveyed over 25,000 faculty members, 20,000 students and over 200 institutions of higher education to explore the impact college had on students. Among Astin’s (1993) major findings was that “overall academic development is influenced most by student-oriented faculty and peer socioeconomic status, as well as by group projects and having papers critiqued by instructors” (Astin, 1993 as cited in Shapiro & Levine, 1999)

How College Affects Students (Pascarella & Terenzini, 1991) is a comprehensive review of over 3000 studies examining the impact of college on students’ cognitive and affective outcomes. After reviewing multitudes of different types of higher education institutions (Predominantly White, Historically Black, same sex, “elite vs. “non-elite”, commuter, community, junior colleges, etc.), the authors concluded that

“size (of the institution) is indirectly influential through the kinds of interpersonal relations and experiences it promotes or discourages. A number of steps have already been proven effective in increasing student

engagement and reducing the psychological size of larger institutions by affording opportunities for students to become involved with smaller groups of individuals....including cluster colleges and other purposeful housing arrangements, architectural alterations, academic organizations, co-curricular activities, work study...and so on” (Pascarella and Terenzini, p. 654 as cited in Shapiro & Levine p.10).

Shapiro & Levine (1999) identify four different models of learning communities:

1. Paired or Clustered Courses, 2. Cohorts in large courses, 3. Team-taught programs and,
4. Residence-based learning communities. The first three are based on models originally described by Gabelnick, McGregor, Matthews, and Smith (1990).

Paired or Cluster Courses are considered the simplest of learning community models based on curricular structure (Shapiro & Levine, 1999). Cohorts of students, usually 25 or less, are placed into two or more classes together that have some way of logically overlapping with one another. Examples include an Introductory Writing course with a History course or a basic Mathematics course paired with an Introductory Science Course. They are usually formed with first-year students but are not exclusive to this group. When first-year students are placed in paired courses, usually this involves a “first-year experience” type of course with a general education academic course. The focus in these types of paired courses may be to enhance “skill building, student learning, and connecting undergraduates to the people and resources they need to succeed in college” (Shapiro & Levine, 1999, p. 23).

Cohorts in Large Courses is a learning community model that typically has a cohort of students, distinct by expressed interest areas, enrolled together in large lecture style

classes. In many of these cases there is also a “master learner” (possibly an upper-class student) who facilitates weekly discussions in a seminar format outside of class. This “cohort” may also be enrolled together in other cluster-courses: discipline-specific or first-year orientation seminar. Freshman Interest Groups (FIGS) are an example of this type of model where student cohorts are placed together by academic major of interest. An example would include a group of students interested in pursuing engineering being placed together in a large Introduction to Calculus for Engineers class (Shapiro & Levine, 1999).

Team-taught learning community models are typically interdisciplinary in nature and serve more students per class, usually between 40 and 75 students. These models involve heavier faculty involvement than *Paired/Cluster Courses* or *Cohorts in Large Classes*. The time-intensive workload surrounds working collaboratively and integrating course content around a particular theme. Themes can be very broad liberal arts type classes or can emphasize specific skills as in math or science courses. Normally larger classes are broken down into smaller discussion type seminar groups that may be led by one of the team teachers (Shapiro & Levine, 1999).

Residence Hall learning community models draw from one of the other models and add a residential component with a cohort of students sharing the same living space. The primary goals of these types of programs are to unite the academic and social aspects of the undergraduate experience. This type of model is complex in that it requires commitment from faculty and student affairs personnel to work together with the same philosophy: all learning does not occur in the classroom. *Residence Hall* models are intentional in that they provide services to students consistent with the mission of the

program. Examples include a resident hall speaker series, academic advising, or in-hall tutorial services (Shapiro & Levine, 1999).

Empirical Studies on Learning Communities

A study by Pike (1999) examined the effects of residential learning communities and traditional residential living arrangements on Educational Gains during the first year of college. The purposes of the study were to address the following questions: (1) Do students living in residential learning communities report richer college experiences and greater gains in learning than do students living in traditional residence halls? (2) Are the relationships between college experiences and educational outcomes the same for students living in residential learning communities and students living in traditional residence halls? and (3) Are observed differences in students' learning and intellectual development the direct result of membership in a learning community, or are the effects of residential learning communities mediated by the quality of the students' college experience? Drawing from Chickering's (1975) work, the conceptual model utilized for the study contained four elements: (a) background characteristics of the students, (b) college experiences that promote differentiation, (c) college experiences that enhance integration, and (d) gains in learning and intellectual development. Students' background characteristics include: gender, ethnicity, ACT composite score, and high school percentile rank. College experiences that promote differentiation were divided into an involvement cluster (clubs and organizations and residence halls) and an interaction cluster (interaction with faculty and interaction with peers). Integration includes integration of course material and integration of information in conversations. Learning

outcomes included gains in general education and gains in intellectual development (Pike, 1999).

The subjects were derived from a pool of 2,406 first-time college students who lived on campus at a public research university in the mid-west that has an annual enrollment of approximately 17,500 undergraduates. During the winter 1996 semester, the CSEQ was mailed to all applicable students and after two follow-up mailings, 626 students living in residence halls had returned completed surveys, a 26% response rate. Of these participants, 25% lived in a residential learning community (compared to 22% of the population) and 70% of the participants were female (compared to 62% of the residence halls population). Finally, minority students comprised 11% of the study participants (6% African-American, 3% Asian-American, 1% Hispanic, less than 1% Native-American, and 1% other). This is compared to 15% minority students in the residence hall population, with African-Americans (8%) and other (2%) accounting for the difference (Pike, 1999).

Data in the study came from existing campus data and from student responses to the CSEQ (Pace, 1992). Background variables included in the analysis were (a) gender, (b) minority status, (c) ACT assessment composite score, and (d) high school class percentile rank. The CSEQ (Pace, 1992) contains 10 areas that matched the conceptual model in the study. The student Involvement cluster included (a) Involvement in Art, Music, and Theater, (b) Involvement in Clubs and Organizations, and (c) Involvement in Residence Halls. The Interaction cluster also included 3 CSEQ (Pace, 1992) subscales: (a) Interaction with Faculty, (b) Interaction with Peers, and (c) Topics of Conversation. Two scales that were constructed from student responses represented integration. Integration

of Course information consisted of 5 items from the CSEQ (Pace, 1992) course learning scale which were found by Pace and Swayze (1992) to form a distinct factor. The second integration scale focused on integration of conversations and consisted of the three items with the highest factor loadings on the CSEQ (Pace, 1992) Information in Conversations scale (Pace and Swayze, 1992). Alpha reliabilities for each of these interaction and integration scales were above .80. Gains were represented by two scales: (a) Gains in General Education and (b) Gains in Intellectual Development. The items selected were based on previous research with the CSEQ (Kuh et al., 1997; Pace and Swayze, 1992) and alpha reliability coefficients were .76 and .82 respectively (Pike, 1999).

Sophisticated techniques were utilized in three phases to analyze the results. First, a one-way analysis of variance was used to analyze absolute differences in background characteristics, college experiences and gains for the Residential Learning Community (RLC) and Traditional Residence Hall (TRH) groups. The second and third phases of analysis involved utilizing a two-group path analysis, including means and intercepts. This was done to analyze the stability of relationships among model components across groups and to assess the direct and indirect effects of RLC's on college experiences and educational outcomes. In short, this is analogous to an analysis of covariance that takes into account possible pre-existing differences (Joreskog and Sorbom, 1993). From this analysis, three models were tested. The first model constrained all the relationships among variables in the model to be identical for both RLC and TRH groups. In the second model, co-variances among the background variables and among the residuals for college experiences and gains were allowed to vary freely. Finally, the third model allowed for means and intercepts for RLC students to vary freely. In this model,

statistically significant intercepts for those RLC students would indicate that RLCs do have a direct effect on student's college experiences and/or educational gains (Pike, 1999).

Results indicate that there were some absolute differences between the groups. Of note, 66% of the RLC group was female compared to 75% of the TRH group. Also, students in the RLC had significantly higher mean ACT composite scores than those students in the TRH group. Results also show that RLCs had significantly higher levels of involvement, interaction, and integration and reported significantly greater gains in general education than did TRH students. Effect sizes indicate that the differences in levels of involvement and integration generally ranged from $1/3$ to $1/2$ of a standard deviation (.19 for Interaction with Faculty to .45 for Involvement in Clubs and Organizations and Topics of Conversation). Utilizing a chi-square statistic, it was shown that by relaxing the variables in each succeeding model, the third model (Chi-square = 110.37; $df = 92$; $p < .05$) was able to equalize the background characteristics, college experiences, and outcomes for both groups while means and intercepts for both groups differed significantly (Pike, 1999).

In comparing the intercepts, the results show that membership in a RLC had significant direct effects on involvement and interaction. In contrast large effects were not found for background characteristics. This indicates that it is unlikely that the direct effects of RLC membership were due to any spurious differences in the two groups. Most notably, gender was positively related to Involvement in Clubs and Organizations (0.12, $p < .01$), Involvement in Residence Halls (0.18, $p < .001$), Interaction with Peers (0.14, $p < .001$), and Integration of Course Information (0.14, $p < .01$). Gender was not

significantly related to Integration of Information in Conversations or either Gain measure (Pike, 1999).

Integration of Course Information was significantly related to Involvement in Clubs and Organizations (0.12, $p < .01$), Involvement In Residence Halls (0.18, $p < .001$), Interaction with Faculty (0.14, $p < .001$), Interaction with Peers (0.09, $p < .05$), and Topics of Conversation (0.17, $p < .001$). Integration of Information in Conversations was impacted by all of the involvement and interaction measures except Involvement in Art, Music, and Theater, which was related to Gains in General Education (0.20, $p < .001$). Other experiences related to Gains in Education included Interactions with Peers (0.14, $p < .01$), Interaction with Faculty (0.11, $p < .01$), Involvement in Residence Halls (0.27, $p < .001$), and Involvement in Clubs and Organizations (0.17, $p < .001$). Factors related to Gains in Intellectual Development were Involvement with Residence Hall (0.20, $p < .001$), Interaction with Faculty (0.15, $p < .001$), Topics of Conversation (0.14, $p < .01$), Integration of Course Information (0.19, $p < .05$), and Integration of Information in Conversations (0.14, $p < .01$) (Pike, 1999).

The author derived three main conclusions from the research. First, RLC students had significantly higher levels of interaction, integration, involvement, and gains than did the TRH students. Also, the effects of the residential living tended to be more pronounced for college experiences promoting differentiation than for college experiences representing enhanced integration or educational gains. Second, RLC's tended to exert a positive direct effect on day to day behavioral aspects of students college experiences and indirect effects on the integration of information and gains in student learning and intellectual development. Finally, it emerged that the indirect effects of RLC's varied by outcome.

Higher scores for RLC's on Integration of Course information was associated with higher scores on involvement with Clubs and Organizations, Residence Halls, Interaction with Faculty and Peers, as well as the breadth and intellectual content of students' interactions (Pike, 1999).

A second study was conducted by Cabrera, Crissman, Bernal, Nora, Terenzini, and Pascarella (2002), which examined collaborative learning, and its impact on college students' Development and Diversity. The purposes of the study were to examine: (a) gender and ethnic differences in terms of preferences towards collaborative learning, (b) effects of collaborative learning on student outcomes, and (c) the determinants of openness to diversity.

The sample was comprised of 2,050 second-year college students enrolled at 23 institutions of varying types including private, public, research, liberal arts, and Historically Black Colleges (HBC) and universities. This was a random sample drawn from the incoming 1992 class who participated in the National Study of Student Learning (NSSL), an extensive, longitudinal investigation of the factors influencing learning and development in college (see Whitt et al., 2001). The sample make-up included female (64.5%), and Caucasian (62.2 %) (Cabrera et al, 2002).

Four dependent variables were utilized. Personal Development, Understanding Science and Technology, Appreciation for Fine Arts, and Analytical Skills. These were assessed using Pace's (1984) scale that measured perceived gains in learning-related and cognitive skills. All had alpha coefficients ranging from .73 to .90. The fifth dependent variable was Openness to Diversity and was measured using a 7-item scale that assessed student's attitudes and predispositions towards interacting with people from different

ethnic backgrounds. With the current sample the measure proved to be reliable at .85 (Cabrera et al, 2002).

Seven independent variables were examined. Preference for collaborative learning was measured via a 4-item scale that measured preferences for learning in groups (in and out of the classroom.) Cooperative learning factors were measured by a five-item scale that asked the student about the frequency of engagement in group projects, class discussions, and study groups. Reliability coefficients for these two measures were .85 and .78 respectively. Other independent variables that were assessed included indicators of socioeconomic status (parental education), pre-college ability (CAAP scores), academic performance (high school GPA), and quality of academic effort (hours per week spent studying). A measure of the racial composition of the student's high school was also included (Cabrera et al, 2002).

Results indicated some support for the notion of student preferences toward collaborative learning. Among minorities, women were as predisposed toward collaborative learning as men ($t = -.17, p = .865$). There were also no significant differences between White males and females ($t = 1.19, p = .402$). However, minorities, regardless of their gender, were more predisposed towards collaborative learning than were Whites. Results also indicate significant effects of cooperative learning practices on cognitive and affective outcomes on all students. A regression analysis was employed that yielded a model that explained 10.3%, 9.7%, 6.6%, and 13.2% in gains related to personal development, understanding science and technology, appreciation for art, and analytical skills, respectively. Relative to all factors under consideration, collaborative

learning was the single best predictor for each of the four cognitive and affective outcomes (Cabrera et al, 2002).

Twelve regression analyses were conducted to test differential learning style hypothesis. The groups being considered were White males (469), White females (805), and Hispanic and African-Americans (518). Hispanics and African Americans were not differentiated by gender. The model explained between 4.5% and 14.5% of the variance seen in the cognitive and affective outcomes and all twelve-regression analyses were significant at a p. level of .01. There was no support for differential learning styles although the magnitude of the effect of collaborative learning varied across groups, the pattern of effects was consistent in each of the three groups (Cabrera et al, 2002).

The model was significant at a confidence level of .01 and explained 9.4% of the variance observed in openness to diversity. After controlling for other independent variables, collaborative learning exerted the highest effect on a college student's openness towards diversity. Net of pre-college ability, performance, and academic effort results show that women and Hispanic students were more predisposed to tolerance of others at the end of their second college year than were White males. (Cabrera et al, 2002).

In a study designed to measure the impact of a residential/curricular learning community at North Carolina State University, Ambrose (2003) compared academic achievement, as measured by end of year grades to participation in a linked course component of the learning community. Students were enrolled in First Year College (FYC), an intensive program designed to aid "undecided" students in the selection of a major. This community is termed the FYC Village. The residential component is

comprised of students living together within two adjacent residence halls. Upper-class Resident Mentors are also staffed within the Residence Halls and student's Academic advisers are also located in one of the Residence Halls. The curricular component consists of linking the courses *Introduction to University Education* course, a one-hour class taught by the student's academic adviser, with a First-Year Inquiry (FYI) course. FYI courses are three-hour seminar type classes that fulfill general education requirements. Examples include *Sociology of the Family*, *Controversial Issues in Psychology*, and *Introduction to Music*. Ambrose (2003) found that students who participated in the linked classes within the FYC Village significantly outperformed those students who did not participate in the linked classes. Mean grade point average (GPA) for the group of students in the linked courses was a 3.059 at the end of the fall semester. Mean GPA for the students who did not participate in the linked courses was a 2.793. This difference was significant at $p < .05$ and remained significant when controlling for the FYI class. Subsequent research (Ambrose, 2004, 2005) has not demonstrated significant differences between the linked vs. non-linked group, but has continued to show significant differences between academic achievement of those students residing in the FYC Village as compared to FYC students living outside the FYC Village. In 2004, Mean G.P.A. for the group of students in the linked courses was a 2.982 at the end of the fall semester. Mean GPA for the students who did not participate in the linked courses was a 2.933. Though a positive difference, this was not found to be significant. In 2005, Mean GPA for the group of students in the linked courses was a 3.008 at the end of the fall semester. Mean GPA for the student's who lived in the FYC Village but did not participate in the "linked" courses was a 3.109. However, a control group of FYC

students who did not live in the village earned a mean G.P.A. of 2.896. An ANOVA found that, though there was positive difference for the “non-linked” group in GPA, it was not statistically significant. It was found, however, that a significant difference existed between the students who lived in the FYC Village (linked and non-linked) and those FYC students who did not reside in the FYC Village. FYC College administrators point out that as the FYC Village has grown in popularity among incoming first-year students, it has also expanded its residential programming components and its Resident Mentor program.

Emotional Intelligence

Although the term emotional intelligence did not surface until 1990, the historical roots of this construct extend as far back as the 19th century when Darwin argued for the heritability and evolution of emotional responses. Many of the early 20th century debates centered around the “chicken or the egg” dilemma of which comes first...an emotion or a physiological response? Robert Thorndike wrote about “social intelligence” in the 1930’s and David Wechsler (1958) defined intelligence as “ the aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment.” As early as 1940, Wechsler referred to “non-intellective” as well as “intellective” elements, by which he meant affective, personal, and social factors. By 1943, he proposed that non-intellective abilities are essential for predicting one’s ability to succeed in life. He stated:

“ The main question is whether non-intellective, that is affective and conative abilities, are admissible as factors of general intelligence. (My

contention) has been that such factors are not only admissible, but necessary. I have tried to show that in addition to intellectual there are also definite non-intellectual factors that determine intelligent behavior. If the foregoing observations are correct, it follows that we cannot expect to measure total intelligence until our tests include some measures of the non-intellectual factors (Wechsler, 1943, p.315).”

The work of these early researchers, unfortunately, were discouraged as intelligence “testing” took off and scientists looked at intelligence in a purely cognitive domain focusing primarily on memory and problem solving ability. Although industrial/organizational psychologists studied the effects of non-cognitive variables in a number of corporate roles in the 1950’s and 60’s, the idea of social intelligence did not resurface until 1983 when Howard Gardner wrote of multiple intelligence. In his book *Frames of Mind*, Gardner (1983) proposed that “intrapersonal” and “interpersonal” are as important as the type of intelligence typically measured by IQ tests.

Salovey and Mayer (1990) first referred to emotional intelligence (EI) as the ability to monitor and regulate one’s feelings and those of others and to use feelings to guide thought and action. They defined it as “ a type of information processing that includes accurate appraisal of emotions in oneself and others, appropriate expression of emotion, and adaptive regulation of emotion in such a way as to enhance living” (Mayer, DiPaulo, and Salovey, 1990). This two-part approach indicated a general processing of emotional information and specifying the skills involved in such processing. Mayer, Caruso, and Salovey (1999) expanded this definition by defining EI as follows: “emotional intelligence refers to an ability to recognize the meanings of emotions and their

relationships, and to reason and problem solve on the basis of them. Emotional Intelligence is involved in the capacity to perceive emotions, assimilate emotion-related feelings, understand the information of those emotions, and manage them” (Mayer, Caruso, and Salovey, 1999, p. 267).

Goleman (1995) defined EI as “the capacity for recognizing our own feelings and those of others, for motivating ourselves and managing our emotions well in ourselves and in our relationships.” Expanding upon Salovey & Mayer’s (1990) model, Goleman (1995) described five basic components of EI. First, the cornerstone of EI, is *self-awareness*. This includes the ability to recognize one’s feelings *as they occur* and being able to appropriately label those feelings. It not only includes ones feelings but also being aware of ones thoughts about those feelings. The second component is that of *self-regulation*. In this context, this is the ability to manage one’s emotions appropriately. Monitoring one’s emotions and thought processes as they guide behavior is crucial. This component is particularly important in effectively dealing with such feelings as anger, anxiety, and depression. Third is the component of *self-motivation*. Critical pieces of self-motivation are impulse control, the ability to delay gratification and self-efficacy. Higher levels of self-motivation are seen across disciplines in individuals who have mastered their particular skill areas. The fourth component is *recognizing emotions in others* and the ability to display *empathy*. This is the fundamental people skill and includes the ability to understand non-verbal as well as verbal cues from others. Finally, *handling relationships* is the fifth component of EI. This component involves social skills and/or the managing of emotions in others. Goleman’s (1995) model shifted the emphasis of EI toward motivation and social relationships generally speaking (Mayer, 2001). Thus, there

have emerged two lines of definitions: (a) the original approach that defined EI as an intelligence involving emotion and (b) the mixed approaches that blended EI with other skills and characteristics such as well-being, motivation, and capacities to engage in relationships (Mayer, 2001).

Reuven Bar-On (1997) defines EI as a “multifactorial array of interrelated emotional, personal, and social abilities that help us cope with daily demands.” In Bar-On’s model, the central emotional, personal, and social abilities that make up the factorial structure of EI are:

1. Self-Regard: The ability to accurately perceive and appraise ourselves.
2. Emotional self-awareness: The ability to be aware of and understand our emotions
3. Assertiveness: The ability to constructively express our emotions and ourselves
4. Stress tolerance: The ability to effectively manage our emotions
5. Impulse control: The ability to effectively control our emotions.
6. Reality testing: The ability to objectively validate our feelings and thoughts
7. Flexibility: the ability to adapt and adjust our feelings and thoughts to new situations
8. Problem-solving: The ability to solve our personal and interpersonal problems
9. Empathy: The ability to be aware of and understand other’s emotions
10. Interpersonal relationship: The ability to relate well with others.

In addition to the 10 key factorial components of EI, the Bar-On model includes five facilitators of emotionally and socially intelligent behavior:

1. Optimism: The ability to be positive and to look at the brighter side of life.

2. Self-actualization: The ability to drive to achieve goals and actualize our potential.
3. Happiness: the ability to feel content with ourselves, others, and life in general.
4. Independence: the ability to be self-reliant and free of emotional dependence on others
5. Social responsibility: the ability to identify with and feel part of our social group.

A crucial facet of the theory of EI is the suggestion that EI can be learned. While it is preferable to be in a supportive environment that fosters EI during one's formative years, it is posited that EI can be enhanced through education and/or counseling regardless of age and developmental level (Goleman, 1995). This has tremendous implications for practitioners in design and implementation of models aimed at increasing EI within the individuals they serve.

Measures of Emotional Intelligence

To date, there are several measures designed to assess emotional intelligence, which generally fall into two categories: performance tests and self-report measures. The Multi-Factor Emotional Intelligence Scale (MEIS), the Mayer-Salovey-Caruso Emotional Intelligence Test (MISCEIT V.1.1 and V.2.0), and The Levels of Emotional Awareness Scale (LEAS) are all performance tests (Mayer, 2001). These generally involve scenes or vignettes that individuals watch and respond with answers as to what emotions are being displayed. The Bar-On Emotional Quotient Inventory (EQ-I), the Trait Meta-Mood Scale (TMMS), and the Schutte Self-Report Inventory (SSRI) are self-report instruments. The

Bar-On EQ-I measures the 15 factors reported above. The TMMS assesses attention to emotion, emotion clarity, and emotion repair. The SSRI measures overall EI as well as the subfactors of emotion perception, managing self-relevant emotions, managing other's emotions, and utilizing emotions (Schutte, Malouff, Hall, Haggerty, Cooper, Golden, and Dornheim, 1998).

Research on Emotional Intelligence

Schutte and Malouff (2002) examined the impact of emotional skills content in a college transition course on emotional intelligence and retention rates at a small private 4-year institution in the Southeastern United States. The university requires all incoming first year students to take a three-credit hour course intended to increase their academic skills, enhance their written and oral communication skills, and introduce them to critical examination of literary texts. For this study, two instructors jointly developed a curriculum with emotional skills as the theme and focus for assignments and then each taught a section of the course, the content being the nature of emotions and the development and application of emotional skills. Students in the experimental group completed readings on emotions and emotional competencies such as Emotional Intelligence, and readings that provided opportunities to analyze case studies such as *Siddhartha*, by Herman Hesse (1951) describing a man's journey through life.

The experimental group classes began with small groups that discussed the assigned readings for that day. Discussions were guided through critical analysis questions the instructor provided. Class lectures on emotions and emotional skills building were followed by experiential activities adapted from Malouffe and Schutte (1998). For example, after a lecture on non-verbal communication, some students would engage in

displaying emotions non-verbally while other students tried to guess what emotion was being displayed. Students kept journals outside of class in which they completed two structured essays per week that were given at the beginning of the semester, taken up and graded at the end of each week and returned at the beginning of the following week. Students were asked to share their thoughts and insights during class time and were also required to make an oral presentation. Students could choose to join with other students and put on a dramatic enactment that exemplified at least three important aspects of emotional intelligence, analyze a biographical film or book and report on the emotional challenges and resolutions of the individual, or interview another person and explain what was learned in regard to the individual's emotional intelligence. Grading for the course was related to the aforementioned assignments and by two examinations that tested students' knowledge of the emotional concepts presented in the class as well as their ability to apply the knowledge (Schutte and Malouff, 2002).

Forty-nine students were part of the experimental group. The control group consisted of 103 students who were placed in four alternatively themed sections. Placement into sections was done by advisers, in conjunction with class schedules, and two of the alternative sections met at the same time as the experimental groups. One male and one female instructor taught the sections with the emotional skills content and four female instructors taught the alternative sections. Students did not know the gender of the class they were placed into prior to classes starting unless they asked. Of the entire group (N=152), 113 were female and 39 were male. The mean age of the students was 18.5 years, SD=2.46 (Schutte and Malouff, 2002).

The impact of the emotional skills course was evaluated by (a) comparing the increase in emotional skills experienced by each group by using a 33-item self-report measure of recognizing, regulating, and harnessing emotions which was based on Salovey and Mayer's (1990) model of emotional intelligence, (b) examining the ratings of the course given by the students in the emotional skills-themed sections, and (c) comparing the end of the year retention data of both groups (Schutte and Malouff, 2002).

Results indicate that students in the emotion-themed sections showed a significant increase in emotional intelligence scores from the beginning of the semester to the end of the semester as compared to the control group in the alternative-themed courses. For the 38 students who took the measure twice, a paired t-test, with an alpha cutoff at a confidence level .05 showed a statistically significant increase in scores $t=5.14$, $p < .001$. A similar test showed no significant change in scores of the students in the alternative sections. A between groups t-test with an alpha cutoff at a p level of .05 showed a significantly greater increase in scores for students in the experimental group as compared to those in the control group, $t = 3.37$, $p < .001$. Descriptive data shows that a high percentage of students in the experimental group reported that "they learned a great deal in the course" (93% agreed or strongly agreed), that the course gave them an "understanding of the importance of the subject matter" (94% agreed or strongly agreed), and that the course "challenged them intellectually" (81% agreed or strongly agreed) (Schutte and Malouff, 2002).

Finally, retention data shows that of the 41 students enrolled in the emotion-skills themed sections, 40 remained enrolled through the end of the academic year. Of the 82 students in the alternative-themed sections, 71 remained enrolled through the end of the

academic year. A one-tailed t-test of two proportions, with alpha set at a p level of .05 revealed that the retention rate was significantly higher for students in the emotion-skills themed section, $z = 1.93$, $p < .026$ (Schutte and Malouff, 2002).

A second study by Wells, Torrie, and Prindle (2000) explored how emotional intelligence correlates in three selected populations of college students. Participants were students at Lethbridge Community College in Canada and were enrolled in either a pre-college *Access Group* ($N=41$) (students taking remedial courses such as English, Math, and Reading skills), or in an Industrial Training Center whereby they were studying in the automotive service technician department. The students in the training center were divided into two groups. One group was at the end of their first year ($N=12$) while the second group was at the end of their two-year program ($N=9$). All groups were administered the Bar-On EQ-I (Bar-On, 1997) to measure emotional intelligence. The purposes of the study were defined as: (1) to gather an LCC baseline of data using the BarOn EQ-I test (Bar-On, 1997), (2) to compare and correlate BarOn EQ-I (Bar-On, 1997) scores pre and post instruction, (3) to correlate BarOn EQ-I (Bar-On, 1997) post program scores with other measures of student achievement such as grades on practica, work experience, or shop experience, and (4) to evaluate the BarOn EQ-I (Bar-On, 1997) instrument to see if it provides information that will inform teaching practices at LCC (Wells et al, 2000).

The BarOn EQ-I (Bar-On, 1997) yields a total EQ score that is broken down into five subscales (Intrapersonal, Interpersonal, Adaptability, Stress Management, and General Mood). Each subscale is further subdivided into factors of emotional intelligence (cited above). Correlations were obtained between the five subscales of the BarOn EQ-I (Bar-

On, 1997) and marks (grades) received. The first-year automotive service technology students received marks on effort, cooperation, assignments, organization, and employability. The second-year automotive technology students received marks on ability, attitude, interaction, and attendance (Wells et al, 2000).

Results indicated that there were no significant differences between the three groups in terms of means and/or variances of the scores and that all scores fell within the normal range of scores associated with the instrument. The results also indicated that no claims could be made regarding the school's second year impacting, or failing to impact, student's skills. However, there is a noticeable difference in the variability of scores, which decreased from students in the Access center through year one to year two of the automotive technology program. The authors suggest that this may be due to the selectivity promoted by choosing a specific program and/or by staying in and completing a particular program (Wells et al, 2000).

In looking at the third purpose of the study, some interesting results are shown. In year one there is virtually no correlation at all between students' grades and emotional intelligence factors as measured by the BarOn EQ-I (Bar-On, 1997). However, by year two, students in the automotive service technology program were showing several other stronger correlations. The test totals correlated at $r = .55$ with several specific correlations being higher. Attitude + Interpersonal correlated at $r = .74$ and Interaction + Stress Management correlated at $r = .63$. Instructor feedback gleaned that this might be explainable by the way the program is structured. First year technology students are being graded more on the content of the trade. When students reach the second year of the program, they know what the trade entails and know that they can be successful as they

move on towards employment. The authors suggest that the second year students are being graded more on the “softer” criteria in which the BarOn EQ-I (Bar-On, 1997) test measures (Wells et al, 2000).

A third study by Sutarso, T., Baggett, L., Sutarso, P., and Tapia, M. (1996) examined the effect of gender and GPA on emotional intelligence. In this study the Emotional Intelligence Inventory was administered to 138 students at the University of Alabama. The participants were students enrolled in either a *Tests and Measurements* or *Educational Psychology* class. The majority of the students were undergraduates. The Emotional Intelligence Inventory was reported to have a reliability coefficient Cronbach Alpha = .87 and through factor analysis was shown to reveal the following three factors: (1) compassion/empathy, (2) self-awareness/self-control, and (3) attunement.

The purpose of the study was to investigate the multivariate interaction effect of gender and GPA on the three factors of emotional intelligence, the effect of GPA on the three factors of emotional intelligence, and the effect of gender on the three factors of emotional intelligence. The variable of GPA consisted of five categories: (1) 3.5-4.0, (2) 3.00 – 3.49, (3) 2.50 – 2.99, (4) 2.00 – 2.49, and (5) less than 2.0. There were no students with GPA's less than 2.00 and there was a good distribution of students achieving a high GPA (3.00 or greater), thus, the GPA was divided into two categories: (1) high – 3.00 and above and (2) low – 2.99 and below (Sutarso et al, 1996).

Results indicate that the two-way interaction effect on the two variables, gender and GPA, to the three dependent variables, compassion/empathy, self-awareness/self-control, and attunement was insignificant. Second, the results indicated that the effects of GPA on the three dependent variables were insignificant as well. However, the data revealed that

the effect of gender on the three dependent variables was significant (Wilks' Lambda $F(3, 118) = 4.1736, p < .0076$) (Sutarso et al, 1996).

In looking at the individual emotional intelligence factors as measured by this instrument, the results also show significant effects of gender on the dependent variables of compassion/empathy and self-awareness/self control. The effect of gender on compassion was significant ($F(1, 120) = 7.35, p, .0077$) as was the effect of gender on self-awareness/self-control ($F(1, 120) = 11.15, p, .0011$). However, the analysis of gender on the dependent variable of attunement proved to be insignificant ($F(120, 1) = 2.75, p < .10$) (Sutarso et al, 1996).

Research Questions

Research has shown that learning communities on college campuses significantly impact a number of variables including academic success. Recent studies have indicated that emotional intelligence (EI) can also be predictive of academic success and greater retention rates. Is there an inherent component of a learning community that enhances emotional intelligence? Several studies have sought to validate Chickering's (1969) proposed vectors of college student development. Though these studies have partially validated several of Chickering's (1969,1993) proposed vectors, none have been able to validate Chickering's (1969,1993) vector of "managing emotions." Do answers to this lie within current measurements of emotional intelligence? Given that no study has sought to examine the relationship between learning communities and emotional intelligence, the current study proposed these research questions:

1. What is the impact of a residential learning community and participation in Inquiry Guided classes on first-year student emotional intelligence scores as measured by the BarOn EQ-I-S (Bar-On, 2002) scales of: Interpersonal, Intrapersonal, Adaptability, Stress Management, General Mood, and Overall Emotional Intelligence?
2. What is the relationship between academic achievement of first-year students as measured by end of year grade point average (GPA) and participation in Inquiry Guided classes and emotional intelligence (EI) scores as measured by the BarOn EQ-I-S (Bar-On, 2002) scales of: Interpersonal, Intrapersonal, Adaptability, Stress Management, General Mood, and Overall Emotional Intelligence?

CHAPTER THREE

METHOD

Participants

The participants in the current study were 503 first-year students enrolled in First Year College (FYC), an intensive program designed to aid “undecided” students in the selection of a major. FYC is housed within the Division of Undergraduate Academic Programs at North Carolina State University. Though termed a “program”, FYC students are admitted similarly to students in other colleges at the University in that they must select FYC as their college of preference. Admission to FYC, as with the other colleges at the University, is competitive and based upon the preference of the student and a computed Academic Index (AI) for each student. The applicant’s AI is a predicted grade point average based on several factors: SAT scores, high-school rank, high school grades, type of high school, and courses taken in high school. In 2003, the mean AI for FYC was a 2.8, ranking it the fourth most selective college at the institution.

Participants were all traditional age first-year students. Of the 503 students, 88% were from in-state and 12% were from out-of-state. Of these students, 48% are male and 52% are female. Of these students, 86% identified themselves as Caucasian, 10% identified themselves as African-American, 3% identified themselves as Asian-American and 1% identified themselves as Native American, Hispanic, or other. In addition, the mean SAT score for entering FYC students was 1160 and the mean weighted high school GPA for entering FYC students was 3.98. This was comparable to the overall University means of 1160 and 4.0 respectively for students entering in 2003 (UPA, 2003).

Permission to include the participants in the study was granted by the North Carolina State University Institutional Review Board for the Use of Human Subjects in Research. Participants received and signed voluntary consent forms (Appendix B) and were told by administrators that they could withdraw at any time without penalty. Data obtained from the study was treated confidentially and there is no shared information, oral or written, that would link data to individual participants.

All participants were enrolled in FYC, as first-year students, during the 2003-2004 academic year. By virtue of this fact, all participants were enrolled in MDS 101A and MDS 102A (Introduction to University Education I and II) during the fall and spring semesters respectively. MDS 101A and MDS 102A are one-credit hour courses, taught by the student's academic adviser. They are required graded courses for all FYC students that focus on transitional issues that impact first-year students, skills that promote academic success, self-exploration, and major and career development.

Of the 580 FYC students, 265 resided in Tucker or Owen Residence Halls, a first-year residential/ curricular living-learning community known as the First Year College Village. The Village offers three primary services to students. First, academic advisers who teach their students/advisees in the MDS 101A and 102A are housed in offices located in Tucker Hall. This provides Village students with convenient access to their academic advisers. Second, FYC and University Housing hire, train, and supervise 13 upper-class resident mentors (RMs) that serve as student intermediaries between University Housing Resident Advisers (RA's) and first-year students. RM's attended a required three hour class on student development and work 10 hours a week in the residence halls, developing programs for the residents, and, in most cases, are paired with

and assist academic advisers in the MDS 101A and MDS 102A classes. Finally, up to 200 Village residents are randomly selected to participate in linked courses. These assignments are made after University Housing places students in either Village Residence Hall during the summer prior to the first semester of classes. Advisees are randomly assigned to MDS 101A sections, hence assigning them an academic adviser by virtue of which MDS 101A section they are assigned. Once all students were pre-registered for the MDS 101A classes, students are then pre-registered for the linked FYI course that is paired with their particular MDS 101A course. These courses are First Year Inquiry (FYI) courses that are linked with the students' MDS 101A course. For these students, the opportunity to live with and attend two classes with the same group of students is experienced.

Group 1 comprised 133 students. These students live in one of two residence halls that house the FYC Village, a residential, curricular first-year living/learning community. These students, by virtue of their living quarters, were randomly assigned to courses that linked with their MDS 101A course in the fall of 2003. The linked courses were three-hour First-Year Inquiry (FYI) courses that satisfied general education requirements at the University. FYI courses are taught in an inquiry-guided learning (IGL) fashion that promotes student engagement with peers and faculty and promotes critical thinking skills. IGL centers around a small, interactive classroom. IGL encourages students to "inquire" about the material being discussed. Different from traditional lecture methods of teaching, IGL introduces models of critical thinking and requires students to utilize this in their approach to the discipline. IGL classes are taught across disciplines from sciences and mathematics to the humanities and social sciences. All FYI linked classes that are

taught in an IGL format are restricted to a maximum of 20 students and academic advisers and FYI faculty attempt to overlap material in the respective links. FYI courses that students were enrolled in are: PSY 201, Controversial Issues in Psychology; Soc 204, Sociology of the Family; PS 201, Introduction to American Government; COM 110, Introduction to Public Speaking; STS 302, Science, Technology, & Values; ENT 203, Bees and Beekeeping; HI 251, Early American History; HI 207, Western Civilization after 1400; MDS 220, Coastal and Ocean Frontiers.

Group 2 comprised fifteen students. These students resided in the FYC Village but were not randomly assigned to participate in one of the linked courses. They were enrolled in MDS 101A courses, taught by their academic advisers who were linked with an FYI course in another MDS 101A section. These students also participated in another FYI course offered at the University. Group 3 comprised 34 students. These students also resided in the Village, but took neither a linked course nor another FYI course at the University.

Seventy-five students comprised Group 4. These students were FYC students, who did not live in the FYC Village but took another FYI course at the University. Group 5 consisted of 189 FYC students who lived outside the Village and took no other FYI course at the University. See Table 1 for visual demonstration of group characteristics.

Table 1: Group Characteristics

Group	Resident of FYC Village	Enrolled in MDS 101A w/ FYC Adviser	Enrolled in FYI Linked Course	Enrolled in Non-linked FYI Course
1 (n=133)	Yes	Yes	Yes	
2 (n =15)	Yes	Yes		Yes
3 (n=34)	Yes	Yes		
4 (n=75)		Yes		Yes
5 (n=189)		Yes		

Research Hypotheses

The researcher hypothesized that first-year students who participated in a residential-curricular learning community would score higher on posttest measures of Emotional Intelligence (Interpersonal, Adaptability, Stress Management and Total EQ), as measured by the BarOn EQ-I-S (Bar-On, 2002) than a cohort of students who participated in the residential-learning community, but were not part of the linked FYI courses, and a control group of students who did not participate in the learning community. Additionally, the researcher hypothesized that pre-test Overall Emotional Intelligence scores and scale scores of Interpersonal, Adaptability, and Stress Management, as measured by the BarOn EQ-I-S (BarOn, 2002), would significantly predict academic achievement, as measured by end of year grade-point average (GPA).

Design

The current study was a pretest-posttest five-group quasi-experimental design with a no-treatment control group (Heppner, Kivlighan, & Wampold, 1999). The independent variables were participation in a first-year residential learning community that included a linked First Year Inquiry course, participation in a first-year residential learning community without participating in a linked First Year Inquiry course, and participation in a First Year Inquiry course with no participation in a first-year residential living-learning community. The dependent variables were interpersonal, intrapersonal, adaptability, stress management, general mood, and overall emotional intelligence scores.

Academic success as measured by end of year grade point average served as a dependent variable. Finally, gender and race were analyzed to determine the impact of these variables on the measured outcomes.

Outcome Measures

The BarOn EQ-I-short version (EQ-I-S) (Bar-On, 2002) is a 51-item paper-pencil instrument that includes six measurable scales in a Likert-scale form. Respondents are given statements and are asked to indicate from (1) *Very Seldom or Not True of Me* to (5) *Very Often True of Me or True of Me*. Measurements include scale scores of Intrapersonal, Interpersonal, Stress Management, Adaptability, General Mood, and Overall Emotional Intelligence. A Positive Impression Scale is also utilized to detect respondents attempting to “fake good” and an Inconsistency Index is provided to detect non-compliance or unmotivated respondents (Bar-On, 2002).

The Intrapersonal Scale measures self-awareness and self-expression. It is defined as being aware of ourselves and understanding our strengths and weaknesses; and being able to express our selves, our feelings, and our thoughts nondestructively. It contains the following sub-components: Self Regard-being aware of, understanding, and accepting ourselves; Emotional Self-Awareness- being aware of and understanding our emotions; Assertiveness- expressing our feelings and ourselves nondestructively; Independence- being self-reliant and free of emotional dependency on others; Self Actualization- having the ability and drive to set and achieve our goals (Bar-On, 2002).

The Interpersonal Scale of social awareness and interpersonal relationships is defined as: Being aware of others' emotions, feelings, and needs, and being able to establish and maintain cooperative, constructive, and mutually satisfying relationships. This scale is comprised of the following sub-components: Empathy – being aware of and understanding how others feel; Social Responsibility – identifying with and feeling part of our social group, and; Interpersonal Relationship – establishing mutually satisfying relationships with others (Bar-On, 2002).

The Stress Management Scale involves emotional management and regulation and is defined as: Managing emotions so that they work for us and not against us. Stress Management contains the following sub-components: Stress Tolerance – effectively and constructively managing our emotions and Impulse Control – effectively and constructively controlling our emotions (Bar-On, 2002).

The Adaptability Scale measures change management and is defined as “Managing change by realistically and flexibly coping with the immediate situation and effectively solving problems as they arise.” It is comprised of the following sub-components: Reality Testing – validating our feelings and thinking with external reality; Flexibility – coping with and adapting to change in our daily life; Problem Solving – generating effective solutions to problems of a personal and social nature (Bar-On, 2002).

The General Mood Scale involves self-motivation and is defined as “Being optimistic, positive, and sufficiently self-motivated to set and pursue our goals.” It is comprised of the sub-components of Optimism – having a positive outlook and looking at the brighter side of life and Happiness- feeling content with ourselves, others, and life in general (Bar-On, 2002).

The Overall EQ scale is the sum of the five composite scales.

The BarOn EQ-I-S (Bar-On, 2002) was developed through factor analysis of items on the BarOn Emotional Quotient Inventory (BarOn EQ-i; Bar-On, 1997). The BarOn EQ-I (Bar-On, 1997) is a self-report 133 item paper/pencil instrument used to measure the six scales as described above as well as the 15 aforementioned subcomponents as defined by BarOn (1997). Participants in the scale development of the BarOn EQ-i-S (Bar-On, 2002) were 2000 adults (1020 females and 980 males) randomly selected from the population sample used in norming the BarOn EQ-i (Bar-On, 1997). Participants ranged in age from 16 to 83 with the mean age being 33.09 years old ($SD=12.01$) (Bar-On, 2002).

The response items falling within the Intrapersonal, Interpersonal, Adaptability, and Stress Management scales were analyzed to determine the highest loading factors from each scale. Using a four factor model process, 15 items from the three Interpersonal subscales, 15 items from the five Intrapersonal sub-scales, 15 items from the three Adaptability subscales, and 12 Items from the two Stress Management subscales were retained as possible response items for the BarOn EQ-I-S (Bar-On, 2002). These 57 items were then subjected to a principal-axis factor analysis in which items were dropped if they failed to load higher than a .30 on any one factor or if they loaded nearly equally high on more than one factor (BarOn, 2002). The process yielded 35 items from the four factors: Intrapersonal (10), Interpersonal (10), Adaptability (7), and Stress Management (8).

As the General Mood Scale was considered to be more of a facilitator of emotionally intelligent behavior than an integral part of the construct itself, the questions that were derived for the EQ-I-S (Bar-On, 2002) were examined through a separate one-factor

model of factor analysis. The 10 items with the highest item to factor parameter estimates were retained. Goodness of fit indicators suggested that the model had excellent fit to the General Mood data. Goodness of Fit Index (Joreskog & Sorbom, 1986) was .938; Adjusted GFI (Joreskog & Sorbom, 1986) was .903 and root-mean square residual (RMS; Joreskog & Sorbom) was .0502 (Bar-On, 2002).

The remaining 6 items on the BarOn EQ-I (BarOn, 2002) comprise the Positive Impression Scale. These items were also taken from the BarOn EQ-I (BarOn, 1997) and factor analyzed using a one-factor model of analysis. The six items with the highest item to factor parameter estimates were retained and the others were dropped. Goodness of Fit data also suggests that the model had an excellent fit with the data. Goodness of Fit Index (Joreskog & Sorbom, 1986) was .966; Adjusted GFI (Joreskog & Sorbom, 1986) was .922 and root-mean square residual (RMS; Joreskog & Sorbom, 1986) was .049.

Reliability

Internal reliability coefficients for all scales the BarOn EQ-I-S (Bar-On, 2002) purports to measure, with the exception of the Positive Impression Scale have ranged from .76 to .93 in males and females 29 years old or younger. Test-retest reliability as measured by a sample of 352 adults in a 6-week interval revealed satisfactory stability coefficients of between .57 and .80 in all of the BarOn EQ-I-S scales (Bar-On, 2002).

Construct Validity

Construct validity of the BarOn EQ-I-S (Bar-On, 2002) was demonstrated through its correlation with the BarOn EQ-I (Bar-On, 1997), its relationship with other measures designed to measure aspects of emotional intelligence, and the degree of its association between the BarOn EQ-I-S and other measures of personality.

Correlations between the BarOn EQ-I-S (Bar-On, 2002) and the BarOn EQ-I (Bar-On, 1997) derived from the normative sample utilized in the scale development process ranged from .73 to .96 for males and .75 to .97 for females. All scale correlations were significant at the $p < .05$ level.

Sitarenios (1999) examined the correlation between the BarOn EQ-I-S (Bar-On, 2002) and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) (Mayer, Salovey, and Caruso, 1999, 2002) on a sample of 137 participants selected from a pool of applicants to a college in Toronto, Canada.

The MSCEIT (Mayer, Salovey, and Caruso, 1999, 2002) is an ability based measure of emotional intelligence and assesses a measurement of overall performance and a four branch model that includes: the ability to (1) accurately perceive emotions; (2) use emotions to facilitate thinking, problem solving, and creativity; (3) understand emotions; and (4) manage emotions for personal growth (Mayer and Salovey, 1997). The MSCEIT (Mayer, Salovey, and Caruso, 1999, 2002) also measures eight specific tasks, two under each of the “branches”. Under *Perceiving Emotions*, respondents are given a *Faces Task* and a *Pictures Task*. These tasks involve asking respondents to identify how a person feels based on a facial expression and the extent to which various pictures express various emotions respectively. Under *Using Emotions to Facilitate Thought*, respondents are

given a Synesthesia Task and a Facilitation Task. The *Synesthesia Task* involves requiring respondents to generate a certain emotion in order to then compare and contrast its sensations with that of sensory modalities (light, color, temperature). The *Facilitation Task* measures the knowledge of how moods interact with and support thinking and reasoning. Under *Understanding Emotions*, respondents are measured on a *Blends Task* and a *Changes Task*. The *Blends Task* assesses respondents' ability to analyze blends of their emotions into their parts, and conversely to assemble simple emotions together into complex feelings. The *Changes Task* measures the respondent's knowledge of emotional "chains" or how emotions transition from one to another. The *Managing Emotions* branch provides an *Emotion Management Task* and an *Emotional Relations Task*. The *Emotion Management Task* measures the respondent's ability to incorporate emotions into decision-making. The *Emotional Relations Task* measures the respondent's ability to incorporate emotions into decision-making regarding other people.

Results showed that there were low to moderate significant correlations between the MSCEIT and BarOn EQ-I-S across most scales. Of particular note is that Coefficient Alphas, ranging from .28 to .40, between Total EQ, as measured by the BarOn EQ-I-S (Bar-On, 2002), and all scales measured by the MSCEIT were significant at the $p < .05$ level, with 10 out of 12 scales showing significance at the $p < .01$ level.

The Trait Meta-Mood Scale (TMMS) developed by Salovey, Mayer, Goldman, Turvey, and Palfai (1995) is a self-report instrument designed to measure Attention to Emotions, Clarity of Emotions, and Emotional Repair was examined in terms of its correlation with the BarOn EQ-I. Bar-On (2002) found the correlation between the TMMS and BarOn EQ-I (Bar-On, 1997) Total Scores to be .58. Dulewicz, Higgs, and

Slaski (2002) compared BarOn EQ-I (Bar-On, 1997) scales with scales on the Emotional Intelligence Questionnaire (EIQ: Dulewicz and Higgs, 1999). The authors found that the correlation between the EIQ and the BarOn EQ-I (Bar-On, 1997) to be .63. Given the significant relationship between the BarOn EQ-I (Bar-On, 1997) and the Baron EQ-I-S (Bar-On, 2002), these studies lend credence to the construct validity of the BarOn EQ-I-S (Bar-On, 2002).

Alexithymia is a disorder characterized as a pathological inability to identify emotions and distinguish between them. People with alexithymia have difficulty in accurately identifying emotions in the facial expressions of others and are limited in their ability to think about and use emotions to cope with stressful situations. (Taylor, Bagby, and Parker, 1997). Parker, Taylor, and Bagby (2001) assessed the relationship between emotional intelligence and alexithymia using the BarOn EQ-I (Bar-On, 1997) and the Toronto Alexithymia Scale (TAS-20; Bagby, Parker, and Taylor, 1994) in a nonclinical sample of 723 adults (322 males and 401 females). The TAS-20 (Bagby et al., 1994) is a 20 item self-report instrument. As expected, results found significant negative correlations ($p < .05$) between emotional intelligence and alexithymia.

Divergent Validity

In efforts to examine the relationship, or lack thereof, between emotional intelligence and personality, two studies have been conducted to demonstrate the differences between these constructs. The first study consisted of 519 adults in a non-clinical sample (participants were part of Baron EQ-I normative sample) that completed the BarOn EQ-I (Bar-On, 1997) and the 16PF (Cattell, Eber, & Tatsouka, 1970). This

study looked at the correlation between the BarOnEQ-I (Bar-On, 1997) scales and the five new 16PF scales developed to assess the five-factor personality model (Extraversion, Anxiety/Shyness, Self Control, Independence, Tough Mindedness). Although some variables appeared to overlap (particularly between Anxiety/Shyness and Stress Management) the low to moderate correlations between the two instruments make it “apparent that BarOn EQ-I-S is assessing a set of interrelated constructs distinct from personality” (Baron, 2002, p. 47).

Parker (2001) also compared scores on the BarOn EQ-I-S (Bar-On, 2002) to scores on the NEO-Five Factor Inventory (NEO-FFI; Costa and McCrae, 1992) in a sample of 290 adults. The NEO-FFI (Costa and McCrae, 1992) is a 60 item self-report measure designed to assess the five-factor model of personality: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Low to moderate correlations were found with the highest correlations existing between EQ-I scales of Stress Management and General Mood with NEO-FFI scale of Neuroticism. These results indicate that only a small part of what the BarOn EQ-I-S (Bar-On, 2002) is measuring can be accounted for by personality and that it would be incorrect to classify the BarOn EQ-I-S as a personality test (Bar-On, 2002, p.47).

Procedure

All students were administered the EQ-I-S (Bar-On, 2002) (Appendix A) during their New Student Orientation session in July 2003. New Student Orientation at North Carolina State University is a two-day intensive orientation session during which students

are acclimated to the University. During this time, students are introduced to the college into which they have been accepted, receive their schedules, and attend training sessions on a variety of campus resources (University Dining, diversity initiatives, computing resources, etc.). First Year College has three of these two-day sessions with approximately 200 students per session. During the first day, students meet their academic adviser during a three-hour period, at which time they learn of the classes in which they have been pre-registered. The three-hour period is divided into two parts: the first hour is dedicated to academic advisers presenting general information to his or her advisees (approximately 20 students per adviser) and the remaining time is comprised of meeting individually with students to discuss his or her individual interests and schedule. During these two hours, an Orientation Counselor (an upper-class student hired by orientation and assigned to that specific group of students for the two-day period) will take one half of the students (approximately ten) to another room in the same building to share other non-academic information, do get-to-know-you “ice breaker” exercises, etc. At the end of the second hour, the two groups of students change rooms, with the latter group now meeting individually with his or her adviser. The BarOn EQ-I-S (Bar-On, 2002) was administered by the orientation counselors to the students during this time. The Orientation Counselors underwent an hour training session on the purpose of the EQ-I-S (Baron, 2002) and were given written instructions as to how the test should be administered. Three certified EQ-I trainers monitored the classrooms where the tests were being administered. After all students had taken the EQ-I-S (BarOn, 2002), the current researcher sorted the groups by those FYC students in the “linked” MDS 101A sections,

those FYC students in the FYC Village but in “non-linked” sections, and those FYC students who did not reside in the FYC Village.

Post-test administration occurred during the last two weeks of MDS 102A class in the spring of 2004. FYC academic advisers administered the BarOn EQ-I-S (Bar-On, 2002) during class. The academic advisers/teachers underwent an hour training session on the purpose of the EQ-I-S (Bar-On, 2002) and were given written instructions (see appendix) as to how the test should be administered. After all students had taken the EQ-I-S post-test (Bar-On, 2002), the current researcher sorted the groups by those FYC students in the linked MDS 101A sections in the prior fall semester, those FYC students in the FYC Village but in non-linked sections during the fall, and those FYC students who did not reside in the FYC Village.

Data Analysis

Upon receiving scored instruments from Behavioral Health Strategies (BHS) Inc., the Investigator analyzed the data. In analyzing the data for the research question: “What is the impact of a residential learning community and participation in Inquiry Guided classes on first-year student emotional intelligence scores as measured by the BarOn EQ-I-S (Bar-On, 2002) scales of: Interpersonal, Intrapersonal, Adaptability, Stress Management, General Mood, and Overall Emotional Intelligence?” the investigator employed a 4 (gender: male/female, race: white/minority) X 5(groups studied) X 6 (dependent variables) pre-post factorial analysis. A repeated measures multi-variate analysis of variance (MANOVA) was conducted to examine the main effects of treatment

groups on emotional intelligence scores as well as effects of gender and race on emotional intelligence scores.

As there have yet to be studies examining the effects of the living-learning community factors on emotional intelligence, the repeated measures MANOVA was chosen to determine if any of the five factors studied (each of the five groups) exhibited interactions on each other or main effects on any of the six dependent variables (emotional intelligence scale scores). Agresti and Finlay (1997) stated that factorial ANOVA's extend to models with several predictors. Those with two factors are often called two-way ANOVA's, studies with three factors are called three-way ANOVA's, etc.. The current study's use of 5 predictive factors is, for simplicity, referred to as a MANOVA. A repeated measures design was employed as participants were administered the same instrument (BarOn EQ-I-S; Bar-On, 2002) at pre and post-test. This allowed the investigator to determine if there were effects over time between any of the predictor variables on any of the dependent variables. If there were time effects, as revealed by the analysis, further investigation, normally t-tests, determined if the time effects were significant. Further, the repeated measures MANOVA analyzed time (between pre and post-test) X group (each of the 5 groups) interactions. Data was analyzed using the SAS (Version 9.1) Statistical Analysis Software to answer this research question.

In analyzing the data for the research question: "What is the relationship between academic achievement of first-year students as measured by end of year grade point average (GPA) and participation in Inquiry Guided classes and emotional intelligence (EI) scores as measured by the BarOn EQ-I-S (Bar-On, 2002) scales of: Interpersonal, Intrapersonal, Adaptability, Stress Management, General Mood, and Overall Emotional

Intelligence?’ the investigator employed a multiple step-wise multiple regression analysis. Step one examined the effect of gender and race on the outcome measure while step two measured the total variance of the EQ-I scale scores and IGL participation (predictor variables) on the end of year GPA (criterion variable).

Unlike simple linear regression analyses wherein a model is constructed to explain only one predictor variable’s relationship on a criterion variable, multiple regression looks at the predictive relationship of several predictors on one criterion variable. (Agresti & Finlay, 1997). Multiple regression was needed in the first step of the study as the investigator analyzed the predictive relationship of four variables (male/female & white/non-white) on academic achievement (end of year GPA). Likewise, the second step consisted of seven predictive variables (Interpersonal, Intrapersonal, Adaptability, Stress-Management, Mood, and Total EQ-I-S scale scores as well as IGL participation) and their predictive relationship on academic achievement (end of year GPA).

Previous studies (Parker et al, 2001; Parker et al, 2005) on emotional intelligence studies have shown relationships between emotional intelligence scores and academic achievement. Also, a previous study (Ambrose, 2003) has shown a relationship between Inquiry Guided Learning and academic achievement. By using a multiple regression analysis, the current study sought to show the amount of variance that could be explained by the predictor variables of EQ-I-S scale scores and IGL participation on academic achievement. However, in order to replicate these earlier studies, the current study also conducted a Pearson correlation analysis to determine the strength of the association for the predictor variables on the criterion variable. The Pearson correlation r and coefficient of determination r -square describe strength of association for bi-variate relationships

(Agresti & Finlay, 1997). Through this process, a correlation matrix was generated that showed the strength and significance of the relationships between each of the predictor variables with each other and with the criterion variable of academic achievement.

CHAPTER FOUR

RESULTS

The current study sought to examine the impact of first-year students' participation in a residential/curricular learning community on emotional intelligence and academic achievement. The study investigated the impact of living in a residential learning community and participating in first-year Inquiry Guided Learning classes on emotional development, as measured by the Baron EQ-I-s (Bar-On, 2002) on first-year undecided students. The current study also examined the predictive value of emotional intelligence and participation in Inquiry Guided Learning classes on academic achievement, as measured by end of year grade point average (GPA).

At pretest, 517 students completed the BarOn EQ-I-S (Bar-On, 2002) during summer orientation in July, 2003. Fourteen of these instruments were thrown out as not usable, yielding a sample size of 503. At post-test, 498 students completed the BarOn EQ-I-S (Bar-On, 2002) during the final two weeks of classes in April 2004. Twenty-three of the post-tests were discarded as unusable, yielding a sample size of 475. The discrepancy in numbers is based on two factors. First, several FYC students may have been unable to attend the regularly scheduled orientation when the pretest was administered. Second, the lower number in the spring reflects any student attrition up to that point as well as students who missed class on the day the EQ-I-S (Bar-On, 2002) was administered.

In utilizing the step-wise regression analysis to determine the impact of the predictor variables (EQI-scale scores and IGL participation) on the criterion variable (academic achievement), all 503 pretest instruments were included. In measuring the variance of

living arrangements and participation in an IGL course on emotional intelligence scores, the current study used the 446 students identified as having taken the pretest and posttest.

The first group of students resided in the FYC Village and took the FYC-IGL linked classes. The cohort of students not in the curricular component of the residential community was further divided into two groups of students. These two groups were those students who took “other” first-year IGL classes at the University and those students who did not take “other” IGL classes at the University. The control group was also divided in this manner. The five groups comprising the study are Village/linked IGL, Village/IGL, Village/non-IGL, Control/IGL and, Control/non-IGL (See table 1 for group characteristics). See table 2 for gender and racial breakdown.

Table 2: Demographics

	<u>n</u>	<u>Male</u>	<u>Female</u>	<u>White</u>	<u>Non-White</u>
Group 1 Village/linked	133	73	60	112	21
Group 2 Village IGL	15	2	13	14	1
Group 3 Village no IGL	34	17	17	31	3
Group 4 Control IGL	75	26	49	70	5
Group 5 Control no IGL	<u>189</u>	<u>83</u>	<u>106</u>	<u>169</u>	<u>20</u>
Total	446	201	245	396	50
		45%	55%	89%	11%

Characteristics of Students at Pretest

All students who completed the BarOn EQ-I-S (Bar-On, 2002) in July 2003, were entering students in the First Year College at North Carolina State University. At the time, students had neither enrolled in courses nor received housing assignments. Though students had “requested” certain housing assignments, the current study did not seek to obtain possible background differences once the groups had been created.

Analysis of Hypotheses

Given the research question, “What is the impact of a residential learning community and participation in Inquiry Guided classes on first-year student emotional intelligence scores”, the researcher hypothesized that first-year students who participate in a residential-curricular learning community will score higher on posttest measures of Emotional Intelligence (Interpersonal, Adaptability, Stress Management and Total EQ), as measured by the BarOn EQ-I-S (Bar-On, 2002) than a cohort of students who participated in the residential-learning community and a control group of students who did not participate in the learning community.

Results were analyzed with a MANOVA with repeated measures on each factor. Results showed there was no significant main effect on each factor. Interpersonal, $F(2,443) = 0.33, p = .7172$; Adaptability, $F(2,443) = 0.15, p = .8650$; Stress Management, $F(2,443) = 0.25, p = .7795$; Total EQ, $F(2,443) = 0.49, p = .6116$. This analysis did

reveal a significant effect for Time on Total EQ, $F(2,443) = 6.71, p < .001$ and Stress Management, $F(2,443) = 9.09, p < .003$. Post hoc analyses found that posttest Total EQ and Stress Management scores were significantly lower than pretest scores. There were no Group X Time effects found. All univariate distributions were found to be normal.

Given the second research question, “What is the relationship between academic achievement of first-year students as measured by end of year grade point average (GPA) and participation in Inquiry Guided classes and emotional intelligence (EI) scores?”, the researcher hypothesized that pre-test Overall Emotional Intelligence scores and scale scores of Interpersonal, Adaptability, and Stress Management, as measured by the BarOn EQ-I-S (BarOn, 2002) and participation in an IGL class, would significantly predict academic achievement, as measured by end of year GPA. $F(2,443) = 8.93, p < .001$, adjusted $R = .034$.

Results were analyzed using both multiple regression and multivariate correlation. Step one sought to examine the effects of gender and race on the criterion variable and Results showed that race did not have a significant effect on GPA. However, gender was shown to have a significant impact on GPA, accounting for over 3% of the variance. Post hoc analyses found that females had significantly higher end of year GPAs. Second, results showed that no scale on the BarOn EQ-I-S (BarOn, 2002) or participation in an IGL class significantly predicted academic achievement, as measured by GPA. In fact, all variables combined accounted for less than three percent of the explainable variance of GPA. $F(7,439) = 1.86, p < .08$, adjusted $R = .0247$. Table 3 displays the values of each predictor variable.

Table 3: Predictor Variables

<u>Variable</u>	<u>t value</u>	<u>Pr > t </u>
Interpersonal	-0.32	0.7529
Intrapersonal	-0.31	0.7546
Adaptability	-0.31	0.7541
Stress Mgmt	-0.31	0.7538
Total EQ	0.31	0.753
Mood	-0.27	0.7836
IGL class	0.36	0.7166

Table 4: Overall Results

Overall Pre and Post-test Results

<u>Variable</u>	<u>Pretest</u>		<u>Posttest</u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
<u>InterPersonal</u>	50.55	12.51	48.93	13.78
<u>IntraPersonal</u>	53.08	12.17	51.1	12.89
<u>Adaptability</u>	51.43	12.07	50.59	12.47
<u>Stress Mgmt.</u>	55.45	12.04	52.46	12.9
<u>Total EQ</u>	52.62	8.85	50.77	9.49
<u>Mood</u>	56.36	12.06	56.23	12.4

n = 446

Table 5: Results by Group

Pretest and Posttest Scores by Group

Pretest Scores:

	<u>Linked/IGL</u>		<u>Village/IGL</u>		<u>Village/NoIGL</u>		<u>Control/IGL</u>		<u>Control/NoIGL</u>	
<u>Variable</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Interpersonal	52.5	10.7	52.1	12.5	52.2	13.24	52.1	12.4	54.1	12.8
Intrapersonal	49.0	11.8	52.3	11.8	48.9	14.4	51.3	13.0	51.5	12.6
Adaptabilty	51.9	11.6	54.4	12.5	47.5	11.5	49.2	12.3	52.4	12.3
Stress Mgmt.	55.3	11.7	58.9	12.0	54.8	10.6	53.5	11.5	56.2	12.7
Total	52.2	7.9	54.5	9.4	50.9	9.1	51.5	8.5	53.5	9.4
Mood	55.5	11.3	59.1	12.1	58.6	11.9	54.8	11.6	57.0	12.7

Posttest Scores :

<u>Variable</u>	<u>Mean</u>	<u>SD</u>								
Interpersonal	51.7	11.6	50.7	12.9	49.7	15.6	49.5	13.5	51.6	13.1
Intrapersonal	48.4	14.9	48.6	14.6	46.8	13.7	49.3	13.6	49.6	13.0
Adaptabilty	51.7	12.3	49.4	15.2	47.4	11.5	52.7	12.4	49.7	12.4
Stress Mgmt.	53.1	12.2	54.8	13.3	50.8	13.2	53.2	12.1	51.9	13.6
Total	51.2	8.7	50.9	11.7	48.7	10.3	51.2	9.4	50.7	9.8
Mood	55.7	12.6	56.4	14.3	56.2	12.6	55.7	11.6	56.8	12.5
End GPA	3.05	.53	3.25	.39	3.07	.63	3.08	.53	3.11	.58

Pearson Correlations

While multiple regression analyses failed to show significance in the explained variance of the EQI-I-S (Bar-On, 2002) scales and Inquiry Guided Learning participation on academic achievement, Pearson Product moment coefficients were calculated to investigate the relationship between the variables. Previous studies (Parker et al, 2001: Parker et al, 2005) have shown significant associations between EQ-I scale scores and academic achievement and Ambrose (2003) found significant associations between Inquiry Guided Learning participation and academic achievement. The current study found that pre-test Interpersonal scale scores, post-test Intrapersonal scale scores, pre and post-test Adaptability scale scores, pre-test Stress Management scale scores, and pre and post-test Total scale scores had significant relationships with academic achievement, as measured by end of year GPA. See Table 6 for Pearson correlation coefficients and significance levels.

Table 6: Correlation Coefficients

Pearson Product Moment Coefficients

	<u>Inter</u>	<u>Inter2</u>	<u>Intra</u>	<u>Intra2</u>	<u>Adapt</u>	<u>Adapt2</u>	<u>Stress</u>	<u>Stress2</u>	<u>Total</u>	<u>Total2</u>	<u>Mood</u>	<u>Md2</u>	<u>IGL</u>
<u>Inter</u>	1	.098*	.379**	.042	.401**	.036	.448**	-.013	.774**	.057	.505**	.086	.043
<u>Inter2</u>	.098*	1	.05	.439**	.107*	.352**	.022	.423**	.096*	.771**	.064**	.56*	.016
<u>Intra</u>	.379**	.05	1	.079	.259**	.038	.329**	.029	.678**	.067	.521**	.034	.058
<u>Intra2</u>	.042	.439**	.079	1	.044	.248**	.016	.44**	.063	.73**	.029	.583**	.018
<u>Adapt</u>	.401**	.107*	.259**	.044	1	.083	.384**	.589	.703**	.101*	.267**	.005	.02
<u>Adapt2</u>	.036	.352**	.038	.248**	.083	1	-.037	.347**	.042	.658**	.016**	.317**	-.1*
<u>Stress</u>	.448**	.022	.329**	.016	.384**	-.037	1	.016	.743	.006	.495**	.039	.04
<u>Stress2</u>	-.013	.423**	.029	.44**	.589	.347**	.016	1	.031	.756**	.024	.537**	-.06
<u>Total</u>	.774**	.096*	.678**	.063	.703**	.042	.743	.031	1	.799	.618	.03	.06
<u>Total2</u>	.057	.771**	.067	.73**	.101*	.658**	.006	.756**	.799	1	.047**	.688	-.04
<u>Mood</u>	.505**	.064**	.521**	.029	.267**	.016**	.495**	.024	.618**	.047	1	.72	.07
<u>Mood2</u>	.086	.56*	.034	.583**	.005	.317**	.039	.537**	.03	.688**	.72	1	.04
<u>IGL</u>	.043	.016	.058	.018	.02	-.1*	.04	-.06	.06	-.04	.07	.04	1
<u>EndGPA</u>	.136**	.058	.054	.099*	.117*	.135**	.105*	.035	.142**	.111*	.071	.06	.02

* = $p > .05$ ** = $p > .01$

n = 446

CHAPTER FIVE

DISCUSSION

The current study focused on one factor that has been shown to have a consistent relationship with retention of college students, that being academic achievement (DeBerard, Spielmans, & Julka, 2002). Higher achieving students persist at a significantly greater rate than their lower achieving counterparts (Kirby & Sharpe, 2001; McGrath & Braunstein, 1997; Ryland, Riordan, & Brack, 1994). While “traditional” measures have failed to display the variance to account for such achievement, the current study sought to explore the impact of emotional intelligence, living-learning community, and Inquiry Guided learning on academic achievement.

Reuven Bar-On (1997) defined EI as a “multifactorial array of interrelated emotional, personal, and social abilities that help us cope with daily demands.” These abilities, according to EI theory have as much to do with “success” as generic Intelligence Quotient (IQ) measurements. Indeed, college students who participated in an emotional skills development course were significantly more likely to be retained than those who did not (Schutte and. Malouff, 2002).

Additionally, living-learning communities, defined as “any one of a variety of curricular structures that link together several existing courses-or actually restructure the material entirely-so that students have opportunities for deeper understanding and integration of the material they are learning and more interaction with one another and their teachers as fellow participants in the learning enterprise” (Gabelnick, MacGregor, Matthews, & Smith, 1990, p. 19 as cited in Shapiro & Levine, 1999) have been shown to be effective in promoting college student adjustment and achievement (Astin, 1993:

Endo & Harpel, 1982; Franklin et al, 1995; Kuh, 1991, 1996; Lampion, 1993; Pascarella & Terenzini, 1991). The current researcher hypothesized that participation in a living-learning community would have a significant impact on students emotional intelligence scores and academic achievement.

Finally, the current study examined Inquiry-guided learning (IGL) on students' emotional intelligence and academic achievement. IGL is an "array of classroom practices that promote student learning through guided and, increasingly, independent investigation of questions and problems for which there is no single answer. This process involves the ability to formulate good questions, identify and collect appropriate evidence, present results systematically, analyze and interpret results, formulate conclusions, and evaluate the worth and importance of those conclusions. It may also involve the ability to identify problems, examine problems, generate possible solutions, and select the best solution with appropriate justification. This process will differ somewhat among different academic disciplines. A variety of teaching strategies, used singly or, more often, in combination with one another, is consistent with inquiry-guided learning: interactive lecture, discussion, group work, case studies, problem-based learning, service learning, simulations, fieldwork, and labs as well as many others. Inquiry-guided learning must also involve writing and speaking both in classroom instruction and in the methods used to evaluate students." (Prepared by Faculty Center for Teaching and Learning and Hewlett Steering Committee September 2000; Lee, 2004). The current study also sought to understand if there were significant differences in emotional intelligence and academic achievement in those students who participated in IGL classes as opposed to students who did not participate in IGL classes.

The current investigator hypothesized that first-year students who participated in a residential-curricular learning community would score higher on posttest measures of Emotional Intelligence (Interpersonal, Adaptability, Stress Management and Total EQ), as measured by the BarOn EQ-I-S (Bar-On, 2002) than two cohorts of students who participated in the residential-learning community (those who participated in IGL and those who did not), and a control group of students who did not participate in the learning community regardless of IGL participation. The current researcher also hypothesized that pre-test Overall Emotional Intelligence scores and scale scores of Interpersonal, Adaptability, and Stress Management, as measured by the BarOn EQ-I-S (BarOn, 2002) and participation in an IGL class, would significantly predict academic achievement, as measured by end of year GPA. Neither hypothesis was supported by the results.

Limitations

The current research study was comprised of a relatively homogenous (89% white at a large public university) group of college students. Therefore, results cannot be generalized to non-college populations or to more heterogenous college student populations. Also, as the current sample was one of “undecided” first-year students, results cannot be generalized to other types of college students (upper class, “decided”, etc.). Although, the selection of students were conducted randomly, some selection bias may be inherent in that the students were randomly chosen from a group who had already “chosen” their living quarters and classes. Given that the design proposed is a pre-post

test with the same instrument, it is possible that practice effects could have occurred during the post-test with students taking a familiar instrument.

While these limitations exist, they are not sufficient in explaining the decrease in emotional intelligence scores demonstrated by the students in this study's sample over the first-year of college. A more plausible limitation may be the timing in which the students took the pre-test. During summer orientation in July, the vast majority of entering first-year students at North Carolina State University have just graduated from high school, returned from senior year beach trips, and are full of confidence and enthusiasm. The students have accomplished a great deal in their high school careers and, save unusual life circumstances and events, they see the world and their futures as theirs for the taking. Academically, the majority of students have not felt the stress that the new academic environment will soon bring. They have not had to deal with the impulse control that their newfound independence will soon prove to challenge. As a land-grant University, many of North Carolina State's students hail from towns much smaller than the University. Many of the interpersonal skills that students have developed have been sufficient in much smaller, less diverse environments. For these reasons, it is plausible to think that emotional intelligence scores might be elevated at this juncture in the students' lives. Though logistically more difficult, the current investigator would suggest administering the pre-test at mid-semester in the fall of the students' first year. At this point, the college environment will have challenged students' emotional skills and more accurate scores may be revealed. If this were to be done, post-test administration would ideally occur during the fall of the sophomore year.

Another possible confound in the study surrounds the setting and environment of the

Post-test. Given during one of the last two class periods in the spring semester, students are primarily concerned about getting through with exams and finishing their first-year of college. Summer plans are at the forefront of their minds and, as FYC students typically are administered three or four assessment surveys, apathy can come into play. While these scores may be more accurate than the pre-test scores, the current researcher would suggest another time for the posttest. Again, during the beginning of the sophomore year may be a more appropriate time. Evidence that a confound existed with the pre and/or posttest times and environments is found within the correlations between pre and posttest scores. There were no expected significant relationships found between the individual Intrapersonal, Adaptability, Stress Management, Total, and Mood pre and post scores.

Limitations exist within the BarOn EQ-I-S (BarOn, 2002) instrument itself. While the factors within each of the five core components have shown relatedness, they are still unique and worthy of individual consideration. For example, a student may score very low in Emotional self-awareness and very high in Independence (both within the Intrapersonal scale) and have a mean score of “average” on the Intrapersonal scale as the Emotional self-awareness and Independence scores balance out. As the BarOn EQ-I-S (BarOn, 2002) was developed to “save time” and have applicability to certain populations (college students, etc.) that might be constrained in such respects, the current investigator suggests using the BarOn EQ-I (Bar-On, 1997) in future research endeavors with college students. The 133 item “long form” provides scale scores for each of the 15 factors that the instrument(s) purport to measure.

Another possible confound to the study are the FYI classes. While there is evidence to suggest that inquiry guided learning is beneficial to students in terms of critical thinking

skills, involvement, and academic success, there is still a great deal of variability among FYI classes at North Carolina State. Being a relatively new program at the University, ways of systematically assessing FYI classes are still under development. Relevant to the current study, the “linked” classes available to FYC Village students add a dimension to the courses that is not found in the other FYI courses. Faculty who teach FYI courses are “asked” to do so, and those who are willing may be inherently different types of teachers. There is some training that occurs with FYI instructors regarding the concepts of inquiry guided teaching and faculty members who teach the classes meet on a monthly basis to exchange ideas. However, the variability between disciplines is vast and it remains difficult to assess. Even within the FYC linked FYI classes, there are great differences in the teaching styles of the FYI instructors. It is not unreasonable to think that the path to critical thinking, while being aided by both, will be somewhat different in a Math class as opposed to a Psychology class.

Implications for Research

As investigators go forward in studying emotional intelligence in college students, the current study illustrates the need to pay careful attention to the timing of such studies. The current study reveals a possible confound in administering emotional intelligence instruments too early to gather valid baseline data. The current investigator suggests delaying any pre-test during the first-year of college to at least halfway through the first semester. By doing so, students will have had time to adjust to the college atmosphere and will have had their emotional intelligence skills challenged in the new academic

environment. The current researcher suggests that this will reveal more accurate pre-test scores that will be indicative of students' "true" levels of emotional intelligence.

The current study also shows the limitations of utilizing the BarOn EQ-I-S (BarOn, 2002) as an instrument for measuring emotional intelligence in college students. Though the BarOn EQ-I-S (BarOn, 2002) has advantages in being able to administer more rapidly to a larger group of students (a practical consideration for researchers in higher education), it fails to break down the core components that it purports to measure. For example, studies have shown that low levels of empathy are associated with poor school achievement, (Nowicki and Duke, 1992) however, empathy is embedded within the BarOn EQ-I-S (BarOn, 2002) core scale of Interpersonal Relationships, along with the factors of Social Responsibility and Interpersonal Relationships. Another example is that research has shown that scores on a test of hope are more accurate than the SAT in predicting college grades (Snyder, Harris, Anderson, Holleran, Irving, Sigmon, Yoshinobu, Gibb, Langelle, & Harney (1991). However, the optimism scale from the BarOn EQ-I (Bar-On, 1997) is joined with the Happiness scale on the on the BarOn EQ-I-S (BarOn, 2002) to form the Mood scale. Indeed, the mean age of the normative sample was 35.52 for males and 34.41 for females (Bar-On, 2002). 52.3% of the normative sample had at least some college or university experience, and 32.8% had already received at least an undergraduate degree (Bar-On, 2002). The current researcher suggests that there is no doubt that there are differences in skills and developmental challenges between this population and a sample of incoming college first-year students.

As the current study failed to show that emotional intelligence scores or any of the scale scores were significant in predicting GPA, the current researcher suggests analyzing

the current data to determine if emotional intelligence accurately predicts the academic achievement of high and low performing students. This would, in essence, be replicating the studies of Parker et al (2001) and Swart (1996) that found emotional intelligences scores were able to predict academic achievement in successful (over 3.0) and unsuccessful students (under 2.0).

A final suggestion for research would be the development of an emotional intelligence instrument specifically for late high school/college students. Questions on such an instrument should be more context-specific for this population. For example, the question, “In the past few years, I’ve accomplished little” (currently on the BarOn EQ-I-S (Bar-On, 2002)), might be changed to read, “In the past year, I’ve accomplished little academically.” The former question is on the Self-Actualization subscale of the BarOn EQ-I (Bar-On, 1997) which falls into the Intrapersonal scales on both the BarOn EQ-I (Bar-On, 1997) and the BarOn EQ-I-S (Bar-On, 2002). Developing a new instrument would certainly involve much in the way of factor analysis, establishing sound validity and reliability coefficients, but may offer enlightened information in the study of emotional intelligence in college students.

Implications for Practitioners

While the current study failed to show the predictive value of living-learning communities on emotional intelligence or the predictability of emotional intelligence on academic achievement, practitioners should not abandon efforts of programming efforts designed to increase student skills in the areas of emotional intelligence. Schutte

and Malouff (2002), demonstrate that a course that focuses on emotional intelligence, its skills and development, result in higher retention rates among college first-year students. While the dependent variable of GPA may be too large to isolate in determining what specific factors contribute to academic “success”, it is clear that student affairs practitioners need to heed the importance of the non-cognitive factors that include emotional intelligence. As Parker, Summerfeldt, Hogan, and Majeski (2003) found, “successful” students had higher emotional intelligence scores upon entering college than “unsuccessful” students.

While living-learning communities (Gabelnick, MacGregor, Matthews, & Smith, 1990, p. 19 as cited in Shapiro & Levine, 1999) have been shown to be effective in promoting college student adjustment and achievement (Astin, 1993; Endo & Harpel, 1982; Franklin et al, 1995; Kuh, 1991, 1996; Lomport, 1993; Pascarella & Terenzini, 1991), it is realistic to think that such communities are instrumental in promoting emotional intelligence. Faculty, student affairs personnel, advisers and counselors, need to continue work in helping students to develop essential emotional intelligence skills. Practitioners must continue to develop programming efforts that focus on the specific factors that the BarOn EQ-I (Bar-On, 1997) purports to measure. Specifically, efforts geared toward the development of self-awareness, interpersonal relationships in the “new” college environment, and stress management will be most beneficial. In conclusion, it continues to be critical that academic achievement is determined by more than traditional high-school academic measures.

Conclusion

The current study sought to examine the impact of first-year students' participation in a residential/curricular learning community on emotional intelligence and academic achievement. The study investigated the impact of living in a residential learning community and participating in first-year Inquiry Guided Learning classes on emotional development, as measured by the Baron EQ-I-s (Bar-On, 2002) on first-year undecided students. The current study also examined the predictive value of emotional intelligence and participation in Inquiry Guided Learning classes on academic achievement, as measured by end of year grade point average (GPA). While the current study revealed no significant differences in emotional intelligence or academic achievement as a result of participating in a living/learning community or Inquiry Guided Learning classes, research in this area is needed.

Parker, Summerfeldt, Hogan, and Majeski (2003) show that emotional intelligence significantly predicts academic achievement in successful and unsuccessful students. Schutte and Malouff (2002) demonstrate that a first-year course designed to improve emotional intelligence skills has a significant impact on academic achievement and retention rates. Given this, researchers and practitioners must continue to investigate and develop interventions that cater to the enhancement of emotional intelligence.

Second, living-learning communities, (Shapiro & Levine, 1999 from Gabelnick, MacGregor, Matthews, & Smith, 1990, p. 19) have been shown to be effective in promoting college student adjustment and achievement (Astin, 1993; Endo & Harpel, 1982; Franklin et al, 1995; Kuh, 1991, 1996; Lampton, 1993; Pascarella & Terenzini, 1991). At North Carolina State University, research (Ambrose, 2004, 2005) has shown

significant differences between academic performance of those students residing in the FYC living/learning community as opposed to those students not residing in the living/learning community. Continued research is necessary to determine the specific impact that living/learning communities have on student achievement.

Finally, Inquiry Guided learning classes for first-year students, an array of classroom practices that promote student learning through guided and, increasingly, independent investigation of questions and problems for which there is no single answer, are designed to promote critical thinking skills. While the current study failed to show a relationship between IGL classes and emotional intelligence or academic achievement, more research is necessary to determine the impact of IGL classes on these outcomes.

The current study failed to provide evidence regarding Chickering's (1969) theory of college student development, specifically the *Managing emotions* vector. This vector involves the task of recognizing the range of emotions and impulses that are inherent in humans and learning to appropriately express them. However, the emotional intelligence literature (Parker, Summerfeldt, Hogan, and Majeski, 2003) clearly shows that emotional development is as predictive of academic success as traditional cognitive measures. Researchers and practitioners must continue to seek ways in which emotional intelligence might be studied and ways in which interventions might be developed to enhance student's emotional intelligence.

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APPENDICES

APPENDIX A

BarOn EQ-I-S (Bar-On, 2002)

EQi:S

Please use a pencil, and completely shade circle like this: ● **not** like this: ⊙ ⊗

<p>A. ID: (Please write each number of your ID on the dash, and completely fill each number of your ID in the circles below. If your ID is less than 10 digits, fill in the remaining circles as zero.)</p> <p>____ ○ 1 2 3 4 5 6 7 8 9</p> <p>____ ○ 1 2 3 4 5 6 7 8 9</p> <p>____ ○ 1 2 3 4 5 6 7 8 9</p> <p>____ ○ 1 2 3 4 5 6 7 8 9</p> <p>____ ○ 1 2 3 4 5 6 7 8 9</p> <p>____ ○ 1 2 3 4 5 6 7 8 9</p> <p>____ ○ 1 2 3 4 5 6 7 8 9</p> <p>____ ○ 1 2 3 4 5 6 7 8 9</p> <p>____ ○ 1 2 3 4 5 6 7 8 9</p> <p>B. Your date of birth: (write the number on the dash, and fill in the corresponding circle)</p> <p>Day (if less than 10, use a zero first, i.e., 05)</p> <p>____ ○ 1 2 3 4 5 6 7 8 9</p> <p>____ ○ 1 2 3 4 5 6 7 8 9</p> <p>Month (if less than 10, use a zero first, i.e., 09)</p> <p>____ ○ 1 2 3 4 5 6 7 8 9</p> <p>____ ○ 1 2 3 4 5 6 7 8 9</p> <p>Year (just the last two digits, i.e., 90)</p> <p>____ ○ 1 2 3 4 5 6 7 8 9</p> <p>____ ○ 1 2 3 4 5 6 7 8 9</p>	<p>C. Gender: Male Female</p> <p style="padding-left: 40px;">① ②</p> <p>D. Ethnicity:</p> <p>African/Black ①</p> <p>Asian/Pacific Islander ②</p> <p>Caucasian/White ③</p> <p>Hispanic/Latino ④</p> <p>Native American/Inuit ⑤</p> <p>Other ⑥</p> <p>(specify: _____)</p> <p>E. Marital Status:</p> <p>Single ①</p> <p>Dating/Engaged ②</p> <p>Married ③</p> <p>Common-law ④</p> <p>Separated/Divorced ⑤</p> <p>Widow/Widower ⑥</p> <p>F. Do you live on campus?</p> <p>Yes No</p> <p style="padding-left: 40px;">① ②</p>	<p>G. Parent's Education:</p> <p>One or both of my parents have received a bachelor degree from a four-year college or university.</p> <p style="padding-left: 40px;">Yes No</p> <p style="padding-left: 80px;">① ②</p> <p>H. Are you a student athlete for a team sponsored by your institution?</p> <p style="padding-left: 40px;">Yes No</p> <p style="padding-left: 80px;">① ②</p> <p>I. Degree Pursuing:</p> <p style="padding-left: 40px;">4-Year 2-Year</p> <p style="padding-left: 80px;">① ②</p> <p>J. Institution: _____</p> <p>K. Course: _____</p> <p>L. Section: _____</p>
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Instructions

The following 51 statements provide you with an opportunity to describe yourself by indicating the degree to which each statement is true of the way you feel, think, or act most of the time and in most situations. There are five possible responses to each sentence. Mark your choice on the answer sheet by filling in the circle which corresponds to your answer.

		Very Seldom True of Me	Seldom True	Sometimes True	Often True	Very Often True of Me
1.	I'm a fairly cheerful person.....	①	②	③	④	⑤
2.	I like helping people.....	①	②	③	④	⑤
3.	I am unable to express my ideas to others.....	①	②	③	④	⑤
4.	It is a problem controlling my anger.....	①	②	③	④	⑤
5.	My approach in overcoming difficulties is to move step by step.....	①	②	③	④	⑤
6.	I don't do anything bad in my life.....	①	②	③	④	⑤
7.	I feel sure of myself in most situations.....	①	②	③	④	⑤
8.	I'm unable to understand the way other people feel.....	①	②	③	④	⑤
9.	I prefer others to make decisions for me.....	①	②	③	④	⑤
10.	My impulsiveness creates problems.....	①	②	③	④	⑤

Please continue on the back.

BarOn EQ-I-S (Bar-On, 2002) (continued)

	Very Seldom True of Me	Seldom True	Sometimes True	Often True	Very Often True of Me
11. I try to see things as they really are, without fantasizing or daydreaming about them...	1	2	3	4	5
12. Nothing disturbs me.	1	2	3	4	5
13. I believe that I can stay on top of tough situations.	1	2	3	4	5
14. I'm good at understanding the way other people feel.	1	2	3	4	5
15. It's hard for me to understand the way I feel.	1	2	3	4	5
16. I feel that it's hard for me to control my anxiety.	1	2	3	4	5
17. When faced with a difficult situation, I like to collect all the information about it that I can.	1	2	3	4	5
18. I have not told a lie in my life.	1	2	3	4	5
19. I'm optimistic about most things I do.	1	2	3	4	5
20. My friends can tell me intimate things about themselves.	1	2	3	4	5
21. In the past few years, I've accomplished little.	1	2	3	4	5
22. I tend to explode with anger easily.	1	2	3	4	5
23. I like to get an overview of a problem before trying to solve it.	1	2	3	4	5
24. I have not broken a law of any kind.	1	2	3	4	5
25. It's hard for me to enjoy life.	1	2	3	4	5
26. I care what happens to other people.	1	2	3	4	5
27. It's hard for me to make decisions on my own.	1	2	3	4	5
28. I have strong impulses that are hard to control.	1	2	3	4	5
29. When facing a problem, the first thing I do is stop and think.	1	2	3	4	5
30. I don't have bad days.	1	2	3	4	5
31. I am satisfied with my life.	1	2	3	4	5
32. My close relationships mean a lot to me and to my friends.	1	2	3	4	5
33. It's hard to express my intimate feelings.	1	2	3	4	5
34. I'm impulsive.	1	2	3	4	5
35. When trying to solve a problem, I look at each possibility and then decide on the best way.	1	2	3	4	5
36. I have not been embarrassed about anything that I've done.	1	2	3	4	5
37. I get depressed.	1	2	3	4	5
38. I'm able to respect others.	1	2	3	4	5
39. I'm more of a follower than a leader.	1	2	3	4	5
40. I've got a bad temper.	1	2	3	4	5
41. In handling situations that arise, I try to think of as many approaches as I can.	1	2	3	4	5
42. I generally expect things will turn out all right, despite setbacks from time to time.	1	2	3	4	5
43. I'm sensitive to the feelings of others.	1	2	3	4	5
44. Others think that I lack assertiveness.	1	2	3	4	5
45. I'm impatient.	1	2	3	4	5
46. I believe in my ability to handle most upsetting problems.	1	2	3	4	5
47. I have good relations with others.	1	2	3	4	5
48. It's hard for me to describe my feelings.	1	2	3	4	5
49. Before beginning something new, I usually feel that I'll fail.	1	2	3	4	5
50. It's difficult for me to stand up for my rights.	1	2	3	4	5
51. People think that I'm sociable.	1	2	3	4	5

APPENDIX B

Informed Consent Form

North Carolina State University
INFORMED CONSENT FORM
For Students

The Assessment of Non-cognitive Variables to Predict Retention and Persistence

Principal Investigator: Caryn Sabourin Ward

Faculty Sponsor: Marilee J. Bresciani, Director of Assessment for
the Division of Undergraduate Affairs

You are invited to participate in a research study. The purpose of this study is to examine students' ability to understand oneself and others, relate to others, and adapt and to and cope with academic demands. A secondary purpose of this study is to examine whether these abilities are related to your academic success.

INFORMATION

1. You will be asked to complete two questionnaires about your ability to cope with daily situations and to get along in the world. The first time will take place within the first week of the semester. You may be selected to take the questionnaires a second time, which will take place during the last week of classes.
2. In addition, we are requesting your social security number to access your cumulative grade point average at the end of the your first year and bio-demographic information from Registration and Records.
3. The duration of each session will take approximately an hour of your time. The total duration of the study will be 2 hours including both sessions at the beginning and end of the semester for those students completing the questionnaires a second time.

RISKS

College students who have participated in similar research in the past report feeling very little to no distress. If you are feeling uncomfortable at any point when completing the surveys, you may withdraw from the study with no penalty, and without affecting your class grade. Please feel free to ask any questions at any time.

BENEFITS

While you will not benefit directly from this study, you will be helping to improve and possibly expand different academic support programs offered here at NC State such as the Honors or Transition program

CONFIDENTIALITY

The information in the study records will be kept strictly confidential. Data will be stored securely and will be made available only to persons conducting the study unless you specifically give permission in writing to do otherwise. No reference will be made in oral or written reports which could link you to the study.

CONTACT

If you have questions at any time about the study or the procedures, you may contact the researcher, principal investigator Caryn Sabourin Ward, at 131 Leazar Hall, or 513-4175 or by email at caryn_sabourin@ncsu.edu. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Matthew Zingraff, Chair of the NCSU IRB for the Use of Human Subjects in Research Committee, Box 7514, NCSU Campus (919/513-1834) or Mr. Matthew Ronning, Assistant Vice Chancellor, Research Administration, Box 7514, NCSU Campus (919/513-2148)

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed, your data will be returned to you or destroyed.

CONSENT

"I have read and understand the above information. I have received a copy of this form. I agree to participate in this study."

Subject's signature _____

Date _____

Investigator's signature _____

Date _____