DISSERTATION

THE IMPACT OF LEARNING COMMUNITIES ON STUDENT SUCCESS AND RETENTION FOR FIRST-TIME COLLEGE STUDENTS AT DEVRY UNIVERSITY/GEORGIA

Submitted By

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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY JOHN DUNBAR ENTITLED: THE IMPACT OF LEARNING COMMUNITIES ON STUDENT SUCCESS AND RETENTION FOR FIRST-TIME COLLEGE STUDENTS AT DEVRY UNIVERSITY/GEORGIA BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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ABSTRACT OF DISSERTATION

THE IMPACT OF LEARNING COMMUNITIES ON STUDENT SUCCESS AND RETENTION FOR FIRST-TIME COLLEGE STUDENTS AT DEVRY UNIVERSITY/GEORGIA

The study examined the impact of learning communities at DeVry University's Georgia campuses. The purpose of the study was to determine if learning communities implemented during the summer and fall 2002 semesters at the DeVry/Georgia campuses had an effect on first-semester GPA, first-term retention and student satisfaction levels for first-time college students.

The study consisted of quantitative research and analysis of data retrieved from the student records database (OSS) and the Noel-Levitz Student Satisfaction Inventory survey (SSI). In addition, interviews were conducted with six faculty members to provide further feedback on their experiences including the impact of learning communities on faculty-faculty interaction, student-faculty interaction, and student success.

Participants in the study included students and faculty. The student groups consisted of first-term students with no prior college, enrolled full time, and who either enrolled in a learning community during the summer or fall 2002 semester or enrolled in the same courses used by the learning community during the summer or fall 2000 semester. The faculty group consisted of full-time faculty

who had taught the same course both in a learning community and in a non-learning community environment for DeVry/Georgia.

The study revealed no significant differences in first-semester GPA and first-term retention between those students in a learning community during 2002 and the non-learning community student group of 2000. Further, the study revealed no significant differences in student satisfaction levels between the two student groups, however, the study also revealed that the students enrolled in the learning communities during 2002 were, on average, younger in age and less academically-prepared than the students sampled in 2000.

Feedback from the faculty interviews yielded strong support for the learning community model. Faculty members suggested the learning community improved the level of faculty-student interaction and faculty-faculty interaction as well as student performance. Recommendations from the faculty included more support from administration; improve the scheduling of classes and meeting times; provide better recognition programs; and improve the process used to select teaching teams.

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DEDICATION

This dissertation is dedicated to my immediate family:

To my wife, Carol F. Dunbar, who has provided me with loving support always;

To my two sons, Brett and Jordan Dunbar, who in their own way have had to make sacrifices as they have patiently waited for Dad to graduate;

To my mother, Willie D. Perkins, who is my life role-model;

To my brother, David T. Dunbar, who provided a shoulder when needed;

To my father, John A. Dunbar Sr., who provided me with direction while he was here with me and who I have missed ever since;

To my grandparents, A. E. "Pat" and Evelyn L. "Mema" Patton who have supported me, and who I know are looking down upon me with a smile.

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CHAPTER 1: INTRODUCTION

Few discussions are held today around current events in higher education that do not at least in some way touch on the issue of student learning or student success. We are in an age when institutions of higher learning are challenged now more than ever before to get the most from limited resources while also being tasked to show improvements in student enrollment, student retention, and graduation rates. Outcomes assessment has become the buzzword often used by accrediting bodies, state and local agencies, school administrations, and even students and their parents when grading an institution's performance. So the question is how do institutions of higher learning cause students to learn more effectively and increase the rate of persistence and graduation? Significant to answering this question is the institution's approach to student learning. Student learning is affected by some hard-to-control features of our universities such as class size and the profiles of incoming students. However, it is also affected by some very controllable aspects such as pedagogy, the university's value system and its academic culture, and just as importantly, by the type of interaction that occurs between faculty and students.

One pedagogical method focuses on student-student and student-faculty interaction is the learning community. In general, learning communities link courses, faculty, and students together through collaborative exercises and activities so students find a greater coherence in what they are learning (Gablenick, MacGregor, Matthews & Smith, 1990c, Howser, 1998; Love, 1999; Tinto, 1997). By making the educational experience more coherent and meaningful, it is suggested that learning communities can foster a greater sense of belonging and promote a greater sense of achievement and

accomplishment among students. It is also suggested that these attributes result in stronger student success and retention rates and tend to revitalize faculty in terms of teaching.

Learning communities exist in varying degrees. They can be as simple as the linking together of two courses through a common or joint assignment or as complex as the full integration of courses in such a way that the students or faculty have difficulty defining which part of the learning activity belongs to which course. In its simplest form, an example of courses linked via a joint assignment might be assigning students in an English writing class to review technical writing assignments from students in an engineering class as a preliminary step in the draft process. The students in the engineering class receive the benefit of the technical expertise of those students in the English writing class while the students in the English class receive the experience of working with engineering students to improve the quality of a technical document. In this example, both groups are learners.

At the other end of the learning community spectrum is the complexity of the full integration of courses. An example of this might be where students enroll in both a math course and a programming course during a semester. On paper, it would appear as if the student enrolled in two discrete courses, however, part of the program includes a biweekly 3-hour session where the focus is placed on co-learning activities for both courses. Students and faculty work together to design and carry out activities for each session with little concern about the amount of time that is "reserved" for either course. Instead, there is a focus on presenting, developing and successfully completing overall competencies and objectives. While each of these formats illustrates the varying degree

of complexity that learning communities exemplify, they each place the focus on student learning by getting the students more actively involved in the process of thinking, questioning, and seeking knowledge. The emphasis is placed on the achievement of specific learning outcomes and the personal and intellectual development of the students versus the achievement of specific course objectives in isolation (Gablenick et al., 1990c; Lenning & Ebbers, 1999; Love, 199; Tinto, 1997). In addition, just as important is the ongoing interaction among students and faculty that occurs through it all.

Problem Statement

Attrition of college students has been on the rise from the 1980's through most of the 1990's (NCES, 2002). In 1994, the average first year attrition for four-year colleges in the United States was 26.9%. These were first year students who began the fall semester and did not return for the subsequent fall semester. Some universities have experienced attrition rates that have leveled off or even improved slightly in recent years. However, this may be due less to initiatives and programs by the university and more to the slower economic growth, which tends to motivate students to stay in school, that greeted the turn of the century. In fact, many institutions today list student success or retention, graduation rates, career placement statistics and student default rates as key indicators of institutional effectiveness. This is a good approach, because the federal government, as well as many state governments, is also listing these same indicators as determinants of which institutions may continue to receive funding and which may not. Added to this mix, as pointed out earlier, is the premium placed on resources due to leveling of or the reduction of spending budgets against increased instructional costs.

So how are colleges and universities reacting to these challenging times? Many have implemented or revitalized first year programs that focus on student advisement, academic support, residence hall programs, and student assessment or surveys (Tinto, 1993, 1997). For example, students may be required to enroll in and complete a freshman seminar course or complete a student profile sheet and survey that might be used early on to identify strengths and potential weaknesses. Some colleges and universities have re-evaluated their entrance standards to see if the profile of the students they are admitting provides the university with a reasonable chance for successfully educating students. There are also reports of institutions offering incentives for students to stay in school such as premium accommodations, state-of-the-art athletic facilities, and even tuition credit for those students who complete their freshman courses and return for their sophomore year. While some of these initiatives may prove to be successful, there are also concerns that placing so much emphasis on key indicators such as retention and graduation rates may result in indirect pressures on the university and its faculty. These pressures include the lowering of academic standards and/or grade inflation. As one student noted from a Midwestern college "I didn't put much effort into my first semester, and I still came out with a B. I learned how to party pretty well though." (Reisburg, 1999, p.57)

So why is it that even with all the innovation some colleges and universities have devised to help keep students in school, so many students still struggle? For one, it could be that programs or incentives put in place to assist with student retention do not engage the student both socially *and* academically. Engaging students socially is important so that they feel like part of a community and have a strong sense of belonging and purpose.

Engaging the students academically is critical so that the students feel challenged and have direction in terms of their academic goals. A southwestern state university president was quoted as saying "If you ask students why they left, they'll tell you they wanted to be closer to home to a boyfriend or girlfriend, or they left for financial reasons. But the real reason students leave is that we have failed to significantly engage them in the campus community. Students on athletic teams don't leave, students in marching bands don't leave, students on the campus newspaper don't leave."(Reisburg, 1999, p.58) Another president from a different southwestern state college expressed concern over the use of incentives and whether or not the proper focus was actually being placed on engaging the student to increase learning. "They are trying to make places friendlier and happier, but they're actually turning attention away from academic standards. They are investing in things that are about comfort and not about learning, and one of the reasons for grade inflation is an institutional desire to make students happy and stay", he stated. (Reisburg, 1999, p.59)

Learning communities are a purposeful attempt to create rich, challenging, interactive and nurturing academic communities where they may not otherwise exist. They are designed to engage students both academically and socially so that the students make connections with other students and faculty, that they become a community of learners. As stated earlier, while there are many different variations of learning communities, they all intentionally link courses or coursework together to provide greater curriculum coherence and more active opportunities for learning and interaction between students and faculty. Learning communities can provide a comprehensive context for educational reform and they can be a realistic response to hard times. Learning

communities are an alternative to create successful academic communities that rely more upon the development of communities of people rather than the massive infusion of institutional resources or programming.

A significant amount of research has been done on the implementation and outcomes of learning communities in higher education with the literature suggesting that there is a positive correlation between the use of learning communities and student success rates (Dodge & Kendall, 2004; Gordon, Young & Kalianov, 1999; Johnson, 1999; Sidle & McReynolds, 1996; Tinto, 1997). However, a great deal of this research has been done at either public or private non-profit institutions. Very limited research has been found on the impact of learning communities in private for-profit institutions of higher learning. This fast growing segment of higher education faces many of the same challenges as institutions in the public and private non-profit sector.

DeVry University is a private, for-profit institution of higher education with programs at both the undergraduate and graduate level. Currently, DeVry University is made up of 27 campus locations that serve approximately 40,000 students in undergraduate programs as well as 78 Keller Graduate School centers that enroll approximately 10,000 students across the United States and Canada. DeVry is primarily a teaching institution in that its mission is to educate the student versus the mission of a research institution whose mission may be expanded to include publishing generally as well as the securing of grants and endowments to support research projects and growth. In addition, DeVry, as a private for-profit institution, receives minimal federal or state (with the exception of some state HOPE grant programs) funding; thus, it relies primarily on tuition dollars received from students through private loans or Title IV student aid as a

source of revenue. Therefore, new student enrollment and student success and retention are critical to the success of the institution. On average, 72% of freshman in undergraduate programs at DeVry University persist from the first semester to the second semester (DeVry IR Report, 2002). Further, the overall graduation rate for undergraduate students at DeVry University is 32% (DeVry IR Report, 2002). For the Georgia campuses, the same statistics are 65% and 25% respectively (DeVry IR Report, 2002).

Purpose of the Study

The purpose of this study is to examine the effects of learning communities on student success and retention for first-time undergraduate students at DeVry University's Georgia campuses. While the rate of student success and retention is important for DeVry University to succeed in its mission, there are also social and economic implications for students who leave college. Obtaining a college degree in today's highly competitive world market is, in many cases, the cornerstone of building a successful career. In addition, healthy democracies need informed thoughtful and articulate citizens. Statistics on students who do not complete a college degree show that they are more likely to be unemployed, earn a lower wage, be promoted less frequently and report a lower level of job satisfaction (NCES, 2002). Therefore, identifying methods that increase the probability of student success and retention would not only benefit DeVry University but the community it supports as well.

Research Objectives

The research will attempt to support the following general hypotheses:

1) Students at DeVry University/Georgia who are involved in learning communities will evidence higher first-semester retention compared to those students that are not involved in learning communities.
2) There is a positive relationship between the involvement in learning communities for first-time college students at DeVry University and first-semester GPA.
3) There is a positive relationship between the involvement in learning communities for first-time college students at DeVry University/GA and student satisfaction levels of; faculty-student informal interactions, faculty-student formal interactions, sense of belonging to the campus, educational quality and overall satisfaction with their college experience.

Definition of Terms

CPT: College Placement Test

First-Time College Student: A student with no prior post-secondary experience

OSS: Oracle Student System database

Significance of the Study

The significance of this study is that it will provide actual data to show whether there is a relationship, positive or negative, between the involvement in learning communities and student success and retention rates of first-time college students at DeVry University. As a proprietary institution, there can be conflict when determining

what types of resources should be applied to improve the instruction and quality of education for students at DeVry. Should there prove to be a strong positive relationship between the implementation of learning communities and student success and retention rates at DeVry, the study could provide the catalyst for institutional change in terms of how the first year is structured as well as provide evidence for the need of resources to implement and maintain such a structure. Further, an increase in student success as well as graduation rates would have a positive social and economic impact in the community. Another significance of this study is that it may provide an opportunity to draw connections between learning communities at DeVry University, classroom involvement theories and practices, and the role of faculty.

CHAPTER 2: A REVIEW OF THE LITERATURE

Introduction

Learning Communities "link courses, faculty, and students together through collaborative exercises and activities so that students find a greater coherence in what they are learning" (Gabelnick, et al., 1990c, p. 5). This type of learning environment is a transition from a teacher-centered to a student-centered setting in that all members of the group, including the teachers, are learners. The building of effective learning communities in higher education is having a profound impact on student success and retention. It has also caused academic leadership to re-examine the classroom; the role of faculty and administration; the use of technology; and the information literacy of students, faculty and staff.

A review of the literature will reveal some of the early roots of learning communities and theories on which they are based. In addition, the various types of learning communities, the reason why learning communities have become the focus of many studies in the past decade, the changing role of faculty and administrators in such learning communities, and examples of successful learning communities are reviewed. Finally, further research opportunities on learning communities are proposed.

Higher Education: A Historical Review

Prior to the 17th century, education equated to the inward solitary searches for the truth. Even educators such as Socrates were thought to play a relatively passive role in what is viewed as a process of self-discovery (Prawat, 1992).

In 1914, Thorndike argued that researchers should focus their energies on describing the individual student through intelligence tests. This led to the use of assessment methods the outcomes of which were used to direct or influence a student's educational track based on certain characteristics or abilities. Evidence of this influence is still prevalent today in secondary educational settings where students decide between a vocational track or college track.

The 1950's and 1960's saw the development of mastery teaching and learning. Learning concepts were broken down into small segments or pieces. Once the students completed the assignment or task associated with a particular segment, they received immediate feedback about their level of understanding. The theory was that once students mastered the smaller pieces or segments, the bigger picture would be understood (Prawat, 1992). Unfortunately, this method downplayed the role of teachers and tended to overburden them with paperwork and management of the systems; thus, it was short-lived although aspects of mastery can still be seen in many effective instructional practices.

Teacher effectiveness was at the forefront of many studies in the 1960's and 1970's. Studies reported that those teachers who were most effective were well-organized, minimized student disruptions and enforced rules in a consistent manner (Prawat, 1992). Obviously, this placed the focus on the teacher and on student conformity. Classrooms were considered the faculty member's domain where all authority, including all decision-making power, was retained by the teacher. This resulted in students playing a more passive role in the learning process, as seems to be the case in many classrooms today (Tinto, 1997)

In the 1980's and 1990's studies reported that what students learn outside the classroom frequently surpasses what students learn inside the classroom (Prawat, 1992). These studies lead to many collaborative teaching models and again placed some focus on teacher effectiveness. Overall, however, the focus was still on the student as an individual learner rather than a contributor to a community of learners. The 2000's have witnessed a trend that includes more of a shift in focus from the individual student and providing good lessons to more on the classroom being viewed as a learning community. Today, the classroom is being viewed by some as a place where individuals engage in animated intellectual conversations that emphasizes more engaging instruction, deeper learning, curriculum reform and development, and alternative approaches to assessment.

Although learning communities have received a great deal of attention over the past decade, early works can be traced back to the 1920's and research from John Dewey (1933) and Alexander Meiklejohn (1932), each considered a "father" of this idea (Gabelnick, et al., 1990c). Meiklejohn argued that education is a means to prepare students to live as responsible citizens in the contemporary world (Gabelnick et al., 1990c). In 1927, Meiklejohn integrated the first learning community as the Experimental College at the University of Wisconsin. It was a lower division, two-year program focusing on democracy in fifth-century Athens and nineteenth and twentieth century America. Meiklejohn rejected the current elective systems rationalizing that early in their education students lacked responsibility and vision, and it was therefore, up to the institution to assume responsibility for providing students with a direction or pathway and a community within which to explore and learn concepts. Although Meiklejohn enjoyed relative success with his learning community, the program ended in 1932. John Dewey's

influence was less on the structure of learning communities and more on teaching and learning (Gabelnick et al., 1990c). Ironically, although Dewey and Meiklejohn shared a passion for education and democracy, they were noted more for their differences. Meiklejohn was a distinguished philosopher and his work placed an emphasis on community while Dewey was more a pragmatist with his work placing more emphasis on the individual. However, each believed in "the need to provide education for citizenship, a curriculum of political morality, and a call to teachers to be endlessly experimental rather than doctrinaire" (Cadwallader, 1984, p. 286).

Almost 30 years later in 1965, a coordinated studies program labeled "The Experiment at Berkley" was established by Joseph Tussman, a professor at the University of California Los Angeles and former student of Meiklejohn (Tussman, 1969). As was the case with his mentor, Meiklejohn, Tussman experienced relative success with his learning community; however, the program ended in 1969 (Gabelnick et al, 1990c). What Tussman did provide was a model for learning communities and educational reform that led to the Evergreen State College experiment in Washington in 1970. Inspired by Tussman's work, founding faculty at Evergreen created a Coordinated Studies Program (CSP) that was team taught by faculty and organized around interdisciplinary themes (Jones, 1981). Evergreen Sate subsequently became a model for learning communities in the 1970's and 1980's (Cadwallader, 1984).

The Current State of Higher Education

Higher education has had a profound impact on our society and our world. Some of its many accomplishments include:

1. Improving accessibility through programs such as the GI Bill of 1944, which some argue had the greatest impact on the American way-of-life since the Homestead Act, the Higher Education Act of 1965 and more recent state programs such as Georgia's HOPE scholarship. All of these programs have contributed to record enrollments, in particular for women and minorities (NECS, 2002).
2. Developing and recognizing world leaders, such as former president Jimmy Carter, by the awarding of the Nobel Prize in 2002 for life accomplishments in physics, chemistry, medicine, literature, economics or peace, and the Pulitzer Prize for journalism and reporting as was presented in 1998 to Linda Greenhouse of the *New York Times* ("The Nobel Prize Internet Archive", n.d.; "The Pulitzer Prizes", n.d.).
3. Assisting in establishing the United States as a world economic power through its developments in research, technology and education. It is certainly hard to underestimate the value of a degree. Data from the U.S. Department of Education and the National Center for Education Statistics show the unemployment rate for persons 25 years or older with less than a high school education to be 6.4% in 2000. The median income for that same population is approximately $20,000.00. Those same statistics for persons aged 25 or older with a bachelor's or higher degree are 1.7% and approximately $55,000.00 respectively (NECS, 2002).

Yet for all of their success, "there are those that feel American colleges have evolved into institutions that can be characterized as bureaucratic, self-serving, large, and

impersonal" (Gabelnick, MacGregor, et al., 1990c, p. 9). Faculty are often described as aging, largely immobile, often demoralized through feelings of being underpaid and under-appreciated. A Carnegie study reported that nearly 50% of the nation's faculty would accept a non-academic assignment if given the opportunity (Gabelnick et al., 1990c). Many colleges today are more focused on faculty credentials and the accumulation of research funds rather than providing their students with a quality education. The structure and political economy of many of our colleges are increasingly at odds with our deeply held values about educational effectiveness (Matthews, Leigh, & Smith, 1996). As stated by Jean McGregor (2000), Director of the National Learning Communities Project (FIPSE),

> "Typically, we sail around solo. We have our own specializations which we deepen and hone through our teaching, research, conversations and sometimes collaboration with counterparts who are sailing in comparable boats at other campuses. Our work is to focus on our own crafts. Snooping around in others' would be an unthinkable invasion of privacy" (p. 1).

State governments have been quick to throw out incentives or strong mandates for the improvement of student outcomes; however, there may never be neither enough "carrots" nor "sticks" to improve undergraduate education without the support, commitment and actions from students and faculty (Chickering & Gameson, 1987).

Further complicating the picture, the profile of students seeking a higher education and entering college in the 1990's and 2000's has changed significantly. We have seen a sharp increase in the number of women and minorities. Between 1990 and 2000, the percent of women enrolled in degree granting institutions increased 14% compared to a 6.5% increase in men (NCES, 2002). By 2002, women accounted for 56% of enrollment at degree granting institutions (NCES, 2002). The percent of minorities

entering college increased from 19.6% in 1990 to 28.2% in 2000 with the sharpest increase being among the Hispanic population which increased from 5.7% in 1990 to 9.5% in 2000, a 40% change over ten years (NCES, 2002). Forty percent of all students who entered college between 1990 and 2000 were aged 25 years old or higher. Only 33% of all high school graduates went directly to a four-year institution and of all entering college students, only 60% attended full-time.

Thus, the profile of the "traditional freshman" entering a four-year college is becoming more the exception than the norm. Students today often sandwich their college experience between work and family obligations. This obviously poses many new challenges for institutions of higher education in terms of providing student services, promoting student success and achieving higher student retention. Students come to college with an array of needs, and if receiving institutions are not able to meet those needs, students will not be as likely to persist. Thus, two primary challenges in higher education today are to identify and meet the changing needs of today's students and to be more accountable for what students learn (Lenning & Ebbers, 1999).

Look at what has happened to students entering college in the 90's. Twenty-eight percent of all entering college students left their initial institution of enrollment before the start of their second year (Tinto, 1995). Only 49% completed their college degrees within 5 to 6 years of study at the institution first enrolled (Tinto, 1995). Further, only 36% of all African American students completed their degrees within 5 to 6 years (Reyes, 1997). Of all students who left college, first year students accounted for 56% (Tinto, 1995). The disturbing underlying issue is that many students left despite having good grades. A study reported that 37% of students who left college had a GPA of 2.5 or higher (Reyes, 1997).

Why might students in good academic standing leave? A primary reason is that students fail to make a connection with the campus community (Beal, 1990; Elliot, 2002; Pascarelli & Trenzini, 1991; Tinto, 1995). In others words, they make the academic transition, however, they are unable to successfully make the social transition. Other reasons that have been cited for students leaving include adjustment, lack of goal setting, finances, uncertainty in a major, isolation from family and friends, and lack of commitment (Beal, 1990; Cambiano, Denny & DeVore, 2000; Duke & Gaither, Elliot, 2002; 1974; Pascarelli & Terenzini, 1991; Tinto, 1997;). This is not to suggest the system is a failure just because every single student who enters college does not complete. In fact, some students do leave for very real and valid reasons such as a lack in their level of preparedness, a change in career plans or life changes including job issues, pregnancy, financial resources, and demands of home life. It is suggested, however, the institutional focus be on the percentage of those students who leave college, but given the right support system, could persist and be successful.

Unfortunately lost in much of the research and programs for educational reform is the importance of the classroom. For many students, classrooms represent the only interaction they have with faculty, other students and with the institution as a whole (Gabelnick et al., 1990c). According to Tinto (1997), institutions of higher education have not seen the classroom as the centerpiece of their efforts to promote student persistence. Instead, resources and efforts are generally poured into programs usually located in student affairs, and while these efforts are admirable, many times they are more reactive responses to student issues versus the development of more proactive programs that address the fundamental needs of students. Therefore, at many colleges and

universities, students continue to take courses as detached individual units, do individual reading assignments and research, and continue to fail to see the "bigger picture" in terms of how their learning relates to other courses or even everyday life experiences.

How, then, can we see the forest for the trees? How can we improve upon the learning process when many colleges and universities expend resources to constantly react and respond to the many student issues they are challenged with each day? The Boyer Commission offered the following recommendations: (a) provide a focus and construct an inquiry-based first-year program, (b) build on the freshman foundation, (c) remove barriers to interdisciplinary education, (d) link communication skills and coursework, (e) use information technology creatively, (f) culminate with a capstone experience, (g) educate graduate students as apprentice teachers, (h) change faculty reward systems, and (i) cultivate a sense of community (Lenning & Ebbers, 1999).

It is also important to bridge the gaps between curricula. This bridge may be accomplished through a common project shared by two or more courses and a faculty-team approach. For example, a first-year group of students and faculty could design a business plan project that requires skills learned in a first-year math course, business and computer skills courses. Through the development of such a business plan, students are constantly transferring skills learned in each class to the project; seeing, first-hand, how they integrate; and with assistance from the faculty-team, are better able to fill in any gaps not formerly covered in the classroom.

Classroom Involvement Theories and Practices

A paradigm shift is taking hold in American higher education. Higher education in the United States is moving from the idea that college is an institution that exists to provide instruction to the idea that college is an institution that exists to produce learning (Barr & Tagg, 1995). For example, Tinto (1997) who is often cited for his works on learning communities, believes that in many cases the classroom is the only place where faculty and students meet and that there is a need for more studies on student persistence that center on classroom meetings and activities. Plenty of research shows that the greater student involvement and interaction with faculty, the greater the likelihood that students will persist. Yet despite the importance of faculty-student interaction, most students in classrooms today play a relatively passive role in the learning process (Tinto, 1997).

This lack of connection is contrary to almost every principle that supports student learning (Guskin, 1994). The few students who, for the most part, do all the talking and leave the rest of the class as mere observers, are the exception. So why then do more students not participate in class? A study done at Northeastern University (Karp, 1975), found that students could tell quickly whether or not a professor really wants discussion or an open dialogue in class. Many students also felt intimidated in larger settings and that they had not formulated their thoughts well enough to make a contribution. In fact, Karp reported that 96% of the students surveyed felt that a small number of students did most of the talking and that 61% of the students surveyed felt that a small number of students talked too much, to the point of annoyance.

According to Karp, other studies have shown teachers seldom call directly on students. The fear of embarrassment or the risk of the student or professor feeling awkward or singled-out causes many faculty to be reluctant. Gender is also a factor. The study at Northeastern revealed that female students are more likely to participate in a classroom with a female faculty member.

Another factor is faculty response to input from students in class. If a faculty member is perceived as one who "puts down" a student or one who flaunts his or her knowledge, class participation or involvement will undoubtedly be less than with an instructor who encourages open dialogue and respects the diverse opinions of others. Another interesting factor from the study at Northeastern was that class participation increased when students sensed a faculty member struggle in the delivery of course materials or did not necessarily have all the answers (Karp, 1975). The fact that the faculty member was "human" in the eyes of the students removed some of the intimidation factor or barriers, encouraging them to actively participate and collaborate with the faculty member to arrive at a solution or understanding. Although this study was published over 30 years ago, many of the same ideals seem to hold true today.

Astin (1984) identifies three pedagogical theories that attempt to describe class involvement or classroom participation: content theory, resource theory and individualized (eclectic) theory.

Content Theory

The content theory, popular among professors, states that student development and learning depends primarily on exposure to the right subject matter. Students learn by

attending classes, listening to lectures, doing reading and/or lab assignments, and preparing and presenting written and oral presentations. In the typical classroom, the faculty is in charge, making all the important decisions such as what to teach and how to teach it (Wilson and Ryder, 1998). The problem with this theory is the student plays a relatively passive role in the classroom. Students who are avid readers, good listeners and highly self-motivated are most successful in this type of learning environment while other students will tend to struggle.

Resource Theory

The resource theory, popular among administrators and policy makers, places emphasis on the accumulation of resources such as labs, libraries, well-trained faculty, counselors, advisors, research funds, endowments and financial aid. The theory is that if you place enough resources in front of students, they will learn. Astin (1984) further suggests that institutions practicing this theory are of the belief that the combination of resources and the recruitment of high quality students will result in higher achievement of all students. The problem is that the number of well-trained faculty and quality students is finite, thus creating immense competition between institutions (Astin, 1984). The theory also tends to emphasize the accumulation of resources versus the use of resources. The potential problem exists with universities focused more on what they have versus how it is being used. For example a university may choose to invest in lab equipment in order to improve programming, however, if it is not properly integrated into the curriculum and with proper orientation and training, it may be of little use.

Individualized Theory

The individualized (eclectic) theory assumes that no single approach to creating a learning environment is adequate for all students. The theory attempts to identify the curriculum content and instructional needs that best meet the needs of the individual student. An emphasis is placed on what is most useful from other pedagogical methods such as self-paced instruction, student counseling and advising (Astin, 1984). The obvious problem associated with this theory is the high cost of implementation and the lack of definition due the multiple methods that can be adopted.

Student Involvement Theory

The student involvement theory, as Astin (1984) suggests, is one that links the best practices of the other theories. The student involvement theory emphasizes active student participation and encourages faculty to focus less on what they do and more on what the student does (Astin, 1984). It considers the most precious resource to be the students' time. The psychic and physical energy of students is finite and institutions must avidly compete with other factors such as family and work.

As for the many factors that affect student persistence, virtually all can be rationalized in terms of student involvement (Astin, 1984; Tinto, 1993). For example, living on campus, working a part time job on campus, participating in honor societies, fraternities, sororities or extra-curricular activities; and frequent interacting between faculty and students all contribute to student success and all are a measure of student involvement. The classroom environment should be one that promotes faculty and student collaboration, attempts to reduce the power lines and shift the roles of authority,

and maximizes all participants' learning. This would suggest the shift from an instructional paradigm to a learning paradigm.

Instructional vs. Learning Paradigm

Consider the mission and purposes of the instructional paradigm versus the learning paradigm: Provide and deliver instruction versus produce learning; Transfer knowledge from faculty to students versus elicit student discovery and construction of knowledge; Offer courses and programs versus create powerful learning environments; Improve the quality of instruction versus improve the quality of learnin;. Achieve access for diverse students versus achieve success for diverse students (Barr & Tagg, 1995). The instructional paradigm often mistakes a means for the end with a greater emphasis on how much information can be delivered versus how much knowledge can be shared and learned and what outcomes are actually achieved. For example if it is determined that students need to be able to better solve problems or think critically, under the instructional paradigm we are quick to develop a course in critical thinking and problem solving. The leaning paradigm would place more focus on the integration of critical thinking and problem solving skills in existing courses instead of adding yet another course for students to take. The learning paradigm envisions the institution itself as a learner thus enabling it to continue to grow and produce more learning with each graduation class. Consequently, the institution becomes more responsible for both institutional and individual outcomes (Barr & Tagg, 1995).

Assessment of Student Learning

According to Barr and Tagg (1995), one key structure for change is an institutional-wide assessment and information system that includes a measure of institutional performance. It is far too easy and often inaccurate to assume that if students do not succeed it is because they are not prepared or not capable in the first place. In fact, if any assumption is to be made, it should be that students are accepted into a college or university under admission standards that are determined by the college itself and are assumed to be at a level the institution has judged to produce a high probability of student success. The college devoted to learning first identifies the knowledge and skill sets it expects students to have when they graduate without regard to any particular curriculum or educational experiences. The results are used to re-design and improve the current learning environment in a way that will give the institution the best possible chance to achieve its desired outcomes (Barr & Tagg, 1995). This involves a number of issues that must be addressed including faculty development and training needs, administrative support, capital funding and a strong commitment from the institution to embrace change. It is unrealistic, of course, to expect different results from doing the same thing over and over (Barr & Tagg, 1995).

The American Association for Higher Education offers nine principles of good practice for assessing student learning (Austin, Banta, Cross, et al., 2003):

1. The assessment of student learning begins with educational values. Assessment is not seen as an end in itself, but is used to identify or develop a plan for educational improvement.

2. Assessment is most effective when it reflects an understanding of learning as multi-dimensional, integrated and revealed in performance over time. This entails not only what students know but also what they can do with what they know. Assessment should reflect this through a diverse array of methods over time to reveal change and growth.
3. Assessment works best when the programs it seeks to improve have clear explicitly stated purposes. It is a goal-oriented process and entails comparing educational performance against educational purposes and expectations. In cases where a program lacks specificity or agreement, assessment may assist in providing clarity and standards.
4. Assessment requires equal attention to outcomes and to the experiences that lead to those outcomes. Where a student ends up is very important; however, it just as important to know how students got there and what they experienced along the way. Assessment can help us learn which students learn best under which conditions.
5. Assessment works best when it is ongoing, not an episode. Although the "one-shot" method is better than none, assessment is best implemented through a series of activities over time. In addition, the assessment process should itself be monitored, evaluated and refined as insight is gained regarding the process.
6. Assessment fosters wider improvement when representatives from across the educational community are involved. While assessment programs may start out small, it is vital that they be integrated into all areas of the

institution. This integration requires a collaborative effort between academics, student affairs, financial aid administrators and students in a collaborative effort.

7. Assessment makes a difference when it begins with issues of use and illuminates questions that really concern people. To be useful, information must be connected to issues or questions and not just be an accumulation of data that will yield results that do not impact or concern people. Assessment should be viewed as a process that begins with questions of decision-makers, that involves them in the gathering and interpreting of data and that informs and guides towards a plan of continuous improvement.
8. Assessment is most likely to lead to improvement when it is part of a larger set of conditions that promote change. It must be a part of the campus culture and a primary goal or vision of its leadership. Assessment by itself will change little.
9. Through assessment, educators meet responsibilities to students and to the public. While it is important to our public that students and our institutions meet certain goals, it should be even more important to ourselves that we improve.

Learning Communities Defined

"Two are better than one, because they have a good reward for their toil. For if they fall, one will lift up [the other]; but woe to him who is alone when he falls and has not another to lift him up. Again, if two lie together, they [keep] warm; but how can one

[keep] warm alone? And though [one] might prevail against one who is alone, two will withstand him. A threefold cord is not quickly broken".

- Eccles. 4: 9-12, RSV (Lenning & Ebberts, 1999, p. 1)

This biblical passage reminds us that community, where people join in small groups to discuss, explore and learn together, has existed for centuries as central to learning (Lenning & Ebbers, 1999). Given the importance placed by higher education on students' social and academic development, student retention and completion rates, and the need for more emphasis on faculty-student interaction and the classroom environment, there has been increased interest and research in the building of learning communities. Learning communities rely on some very basic traditions of higher education. According to Tinto (1995), they are concerned with the fostering of communities where the work is to insure the social and intellectual development of its member's. They are forms of co-registration that enable students to take courses together.

Learning communities can be defined as small communities or groups of students that take a substantial body of coursework together and in a learning environment where understandings and meaning-making are constructed through collaborative efforts. The result is a structure that intentionally connects courses and disciplines together (McGregor, 2000). Learning communities can also be defined as classrooms, labs, committees, advisory groups, and team-teaching groups that have common goals and, through interaction, develop a sense of membership or community where all participants are learners (Weimer, 1999). In general, people tend to learn only 10 percent of what they read, 20 percent of what they hear, 30 percent of what they see, 50 percent of what they hear and see, 70 percent of what they say, and 90 percent of what they say and do (Lenning & Ebbers, 1999).

> "Learning communities purposefully restructure the curriculum to link together courses or course work so that students find a greater coherence in what they are learning as well as increased intellectual interaction with faculty and fellow students" (Gabelnick et al., 1990c, p. 5).

They rest on the principles of collaborative learning. Learning communities also emphasize equalitarianism versus hierarchies, collaboration versus competitiveness and active participation versus passive absorption (Weimer, 1999, p. 6). In essence, learning communities attempt to use the curriculum to build community, a responsibility that is generally left otherwise to the college (Gabelnick et al., 1990c).

Studies have shown that students who are in learning communities have, in general, earned higher GPA's, reported higher levels of student satisfaction, and persisted at a higher rate than those students who are not in learning communities (Dodge & Kendall, 2004; Friedman, 2004; Gordon, Young & Kalianov, 1999; Johnson, 1999; Sidle & McReynolds, 1996; Tinto, 1997). This may be because students feel they are more active participants in their education. They can confront each other; create joint meaning with other students and faculty, and discover and experience the way group work deepens individual insight and translates into other community efforts, breaking down the idea of learning alone, being alone and teaching alone (Gabelnick et al., 1990b). Learning communities can encourage the integration of social and academic lives within a college or university (Tinto, 1998).

Types of Learning Communities

An early review of the literature reveals five types of learning communities: a) linked courses, b) learning clusters, c) freshman interest groups, d) federated learning

communities, and e) coordinated studies programs (Gabelnick et al., 1990b; Tinto, 1997; Love & Tokuno, 1999). However, more recently it has been suggested that these five types may be condensed into three types: a) Student Cohorts in Larger Classes, b) Paired or Clustered Classes and c) Team-Taught Programs (MacGregor, Smith, Matthews, and Gablenick, 1997). Since the five-type and three-type models have both differences and similarities, each will be addressed in more detail.

Summary of the Five-Type Model

Linked courses

The linked courses format is the simplest form of a learning community. It is the linking together of two courses for which students co-register (Gablenick, et al., 1990b; Love & Tokuno, 1999). Although faculties teach each course individually as they usually would, they often coordinate syllabi and assignments, and they meet prior to the semester to discuss the implementation of joint assignments or the development of related lesson plans. The illustration in Figure 2.1 shows a typical relationship between two linked courses; college success (COLL) and introduction to business (BUSN). Each course is taught individually; however, the overlap represents the coordination of assignments and/or a joint project. These conjoined activities provide the students with an opportunity to see a connection between the two courses. It also promotes cooperation and coordination of faculty.

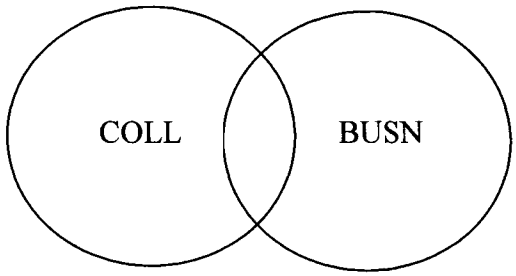

Figure 2.1. An example of linked courses.

Learning clusters

The learning cluster model takes the linked course model a step further; it links three to four courses together (Gablenick, et al., 1990b; Love & Tokuno, 1999). As with the linked course model, faculty may teach the courses as discrete individual courses; however, joint assignments and labs are often used where all faculty members and students participate. These exercises are often the focal point of the learning community and assist students in the synthesis of what they have learned in the discrete courses. The illustration in figure 2.2 shows the typical relationship between courses within a cluster. In this example, the cluster includes four courses: college Algebra (MATH), computer Skills (COMP), college success (COLL) and an introduction to business (BUSN) course. The center of the diagram represents the common project or lab time in which all faculty and students participate.

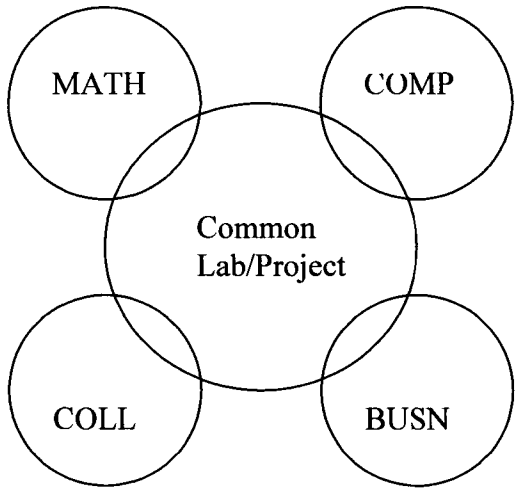

Figure 2.2. The relationship between courses in a learning cluster.

Freshman Interest Groups

Freshman Interest Groups (FIG's) link three courses around a pre-major (Gablenick, et al., 1990b; Love & Tokuno, 1999). Faculty members teach the courses as they would outside the learning community. This model utilizes a peer adviser, usually an older, senior level student, to link what was learned in each of the discrete courses. Students in FIG's register for all three courses. This model is usually implemented at larger institutions. The illustration in figure 2.3 shows the relationship between the peer advisor and courses the students take. In this example, the student registers for a college algebra (MATH), college success (COLL), and freshman engineering course (ENG). Each of the courses is taught independently by faculty. A peer advisor (upper division engineering student) completes the learning community. The role of the advisor is to assist the student in the development of an understanding as to how the college algebra,

college success and engineering courses are connected and how they work together to build a foundation to assist the student in seeing the bigger picture.

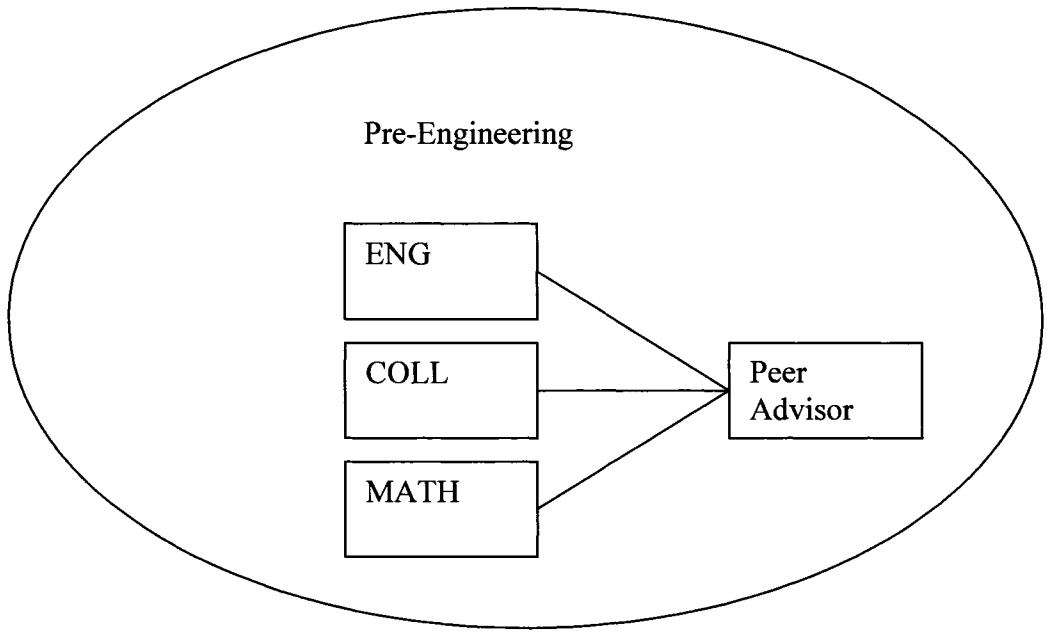

Figure 2.3. The inter-relationship of Freshman Interest Groups.

Federated learning communities

Federated learning communities link three courses together through a common seminar or college success course, such as College 101, which is conducted by a "master learner" (Gablenick, et al., 1990b; Love & Tokuno, 1999). The master learner is a faculty member who has no prior background in any of the linked courses; therefore, the faculty member becomes part of the community as a learner. The master learner follows the class group through all classes and utilizes his or her age, maturity, and professional experience, to facilitate students' learning. This model can prove costly to implement

since the master learner is typically relieved of all other teaching duties. The illustration in figure 2.4 shows the typical relationships in this type of model.

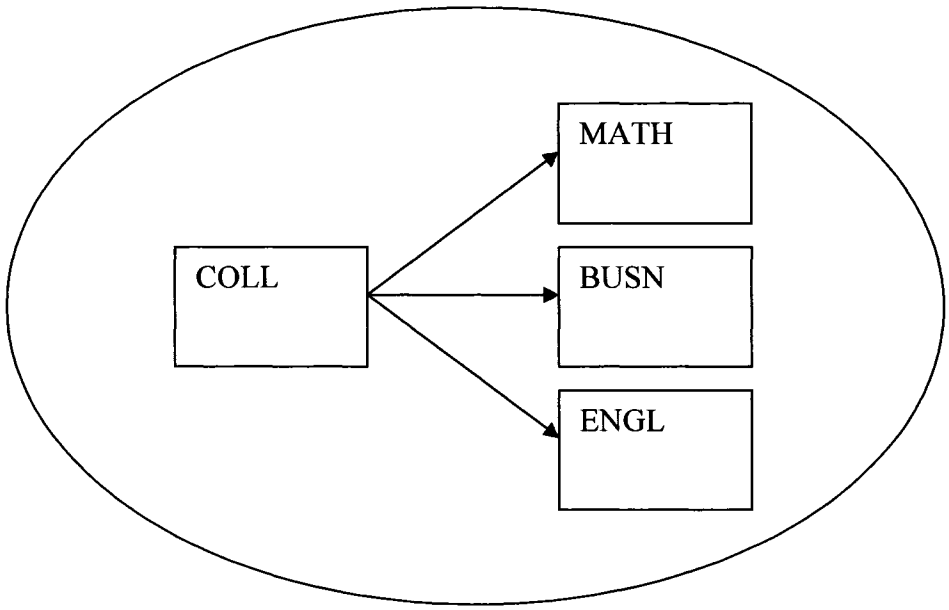

Figure 2.4. The relationship of courses in federated learning communities.

In a federated learning community, students register for courses in college success (COLL), college algebra (MATH), English (ENGL) and introduction to business (BUSN). Each of the courses is taught independently by faculty. However, the faculty member teaching the students' college success course also moves with the student into their other courses and assists the students in understanding how all the courses interconnect (Gablenick, et al., 1990b; Love & Tokuno, 1999).

Coordinated studies programs

The Coordinated Studies program (CSP) model is the most direct descendant of the Meiklejohn-Tussman experiments. Members of this model engage in full-time,

interdisciplinary, active learning around themes that naturally link all courses in the learning community (Gablenick, et al., 1990b; Love & Tokuno, 1999). In fact, many times students have difficulty identifying which course is being referenced, which is precisely the goal. Although courses are taught as one seamless curriculum, credit is still awarded in discrete components. Faculty members teach in only one Coordinated Studies Program while students register for only one CSP as their entire course load. The Coordinated Studies Programs (CSP's) are the most complex of the learning community models. Faculty members must spend time planning collaboratively and must re-define their roles in the classroom. Activities that engage the students and faculty may include plenary sessions, group work, and seminars. The illustration in figure 2.5 shows the relationships in this type of model.

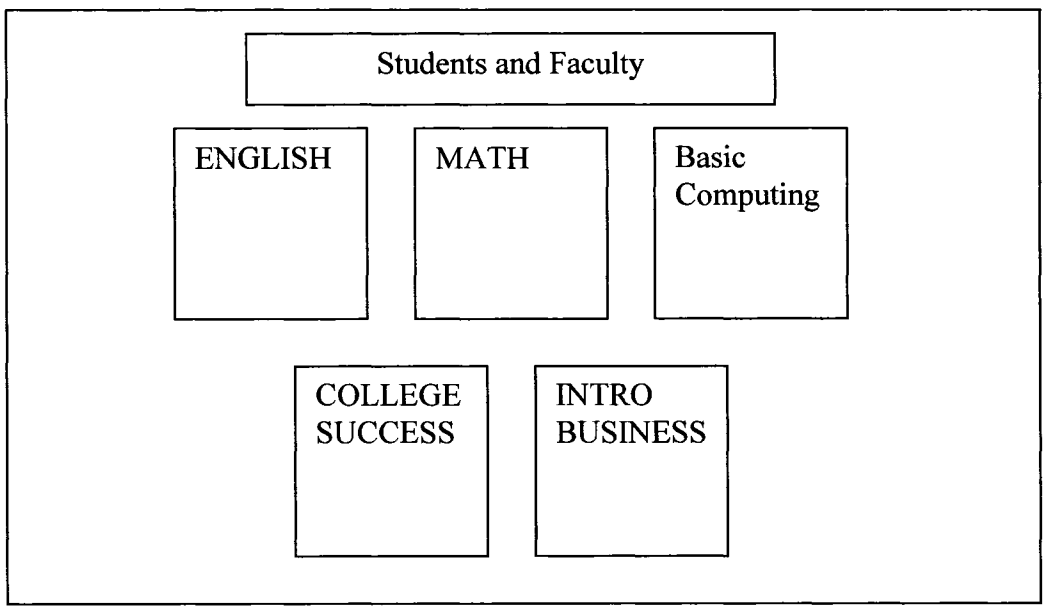

Figure 2.5. The relationship between students and faculty and enrolled courses in the Coordinated Studies Program.

In this example, students technically enroll in, for credit purposes, a college success, math, business, computing and English courses. However, note that students and faculty are independent of the individual courses. The topics of the individual classes may be blended together in accordance with a set of desired outcomes. For example, the tangible outcome may be a comprehensive project of some type that integrates the desired outcomes of all the courses in the Coordinated Studies Program (CSP). During the course of the semester, particular topics that facilitate learning and completion of the project are discussed. Depending on the topic, faculty members and students may take turns presenting, team-teaching, organizing group activities, and/or being learners themselves.

Further, learning communities may be formed around a particular curriculum such as the linking of developmental coursework (basic skills such as reading, writing and math), honors courses, or courses where students typically struggle, such as calculus. The nature of learning communities and their supportive collaborative environment lends itself well to these special populations (Love & Tokuno, 1999). Learning communities may also be formed around a pre-major or major using block scheduling (Mathews et al, 1996). For example, at LaGaurdia Community College in New York, a learning community is designed for first-year students studying business. Cerrito College in California has developed learning communities to support students in science and engineering while at Iowa Sate University, learning communities are linked to a freshman seminar course (Tinto, 1998).

Summary of the Three-Type Model

Student cohorts in large classes model

In the Student Cohorts in Large Classes model, a cohort of students registers for two or more classes together (Love & Tokuno, 1999; MacGregor, Smith, Matthews, and Gablenick, 1997). However, the learning community cohort is a part of a larger class, meaning that the students enrolled in the learning community may be joined by other students in a particular classroom. In other words, there are students in the larger cohort who may only take one of the classes that is considered part of the community. Further, faculty may not alter their teaching style but instead deliver the course in the same manner as they normally would. The learning community students meet outside the normal class time during planned sessions that give the students an opportunity to collaborate and to draw connections on what they are learning. The illustration in figure 2.6 shows the relationships in the Student Cohorts in Large Classes model.

In this example, the courses assigned to the cohort are: college algebra (MATH), college success (COLL), introduction to business (BUSN) and English (ENGL). The large circle at center represents all students enrolled in at least one of the four courses assigned to the cohort. The smaller diameter circle within the larger one represents those students who are enrolled in all four courses and who form the learning community. Faculty and students in this group meet in planned sessions that provide support. This model is similar to the Freshman Interest Groups (FIGS) and Federated Learning Communities (FLC's) (Love & Tokuno, 1999). The advantage of this model is that it provides a way to implement a form of learning community that is less sensitive to class size and budget restrictions.

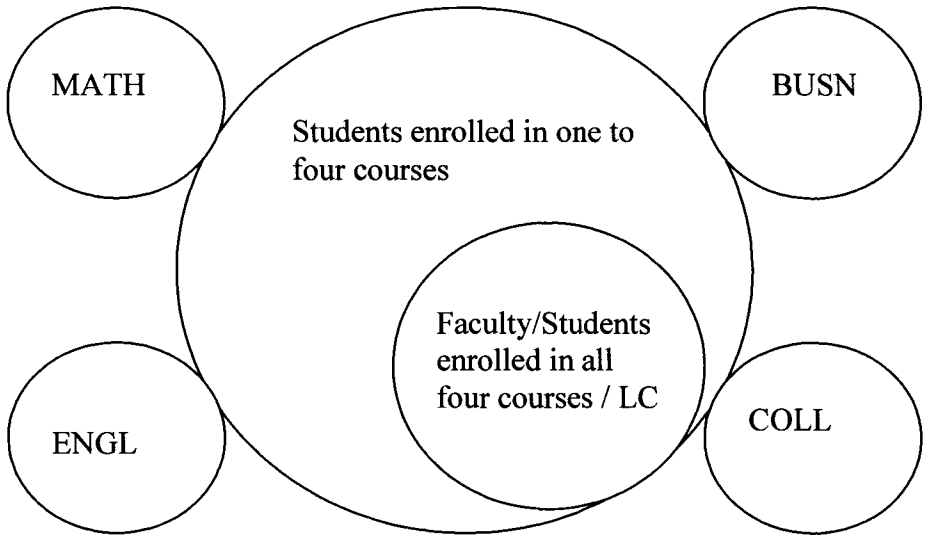

Figure 2.6. Illustration of the collaboration and connectedness of a student cohort in a large class model.

Paired and clustered classes model

With the Paired and Clustered Classes model, courses are linked together through a scheduling process that facilitates and supports faculty members who teach in the community to plan curriculum and activities together in a way that links learning objectives and outcomes (Love & Tokuno, 1999; MacGregor, Smith, Matthews, and Gablenick, 1997). Only students in the learning community register for the linked courses, thus removing the challenge of having students attend single classes within the community. This model, although more challenging from a personnel, logistics and budgetary standpoint, provides the students and faculty with a better opportunity to learn from each other and to grow together as a team. In fact, the faculty member may actually

become a type of socializing agent for students (Love & Tokuno, 1999). This model is very similar to Learning Clusters under the Five-Type Model that was shown previously in figure 2.2.

Team-taught program

The Team-Taught Program is often called a coordinated studies program (Love & Tokuno, 1999) which is illustrated in figure 2.5. With this model, faculty team-teach a set of courses and may meet students in large classes or small discussion groups. While there may or may not be set blocks of time for the learning community, the "course" time may vary dependant on the needs of the community. For example if an extended period of time is needed by one of the faculty members to bring in a guest speaker to address the students in the learning community, the faculty team may meet together to re-arrange the schedule to accommodate this need. The strength of this model is the concept of team-teaching in an environment in which the idea that all participants are learners is encouraged. The obvious challenge is that team-teaching for faculty is a far reach from the traditional lecture model. Faculty must be willing to relinquish at least some of the control they perceive to have under the classic structure. They must truly be prepared to teach in a team environment, one in which ideas can be openly challenged and the art of compromise is tested. Thus, faculty development and training is very important.

Although there are many types of learning communities that exist, nearly all share two concepts. The first is "shared knowledge" where courses are organized around a theme the learning community seeks to construct for a coherent learning environment where students and faculty come together to share knowledge. The second is "shared

knowing" meaning that by enrolling in several courses together, students not only share a body of knowledge they also share the experience of trying to know or learn together (Tinto, 1998).

Implementing Learning Communities in Higher Education

To successfully implement a learning community, consideration must be given to the development of a mission statement, and defining what the goals of the learning community are. Just as important are determining what causes of student leaving are to be addressed; what type of learning community model will best fit the institution; who the faculty will be; what role administration, marketing, and student recruitment will play, and what the costs of implementation will be must also be investigated (Tinto, 1995). Authors Chickering and Gameson (1987) outlined in *Seven Principles for Good Practice in Undergraduate Education* key objectives that warrant consideration during the roll-out of the learning communities. They are: (a) encourage contact between students and faculty, (b) develop reciprocity and cooperation among students, (c) encourage active learning, (d) give prompt feedback, (e) emphasize time on task, (f) communicate high expectations, and (g) respect diverse talents and ways of learning. Consideration must also be given to the culture of the institution and its administration and faculty which can create formidable forces that work against creating learning communities (MacGregor, 2000).

Choosing faculty can be one of the most important factors that affects the success of learning communities. If faculty members are involved during the early stages of planning and development, there can tend to be a stronger sense of camaraderie and

ownership. The inclusion of veteran faculty and newcomers as well as a combination of full-time and part-time faculty can provide a diverse set of experiences that will benefit the design of the learning community (Gabelnick et al, 1990e). When selecting participating faculty members, care should be taken to involve those who are viewed as innovators versus troublemakers or faddists in order to build credibility throughout the institution. While the selection of faculty is important, it also equally important to promote and solicit support for learning communities from all of academia and to guard against creating a "clique" or having a certain group of faculty viewed as the "in-group" (Gabelnick et al, 1990e).

Yet another critical success factor is the support and involvement of the administration. Administrators can build interest, support and ownership across the campus; therefore, it is suggested that they be involved in early planning stages as well (Gabelnick et al, 1990e). The role of the administrator typically is one of project coordinator handling logistics so that faculty can concentrate on curriculum development, instruction and evaluation methods. The type of administrators who work best in this type of environment exhibit a collaborative management style that establishes regular informational meetings to discuss issues.

Failure to include administration can lead to many barriers such as lack of support from departments outside of academics, or even a lack of support from within academia outside the learning community. As a faculty member noted from one institution: "There were many barriers to establishing the program. It was designed by a tiny group of faculty and developed outside the administration. The administration was divided about whether they wanted to have the program at all. They were generally skeptical of doing

anything different. There were problems with rooms and registering a cluster of classes. The life of the project just wasn't in their head and they didn't understand the value of doing it. They did finally give the go ahead because we had worked so hard to develop it. But, of course, we had to do all the legwork." (Gabelnick, et al., 1990e, p. 40). Other individuals who can play an important role in the success of a learning community environment include librarians, information technology professionals, multimedia developers and instructional technology staff members, the registrar and student affairs personnel (Tompkins, Perry, & Lippincott, 1998).

Defining where the learning community will be housed can provide the program with credibility, establish it as a legitimate part of the institution and assist with student recruitment. The literature suggests the most effective area to house learning communities is within academics. Many programs that rely on academic support yet fail to receive that support because they are tucked away in the student affairs office and are perceived by faculty and administrators as being non-academic or "second-tier" programs. A faculty member from one institution noted: "Although it is now well established, initially the program was a stepchild, living totally outside any academic department. The courses had interdisciplinary prefixes and were rarely discovered by students. We had to market them like crazy just to let the students know they existed. The dean feared that if the program wasn't put under a department, it might be lost during a budgetary downturn, so now we live in the English department and the courses carry English prefixes. This is very helpful in finding students. It's a relief to have the repetitive struggle of recruiting students behind us" (Gabelnick et al, 1990e, p. 4).

Clearly, choosing what type of learning community to model, deciding which courses to link together and determining how the learning community is to be marketed are important to the success of the program. For example, in choosing which type of learning community to model after, careful consideration must be given to faculty loads and cost of instruction given that different types of learning communities require varying levels of faculty involvement. It must also be determined which courses and how many are to be linked. For example, it may be decided that the linked courses should revolve around a general education theme or a particular major, or that courses that typically have had high attrition should be linked. To illustrate the importance of carefully selecting which courses to link, one institution had selected several courses for its learning community that *faculty* members were interested in linking. Unfortunately, many of the courses chosen were electives within the curriculum. Student enrollment was low and the courses were subsequently dropped.

Conversely, there has been some success in developing learning communities around a particular major. For example, students majoring in business may take a group of linked courses such as Logic and Critical Thinking, Business Organization, and Computer Skills for Business. Students and faculty are jointly involved in learning throughout the semester with the outcome culminating in a final project that demonstrates the integration of skills from all of the courses. This tangible outcome reinforces the value of the learning community with the students and the faculty. The notion that students perceive value in enrolling in courses within the learning community plays an important role in the success of the program (Gablenick, et al., 1990d; Tinto, 1995).

Once courses are selected for the learning community, a more formal education and training process for the institution can begin. Retreats with key administrators, staff and faculty serve as team building functions as well as informational sessions on the roll out planned for the learning community. Sessions can include workshops on learning styles, models for collaboration, writing across the curriculum, critical thinking, problem solving skills, and methods of assessment (Gabelnick et al, 1990e). The bringing together of faculty and administrators fosters more dialogue and can help prevent careless oversights.

Finally, funding and effective marketing of the learning community is essential. Securing funds for such an initiative will generally require a formal proposal, hence the importance of involving administration in the early stages. This proposal most likely will require a description of the program, its plan and cost for implementation, expected outcomes and how they will be measured. Approval should occur in the early stages before too much development or expenditures take place. Marketing the learning community concept can be achieved through booklets, posters, articles in student newspapers or campus newsletters, student testimonials, and workshops with admissions personnel (Hetherington & Davis, 1984). Of course today, email, list-serves, and the web are also important tools than may be effectively used in marketing efforts.

The Role and Values of Faculty in Learning Communities

In the traditional teaching model, a widely accepted assumption is that faculty members teaching groups of students in a classroom setting are essential for student learning. Therefore, the more classes or students that are taught by faculty members, the

more that should increase benefits theoretically. While this may seem logical, one could argue that simply doing more of the same will not yield a proportional increase in results. In the annual survey conducted by the Higher Education Research Institute at UCLA, under the direction of Alexander Astin, some of these findings were disturbing to some though perhaps not surprising to those close to the classroom. Results from students indicated that they were frequently bored in classes, had little contact with faculty beyond the classroom, spent more hours working and less hours doing homework, and were uncertain about their skills in math, reading and writing (Strommer, 1999). Consider this with some of the same types of disturbing trends we are seeing at major colleges and universities across the country. These trends include increased class absenteeism, particularly in large lecture classes; more students feeling unattached or uninvolved with the university; fewer students living on campus; and fewer students involved in extra curricular activities (Strommer, 1999). For most colleges or universities, these trends would be a formula for lower student success and retention. While support from the institution and administration is critical in reversing trends such as these, colleges and universities could conclude that it is the role of ownership by faculty and students that can make the most significant impact.

In the learning community model, the issue is not how many classes faculty members teach, but how much students learn (Guskin, 1996). For more students to learn, faculty members must focus directly on those activities that enhance student learning. Thus, the role of instructors must be restructured to maximize (a) essential student-faculty interaction, (b) the integration of new technologies into the learning process, (c) the utilization of collaborative learning strategies, and (d) the amount of time students

spend learning. This focus on student learning has far-reaching implications on how the institution must view the role of faculty as well as their developmental needs. In this new model, faculty productivity is replaced with student productivity, faculty disciplinary interests are replaced by what students need to learn, teaching styles are replaced with learning styles, and classroom teaching is replaced with student learning (Guskin, 1996). Faculties become members of the community of learners themselves. They must be willing to negotiate authority among other faculty and staff as well as with students for true collaboration to occur. In other words, they must be willing to suspend their own authority to work with others (Romer & Whipple, 1991).

For example, if a faculty and student are truly collaborating on a specific project, authority is constantly negotiated and the student is allowed to transcend the barrier of the power line. A student at one institution noted: "The weekly meetings were the high point of my summer. When I walked through that door, I was *somebody*. We spread our materials out side by side on a conference table in a neutral discussion room, effectively eliminating the conventional authoritative atmosphere of a professor sitting behind *his* desk, in *his* swivel chair in *his* office peering across a powerless student. Then we would open our minds, ears and voices and engage in a kind of exchange unlike anything I had ever participated in before" (Romer & Whipple, 1991, p. 69). Palmer (1998) suggests that the role of faculty in a learning community changes from that of a distant and objective evaluator to a coach actively involved with student learning, from a lecturer to a collaborator, and from goal setter and grader to a support person who determines what the student needs in order to learn. This radical change in paradigm requires that faculty members dispel the traditions of teaching with which they are most accustomed to and, in

many cases subjected to themselves in graduate school. Faculty members must also develop an understanding of how students learn.

The learning community encourages faculty members to identify those instructional methods and tools that enhance student learning and that are better alternatives to the standard lecture model. According to Guskin (1996), faculty members must, for example, identify the following:

1. What learning processes can be accomplished through faculty-student interaction such as with student advisement and mentoring?
2. What learning processes can provide instruction and feedback through effective use of technology such as online group discussions or electronic mail?
3. What learning processes can be accomplished collaboratively through peer groups or learning teams using case studies or peer tutoring?
4. What learning processes can be accomplished with supplemental instruction through academic support centers or student learning centers?
5. And, finally, what learning processes can students achieve on their own?

Identifying, classifying and developing these learning activities can free faculty to spend less time in the traditional teaching mode and more time facilitating student learning. The result can be a student who is a more active learner and who becomes a more independent learner (Guskin, 1996).

What is it that attracts faculty to learning communities? In general, faculty members value higher pay and smaller classes, the shape of the work environment, intellectual challenges and the ability to take risks among others (Gabelnick et al, 1990a).

What faculty value in learning communities is working with others on teams to improve teaching with regular opportunities for feedback, to create a safe environment for change, and to have an opportunity to shape their work and to learn more about themselves and their students.

What are the characteristics of faculty members who are typically attracted to learning communities? Instructors in general education and the human sciences are attracted by the nature of study that surrounds learning communities and the cross curriculum activities that are essential for success (Gabelnick et al., 1990a). Many could be described as mid-career, having reached a time in which they are ready to take new risks or feel a strong need to try something new. Women are highly visible in learning communities. Female instructors have often cited the connection of teaching and learning and the sense of "community" as reasons for their involvement (Gabelnick et al., 1990a).

Assessment of Learning Communities

Assessment of learning communities can easily be supported by the American Association for Higher Education's nine principles of good practice for assessing student learning that were described earlier in the literature. One can, for the most part, go down the list and with each principle see a strong relationship to learning communities.

- Principle one suggests that the assessment of student learning begins with educational values. Those values are very clear in the philosophy and structure of learning communities.
- Principle two suggests that assessment is most effective when it reflects an understanding of learning as multi-dimensional, integrated and revealed in

performance over time. Learning communities stress these points in that they integrate courses, faculty, students and the different learning styles of each participant.

- Principle three suggests that assessment works best when the programs it seeks to improve have explicitly stated purposes. Learning communities are formed to improve student and faculty learning and achievement. They also generally have goals and objectives that are very definitive in terms of how teams will be organized and function and what the expectations of each team member are within the community.
- Principle four suggests that assessment requires equal attention to outcomes and the experiences that lead to those outcomes. Learning communities pay particular attention to the diverse learning styles and experiences of each member, and they promote discussions among students and faculty in terms of how progress is being made, what is working and what is not, if there are specific actions that can be taken to make improvements.
- Principle five suggests that assessment works best when it is on going, not an episode. Assessment of learning communities tends to be ongoing simply because the student and faculty learning are constantly from the beginning. It is not just a matter of grading an end of term project, but the continuous measure of how and what students are learning during the process.
- Principle six suggests that assessment fosters wider improvement when representatives from across the educational community are involved. As was mentioned earlier in the literature, the successful implementation of learning

communities relies heavily on the involvement of key areas across the institution, thus supporting this principle.

- Principle seven suggests that assessment makes a difference when it begins with issues of use and illuminates questions that people really care about. Learning communities focus on how to improve student learning and the many questions that revolve around it such as how do students learn best and how to best manage a group with differing learning styles. These questions are certainly pertinent in higher education today.
- Principle eight suggests that assessment is most likely to lead to improvement when it is part of a larger set of conditions that promote change. Learning communities promote change in that this environment causes the institution to put more of a focus on student learning, achievement and success and to rethink how it can best accomplish its mission and goals in this area. This focus ultimately becomes a part of the institution's overall strategy development process.
- Finally, principle nine suggests that through assessment, educators meet responsibilities to students and to the public. Again, the focus is placed on student learning and the institutions mission to foster an environment that will maximize the opportunity for student success. Student success is central to many concerns that parents, public officials, accrediting bodies, and students have regarding higher education and its ability to improve in areas such as graduation and career placement rates.

Regardless of the type of learning community or institution, studies all seem to share the common outcomes that students:

1. Built peer support groups
2. Spent more time actively learning inside and outside the classroom
3. Used the learning community as a gateway to further involvement beyond the first year
4. Persisted at higher rates
5. Spoke of learning communities as a deeper, richer, better experience than the traditional classroom-learning environment
6. Reported a feeling of safety, that they were less afraid to express their opinions or ideas, and were more willing to risk being corrected or "wrong" (Tinto 1998).

Studies have also suggested that once students move beyond the learning community, they attempt to integrate many of the same approaches into traditional classes or they attempt to "re-create" the learning communities wherever they go (Gabelnick et al, 1990d).

Studies of Factors that Influence Student Satisfaction and Student Success

Studies on student satisfaction and student success have been conducted that attempt to capture those factors that most influence students' college experience including their ability to make connections with the campus, develop positive relationships with faculty and students, achieve their academic goals, and the feeling of overall satisfaction with the institution. A primary tool used for measure is the student survey. There are several designs that vary in focus, length, the point in time in which they are administered and how often. The following is a summary of studies reviewed. While these studies are not of learning communities specifically, these studies attempt to

identify some of the very same factors or influences that the learning community model is designed to address.

Bean, 1980

John Bean (1980) did a study that included a model to help explain student attrition similar to a model developed to explain turnover in the workplace (Price, 1977). The design of the study used "drop out" as the dependent variable and independent variables in three categories: Intervening, Organizational Determinants, and Background. Under Intervening, the study used Student Satisfaction and Institutional Commitment (degree of loyalty). Organizational Determinants included:

1) Routinization: The degree to which the role of the student is viewed as repetitive.
2) Development: The level of development as a result of attending school.
3) Practical Value: The level in which the student perceives value.
4) Quality of Institution
5) Integration: Making friends
6) University GPA
7) Goal Commitment: Level of Importance
8) Communication
9) Centralization: Having a voice
10) Advisor/Advisement
11) Staff/Faculty relationships: Internal contacts
12) Campus Employment
13) Major

14) Housing (campus)

15) Organizations: Belonging to

16) Opportunity: As perceived by the student

Background variables included:

1) Performance: High School GPA
2) Socio-economic Status (parents)
3) State of University Residence: The location of the school.
4) Distance from Home (to attending University)
5) Size of Home Town: (population)

A survey tool was developed and sent to students who had dropped out of their freshman year at a major mid-western university. The majority student profile for freshman of this university includes 80% of ACT scores in the top 2 quartiles, single, Caucasian, age under 22 years, US citizen and attending full time. The following details the return results:

- 1,111 surveys were returned with 908 being useable
- 541 surveys were returned by women
- 366 were returned by men

The results of the surveys from women who had dropped out included the following.

The student:

- was not committed to the institution
- did not perform well in high school
- did not belong to campus organizations

- did not believe that going to college would lead to employment
- perceived an opportunity to transfer
- did not believe that education would lead to self-development
- did not find daily life at college repetitive
- was not committed to getting a bachelors degree
- was not satisfied with being a student
- did not participate in decision-making
- did not feel she was being treated fairly
- did know the social and academic rules of the institution
- did not meet with staff and faculty informally

The results of the surveys from men who had dropped out included the following. The student:

- was not committed to the institution
- did not have a high university GPA
- was satisfied with being a student
- did not believe that the education he was receiving was leading to his development
- found his life repetitive
- did not know social and academic rules of the institution well
- may have lived with his parents

Institutional commitment was most significant in predicting dropout for men and women. Performance was the only significant Background variable and Student Satisfaction was the only Intervening variable that was significant (for women only). The explanatory

power of the final model resulted in an adjusted R^2 value of 0.21 for women and 0.12 for men. However, whether or not these results are transferable to other colleges, particularly those that might be less selective, remains questionable. Further, are their other variables that may significantly impact a student's decision to drop out (e.g. financial aid) that this model does not seem to include?

Cambiano, Denny and Vore, 1999

A study done by Cambiano, Denny & Vore at a midsize public doctoral university in the central United States examined how well high school GPA, ACT scores, gender and age predict student retention (1999). The study included a sample of 2499 students (52% male and 48% female) who were enrolled from 1989 to 1995 (13 semester period). Of the 2499 students, 41% graduated, 54% dropped out before obtaining their degree and 5% were still enrolled after their sixth year. Admission requirements of the institution included a minimum ACT score of 18 and minimum high school GPA of 2.50. Not surprisingly, the results of the study revealed that ACT scores, high school GPA, gender and age all played a role in predicting student retention. In the model developed, ACT scores as well as high school GPA were significant predictors of student retention for all 13 semesters. Age was a significant predictor but only for the second semester. Gender was also a significant predictor but only for the 9th semester (5th year). Therefore, it is not surprising to find that institutions that require students have an ACT score of 26 or higher experience the lowest dropout rates (10%) versus the dropout rates of institutions that accept ACT scores of 15 or lower (41%) (Kalsner, 1991).

Elliot, 2002

A study conducted at an upper mid-western university was designed to examine what impact various dimensions of an educational experience have on student overall satisfaction (Elliot, 2002). The tool used for the study was the Noel-Levitz Student Satisfaction Inventory (SSI) survey. The theory is that student satisfaction is continuously being shaped by campus life and that the university's product is equal to the sum of a student's academic, social, physical and even spiritual experiences. Additionally, a student's satisfaction is influenced by creating trust, by treating students in a consistent and equitable manner, by meeting student expectations and by the handling of student complaints in a caring and timely process. The sample included 1805 surveys (Freshmen 21%, Sophomores 17%, Juniors 26%, and Seniors 31%).

- 53% of respondents were women
- 85% respondents were Caucasian
- 75% of the respondents were 19-24 years old.

The GPA breakdown was as follows:

- 12.5% reported a 2.0 – 2.49
- 29.3% reported a 2.5-2.99
- 34.9% reported a 3.0-3.49, and
- 17.7% reported a 3.5 or greater.

A stepwise regression model was developed from the survey responses to determine which dimensions were considered predictors of student overall satisfaction. The two main dimensions that were most significant in predicting overall students' satisfaction were Student Centeredness (B = .484746) and Instructional Effectiveness

(B = .226266). Each dimension consists of a number of individual items. Below are the most significant predictors under each dimension:

Student Centeredness:

1) Having an enjoyable experience (B = .3293)
2) Feeling a sense of belonging (B = .1723)
3) Staff are caring and helpful (B = .0768)
4) There is a concern for students (B = .0737)

Instructional Effectiveness:

1) Experience intellectual growth (B = .1108)
2) Instructional quality in major (B = .0768)
3) Faculty are fair and unbiased (B = .0685)
4) Overall quality of instruction (B = .0635)
5) A wide variety of courses (B = .0487)

Consistent with the literature, students' overall satisfaction depends significantly on the ability to make connections, feel a sense of belonging, and experience growth both socially and academically. A weakness of this design appears to be that all survey data is self-reported through the SSI. It might also be interesting to see if there are any differences in the model between freshman level students and senior level students.

Endo & Harpo, 1982

A study at the University of Colorado, Boulder on 'The Effect of Student-Faculty Interaction on Students' Educational Outcomes (Endo & Harpo, 1982) was conducted

using data from a freshman class which was collected over a four-year period, which the authors suggest as being longer than most 1-2 year average studies done prior to theirs. The study included four different categories of student outcomes: 1) Personal and social outcomes, 2) Intellectual outcomes, 3) Academic achievement, and 4) Satisfaction with education. Student-faculty interaction was categorized as either informal, meaning to include informal advisement or discussions between students and faculty at unscheduled intervals and with little structure, or formal scheduled and highly structured advisement sessions. The study looked at the frequency (quantity) of student-faculty interactions, but it also examined the quality and helpfulness of these sessions. Background variables used in the study were placed into two categories:

- demographic/academic including sex, socioeconomic status, religiousness, program of study, academic ability
- and expectation including degree earned, sociability, finding friendly faculty, exiting classes, participating in extracurricular activities, openness to change

It was interesting to note that only the educational background of the father versus that of the father *and* mother of the student was considered.

Data were collected through instruments which included freshman questionnaires (n=2830) and a graduating student survey (n=311). Items from the surveys were combined into scales for outcome variables. These variables were defined as:

- social self-confidence
- importance of developing independence
- formal involvement with extracurricular activity

- progress towards intellectual goals
- satisfaction with education, frequency of formal student-faculty interaction
- frequency of informal student-faculty interaction, helpfulness of faculty members
- and quality of faculty advising

There were additional items on the surveys that were used directly as variables. The hypotheses the tested were:

1. The frequency of informal student-faculty interaction would have more overall effects than formal student-faculty interaction on personal/social outcomes, intellectual outcomes, academic achievement, and satisfaction with education.
2. The frequency of informal student-faculty interaction would have more overall effects on the personal/social outcomes and satisfaction with education than on intellectual outcomes or academic achievement.
3. The helpfulness of faculty and quality of faculty advising would have more effect on satisfaction with education than the frequency of formal and informal student-faculty interaction.

The results of the study fully supported the first hypothesis, partially supported the second yet failed to support the third. It also revealed that formal student-faculty interaction could have a negative impact on student outcomes in some cases. It may be that these are cases of students in academic difficulty who do not view these interactions as positive. However, the results did re-affirm some of the findings in the works of Pascarella & Terenzini (1978) which suggest the quality of student-faculty interactions,

particularly informal ones, can have a positive impact on personal, intellectual and academic outcomes.

Studies of Learning Communities

Studies of learning communities have reported increases in student retention beyond the first year, increased student social and academic development and higher first-year GPA's. These studies come from three streams: (a) a focus on learning outcomes, which show good correlation between student involvement and the amount of intellectual growth; (b) developmental theory, which suggests that dialogue between faculty and students and the exposure to different points of view help students attain higher levels of intellectual development; and (c) evidence on cognition and motivation which support learning communities as students work to create their own understanding, to fit what they know into a context, network or schema or make connections between old knowledge and new knowledge (Weimer, 1999). The following is a summary and discussion of a selection of studies on learning communities.

Dodge & Kendall, 2004

Lucy Dodge, is a twenty-year instructor for the computer information systems department at San Jose City College (SJCC) and Martha Kendall, is chair of the English department for SJCC and also serves as the learning communities coordinator. As is the case with many urban colleges, SJCC is challenged with serving a significant number of students who are under-prepared for higher education. It has a diverse ethnic population:

- 37% Asian

- 29% Latino
- 20% Caucasian
- 8% African American, and
- 6% other

Twenty-nine percent of the students are not US citizens and for 40 percent of the student body, English is not the primary language. Forty-five percent of the students are low income in accordance with the federal definition, and 83 percent attend on a part-time basis. Learning communities at SJCC are structured around three major themes, developmental, ESL and transfer level courses. An example is the pairing of a developmental writing and reading course with a computer applications course. Others include HTML and French, Chemistry and Study Skills, and Math and Critical Thinking.

The study looked at the success rate (passed with a grade of C or higher) of students enrolled in select courses that were part of a learning community versus the success rate of students who attended the same courses delivered in a more traditional format during the fall 2001 semester. In addition, to establish a baseline, the study made a third comparison to those students who had attempted the same courses over a three-year period, from 1998 to 2000. Courses tested were English (ENGL), ESL, and Computer Applications (CA). See Table 2.1.

Students in the learning community courses succeeded at a higher rate overall than students in the non-learning community courses. A chi-square test, when used to compare the frequency of success of students in the learning community courses versus those students in the baseline courses, was significant at the .01 level (chi-sqaure = 25.30, df = 7). Beyond the statistical analysis, there were a number of comments from students and

Table 2.1

Course Success Rates at SJCC

Category	Course	# Enrolled	# Successful[a]	% Successful
Fall 2001 Learning Community	ENGL	102	56	55
	ESL	27	15	56
	CA	84	57	68
	Overall	213	128	60
Fall 2001 Non-learning Community	ENGL	383	200	52
	ESL	69	46	67
	CA	75	37	49
	Overall	527	283	54
Baseline Courses 1998-2000	ENGL	2400	1111	46
	ESL	377	212	56
	CA	81	52	64
	Overall	2858	1375	48

[a] Success is defined as completing a course with a grade of C or higher.

faculty who were surveyed while participating in the learning communities. These comments provided qualitative feedback and insight. For example, an ESL instructor commented that the LC "provides a very supportive environment for students who would normally drop out of stand-alone classes, and it encourages persistence into the next level classes because students have created a strong community of learners that can support them as they continue." (Dodge & Kendall, 2004, p. 153) Another faculty member noted that students tend to remain in their cohort from one semester to the next, moving ahead together. One student commented, "Being in this learning community is like having a second family, because we are all so close." (Dodge & Kendall, 2004, p. 153) Another commented, "We became really good friends." (Dodge & Kendall, 2004, p. 153)

A third student said, "Everyone knows everyone. That is something that doesn't happen in a regular college class." (Dodge & Kendall, 2004, p. 153) A fourth student commented, "I never expected to learn as much as I have." (Dodge & Kendall, 2004, p. 154).

A strength of this study is that the courses compared between the learning community groups and the non-learning community groups were taught by in large by the same faculty members at similar times of the day. However, while these results are certainly encouraging, it would have strengthened the study even further to have information on the level of preparedness (e.g. average SAT scores) for each of the groups of students. For example, it may well be that while the difference in the success rates between the learning and non-learning community students overall was higher yet not significant, students who chose the learning community may have also been less prepared

academically, further underscoring the success of the learning community. Of course, the opposite could also be true.

Friedman, 2004

A study conducted at Appalachian State University in fall 2003 semester surveyed the 2064/2474 (83%) of the freshman student population using the Educational Benchmarking (EBI) First Year Initiative (FYI) Study (Friedman, 2004). The study was issued online to freshmen who were either enrolled in one of ten learning communities or were not enrolled in a learning community and took classes in the more traditional format. The total sample breakdown is shown in Table 2.2.

The study groups survey items into factors and then calculates an average score for each factor. The study statistically compares items with the factor called "Overall Course Effectiveness". As one would expect, some factors, otherwise called predictors, have more of an influence on a student's overall experience than others. The study returned nine predictors:

- Course experience included engaging pedagogy,
- Usefulness of course readings,
- Course experience improved managing time and priorities,
- Satisfaction with College/University,
- Course experience increased out-of-class engagement,

Table 2.2

EBI-FYI Study Response

Type of Learning Community	Total Responses	Percent of Total
Biology and Math	18	1%
Freshman Seminar	1167	57%
History and English	27	1%
Honors	55	3%
Watauga College	104	5%
Teaching Fellows	47	2%
Service Learning & Leadership	40	2%
No Learning Community	564	27%

- Course experience improved connections with peers,
- Course experience improved study strategies,
- Course experience improved critical thinking skills, and
- Course experience improved connections with faculty.

The higher rating can indicate a better and more effective experience. The students in learning communities consistently rated their experiences higher than students

in the non-learning communities. There were also some learning communities that consistently rated highest among the various types. For example, the Service Learning and Leadership Community consistently rated in the top three under each predictor. On the other hand, the largest learning community, Freshman Seminar, consistently rated in the lower quartile for each of the nine predictors; however, these scores were still significantly higher than those scores from students not in a learning community. It is noted that there was no discussion of selection criteria in terms of how students were enrolled in the learning communities or how the learning community students compared to non-learning community students in terms of high school GPA, college placement, SAT scores, etc.

Gordon, Young and Kalianov, 2001

A study conducted at a large mid-western university looked at the impact of Freshman Interest Groups (FIG's) on first year GPA, retention, and level of university involvement (Gordon, Young & Kalianov, 2001). The hypotheses were that students who participated in the FIG's would:

1. complete their first year with a higher GPA than the general population
2. persist to the second year at a higher rate than the general population, and
3. become more involved in university life.

The FIG's consisted of three common courses which included a general education course, a course in a major area of study and a freshman seminar course. Students with a determined major were placed into clusters accordingly while students who had not yet

determined a major were placed into a foundations course instead. Faculty in the learning community worked together to plan joint activities and assignments. Non-learning community students were placed in a foundations course, general education course and freshman seminar. The sample included 292 learning community students (of which 20.3% were women and 79.7% men) and 809 non-learning community students (of which 22.6% were women and 77.4% men). The difference in percent gender between the two groups was not significant (Chi-square (1, n=1101) = 0.66; p <.05) and the average ACT score, high school rank and grades were similar between groups. An additional tool used was the Cooperative Institutional Research Program Survey (CIRP) developed by the Higher Education Research Institute (HERI) and administered to first-year students nationwide. It includes such topics as goals, expectations, behaviors, attitudes and values.

A sophomore survey was developed by the university assessment office using items from the CIRP. The CIRP was administered to 150 students during summer orientation before their freshman year. Sophomore students completed a survey during the second week of their sophomore year. When tested, the participation in the learning community did contribute significantly in explaining the variance in GPA (F = 17.89, p < .05) as did gender (F = 26.56, p < .05) and ACT score (F = 117.77, p < .05). In terms of persistence, 82% of students that participated in the learning community persisted on to their second year while non-learning community students persisted at a 78% rate (Chi-square = 4.52, p < .05). However, when the persistence rate was tested using the Wilk's Lambda U Statistic, this proved to not be significant (p < .05). When controlling for ACT and gender, learning community students still showed a higher GPA versus non-learning

community students. In terms of involvement, the only significant finding was a higher percent (24.5%) of learning community students reported that they do volunteer work frequently versus what non-learning community students reported (18%). An interesting finding was that students who chose to participate in the learning community reported socializing less with peers in high school versus non-learning community students.

Johnson, 1999

Judith L. Johnson, Director of the Testing and Assessment Center at the University of Southern Maine (USM) investigated the effectiveness of the Russell Scholars Program, a residential learning community at the university. The Russell Scholars Program's purpose is to assist students many of whom are the first generation in their families to attend college. Admission to the program is by separate application and is open to any full-time resident student. Students admitted into the program are required to take three Russell Scholars courses: RSP College Writing, RSP Seminar-Identity and Community, and a one credit, RSP Learning Community Lab. Courses are thematically linked and the lab is used to provide a core for learning activities through individual and group service learning opportunities within the university and the community.

For the study, two groups of students were compared. One group of 30 students in enrolled in the Russell Scholars Program was compared with a second group of 100 randomly selected students not in the RSP but that matched the RSP group in terms of high school GPA, SAT scores, age, gender, placement exam scores, degree level, date of entry and enrollment status. At the end of the first academic year, students in each group were asked to complete a questionnaire designed to measure students' overall

satisfaction. Russell Scholars students were significantly (p >0.05) more satisfied with their interactions with faculty and their overall USM experience that non-RSP students. However, non-RSP students were significantly more satisfied with their resident advisor than RSP students. Items that RSP students rated significantly higher than non-RSP students included:

- I felt a sense of community in the Russell Scholars Program/USM.
- The professors encouraged students to discuss their feelings about important issues.
- I felt as if I could trust the faculty to look out for my interests.
- Students were encouraged to participate actively in discussions in the classroom.
- I felt comfortable speaking up whenever I had a problem with something.
- The professors are well prepared for the classes they taught.
- I found that the RSP/USM classes were interesting and worth attending.
- I felt proud to be in the RSP/USM this year.
- The learning experiences offered in the RSP/USM was of great value to me.

One item rated significantly ($p < 0.05$) higher by non-RSP students was: I found it difficult to get good grades in my RSP/USM classes.

In all, the most dominant theme that emerged from the RSP students' responses was the social connection. Comments included: "I met a nice group of people quickly who were really supportive." "Some good friends were made." "The individual attention from professors I received was good"(Johnson, 1999, p.13). Although not significant, RSP students earned on average a slightly higher GPA (2.57) versus non-RSP students (2.32) after their first academic year. RSP students also earned on average slightly more

credit hours (22.56) than non-RSP students (19.31). On area of caution with this study would be the relatively small sample used for RSP students (23/30) and the low response rate on the survey for non-RSP students (29/100).

Sidle and McReynolds, 1996

Meg Wright Sidle and Janet McReynolds (1996) conducted a study from 1993 to 1996 at a medium-sized, regional, predominantly White public four-year university in the Midwest which focused on the impact of a Freshman Year Experience course on student retention and student success. The Freshman Year Experience course is one designed to develop connections between students, faculty and staff; to communicate expectations of the university; and to orient students in terms of what the university has to offer, where things are and where to go for specific needs.

The initial sample was comprised of all first year students who enrolled during the fall 1993, spring 1994, fall 1994, spring 1995, fall 1995 or spring 1996 semesters (n=3,084). The control group consisted of students in the initial sample who did not enroll in the university's Freshman Year Experience course. The experimental group consisted of students who did enroll in the Freshman Year Experience course. Students in each of the groups were further matched on criteria such as ACT scores, age, county of residence, high school ranking, high school GPA, placement (university's test) level, ethnicity, gender, and courses enrolled (pre-college math, writing and algebra). Thus, the control group and experimental group were filtered to a final sample size of 431 each or 28% of the first-year student population. The outcomes measured, using t-tests and a multiple regression model (assuming a 0.05 level of significance), were retention (second

fall term enrollment), completion rate (freshman year), mean GPA, ratio of earned credit hours/attempted credit hours, and percent of general education hours completed. The quantitative results of the study are illustrated in Table 2.3.

Table 2.3

Summary of Results for the Control and Experimental Groups

Variable	Control Group	Experimental Group
Completed freshman year	80%	85%
Enrolled in second fall term	56%	63%
Freshman year GPA	1.99	2.17
Earned credits/attempted credits ratio	0.62	0.68

Students in the experimental group completed their freshman year, enrolled in a second fall term at a slightly higher rate that those students in the control group. In addition, students in the experimental group earned on average a slightly higher GPA and completed more hours attempted than those students in the control group. However, regression analysis showed no relationship between student enrolling in the Freshman Year Experience course and the listed outcomes after considering other variables.

It could be that, among other variables, students enrolling in this type of course are naturally more motivated and interested in succeeding in college. Although, on the surface, the results of this study do seem to be somewhat consistent with others done in this area (learning communities) of research there may be some question about the comparability of the groups.

Tinto, 1997

In 1997, Vincent Tinto conducted a study of a Coordinated Studies Program (CSP) at Seattle Central Community College. The main two questions that Tinto asked were: (a) Does this program make a difference, and (b) If so in what way or how so? This mixed design consisted of collecting data from two student questionnaires, one conducted at the beginning of the fall semester and one conducted at the end of the fall semester, and data from a student records database using the case study method. The control group consisted of 307 students enrolled in courses delivered in a traditional manner. The experimental group consisted of 210 students who enrolled in the Coordinated Studies Program. The attributes of the experimental and control groups were tested for comparability (e.g. age, gender, employment status, parental education, high-school GPA, etc.). The first questionnaire included items that focused on student attributes, prior education, current life situations, educational intentions, learning preferences, perceptions of ability and attitude regarding education. The second questionnaire included items that focused on current life situation, range of classroom and out-of-classroom activities, estimates of learning gains, perceptions of the institution and expectations regarding subsequent enrollment. Additional data were collected at the beginning of the spring semester which included attempted/earned credits, GPA, and

enrollment patterns. The qualitative portion of the study was designed around observations made at each of the CSP groups (in class or on-campus/surrounding community) for three 1-week periods and student/staff interviews using open-ended questions (n=45). Responses were coded into categories that included: (a) building supportive peer groups, (b) shared learning: bridging the academic-social divide, and (c) gaining a voice in the construction of knowledge.

The results of the study showed a significant difference (positive) in the involvement in course and student activities for those students enrolled in the Coordinated Studies program. It also showed that the perception of the college environment of students enrolled in the CSP was higher than that of those students in the control group. Finally, students in the CSP program persisted at a rate of 66.7% after one year (fall re-enrollment) versus 52% of those students in the control group. Some of the comments noted from students included: "In the cluster we knew each other, we were friends, we discussed and studied everything from all the classes. We knew things very, very well because we discussed it all so much...Now it's more difficult because there are different people in each class..." (Tinto, 1997, p. 610). Students also showed a propensity to move learning beyond the classroom: "You know the more I talk to other people about our class stuff, the homework, the tests, the more I'm actually learning,...and the more I learn not only about other people, but also about the subject, because my brain is getting more, because I'm getting more involved with the students. I'm getting more involved with the class after class" (Tinto, 1997, p. 611). Another students' comment: "I think more people should be educated in this form of education. I mean, because it's good. We learn not only how to interact with ourselves, but with other people of different races,

different sizes, different colors, different everything. I mean it just makes learning a lot better" (Tinto, 1997, p. 612).

Briefs on Additional Studies

A learning community at Western Michigan University reported a 100% retention rate for students from the beginning to the end of the semester (Gabelnick et al, 1990d). A study of a learning community at LaGuardia Community College reported that 90% of the students who participated in learning clusters completed the semester. In addition, pass rates in Composition were 12-14% higher for students in the learning community than pass rates for students who enrolled in traditional courses (Landa, 1981). At the University of Maryland, students that participated in a learning community not only persisted at a higher level, but they also showed a significant and unusual "leap" in their academic development from the "Dualistic" stage (Perry scheme) to the "Multiplicity" stage (Gablenick, Howarth, & Pearl, 1983).

Another learning community formed at Jackson Community College for at-risk students reported a 93% retention rate, almost 30% higher than at-risk students enrolled in traditional courses. According to Dr. Lee Howser, the average GPA for at-risk students in the learning community was 2.41 versus 1.68 for at-risk students not enrolled in the learning community at Jackson (Howser, 1998). One student in the learning community noted: "I didn't think college was for me. But I feel better now. I know I will have to work hard, but I am going to get a lot of help from the faculty and the other students. I made several friends today, and for the first time, I think I will make it." (Howser, 1998, p. 3). Dr. Howser further states: "Did we create a sense of community for the students

enrolled in the program? Perhaps this representative student comment will answer that question. She writes: 'I have made new friends in this community. We may not always agree, but we talk things out. In the other class I am taking, which isn't a part of the learning community, I don't know anyone.' I believe we are on the right track." (Howser, 1998, p. 3).

Freshman Interest Groups have been offered at the University of Washington since 1987. The program began with a mere 20 students and quickly grew to over 400 students by the third year (Sullivan & Wulff, 1990). The purpose of the FIG's was to address the growing concern of students who felt overwhelmed or just like a number in a large university setting. The FIG's include participation by faculty members, teaching assistants and peer advisors. Weekly sessions are held outside of class and provide students with an opportunity to discuss issues ranging from academic/administrative in nature to social/personal. The groups have been very popular with pre-science and pre-engineering students, typically not those who are thought of as being interested in this type of program. Feedback from students has also been very positive, as one student/FIG participant commented: "I really feel my FIG group is a family unit. We are all feeling the same stress, the same pressure, and, because of that, we are able to deal with anxiety together" (Sullivan & Wulff, 1990, p. 5). Faculty members likewise have provided similar feedback regarding students in FIG's: "They were a lot more together and enthused. They were the first group I ever had who formed a study guide for the final. They were more confident and interested" (Sullivan & Wolff, 1990, p. 6).

Advantages and Challenges of Learning Communities

Advantages of Learning Communities

Published research support some of the following advantages of learning communities. Learning communities:

- Allow faculty to work together more closely and effectively.
- Lead to increased continuity and integration in the curriculum.
- Provide valuable opportunities for faculty development.
- Encourage faculty to view their disciplines in a more revealing light.
- Help faculty share knowledge with one another.
- Broaden faculty knowledge about pedagogy.
- Promote collaborative active teaching.
- Increase collegial trust.

Faculty generally find their work in learning communities satisfying. They appreciate the impact of learning communities on the amount and quality of students' learning, on students' enjoyment of learning, and students' values and satisfactions.

Although the most advertised benefits of successful learning communities are higher levels of student-faculty interactions, intellectual development, and student persistence, there are many other underlying benefits as well. The interaction among faculty members within learning communities can foster cooperation and collaboration in the employment of different pedagogy and materials (Tinto, 1995). Learning communities can shake students out of the mindset of just "doing school" or faculty from just "teaching class" (Gabelnick et al, 1990b). There is an emphasis on the construction of supportive educational communities, for both academic and social purposes, in which

new students can find memberships that last beyond the learning community itself. Learning communities can foster student academic success, influence student persistence, and help students overcome isolation. Assessments at many colleges and universities suggest that learning communities may benefit first-year students, in particular, and can help make them feel that being a student is a very positive experience which, in turn, can validate their reasons for being in college (Strommer, 1999).

Faculty members are encouraged to act as both specialists and as educators in learning communities, thus enabling the development of new roles (Gamson, 1994). Learning communities can bring together administration, faculty, staff, and students into a more student-centered, active, task-oriented learning environment that can develop characteristics such as creativity and innovation. They can encourage multiple perspectives and the crossing of traditional disciplinary boundaries (Tinto, 1995). Learning communities can promote respect for difference among students and faculty and a deeper appreciation of the many ways in which diversity enriches the entire community (Tinto, 1995). In successful learning communities, there is a commitment to the generation and sharing of knowledge, a common focus and an incentive to work together in an environment where everybody learns (Wilson & Ryder, 1998). As John Dewey suggested: "Properly structured, the educational process should teach important lessons about social control and community life. This, too, alters the role of the teacher who is seen now less as an external authority and more as a leader of group activities." (Dewey, 1933, p. 59).

Challenges in Building and Sustaining Learning Communities

With all the benefits of successful learning communities, why is it that more colleges do not implement them? As you would probably suspect, there are many challenges in building and sustaining successful learning communities in higher education. These include the following:

- Short-term inefficiencies as with any new procedure
- The lack of predictability
- The lack of administrative support
- Limited financial, physical and human resources
- The cultivation of a lasting culture in the institution for learning communities
- The ability to overcome the natural fragmentation between academics, student affairs, freshman programs and other departments within the institution
- The building of a sense of community between faculty and students, especially when many students may be part-time
- The ability to overcome the traditional role of faculty
- The ability to overcome existing organizational barriers
- The ability to prevent jealousy, competitiveness and territorialism among faculty and administration
- The willingness of faculty members to release some of their autonomy for the good of the community
- The willingness of faculty to truly collaborate with students, to negotiate authority and link what students are learning with society

- The concern about faculty burnout or depression once the learning community session ends
- The ability to recruit competent faculty while competing against other factors such as research opportunities for faculty time

Possible Research Opportunities

Although much research has been done on learning communities, particularly in the last decade, there is still a need for more. For example, studies could be conducted in the following areas:

- Learning communities in proprietary education
- Using learning communities to build the bridges between technical and non-technical faculty for a major in technology
- Life after the learning community
- Use of learning communities in the senior-year experience
- Learning communities in distance education
- Learning communities, first-year students and adult-learners
- The impact of learning communities by major
- The cost in time and effort away from other activities (e.g. research)

Expanding the Literature

This literature review has outlined the foundations of how learning communities have evolved in higher education today including a historical review and a look at the current state of higher education, its successes and challenges. In addition, the literature

review has included a review of classroom involvements theories and assessment and the influence these areas have had in the development of learning communities. Finally, several types or models of learning communities have been listed as well as issues in implementation, the roles of faculty and staff, and examples of recent studies and outcomes of learning communities. While there are many benefits and challenges that accompany the implementation of learning communities, there is also room for additional research on the impact of learning communities in higher education, many of which have been listed in this literature review. This research will attempt to expand the literature in the area of learning communities in proprietary education, more specifically the implementation and impact of learning communities in the form of linked courses for new first-time (true freshman) college students at DeVry University in Atlanta, Georgia. The methods chapter that follows will outline the details in terms of type of learning community used, courses linked, sample and data collection procedures and outcomes that will be measured. It will also provide some background on DeVry University and its mission in higher education.

CHAPTER 3: METHODOLOGY

Introduction

The purpose of this chapter is to describe the rationale, approach and design for this study. This will include a brief overview of the First Year program at DeVry, including the learning community initiative, the approach used to quantify its effectiveness including design, validity and reliability, data sampling, collection and analysis procedures.

Rationale for the Study

In the summer semester of 2001, DeVry University/Georgia made a concerted effort to re-focus on the success rate of first-year students. Upon investigation of its student retention patterns, it was discovered that first term student attrition accounted for approximately 35% of the total first-term enrollment. It was also discovered that second semester student attrition accounted for another 20% of the total second-term enrollment. Thus, there was better than a 50% chance that students would not persist beyond their second semester (DeVry University, 2002). Realizing that any effort to increase student retention and graduation rates would need to include improvement in the success rates of its first-year students, DeVry University/Georgia developed a First Year Initiative (FYI), an initiative that included programs that were developed and put in place specifically to support first-year students. The rationale for this study is to examine the impact of one of the programs under FYI, the implementation of learning communities.

Learning communities were chosen as a part of FYI based on, as outlined in the literature review, their potential impact on the success and retention of first-year students.

The type of learning community that was chosen to be implemented at DeVry University was the Learning Cluster from the five-type model.

During the summer 2000 and fall 2000 semesters, students typically enrolled in courses that were taught independent from one another (Figure 3.1). While faculty teaching these courses may have consulted with one another during the semester, this interaction was on an informal basis as there was no formal structure to support a collaborative approach to teaching. For example, although each course had a standard set of terminal objectives associated with it which the faculty were expected to deliver, the development of syllabi, lesson plans and other course materials was generally done independently by each faculty member for each course. Connected to the Introduction to Business (BUSN) 3-credit course was a semester project, and while there may have been some informal discussion between faculty members who taught other first-term courses, this project was assigned as credit only for the BUSN course (Figure 3.1).

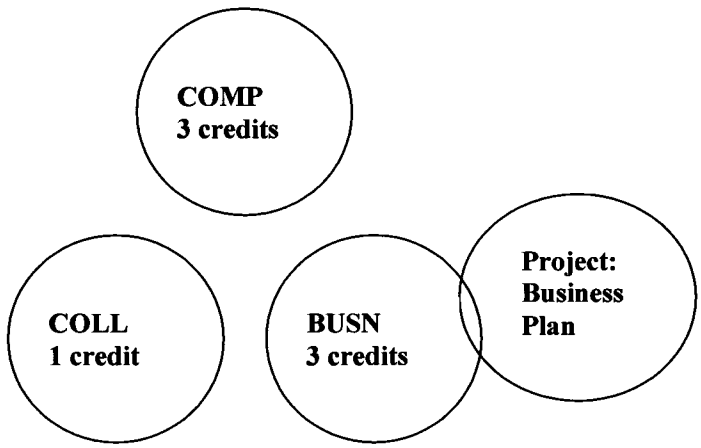

Figure 3.1. DeVry University/GA first-semester course relationships for summer/fall 2000.

In the summer 2002 and fall 2002 semesters, learning communities were implemented through a standard set of first semester courses for first-time college students entering DeVry University/GA. The courses selected for the learning community were Critical Thinking and Problem Solving course (COLL), Introduction to Business (BUSN) and Introduction to Computers (COMP). These courses were required of most majors and are very typical of the courses for which a first-time college student enrolling at DeVry University/GA would register. See Figure 3.2.

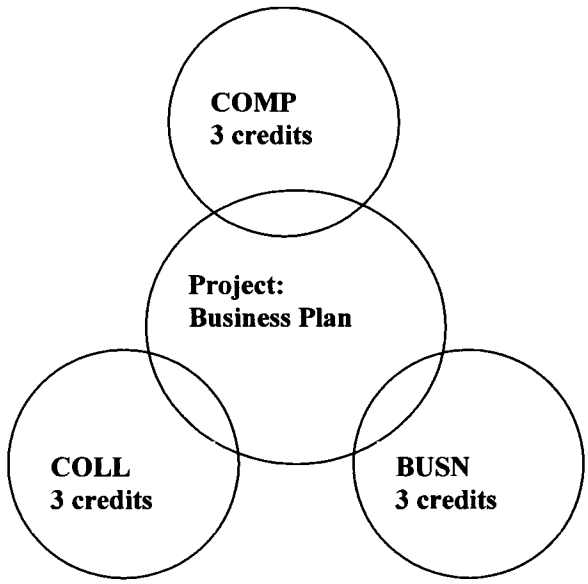

Figure 3.2. DeVry University/GA first-semester learning cluster for summer/fall 2002.

The three courses were for the most part taught independently by each faculty member; however, at the core of the Learning Cluster was a semester project, the development of a business plan, by student teams. This project was used to develop a theme through which students would have a better opportunity to draw connections between their individual classes. To support this framework a common lab hour was required each week for all students and faculty to attend as well as a second hour for a

faculty-only meeting. Since the development of the business plan project relied on the knowledge base and skill sets learned in the individual courses, faculty met weekly during their scheduled hour to: 1) Discuss and review how students would be assigned into teams, 2) The development of lesson plans and syllabi, 3) Discuss how the projects would be assessed and graded, and 4) What their roles would be in each of the scheduled common lab periods. Faculty also used this time to discuss individual students in terms of their academic progress. This provided the faculty with a much broader perspective in terms of how particular students were doing overall and if any additional support for those students was needed.

A desired outcome of the learning community was that faculty and students would engage each other more often, sharing roles as teachers and learners. It was also desired that students would find more of a connection between the classes they were taking and how their critical thinking skills, business skills and computer skills worked together in the development of a tangible outcome, the business plan. It was hoped that students involved in the learning community would perceive more value in their education, be more satisfied with their experience, perform at a higher level and persist at a higher level.

Design

The design for this quantitative study was to compare two groups of students during different timeframes, one group before the learning community intervention and one group during the intervention. The control group was derived from students enrolled at DeVry University/GA during the summer 2000 and fall 2000 semester before the intervention. The experimental group was derived from students enrolled at DeVry

University/GA during the summer 2002 and fall 2002 semesters. The design of this study was quasi-experimental, between groups comparison, pre-test post-test design (Gliner & Morgan, 2000).

NR E O_1 X O_2

NR C O_1 X O_2

O_1 = CPT score, gender, #hours attempted, area of major.

O_2 = GPA, retention, sense of belonging, faculty-student informal interaction, faculty-student formal interaction, intent to re-enroll, overall satisfaction.

Participants

The participants in this study were all accessible first-time full-time college students who:

1. Enrolled full-time during the summer 2000, fall 2000, summer 2002 or fall 2002 semesters.
2. Registered for Introduction to Computing (COMP), Introduction to Business (BUSN) and Critical Thinking and Problem Solving (COLL).
3. Completed a Noel-Levitz Student Satisfaction Inventory (SSI) survey and provided their social security number.

The participants were placed into one of two groups depending on their semester start date. The control group consists of participants who began in the summer or fall 2000 semester. The experimental group consists of participants who began in the summer or fall 2002 semester. See Figure 3.3.

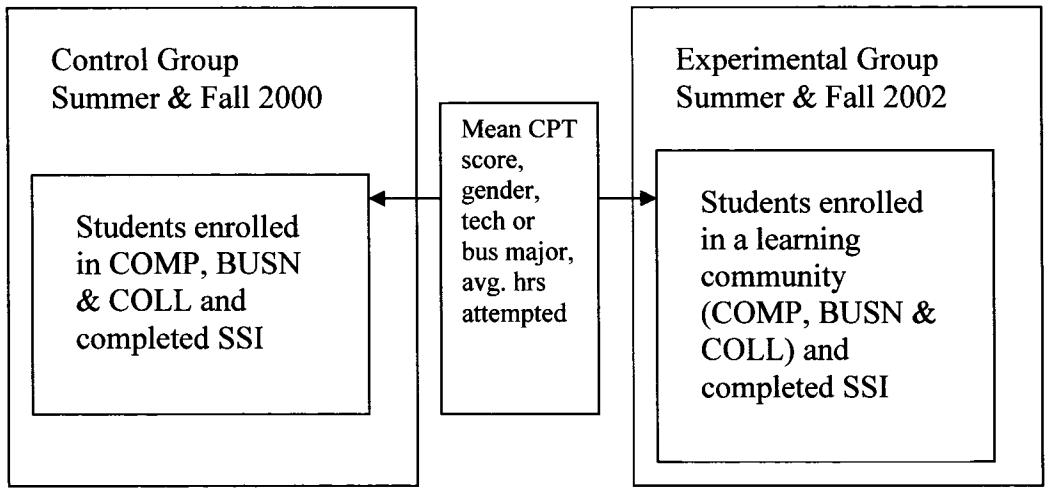

Figure 3.3. Comparison of control and experimental groups.

Data Collection Procedures

Student data were collected primarily from two sources, the DeVry University student records database and the Noel Levitz Student Satisfaction Index (SSI) database. Faculty data were also collected from interviews with six faculty members that taught in a learning community during the summer 2002 or fall 2002 semester and taught the same course before and after that time period.

The DeVry University student records database has a number of fields for each student that includes identifiers such as student ID, major program of study, CPT entrance scores, prior college experience, GPA, start date, current enrollment status, withdrawal date, course record, and grade records. The database (OSS) is accessible through our corporate offices located in Chicago, Illinois. Potential participants were selected from the database based on the start date that corresponds to each group (e.g. summer/fall 2000 or summer/fall 2002). This results in two lists of potential participants,

one for the control group (summer/fall 2000) and one for the experimental group (summer/fall 2002). The control group was filtered to include only full-time day students with no prior college who were enrolled in COMP, BUSN and COLL. The experimental group was filtered to include only full-time day students with no prior college who were enrolled in a learning community, which included COMP-110, BUSN-115 and COLL-149. The student section code designator contained in the student records database was used to verify the specific learning community in which the student in the experimental group was registered.

The next step in the data collection process was the inclusion of the Noel-Levitz Student Satisfaction Inventory results for the students in each group. The survey was administered only once each year during the month of November during the fall semester. Students were asked to complete the survey and provide their student ID number. In order to match the survey results with a student, the ID numbers from the Noel-Levitz SSI database for the fall 2000 survey were matched against the student ID numbers in the control group and the ID numbers from the SSI fall 2002 survey were matched against the student ID numbers in the experimental group.

The final step in the data collection process was faculty interviews. Six faculty members who taught in a learning community during the summer 2002 or fall 2002 semester were selected for interviews. Each interview lasted no more than 30 minutes and consisted of a series of open-ended but specific questions. The results of these interviews provided the additional perspective of the faculty in terms of what went well in the learning community, what did not go well, and what recommendations they would provide.

Measures

Instruments to measure the effectiveness of the learning communities were the Noel-Levitz Student Satisfaction Inventory (SSI) database, the DeVry University student records database (OSS), and faculty interviews.

The Noel-Levitz SSI was used to measure student expectations/importance and student satisfaction for over 100 items pertaining to the institution. This instrument has been used in higher education since 1984 with the 2004 administration of SSI yielding responses from over 650,000 students at 850 two and four-year public and private institutions across North America. The SSI survey form is made up of 104 standardized items that students are asked to rate for a) level of importance and b) level of satisfaction. The survey also includes an option for the institution to add up to 10 campus-specific items for a total of 114 possible items for the student to respond to. A 7-point Likert scale ranging from 1 = not very important/satisfied at all to 7 = very important/satisfied is used to measure a student's response on each count. The results of the survey provide three basic measures:

1. How important an item is to the student
2. How satisfied the student is with the item
3. The gap score which is the difference between 1 and 2.

An example of an item is "Faculty care about me as an individual." Students may rate this as being "very important" (which is a 7) to them and rate that they are "somewhat satisfied" (which is a 5), thus the gap score for this item is 7-5=2. Not all items in the survey were used for the SSI measures. In fact, using background from a recent study (Burks, 2005), suggested that multiple items within the Noel-Levitz SSI may be

effectively combined to create several variables that predict retention. Table 3.1 shows the variables from the Burks study, which are also to be used in this study, and the items from the SSI survey associated with each variable.

The DeVry University database (OSS) contains over 200 variables for each student attending DeVry since 1984. The records for each student are initially established during the enrollment process. This database is maintained and updated each semester. Variables that were measured are CPT scores, courses taken and hours attempted during the first semester, first-semester retention, first-semester GPA, gender, age, ethnicity, major program area (technology or business), and verification of no prior college.

The instrument for the faculty interviews was a series of open-ended but specific questions:

1. What semester(s) did you teach in a learning community?
2. What course did you teach? How often have you taught that course before and since?
3. Describe from your perspective what the benefits were, if any, teaching in the learning community for each of the following areas: (a) student persistence and outcomes, (b) faculty interaction, (c) student-faculty interaction, (d) course planning and development, and (e) course delivery. Where there any other benefits?
4. Describe from your perspective what the drawbacks were, if any, teaching in the learning community from each of the same topics.
5. From your experience, what recommendations would you offer the program?

6. Would you teach in a learning community again? Why or why not?

Table 3.1

Definition of Variables Composed of Multiple Items from the Noel-Levitz SSI (Reprinted from Burks, 2005).

	Variable Name	Definition	SSI Survey Items
1	Educational Quality	The degree to which the institution is viewed as providing quality education, reputation, and image. (Bean, 1980 & Pascarella, 1980)	1. The institution has a good reputation in the community. 2. There is a commitment to academic excellence on this campus.
2	Sense of Community	The degree to which students perceive the organization as a community including respect and care for one another	1. Most students feel a sense of belonging here. 2. The campus staffs are caring and helpful. 3. Students are made to feel welcome on this campus. 4. The institution shows concern for students as individuals.
3	Faculty-Student formal interaction	The level and quality of interaction between students and faculty members. Justification for measures of academic integration based on Pascarella et al (1983) study that was conducted at a commuter institution as well as Pascarella and Terenzini (1983). Questions centered around faculty concern for teaching and the individual in a classroom setting are included in the composite.	1. The instruction in my major field is excellent. 2. The quality of instruction I receive in most of my classes is excellent. 3. Adjunct faculty are competent as classroom instructors. 4. Nearly all faculty are knowledgeable in their field. 5. Faculty take into consideration student differences as they teach. 6. Faculty provide timely feedback about student progress in a course.
4	Faculty-Student informal interaction	The amount and quality of informal contact with faculty. Justification for measures used for social integration based on Braxton and Brier (1989), Pascarella et al. (1983) and Pascarella & Terenzini (1983) where quality and impact and quality of non-classroom interactions were assigned to social integration.	1. Faculty care about me as an individual. 2. Faculty are fair and unbiased in treatment of individual students. 3. Faculty are usually available after class and during office hours.
5	Overall Satisfaction	Level of satisfaction of overall college experience. Model tests Bean's (1983) definition of an outcome of a student's various components of an institution, and experiences of the college environment from Cabrera et al. (1992) as well as Bean and Metzner's (1985) definition of how much a student enjoys the role of a student.	1. So far, how has your college experience met your expectations? 2. Rate your overall satisfaction with your experience here so far. 3. It is an enjoyable experience to be a student on this campus.

Validity and Reliability of Measures

DeVry University's student records database is assumed to be a reliable and valid source of data for this study.

The Noel-Levitz Student Satisfaction Inventory (SSI) measures student importance and student satisfaction levels for approximately 100 items that pertain to the services provided by an institution. The instrument also calculates the gap between the students' recorded level of importance and the students' level of satisfaction for each item. This is referred to as the "gap score". Both the two and four-year versions of the SSI show high internal reliability. The SSI demonstrates a good score reliability over time. The three-week, test-retest reliability coefficient is 0.85 for importance scores and 0.84 for satisfaction scores. There is also evidence to support the validity of the SSI. Convergent validity was assessed by correlating satisfaction scores from the SSI with satisfaction scores from the College Student Satisfaction Questionnaire (CSSQ). The Pearson correlation between these two instruments of $r = 0.71$ is high enough to indicate that the SSI's satisfaction scores measure a satisfaction construct very similar to the CSSQ's scores, and yet the correlation is low enough to indicate that there are distinct differences between the SSI and CSSQ instruments (Noel-Levitz, 2000a, 2000b, 2002a, 2002b). In addition, Cronbach's alpha specifically for DeVry University and the variables outlined in Table 3.1 are provided (Burks, 2005). See Table 3.2. The alpha scores for each of the variables are above the recommended minimum of 0.70 (Gliner & Morgan, 2000).

Table 3.2

Cronbach's Alpha for Variables in Table 3.1

Variable Name	Number of SSI Items	Conbach's Alpha
Educational Quality	2	0.73
Sense of Community	4	0.83
Faculty-student informal interaction	3	0.73
Faculty-student formal interaction	6	0.88
Overall Satisfaction	3	0.84

It is from these surveys that the matching of students will occur for the purpose of observing the planned outcomes. First and second semester student surveys are used in the matching process because the survey is administered once per year during the fall semester thus, those students who were in their first term during the summer semester would most likely be second semester students in during the fall. Table 3.3 provides a demographic summary of the total number of surveys obtained from first and second semester students during the 2000 and 2002 academic years. As you can see, there are similarities between the two groups in terms of sample size for the first and second semesters, gender, ethnicity and percent attending full-time.

Table 3.3

DeVry/Georgia Campus Semester 1 and 2 SSI Demographics

Noel-Levitz	Fall 2000 SSI	Fall 2002 SSI
Total - Semester 1 students	371	339
Total - Semester 2 students	209	200
Total - Semester 1&2	580	539
Percent Male/Female	60/40	58/42
Percent African American	60	64
Percent Caucasian	22	22
Percent Bachelor's degree	70	71
Percent Full Time	80	78

The reliability of faculty interviews will depend upon the specificity of the questions used and how they are interpreted by the interviewee. It will also depend upon the ability of the interviewee to recall from three years ago their experiences with the learning community. Validity will depend upon the ability to determine any consistencies or trends in those responses.

Other Factors That May Impact the Research

Other factors that may impact this research include scheduling and systems support, faculty development needs and outside influences such as the economy and education reform or legislation this in area.

The implementation of learning communities relies on effective course scheduling. While every effort was made to schedule students into the learning communities that were a part of each of the courses, this was not always the case. There was a small group of students scheduled into some of the communities that may have, for example, taken only one of the three courses that were designated for the community. This was in part due to limitations of the scheduling system that was in place and the fact that students on occasion may have been advised into courses by staff members who were unfamiliar with the process. Even though some of these students were identified early and re-scheduled, there were still those not detected until the semester had begun and thus, were allowed to remain enrolled. As was stated earlier, student schedules will be compared to minimize the impact of this group on the sample used.

Faculty development and support was provided through a series of training sessions. The training sessions focused on the rationale behind the learning community project, the structure and model to be used, activities that were expected and the expectations of the end-of-term project. The training sessions also allowed for faculty to provide input, exchange ideas and develop teams for the upcoming semester. Unfortunately some faculty members involved in the learning communities were adjunct faculty and were unable to attend the sessions when they were offered. Thus, those faculty members unable to attend may have needed more time to develop an understanding of the process and may not have been as comfortable or successful initially teaching in a learning community.

While there is little control over outside influences such as the economy or education reform and legislation, these influences could in fact impact the outcome of

this study. For example, it has been suggested that in a poor economy students tend to stay in school due to the lack of other opportunities. Thus, the effort to tie an upswing in student retention to the impact of a first-year program during poor economic times may be tempered by the idea that students are more likely to stay in school simply due to the current economic environment.

Hypotheses

The study will attempt to provide evidence to support the following hypotheses:

1. Students at DeVry University/Georgia who were involved in learning communities will evidence higher first-semester retention compared to those students who were not involved in learning communities.
2. Students at DeVry University/Georgia who were involved in learning communities will evidence a higher first-semester GPA compared to those students who were not involved in learning communities.
3. Students at DeVry University/Georgia who were involved in learning communities will evidence a perception of higher educational quality compared to those students who were not involved in learning communities.
4. Students at DeVry University/Georgia who were involved in learning communities will evidence a stronger feeling of sense of community (Burks, 2005) compared to those students who were not involved in learning communities.

5. Students at DeVry University/Georgia who were involved in learning communities are more satisfied with faculty-student informal interaction (Burks, 2005) compared to those students who were not involved in learning communities.
6. Students at DeVry University/Georgia who were involved in learning communities are more satisfied with faculty-student formal interaction (Burks, 2005) compared to those students who were not involved in learning communities.
7. Students at DeVry University/Georgia who were involved in learning communities evidenced a higher overall satisfaction with the university (Burks, 2005) compared to those students who were not involved in learning communities.

CHAPTER 4: FINDINGS

Introduction

The findings of the research include the comparison of two groups, an experimental group and a comparison group, and the outcomes from quantitative data analysis extracted from student records and a student satisfaction survey, and qualitative data from faculty interviews. While this study in considered to be quantitative in design, the feedback from the faculty interviews may help to put into perspective, or add richness to, the quantitative results.

Samples

For the comparison group, there were a total of 150 student records from the summer and fall 2000 semesters combined that met the first two criteria established in chapter 3. That is, the student was registered as full time, had no prior college, and was registered for Introduction to Computers (COMP), Introduction to Business (BUSN), and Critical Thinking and Problem Solving (COLL). From this initial group, a smaller sample of 46 students was derived which included only those student records that met a third criteria as well, which was to be matched to a Noel-Levitz Student Satisfaction Inventory (SSI) survey. The reduction from 150 students to 46 students was due to the number of SSI surveys for which there was no student ID number recorded, and, therefore, the SSI could not be matched to any student record.

For the experimental group, there were a total of 130 student records in the summer and fall 2002 semesters combined that met the same first two criteria. As was the

case with the comparison group, a second sample of 50 students that met the third criteria was derived from the larger group. See Table 4.1.

Table 4.1

Sample Sizes

Students	Comparison Group (*n*)	Experimental Group (*n*)
Met criteria 1[a] and 2[b]	150	130
Met criteria 1[a],2[b] and 3[c]	46	50

[a] Criteria 1 = Students enrolled FT and have no prior college. [b] Criteria 2 = Students enrolled in Introduction to Computers, Introduction to Business and Critical Thinking and Problem Solving. [c] Criteria 3 = Students who completed a Noel-Levitz Student Satisfaction Inventory Survey and provided their student ID number.

As was stated previously, criteria were set that each student in the two groups must have been registered for Introduction to Business (BUSN), Critical Thinking and Problem Solving (COLL), and Introduction to Computers (COMP) courses, and the assumption was that the version of these courses would be the same for both the comparison and experimental groups. It was discovered, however, that this was not the case with regard to the COLL course. The Critical Thinking and Problem Solving course was revised twice between the summer 2000 and fall 2001 semesters. For the summer 2000 semester, the course number associated with the Critical Thinking and Problem Solving was COLL-106 which was listed as a 1-credit hour course. In the fall 2000 semester the course number was changed to COLL-145 and listed also as 1-credit hour. During the 2001 academic year the course was revised a second time and re-listed as COLL-149 at 3-credit hours. Thus, students in the comparison group enrolled in a 1-

credit hour COLL course while students in the experimental group enrolled in a 3-credit hour COLL course. See Table 4.2.

Table 4.2

Critical Thinking and Problem Solving Course Versions

Semester / Group	*n*	Version of COLL	Credit Hours
Summer 2000 / Comparison	75	COLL-106	1
Fall 2000 / Comparison	75	COLL-145	1
Summer 2002 & Fall 2002 / Experimental	130	COLL-149	3

The samples from the comparison and experimental groups were then compared in terms of gender and major area of study. This comparison was done for the both the larger samples, meeting only criteria 1 and 2, as well as the smaller samples that met all three criteria. See Table 4.3. In terms of gender, there were more males than females in both groups, but there was a somewhat larger percentage of males in the experimental group versus the comparison group. In terms of major area of study, there were more technology majors than business majors in each group, and there was a somewhat larger percentage of technology majors in the comparison group versus the experimental group.

Table 4.3

Group Comparison of Gender and Major Area of Study

Group	*n*	Male	Female	Technology Major	Business Major
Comparison (Met criteria 1[a] and 2[b])	150	76 (51%)	74 (49%)	101 (67%)	49 (33%)
Experimental (Met criteria 1[a] and 2[b])	130	76 (58%)	54 (42%)	74 (57%)	56 (43%)
Comparison (Met criteria 1[a],2[b] and 3[c])	46	27 (59%)	19 (41%)	40 (87%)	6 (13%)
Experimental (Met criteria 1[a],2[b] and 3[c])	50	35 (70%)	15 (30%)	38 (76%)	12 (24%)

[a] Criteria 1 = Students enrolled FT and have no prior college. [b] Criteria 2 = Students enrolled in Introduction to Computers, Introduction to Business and Critical Thinking and Problem Solving. [c] Criteria 3 = Students who completed a Noel-Levitz Student Satisfaction Inventory Survey and provided their student ID number.

A comparison of the average College Placement Test (CPT) scores for the comparison and experimental groups was done. Scores are recorded in four areas: reading, writing, arithmetic and algebra. Table 4.4 shows that the average CPT scores for reading, writing, arithmetic and algebra were higher for the comparison group versus the experimental group.

Table 4.4

Average CPT Score Comparison between Groups

CPT	Group	*n*	Mean	*SD*
Reading	Comparison	92	86.68	10.48
	Experimental	103	81.20	14.35
Writing	Comparison	92	93.18	13.40
	Experimental	103	87.05	15.49
Arithmetic	Comparison	93	76.75	17.52
	Experimental	107	72.53	17.12
Algebra	Comparison	95	66.13	18.28
	Experimental	107	60.84	19.48

To test whether these differences were significant, an independent samples *t*-test was run to first determine if the assumption of equality of variances could be accepted for each case. The assumption of equality of variances was accepted for the average CPT scores between groups in writing, arithmetic and algebra. However, the assumption of equality of variances ($F = 3.970$, $p = .048$) for reading was rejected. See Table 4.5. An independent samples *t*-test was used to determine if, in fact, there was a significant difference in the CPT test score averages between groups. There was a significant difference in the average CPT scores for reading, writing and algebra between the comparison group (higher) and the experimental group.

Table 4.5

Independent Samples t-test

CPT	Equal Variances	*t*	*df*	Sig. (2-tailed)	Mean Difference
Reading	Not assumed	3.068	185.9	.002	5.48
Writing	Assumed	2.942	193	.004	6.14
Arithmetic	Assumed	1.720	198	.087	4.23
Algebra	Assumed	1.981	200	.049	5.29

There was, however, not a significant difference in the average CPT score for arithmetic between the two groups. The effect size for CPT Reading (d = 5.48/12.5 = .44) and Writing (d = 6.13/14.4 = .42) was medium while the effect size for Arithmetic (d = 4.22/17.3 = .24) and Algebra (d = 5.29/19 = .28) was considered to be small-medium. This same comparison was made between the two groups using only those students who were matched with a Noel-Levitz SSI survey. See Table 4.6.

There was, however, no statistically significant difference in the average CPT scores for Reading, Writing, Arithmetic or Algebra between the two groups using the smaller sample.

Table 4.6

Average CPT Scores between Groups (Students w/SSI surveys only)

CPT	Group	*n*	Mean	*SD*
Reading	Comparison	27	85.26	11.90
	Experimental	40	82.63	17.74
Writing	Comparison	27	91.37	15.85
	Experimental	40	88.38	16.39
Arithmetic	Comparison	30	82.77	17.75
	Experimental	40	73.63	20.60
Algebra	Comparison	30	65.87	23.45
	Experimental	40	63.36	22.48

The comparison and experimental student groups were compared on age and average number of credit hours attempted. The sample of 150 students in the comparison group showed an average age of 24.89 years while the sample of 130 students in the experimental group showed an average age of 23.16 years. This difference of 1.73 years was statistically significant between groups. The average number of credit hours attempted by students in the comparison group (n=150) was 16.57 while the average number of credit ours attempted by students in the experimental group (n=130) was 15.83. The difference of 0.74 average credit hours attempted between groups is not statistically significant.

Finally, the comparison and experimental groups were compared in ethnicity. African Americans were the dominant ethnic group representing 77.3% (116/150) and 75.3% (98/130) of each group respectively. There was, however, no significant difference in the percent of African American students between the two groups.

In summary, the students in the larger (n=130) comparison group had, on average, significantly higher CPT scores in reading, writing, and algebra than those students in the larger (n=150) experimental group. There was no significant difference in the average CPT score for arithmetic between groups. The average age of students in the larger comparison group was significantly higher than the average age of students in the larger experimental group. Students in the comparison group enrolled in a 1-credit hour Critical Thinking and Problem Solving course while students in the experimental group enrolled in a 3-credit hour Critical Thinking and Problem Solving course. There was no significant difference between groups in the average number of credit hours attempted. There were slightly more males and there were slightly more business majors in the experimental group compared to the comparison group, however, these differences were not found to be significant. There was no statistical difference in ethnicity between groups. Overall, the comparison and experimental groups shared some similar characteristics such as they were majority African American, they were majority male, and they were majority technology majors. However, the experimental group was somewhat less prepared for college.

Quantitative Findings

This section will address the quantitative testing, analysis, and results of the seven hypothesis presented in Chapter 3.

Student Retention

This section will address the first hypothesis: Students at DeVry University/Georgia who were involved in learning communities will evidence higher retention compared to those students who were not involved in learning communities.

In this case, retention (first semester) is defined as students who complete their first semester, enroll in their second semester, and remain enrolled in their second semester past the drop/add period. An interrupt is defined as a student who does not persist from the first to the second semester or one who begins the second semester yet withdraws from all classes during the first two weeks. Retention for the comparison group and the experimental group was compared at two different levels. First, students who met only the first two criteria outlined in Chapter 3 (enrolled full-time with no prior college, and registered for the Critical Thinking and Problem Solving course, the Introduction to Business course, and the Introduction to Computers course) were compared. Second, students in each group who met all three criteria (criteria one and two *and* could be matched to a Noel-Levitz SSI survey) in each group were compared. This created two comparable samples for each group. See Table 4.7

Table 4.7

First-Semester Student Retention

Group	Beginning Students	Attended 2nd Term	Interrupts[a]
Comparison	150 (100%)	116 (77.3%)	34 (22.7%)
Experimental	130 (100%)	104 (80.0%)	26 (20.0%)
Comparison (matched SSI only[b])	46 (100%)	38 (82.6%)	8 (17.4%)
Experimental (matched SSI only[b])	50 (100%)	40 (80.0%)	10 (20.0%)

[a] Students who either withdrew during or after their first semester ended or during the first two weeks of their second semester. [b] Students from the larger sample who were matched to a Noel-Levitz Student Satisfaction Inventory survey.

Table 4.7 shows that 116 (77.3%) of the 150 students in the comparison group and 104 (80%) of the 130 students in the experimental group persisted on to the second semester. In addition, 38 (82.6%) of the 46 students who were matched to a Noel-Levitz SSI survey in the comparison group and 40 (80%) of the 50 students who were matched to a Noel-Levitz SSI survey in the experimental group persisted on to the second semester. Using the Chi-square test, the differences between the two groups of students who met criteria 1 and criteria 2 were determined not to be significant. See Table 4.8. Again, using the Chi-square test, the differences between the two groups of students who met criteria 1, 2, and 3 were determined not to be significant. See Table 4.9.

Table 4.8

Chi-square Test for Students between Groups who met Criteria 1 and 2

	Value	*df*	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-square	.294[a]	1	.588		
Fisher's Exact Test				.662	.347
n of Valid Cases	280				

[a] 0 cells (.0%) have expected count less than 5. The minimum expected count is 27.86.

Table 4.9

Chi-square Test for Students between Groups who met Criteria 1, 2 and 3

	Value	*df*	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-square	.107[a]	1	.588		
Fisher's Exact Test				.662	.347
n of Valid Cases	280				

[a] 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.63.

Student GPA

This section addresses the second hypothesis: Students at DeVry University/Georgia who were involved in learning communities will evidence a higher GPA compared to those students who were not involved in learning communities.

GPA is calculated using a 4.0 point scale and includes only those courses taken for credit. Two comparisons of GPA are made. One compares the average first-semester GPA of the 150 students in the comparison group against the average first-semester GPA of the 130 students in the experimental group. The second compares the average first-term GPA of the 46 students with SSI surveys in the comparison group against the average first-semester GPA of the 50 students with SSI surveys in the experimental group. See Table 4.10.

Table 4.10

Average First-Semester GPA

	Group	*n*	Mean	*SD*
Students meeting criteria 1[a] and 2[b] only.	Comparison	150	2.57	1.19
	Experimental	130	2.64	1.16
Students meeting criteria 1[a],2[b] and 3[c].	Comparison	46	3.02	0.96
	Experimental	50	2.59	1.14

[a] Criteria 1 = Students enrolled FT and have no prior college. [b] Criteria 2 = Students enrolled in Introduction to Computers, Introduction to Business and Critical Thinking and Problem Solving. [c] Criteria 3 = Students who completed a Noel-Levitz Student Satisfaction Survey.

The average first-semester GPA for the 150 students in the comparison group is 2.57 and the average first-semester GPA for the 130 students in the experimental group is 2.64, a difference of 0.07. In comparing the two groups using only those students with matched SSI surveys, the average first-semester GPA for the 46 students in the comparison group is 3.02 and the average first-semester GPA for the 50 students in the experimental group is 2.59, a difference of 0.41. An independent samples *t*-test was used to determine whether there was any significance in these differences. See Table 4.11

Table 4.11

Independent Samples t-test

Sample	Assumption	*t*	*df*	Sig. (2-tailed)	Mean Difference
Students meeting criteria 1[a] and 2[b] only.	Equal variances assumed	-.509	278	.611	-.072
Students meeting criteria 1[a],2[b] and 3[c].	Equal variances assumed	1.971	94	.052	.426

[a] Criteria 1 = Students enrolled FT and have no prior college. [b] Criteria 2 = Students enrolled in Introduction to Computers, Introduction to Business and Critical Thinking and Problem Solving. [c] Criteria 3 = Students who completed a Noel-Levitz Student Satisfaction Survey.

The results of the independent samples *t*-test showed no significant difference (t=-.509) in the average first-semester GPA between students who met criteria 1 and 2 in the comparison group and students who met criteria 1 and 2 in experimental group. Although close to being so (t=1.971), there also was no significant difference in the average first-

semester GPA between the students in the comparison group who met criteria 1,2 and 3 and those students in the experimental group who met criteria 1,2, and 3.

The Perception of Educational Quality

This section will address the third hypothesis: Students at DeVry University/Georgia who were involved in learning communities will evidence a perception of higher educational quality (Burks, 2005) compared to those students who were not involved in learning communities. The hypothesis is tested with the variable Educational Quality.

The three measures of Educational Quality are level of satisfaction (eqs), level of importance (eqi) and the gap between satisfaction and importance (dif_eqs). Only those students in each group who met all three criteria (full-time student with no prior college, enrolled in COLL, BUSN, and COMP, and completed a Noel-Levitz SSI survey) are included in this measure. Thus, the samples are limited to the 46 students in the comparison group and the 50 students in the experimental group. See Table 4.12.

Table 4.12

Educational Quality

Variable	Group	*n*	Mean	*SD*
eqs[a]	Comparison	46	5.67	1.36
	Experimental	50	5.72	1.08
eqi[b]	Comparison	46	6.37	0.85
	Experimental	50	6.26	1.20
dif_eqs[c]	Comparison	46	0.70	1.22
	Experimental	50	0.54	1.01

[a] eqs = Level of satisfaction for educational quality. [b] eqi = Level of importance for educational quality. [c] dif_eqs = Difference in level of satisfaction and level of importance for educational quality.

The average level of satisfaction with Educational Quality was 5.72 for the experimental group versus 5.67 for the comparison group. Conversely, the average level of importance of Educational Quality was 6.37 for the comparison group versus 6.26 for the experimental group. The average difference, or gap, between level of satisfaction and level of importance for Educational Quality was 0.70 for the comparison group versus 0.54 for the experimental group. An independent samples *t*-test was used to determine if these differences are significant. See Table 4.13.

Table 4.13

Independent Samples t-test for Educational Quality

Variable	Assumption	*t*	*df*	Sig. (2-tailed)	Mean Difference
eqs[a]	Equal Variances	-.185	94	.854	-.046
eqi[b]	Equal Variances	.513	94	.609	.110
dif_eqs[c]	Equal Variances	.684	94	.496	.156

[a] eqs = Level of satisfaction for educational quality. [b] eqi = Level of importance for educational quality. [c] dif_eqs = Difference in level of satisfaction and level of importance for educational quality.

There were no significant differences between groups in the level of satisfaction with Educational Quality, in the level of importance for Educational Quality, or in the gap between level of satisfaction and level of importance for Educational Quality.

Sense of Community

This section will address the fourth hypothesis: Students at DeVry University/Georgia who were involved in learning communities will evidence a stronger feeling of sense of community (Burks, 2005) compared to those students who were not involved in learning communities. The hypothesis is tested with the variable Sense of Community.

The three measures of Sense of Community are level of satisfaction (scs), level of importance (sci) and the gap between satisfaction and importance (dif_scs). Only those students in each group matched to a Noel-Levitz SSI survey were included in these measures. See Table 4.14.

Table 4.14

Sense of Community

Variable	Group	*n*	Mean	*SD*
scs [a]	Comparison	46	5.41	1.08
	Experimental	50	5.44	0.97
sci [b]	Comparison	46	6.05	0.86
	Experimental	50	6.14	0.89
dif_scs [c]	Comparison	46	0.64	1.02
	Experimental	50	0.71	0.89

[a] eqs = Level of satisfaction for Sense of Community. [b] eqi = Level of importance for Sense of Community. [c] dif_eqs = Difference in level of satisfaction and level of importance for Sense of Community.

The average level of satisfaction with Sense of Community was 5.44 for the experimental group versus 5.41 for the comparison group. The average level of importance for Sense of Community was 6.14 for the experimental group versus 6.05 for the comparison group. The average difference, or gap, between the level of satisfaction and the level of importance for Sense of Community was 0.71 for the experimental group versus 0.64 for the comparison group. An independent samples *t*-test was used to determine if these differences are significant. See Table 4.15.

Table 4.15

Independent Samples t-test for Sense of Community

Variable	Assumption	*t*	*df*	Sig. (2-tailed)	Mean Difference
scs [a]	Equal Variances	-.105	94	.917	-.022
sci [b]	Equal Variances	-.478	94	.634	-.086
dif_scs [c]	Equal Variances	-.327	94	.744	-.064

[a] scs = Level of satisfaction for Sense of Community. [b] sci = Level of importance for Sense of Community. [c] dif_scs = Difference in level of satisfaction and level of importance for Sense of Community.

There were no significant differences between groups in the level of satisfaction with Sense of Community, in the level of importance for Sense of Community, or in the gap between level of satisfaction and level of importance for Sense of Community.

Faculty-Student Informal Interaction

This section addresses the fifth hypothesis: Students at DeVry University/Georgia who were involved in learning communities are more satisfied with faculty-student informal interaction (Burks, 2005) compared to those students who were not involved in learning communities. The hypothesis is tested with the variable Informal Faculty-Student Interaction.

The three measures of Faculty-Student Informal Interaction are level of satisfaction (fsis), level of importance (fsii) and the gap between satisfaction and

importance (dif_fsi). Only those students in each group matched to a Noel-Levitz SSI survey were included in these measures. See Table 4.16.

Table 4.16

Faculty-Student Informal Interaction

Variable	Group	*n*	Mean	*SD*
fsis [a]	Comparison	46	5.12	1.31
	Experimental	50	5.31	1.14
fsii [b]	Comparison	46	6.29	0.73
	Experimental	50	6.31	0.83
dif_fsi [c]	Comparison	46	1.17	1.18
	Experimental	50	1.00	1.22

[a] fsis = Level of satisfaction for Faculty-Student Informal Interaction. [b] fsii = Level of importance for Faculty-Student Informal Interaction. [c] dif_fsi = Difference in level of satisfaction and level of importance for Faculty-Student Informal Interaction.

The average level of satisfaction with Faculty-Student Informal Interaction was 5.31 for the experimental group versus 5.12 for the comparison group. The average level of importance for Faculty-Student Informal Interaction was 6.31 for the experimental group versus 6.29 for the comparison group. The average difference, or gap, between the level of satisfaction and the level of importance for Student-Faculty Informal Interaction was 1.17 for the comparison group versus 1.00 for the experimental group. An independent samples *t*-test was used to determine if these differences are significant. The results are recorded in Table 4.17.

Table 4.17

Independent Samples t-test for Faculty-Student Informal Interaction

Variable	Assumption	*t*	*df*	Sig. (2-tailed)	Mean Difference
fsis[a]	Equal Variances	-.747	94	.457	-.187
fsii[b]	Equal Variances	-.132	94	.896	-.023
dif_fsi[c]	Equal Variances	.669	94	.505	.164

[a] fsis = Level of satisfaction for Faculty-Student Informal Interaction. [b] fsii = Level of importance for Faculty-Student Informal Interaction. [c] dif_fsi = Difference in level of satisfaction and level of importance for Faculty-Student Informal Interaction.

There were no significant differences between groups in the level of satisfaction with Informal Faculty-Student Interaction, in the level of importance for Informal Faculty-Student Interaction, or in the gap between level of satisfaction and level of importance for Informal Faculty-Student Interaction.

Faculty-Student Formal Interaction

This section addresses the sixth hypothesis: Students at DeVry University/Georgia who were involved in learning communities are more satisfied with faculty-student formal interaction (Burks, 2005) compared to those students who were not involved in learning communities. The hypothesis is tested with the variable Faculty-Student Formal Interaction.

The three measures of Faculty-Student Formal Interaction are level of satisfaction (fsfs), level of importance (fsfi) and the gap between satisfaction and importance (dif_fsfs). Only those students in each group matched to a Noel-Levitz SSI survey were included in these measures. See Table 4.18.

Table 4.18

Faculty-Student Formal Interaction

Variable	Group/Year	*n*	Mean	*SD*
fsfs[a]	Comparison	46	5.03	1.27
	Experimental	50	5.11	1.02
fsfi[b]	Comparison	46	6.36	0.73
	Experimental	50	6.32	0.83
dif_fsfs[c]	Comparison	46	1.33	1.13
	Experimental	50	1.21	1.08

[a] fsfs = Level of satisfaction for Faculty-Student Formal Interaction. [b] fsfi = Level of importance for Faculty-Student Formal Interaction. [c] dif_fsfs = Difference in level of satisfaction and level of importance for Faculty-Student Formal Interaction.

The average level of satisfaction with Faculty-Student Formal Interaction was 5.11 for the experimental group versus 5.03 for the comparison group. The average level of importance for Faculty-Student Formal Interaction was 6.36 for the comparison group versus 6.32 for the experimental group. The average difference, or gap, between the level of satisfaction and the level of importance for Faculty-Student Formal Interaction was

1.33 for the comparison group versus 1.21 for the experimental group. An independent samples *t*-test was used to determine if these differences are significant. See Table 4.19.

Table 4.19

Independent Samples t-test for Faculty-Student Formal Interaction

Variable	Assumption	*t*	*df*	Sig. (2-tailed)	Mean Difference
fsfs[a]	Equal Variances	-.747	94	.457	-.187
fsfi[b]	Equal Variances	-.132	94	.896	-.023
dif_fsfs[c]	Equal Variances	.669	94	.505	.164

[a] fsfs = Level of satisfaction for Faculty-Student Formal Interaction. [b] fsfi = Level of importance for Faculty-Student Formal Interaction. [c] dif_fsfs = Difference in level of satisfaction and level of importance for Faculty-Student Formal Interaction.

There were no significant differences between groups in the level of satisfaction with Faculty-Student Formal Interaction, in the level of importance for Faculty-Student Formal Interaction, or in the gap between level of satisfaction and level of importance for Faculty-Student Formal Interaction.

Overall Satisfaction

This section addresses the final hypothesis: Students at DeVry University/Georgia who were involved in learning communities evidenced a higher overall satisfaction with the university (Burks, 2005) compared to those students who were not involved in learning communities. The hypothesis is tested with the variable Overall Satisfaction.

The three measures of Overall Satisfaction are level of satisfaction (oss), level of importance (osi) and the gap between satisfaction and importance (dif_oss). Only those students in each group matched to a Noel-Levitz SSI survey are included in these measures. See Table 4.20.

Table 4.20

Overall Satisfaction

Variable	Group	*n*	Mean	*SD*
oss[a]	Comparison	46	5.05	1.48
	Experimental	50	4.99	1.12
osi[b]	Comparison	46	6.41	0.84
	Experimental	50	6.38	0.90
dif_oss[c]	Comparison	46	1.36	1.43
	Experimental	50	1.39	1.06

[a] oss = Level of satisfaction for Overall Satisfaction. [b] osi = Level of importance for Overall Satisfaction. [c] dif_fsfs = Difference in level of satisfaction and level of importance for Overall Satisfaction.

The average level of satisfaction with Overall Satisfaction was 5.05 for the comparison group versus 4.99 for the experimental group. The average level of importance for Overall Satisfaction was 6.41 for the comparison group versus 6.38 for the experimental group. The average difference, or gap, between the level of satisfaction and the level of importance for Overall Satisfaction was 1.39 for the experimental group

versus 1.36 for the comparison group. An independent samples *t*-test was used to determine if these differences are significant. See Table 4.21.

Table 4.21

Independent Samples t-test for Overall Satisfaction

Variable	Assumption	*t*	*df*	Sig. (2-tailed)	Mean Difference
oss[a]	Equal Variances	.202	94	.840	.054
osi[b]	Equal Variances	.161	94	.873	.029
dif_oss[c]	Equal Variances	.028	94	.978	.007

[a] oss = Level of satisfaction for Overall Satisfaction. [b] osi = Level of importance for Overall Satisfaction. [c] dif_fsfs = Difference in level of satisfaction and level of importance for Overall Satisfaction.

There were no significant differences between groups in the level of satisfaction with Overall Satisfaction, in the level of importance for Overall Satisfaction, or in the gap between level of satisfaction and level of importance for Overall Satisfaction.

Summary

The quantitative analysis provided no significant findings in support of the seven hypotheses, and, therefore, the hypotheses are rejected.

Faculty Interviews

Introduction

To develop a better understanding of the impact (or lack) of the learning communities at DeVry University/Georgia during the summer and fall 2002 semesters, 6 faculty members who taught in the learning community were interviewed and asked a series of open-ended questions about their experiences. Each interviewee was provided a copy of the questions one day prior to their interview in order to better prepare. Each interview was approximately 30 minutes in length and conducted on the either the Alpharetta or Decatur campus in a private and professional setting. The interviewer/researcher took hand written notes to track responses and record quotes.

The sampling method used was convenience sampling. An estimated 25 faculty members participated in the Learning Community from the summer 2001 semester through the fall 2002 semester. The sample was focused on faculty who had taught in the Learning Community during the 2002 academic year (includes summer, fall and spring semesters) but also may have taught during the 2001 academic year as well. The rationale for requiring that faculty had taught in the learning community during the 2002 academic year is that the program was still under construction during the 2001 academic year. Therefore, the responses of faculty who taught in the learning community only during the 2001 academic year may not have best represented the actual experiences of faculty with the final model. In addition, 2002 academic year represents the period for which student records data were analyzed. Interview requests were sent to ten faculty members who were identified as participants in the Learning Community during the 2002 academic year and who were still present at the university. An effort was made to have representation

from each of the two campuses and from each of the undergraduate schools. The final six participants were selected based on location and department.

The participants included full-time faculty members from the School of Technology, School of Arts and Sciences and the School of Business. In addition, all faculty members had prior experience in teaching the specific course they were assigned in the Learning Community and have continued to teach that same course following the completion of the pilot. Courses represented include Critical Thinking and Problem Solving (COLL-149), Introduction to Business (BUSN-115) and Fundamentals in Electronics (ECT-128). All participants were asked to state the semester date(s) in which they taught in the Learning Community. None of the participants could remember the exact date (e.g. Summer 2002); however, each participant acknowledged involvement in the Learning Community (LC) during the 2002 academic year. What follows is the participants' responses to questions that asked them to reflect on the benefits and drawbacks of teaching in the Learning Community, to make recommendations they have for the program, and to decide if they would do it all again.

All participants were asked to reflect and describe what they felt the benefits were, if any, of teaching in the LC with a focus on a few key areas such as student persistence and outcomes, faculty-faculty interaction, student-faculty interaction, course planning and development and course delivery.

Student Outcomes and Persistence

All participants were asked to discuss what they perceived were the benefits of the learning community in terms of student outcomes and persistence. This proved to be a difficult question to respond to quantitatively for all of the participants; however, all six

participants *felt* that students did better in their specific course as a result of their experience in the learning community. Five out of six participants commented that the faculty teams were better equipped to focus in on student performance problems and develop methods to help the student improve. They felt that the regular faculty team meetings where discussions took place regarding student progress, attendance issues, and group project work helped to focus on the desired outcomes. Three out of six participants stated that while they did not have data to support it, they felt students persisted at a higher rate. One commented, "I know there were a couple students in particular in the Electronics program that most likely would have not made the connections and persisted." A second participant commented, "The joint projects allowed students the opportunity to bond while also holding each other accountable. Students knew they not only had to do well for themselves but for the entire project team." Most participants felt students persisted due to the forging of stronger relationships. One noted, "There seemed to be a stronger sense of belonging, caring and sharing. Students seemed to develop longer lasting relationships that extended beyond the Learning Community and the first semester."

Faculty-Faculty Interaction

All six participants commented that the LC experience provided them the opportunity to get to know, to work with and to learn from other faculty. One participant stated, "The Learning Community allowed faculty the opportunity to get to know each other better, to learn from each other's teaching styles." Another commented, "Faculty on the Learning Community team proof read papers, graded Power Point presentations, observed and evaluated speeches together." Finally from another participant, "I

experienced just as much significant learning from other faculty as I did from my students. You had the opportunity to really talk with other faculty about teaching and learning styles." The participants also commented on the added peer pressure of performing and the fear of being unprepared or the fear of failure in front of their own peer group. One participant commented, "The unit made a faculty member change. There was less of a tendency to become complacent during the semester." In reading over the numerous responses to this question, this particular benefit appeared to be one of the richest in value.

Student-Faculty Interaction

All participants felt that one of the leading benefits under student-faculty interaction was the opportunity it gave the students to see faculty actually working as a team. Observing some of the comments made by the participants, it is almost as if the team approach caused the faculty to be "brought down from their thrones of power" and cast in a more humanistic role which, in turn, made them seem more approachable and caring in the eyes of the students. Participants made comments such a, "It allowed for students to see faculty working together as a team with them at a different level, more personal level. It seemed to make us more approachable." "Presentations were high energy and evaluated by the entire faculty team. Students saw this as caring." "The team made it clear 'we are here for you, we want you to engage and be involved. It is part of our job.' It sort of set the tone," and "Faculty better understood student workload issues from week to week." Three of the six participants also found that setting expectations as a team was a strength. Students better understood what was expected, and through those expectations, began to see the linkages or connections between their classes. One

participant commented: "We felt it was very important for the students to see and meet with us right away. We explained the purpose of the Learning Community and that we were there as a team to help them succeed." Three of the six participants felt that the formal interaction also led to informal interactions outside the classroom. This included off-line discussions with project groups, academic and career advisement, and even faculty being invited to special events such as weddings or family gatherings. One participant commented: "I witnessed a significant increase in faculty-student interaction both in and out of the classroom in the Learning Community versus those courses that were not involved in the Learning Community project."

Planning and Development

All six participants saw definite benefits in working together as a team to discuss concepts such as methodology or how to best link the courses together for the students, course objectives, syllabi, project criteria and grading, group activities, and the development of support materials. This is supported through comments from the participants, "It provided the opportunity to outline course objectives as a team and develop assignments together as a team," and "Planning grids were developed in detail which showed what was going to be covered each session and by whom." A few participants also recognized the need for compromise during this process. One commented, "This took some compromise in terms of how much it (the project) would count and what the criteria would be. It was a good team-building exercise for us." In general, the planning meetings, although sometimes hard to schedule, were productive and resulted in a more cohesive presentation of the courses.

Course Delivery

This seemed to be a more difficult question for the participants to respond to in terms of real depth. However, five out of six participants felt that a benefit of teaching in the LC was the ability to tie concepts together better so that the students could see the connections between the individual courses. One participant commented, "There was an obvious link between each of the courses. For example, through the business plan they developed, students could see the benefit in taking the computer skills course." Four out of five participants also felt that the delivery benefited from faculty members being able to observe each other's methodology and the reactions of the class, to better understand what types of delivery methods worked best. A participant commented, "It allowed faculty to observe each other in action, to observe the different pedagogical methods, what works. Some faculty took real advantage of this opportunity." Another commented, "Very much a team approach, or at least the opportunity to work as a team benefited the students in that they were able to experience multiple teaching methods which helps accommodate the different learning styles." Three of the six participants suggested that the delivery of the courses in the LC were presented with more energy and enthusiasm, "The group exercises were very strong elements. Our student groups would rotate around to each faculty team member during the common meeting hour and focus on specific issues or problems they were having."

Other Benefits

This question allowed the participants to reflect and add their own thoughts as to what they perceived to be additional benefits from teaching in the Learning Community. While many of the comments tended to re-enforce what has already been discussed, some

addressed additional areas such as learning styles and disabilities, prestige and recognition, and the overall classroom experience. These are reflected in the comments by some of the participants, "It seemed to change the classroom atmosphere in a positive way." "The Learning Community brought a certain amount of prestige with it. It seemed important to the university." "It was a good program for our students, faculty really bought in to the concept." "I had the ability to assist other faculty in identifying students with learning disabilities and I was able to offer coaching to students and faculty."

The Drawbacks of Teaching in the Learning Community

All participants were asked to describe what they perceived to be drawbacks of teaching in the Learning Community in terms of student persistence and outcomes, faculty interaction, student-faculty interaction, course planning and development, and course delivery. These responses seemed to be less structured as participants tended not to follow the same sequence as they did when discussing benefits. However, there were three or four areas that emerged consistently among the participants as drawbacks to teaching in the Learning Community.

Team dynamics – commitment, scheduling, and working together

Five of the six participants felt that the time commitment required was underestimated. Although faculty were provided one common hour per week during the semester to meet, most felt this was simply not enough time to plan and prepare adequately. One participant commented, "Time commitment is much more than with the non-Learning Community courses." In addition, not all team members exhibited the same level of commitment to the team. Some faculty members would not participate as often in

the planning meetings which led to difficulties in the development of course materials and quality of instruction, not to mention it played a negative role in the team's dynamics. Some comments from the participants, "Some faculty did not participate as much as others. Accountability needed to be better emphasized." "Some faculty did not want to or could not attend the team meetings with other faculty. It was a little disheartening to know that they were paid, yet didn't seem to buy-in or care." "The right people were not always assigned to the Learning Community teams. They may not all participate, are not all good team players, and may not buy-in to the Learning Community concept."

In addition to the time commitment, scheduling was the next most often cited drawback. Four out of six participants felt that there was not enough foresight or planning in developing course schedules to accommodate the faculty team meetings. Often, faculty would come to the campus on a non-teaching day to attend a one-hour meeting which was not an efficient use of their time. One participant stated, "Team meetings were difficult to hold due to each faculty member's schedule." In addition, another noted, "Scheduling was a challenge as well, getting people together during a common time."

While there were a number of benefits suggested by the participants that involved teaching in a team environment, there were also some drawbacks as well. A few participants suggested that their experiences included instances where the teams that were put together were not necessarily the best fit. It was suggested that more thought be put into matching faculty together in teams, such as is often done when assigning roommates in college. Comments from some participants in the area included, "Team dynamics can

be a negative experience. Some faculty wanted to dominate and control the entire outcome." "Some personalities did not always match up causing conflict."

Autonomy and flexibility

It was suggested by some participants that they sacrificed the autonomy and flexibility they had when teaching the course individually for the sake of using the team-teaching approach. Some comments from participants in this area included, "There is the sense that you do lose some control of you own course," "The expected grade percent for the project for each faculty member ranged from 5 percent to 15 percent. A compromise was reached; however, I was never 100 percent comfortable with it," and "There did not seem to be the amount of flexibility that I had when teaching the course myself."

Recommendations from the Participants

The participants offered several recommendations from their experiences. These tended to vary widely by participant; however, there were couple of similar recommendations from most, if not all, of the participants. Those will be described first.

Most participants (four out of six) recommended that more time and thought be given to putting the faculty teams together. It was suggested that a process be used that is similar to that when pairing college roommates. It was also suggested that teams be provided with more time before the semester begins as well as more time during the semester for planning and team building. Comments from participants included, "Build the Learning Community teams a semester prior to the start and allow them one-hour meeting times each week the semester prior to plan and develop a solid working relationship and compensate them for their time." "Check for team chemistry. Train

participants on how to be a team player." "Look for volunteers for the program versus drafting people." "Assess how well a person (faculty) functions in a team environment before assigning them." A couple of participants even suggested that teams be kept in place for at least a year so that they would have the time to fine-tune and develop the model. As one participant stated, "Teaching teams should stay together for at least a year, if at all possible, to better develop synergies and relationships."

Most participants (four out of six) suggested that better attention be paid to the scheduling of classes, faculty teaching schedules and faculty team meetings. Some of the comments from the participants included, "Put more thought into the scheduling of meeting times for faculty." "Schedule meeting times so that they better work within faculty and student schedules."

Half of the participants suggested an improved recognition program for those involved in the Learning Community project. This did not always equate to monetary compensation; in fact, each of the participants suggested alternative ways to recognize faculty in the program such as release time, professional development opportunities, University Day events, team shirts, and the chance to present outcomes to and work with the administration.

Other recommendations from participants included moving back to a 15-week format versus the current 8-week format to increase the number of class sessions, the linking of two courses instead of three or four, providing additional administrative support for the faculty teams in the Learning Community, and providing an additional credit hour for the Critical Thinking and Problem Solving course. In addition, four of six participants suggested the Learning Community be reinstated.

Would You Do It Again?

At the end of the interview, all participants were asked whether or not they would be willing to teach in the Learning Community again should it be reinstated. All six participants communicated that yes, they would be interested and willing. When asked why, the actual responses varied; however, the general theme seemed to stem from a positive experience the first time and the promise it holds for improved faculty and student outcomes. Participant comments included, "Yes, very positive experience, students seemed to perform better, expectations from multiple teachers allowed students to make connections, relationships extended beyond the class." "Yes I would love to. I feel I (we) do a better job and that there is better fulfillment. It helps make DeVry a better place, better for the students. Get it back!" "Yes, it is a win-win. My overall experience was great!" "Sure absolutely, the whole is greater than the sum of the parts and it permeates into classroom and student success." "Yes, I am motivated by the potential in assisting students with learning disabilities and working with faculty on how to better address students in this category."

Summary

Although this collection of qualitative information is from a convenience sample of 6 out of the estimated 25 faculty who taught in the Learning Community during the, it does include representation from each of the three undergraduate schools and it reveals some fairly consistent trends in experience from the six participants.

All six participants experienced team-work, the opportunity to get to know other faculty members, the opportunity to learn from one another, the benefits in students

seeing the faculty working together and making them appear more approachable, the benefits of the team meetings in the planning and outlining of course objectives, the building of and preparing course materials together as a team, and the tying together of concepts from all courses. All six participants also communicated that they would be interested in teaching in a learning community in the future largely due to their past experience.

Most participants discussed and tried different teaching methods as a result of observations of others on the team, appreciated the opportunity to set expectations of students as a team, and enjoyed the increase in informal faculty-student interactions that took place outside the classroom. Most participants also experienced an increase in the time required to prepare for their classes, a difficult time scheduling team meetings, and some frustration with other faculty on the team not demonstrating the same level of participation or commitment.

The strongest recommendations from the group going forward were to improve the scheduling process and establish a more comprehensive recognition program for participants.

CHAPTER 5: DISCUSSION OF FINDINGS

Introduction

The purpose of this chapter is to discuss the findings of the research including a summary of the study, an interpretation and discussion of the study findings and how they relate to the literature, implications for practice and further research, suggestions for further investigation, and a conclusion.

Summary of the Study

The purpose of the study was to determine whether or not the implementation of learning communities at DeVry University/Georgia had a positive impact on select student outcome variables. These variables include first-term GPA, first-term retention, perceptions of educational quality, informal student-faculty interaction, formal student-faculty interaction, sense of community, and overall satisfaction. Specifically, the purpose was to address the following hypotheses by comparing two student groups:

1. Students at DeVry University/Georgia who were involved in learning communities evidenced higher first-semester retention compared to those students who were not involved in learning communities.
2. Students at DeVry University/Georgia who were involved in learning communities evidenced a higher first-semester GPA compared to those students who were not involved in learning communities.
3. Students at DeVry University/Georgia who were involved in learning communities evidenced a perception of higher educational quality compared to those students who were not involved in learning communities.

4. Students at DeVry University/Georgia who were involved in learning communities evidenced a stronger feeling of sense of community (Burks, 2005) compared to those students who were not involved in learning communities.
5. Students at DeVry University/Georgia who were involved in learning communities were more satisfied with faculty-student informal interaction (Burks, 2005) compared to those students who were not involved in learning communities.
6. Students at DeVry University/Georgia who were involved in learning communities were more satisfied with faculty-student formal interaction (Burks, 2005) compared to those students who were not involved in learning communities.
7. Students at DeVry University/Georgia who were involved in learning communities evidenced a higher overall satisfaction with the university (Burks, 2005) compared to those students who were not involved in learning communities.

Discussion of the Sample Used in the Study

In an attempt to determine whether or not the above seven hypotheses could be accepted, two groups of students were compared. One group (comparison) consisted of students who attended the summer or fall semester in 2000 and met the following criteria:

1. Had no prior college and enrolled as a full time day student.
2. Registered for Introduction to Computing (COMP), Introduction to Business (BUSN), and Critical Thinking and Problem Solving (COLL).

3. Completed a Noel-Levitz Student Satisfaction Inventory (SSI) survey and provided their social security number.

A second group (experimental) consisted of students who attended the summer or fall semester in 2002, met all of the above criteria, and participated in a learning community.

Securing the actual samples for each group was much more difficult than anticipated. The student records database proved awkward to work with and inconsistent in terms of available information in each of the data fields. In addition, since the Noel-Levitz Student Satisfaction Inventory is a self-reporting survey, the frequency with which students recorded their student ID was less than expected. Thus, the matching of student surveys against student records proved to be challenging and yielded a much smaller sample (n=46 for the comparison group and n=50 for the experimental group) than the 100 that was desired for each group.

In an attempt to offset the small sample size, a second comparison was done between students in each class group who met only the first two criteria: (a) had no prior college and enrolled as a full time day student, and (b) registered for Introduction to Computing (COMP), Introduction to Business (BUSN), and Critical Thinking and Problem Solving (COLL). This provided a larger second sample for each group (n=150 for the comparison group and n=130 for the experimental group). Obviously, the drawback is that the larger two samples of students who met the first and second criteria only, can address only the first two hypothesis regarding student outcomes: first-semester GPA and first-semester retention. The two comparisons made with the smaller and larger set of samples did, however, provide an opportunity to see if there were common trends, possibly adding some validity to the smaller-sample comparison.

Discussion of Sample Demographics and Academic Preparedness

In order to better understand better how these two groups compare in terms of demographics and academic preparedness, they were compared in terms of average College Placement Test (CPT) scores in reading, writing, arithmetic and algebra; average age; average number of credit hours attempted; gender; ethnic group; and major area of study. This comparison was done for the smaller samples of students with matching surveys as well as for the larger samples of students that met the first two criteria but did not have matching surveys. As the findings indicated, the average CPT scores were higher in reading, writing and algebra for students in the larger (n=150) comparison group versus students in the larger (n=130) experimental group. However, when the same comparison was done between the smaller (n=46) comparison group and the smaller (n=50) experimental group, the outcomes revealed no significant differences in scores. However, the students in the smaller comparison group did, on average, score higher in each area compared to the students in the smaller experimental group. That this difference did not prove to be significant may be explained, in part, by the small number of actual records that were compared. In other words, although the total sample sizes for the two groups with matching surveys was 46 and 50 respectively, the actual number of records compared was less (27 and 40 respectively) since not all students had scores for the CPT. One reason for this difference could be that a student had qualifying ACT or SAT scores and was not required to take the CPT. Therefore, given the findings from these comparisons, one might argue that the comparison group was better prepared academically upon entering college when compared to the experimental group.

As indicated by the findings, the comparison group and experimental group were significantly different in average age with the comparison group being older. This difference in age might be explained by the limited accessibility of learning communities to evening students. Since the majority of the learning communities were offered during the daytime hours, evening students, who are typically older in age, may not have had the opportunity to enroll. Further, the concept of learning communities may have been less attractive, or of a lesser priority to the evening student, compared to *when* a course was offered.

It was also found that both groups had more males than females and that the percent of males was somewhat higher (58% vs. 51%) in the experimental group versus the control group. This was the case between both the larger and the smaller sample comparisons. This is interesting considering that there are more women than men entering college as first-time students today (NCES, 2004). However, when the overall population for DeVry, GA is examined in terms of gender between 2000 and 2002, it supports the national trend (DeVry, 2002). One possible explanation for this discrepancy may be, given the younger age, students in the experimental group were more likely to attend during the daytime when there is an even higher concentration of males attending classes on campus compared to the overall percentage of males (DeVry, 2002).

One trend that was predictable was the increase in business majors with the experimental group which might be explained by the downturn in the local technology sector beginning in 2001. The percent of business majors increased from 33% to 43% (comparing the large samples) or 13% to 24% (comparing the small samples). Finally, the ethnic breakdown of the sample groups was as expected and is consistent with that of

the overall student population at DeVry University/GA. There was no significant difference between the comparison and experimental groups in ethnicity.

Discussion of Findings Related to First-Semester Retention and First-Semester GPA

Chi-square tests were used to address the hypothesis: "Students at DeVry University/Georgia who were involved in learning communities will evidence higher retention compared to those students who were not involved in learning communities." The results showed that there was little significant difference between the two groups. This may at first seem somewhat inconsistent with findings from other studies (Dodge, 2000; Friedman, 2004; Gordon, Young & Kalianov, 2001; Johnson, 1999; Sidle & McReynolds 1997; Tinto, 1997) on learning communities or classroom involvement theories and student satisfaction (Bean, 1980; Elliot, 2002; Endo & Harpo, 1982) that have shown some positive results in student retention. However, if we look at the fact that the experimental group was less-prepared academically and was younger in age upon entering the university, it might be argued that without the learning community experience, the retention rates for the experimental group would have been significantly lower than that of the comparison group, thus supporting indirectly the historical studies.

An independent samples *t*-test was used to address the hypothesis: "Students at DeVry University/Georgia who were involved in learning communities will evidence a higher GPA compared to those students who were not involved in learning communities". The results showed that there were no significant differences in first-term GPA between students in the larger samples comparison or the smaller samples comparison. This may seem once again to contradict other studies (Dodge & Kendall,

2004; Friedman, 2004; Gordon, Young & Kalianov, 2001; Johnson, 1999; Sidle & McReynolds 1997; Sullivan & Wolfe, 1990; Tinto, 1997) that suggest students that participate in learning communities achieve, on average, a higher level of student success or GPA. However, it may be argued that without the learning community experience, the younger and less academically-prepared experimental group of students may have achieved a significantly *lower* GPA than the older and more academically-prepared comparison group, thus indirectly supporting historical research.

Discussion of Findings Related to Student Satisfaction

Results from the Noel-Levitz Student Satisfaction Inventory (SSI) and independent samples *t*-tests were used to address students' level of satisfaction with Educational Quality, Sense of Community, Informal Student-Faculty Interaction, Formal Student-Faculty Interaction, and Overall Satisfaction. As the findings indicated, there were no significant differences in the satisfaction levels for any of the five variables for the students in the comparison group compared to the students in the experimental group. At first glance, the statistical results seem somewhat different than the findings from other studies (Beal, 1980; Bean, 1980; Cambiano, Denny & Vore, 2000; Elliot, 2002; Pascarelli & Terenzini, 1983; Pascarelli & Terenzini,l 1991; Tinto, 1997; Toy, 2000) that suggest students who participate in learning communities or classroom involvement activities evidence a stronger sense of community, enjoy stronger faculty interactions, and are more satisfied with their overall experience when compared to students who do not participate in learning communities. However, this discrepancy may be due, in part, to the size and the degree in variance of the samples compared. Further, a closer look

may reveal a small indication of some success. For the three variables: Sense of Community, Informal Student-Faculty Interaction, and Formal Student-Faculty Interaction, students in the experimental group rated their level satisfaction to be higher on average compared to the students in the comparison group, which is consistent with historical studies (Braxton & Brien 1989; Dodge, 2000; Pascarelli & Terenzini, 1983; Pascarelli & Terenzini, 1991; Sidle & McReynolds 1997; Tinto, 1997). While these differences are not statistically significant, overall they seem to represent a trend. Therefore, further investigation using larger samples may yield more significant results.

Table 5.1

Student Satisfaction Levels

Variable	Comparison Group n=46	Experimental Group n=50	Difference
Educational Quality	5.67	5.72	0.05
Sense of Community	5.41	5.44	0.03
Informal Student-Faculty Interaction	5.12	5.31	0.19
Formal Student-Faculty Interaction	5.03	5.11	0.08
Overall Satisfaction	5.04	4.99	-0.05

Discussion of Feedback from Faculty Interviews

The one area for which there was no research question developed is in regard to how the learning community project impacted those faculty who participated. In addition to the quantitative analysis that was performed on student grades and student satisfaction, interviews were conducted with faculty members in an attempt to better understand their experiences while teaching in one of the Learning Communities and to gauge their perceptions in terms of the impact the Learning Communities at DeVry/GA had on student success. The interviews were also conducted as an effort to better understand if the Learning Community experience had an impact in some way on how faculty teach or how they perceive their role with students and/or other faculty and would they do it all again if given the opportunity.

The six faculty members who were interviewed had an average length of service of 14 years, and, as was true of all participants, they had an interest in the learning community project and were viewed by many as early adopters. Four out of the six taught under the School of Arts and Sciences and 4 of the 6 were women. Although the sample was derived from convenience, these faculty characteristics are consistent with what is described in the literature as the type of faculty most often involved in learning communities, i.e. mid-career, needing or ready to take on additional risk, wanting to try something new, most often having backgrounds in general education or human sciences or being mostly women (Gablenick et al, 1990a).

While the quantitative analysis on student persistence and outcomes (GPA) did not reveal any significant differences between the comparison group and the experimental group, it is interesting to note that all six faculty members felt that their

students did better in their specific course because it was part of a learning community. Given the lack of quantitative support, at first, one might be tempted to dismiss this "feeling" as simply affection for the program and a desire to continue participating. However, if we look at the areas that faculty provided feedback on, the comments that were made, and what is stated in the literature, there may be some good argument that, in fact, the learning communities did have a positive impact on faculty and students.

The purpose of learning communities is to "link together courses, students, and faculty in such a way that students find a greater coherence in what they are learning" (Gabelnick, et al. , 1990c, p. 5). In terms of what faculty value in the learning community, the literature suggests that faculty value working with others to improve teaching, a safe environment for change, and the opportunity to learn about themselves and students (Gablenick et al, 1990a). This was evident in the feedback received from the faculty participants. All six participants interviewed cited the benefits in working together as a team, planning class activities, establishing grading criteria, developing syllabi, and organizing group projects for students. The feedback received suggests a significant amount of learning took place between *faculty*. They got to know each other better, and learned from each other's teaching and delivery styles. As one faculty member stated: "I experienced just as much significant learning from other faculty as I did from my students." Faculty across disciplines that made up the teaching teams in the learning communities worked together to develop coursework materials and lesson plans. Technology faculty worked alongside faculty from the School of Arts and Sciences towards a common goal, to educate students in the best possible way.

The classroom was viewed differently as well. As Tinto (1997) suggests, the classroom is one of the few opportunities where faculty and students meet and that we (higher education) historically have not made the classroom more of a focus for student persistence initiatives and activities. The learning community at DeVry/GA appears to have helped place more a focus on classroom activities. The common lab activities that were held each week with the students and faculty seemed to emphasize the importance of team, collaboration and accountability. It also seemed to provide a better opportunity for students to connect concepts from different courses. As one faculty member stated: "There was an obvious link between each of the courses". As Austin (1984) suggests with his student involvement theory, the classroom became a place where faculty were less focused on what they did and more focused on what the students did. The learning communities utilized the identification, classification, and development of learning activities that freed faculty to spend less time in the traditional teaching mode and more time facilitating learning (Guskin, 1996).

While the experience with learning communities appeared overall to be a positive one, it was not without its challenges. Faculty learned to compromise, something that was not necessarily required as much when they taught stand-alone courses and had seemingly much more autonomy in the classroom. As Romer and Whipple (1991) suggest, these faculty members became learners and suspended their own authority to work better with others. As one faculty member stated: "It was a good team-building exercise for us". There were additional challenges in implementing the learning communities at DeVry/GA which were consistent with those found in the literature (Chickering & Gameson, 1987; Gablenick et al, 1990e; Guskin, 1996; McGregor, 2000;

Tinto, 1995). These included issues involving administrative support with scheduling, providing adequate release time for team meetings and activities, the added work that went into the planning process, working with faculty who were not as committed, and feeling a lack of recognition for participating.

Implications for Practice

This study provides practical contributions to the field of learning communities in higher education, and in particular, the for-profit sector and DeVry University/GA. It also provides contributions to programs developed to improve retention and success rates of first-year students at DeVry University/GA as well as DeVry University nationwide.

The present study has implications for the for-profit sector of higher education in that it provides at least an initial look at the possible benefits of implementing learning communities in a more non-traditional (for-profit) setting. For example, it could be that the implementation of linked courses for evening-adult students would provide them the opportunity to draw better connections between the courses that they are taking. It also may challenge for-profit higher education to re-think the role of faculty. Is there an optimum balance between teaching and non-teaching responsibilities and how they are connected? In some cases, for example, the role of faculty in a for-profit setting is limited primarily to teaching classes with a small percent of their responsibility devoted to university service. While this may appear to be the most profitable use of faculty, are there other outcomes that are lost by not engaging faculty more in student success initiatives and research such as collaborative teaching and learning models or student advising in a for-profit setting?

There are also implications for practice in terms of implementation. In designing the type of learning community model to be used, careful consideration should be given to the research and what have been identified as good practices in areas such as: strategies for choosing a model that best fits the institution, methods of assessment, consideration for resources needed for support, educating and marketing to the campus community, and the development of faculty training and development strategies (Gablenick, et al., 1990e). The American Association for Higher Education's nine principles of good practice for assessing student learning (Astin, Banta, Cross, et al., 2003) and *Seven Principles for Good Practice in Undergraduate Education* (Chickering & Gameson, 1987) seem to provide good high-level frameworks for the design process. Other important considerations outlined in the literature (Hetherington & davis, 1984; Gablenick, et al., 1990e; Guskin, 1996; Romer & Whipple, 1991; Strommer, 1999; Tinto, 1995; Tompkins, Perry & Lippincott, 1998) and supported by this study include setting clear objectives, administrative support across all departments, the selection of and defining the role of faculty, faculty development, marketing plans, and programs for recognition.

By examining the impact of learning communities at DeVry University/GA over a two-semester period, this study has implications in terms of being able to better evaluate what went well, what opportunities exist for improvement, and what approach the university might take in the implementation of learning communities in the future. The potential for improving student outcomes and satisfaction levels along with the promises of higher retention, completion rates and profit margins may prove to be attractive

enough to warrant further investigation or studies on the impact of learning communities in for-profit higher education.

The quantitative analysis that compared two groups of students in this study did not provide significant results in terms of *a difference* in student outcomes or student satisfaction levels. However, the Learning Community (experimental) group was younger and significantly less-prepared academically than the comparison group. Therefore, it might be argued that the Learning Community program can be viewed as a partial success in that without the experience of the learning community, there may have been significant differences in student outcomes, differences that favored the *comparison* group.

Faculty buy-in was seen as a key success factor with the learning communities at DeVry University/GA. The level of interest and commitment was fairly strong, in particular from faculty within the School of Arts and Sciences who typically are among the early adopters at the university. The attractiveness of an opportunity to work with students as a team and, as Wilson and Ryder (1998) suggest, having a common focus, a commitment to the generation and sharing of knowledge in an environment where everybody learns was a major draw. This was confirmed in the feedback received through the faculty interviews. Although this sample was relatively small in number, the six faculty did represent nearly 30% of the participating full-time faculty and were selected to represent the three different schools at DeVry.

The learning communities also appeared to have an impact on faculty members in terms of how they viewed their role in the overall learning experience. It challenged faculty to look and think "outside the box" in terms of how they prepared, delivered, and

evaluated courses. Working together in a collaborative environment and strengthening the learning experience not only for the students, but also for themselves was viewed as a positive. As Gablenick, et al. (1990e) suggests, the learning community initiative provides an opportunity for faculty *and* administration to work jointly towards a common goal of creating a stronger sense of community and sense of belonging and to find a better way to educate and improve student outcomes.

The faculty team meetings and student lab sessions was seen as a strength of the learning community model used at the university. Using these meetings to link together courses, students, and faculty provided the best opportunity for learning to occur for all participants. This is supported not only through feedback received from the faculty interviews, but also in the literature where Astin (1984) suggests a way to increase student learning is to place more emphasis on active student participation, which he refers to as the student involvement theory.

As suggested by Gablenick, et al. (1990e), choosing faculty can be one of the most important factors in the success of learning communities. This is an area that is viewed as one of opportunity for improvement with the DeVry model. One faculty member suggested during the interview process that we (DeVry University/GA) consider the use of a tool similar to that used in the selection of roommates. Whatever the method or tool used, a careful evaluation of this process is important for optimization of team performance.

In addition to choosing the faculty, the amount of training and development that is provided can be just as critical. An orientation session can be an effective way to gain buy-in, handle logistical needs, etc., however, additional follow-up must occur *during* the

semester to better respond to and support faculty *and* student needs. Otherwise, there is a risk that both faculty and students fall back into their traditional and more familiar roles. This again is an area of opportunity with future learning communities at DeVry/GA.

Administrative support was gained early in the process. This proved helpful in pushing plans forward for such things as additional compensation for participating faculty in an effort to offset the additional time and effort that was required. As the literature suggest, administrators can build strong interest support and ownership across the campus, so it is critical that they be involved (Gablenick, et al., 1990e; MacGregor, 2000). This support also proved critical in the early efforts to market the program. However, while early support from administration is certainly critical, it is just as critical that the support be across *all* departments and for the duration of the program. This is important due to the ongoing challenges and opportunities that occur such as selecting new faculty participants, continuous improvement and evaluation activities, scheduling of classes, selection of faculty teams, faculty development activities, and programs for recognition. If faculty and staff sense support for a program begins to diminish from key administration, in most instances the program itself will begin to struggle. Therefore, as Tinto (1995) outlines, it is important that there be clearly defined roles and accountabilities for administration. It is further suggested that these roles and accountabilities remain in place as long as the program is active to ensure continued support.

There are a number of opportunities to improve the design, the implementation, and the assessment processes that were modeled in the learning communities at DeVry

University/GA in 2001-2002. Clearly, taking better advantage of the research prior to implementation will provide the best opportunity for success. This might include:

- incorporating a faculty advisory committee for the purpose of involving faculty early in the development process
- securing full support of administration across *all* departments with clearly defined roles and responsibilities
- marketing the program early-on and developing more of a culture of "a community of learners"
- clearly defining and document processes
- defining a clear and effective plan for assessment
- communicating outcomes to the campus community
- planning faculty development needs beforehand
- and providing for a recognition program.

Finally, this study has implications for first-year programs at DeVry University/GA beyond learning communities. The implementation of learning communities at DeVry University/GA underscores the need to examine other important components of the first year experience such as student orientation, academic and social engagement, and quality of instruction to name a few. For example, DeVry/GA may examine the impact of student orientation to determine whether or not it is effective in its current form.

Suggestions for Further Research

In addition to the practical implications, this research provides theoretical contributions to the field of learning communities in higher education, particularly in the for-profit sector. There are very few, if any, studies done on the impact of learning communities in for-profit higher education. Given the high growth in the for-profit education sector over the last 10 years, this study may provide a basis for understanding that the theoretical framework often researched in the traditional university settings may prove to be applicable in the for-profit setting as well. Therefore, further studies are needed to extend the research and to better investigate the impact of learning communities in higher education and, more specifically, in for-profit higher education and DeVry University.

First, the results of this study cannot be used to conclude that the implementation of learning communities at DeVry University/GA have had a significant impact on student outcomes and student satisfaction levels. However, it is suggested this study be replicated at either DeVry University/GA or expanded to other DeVry University locations to broaden the population. It is also suggested that rather than relying entirely on the database for the development of a comparison group that the learning community and non learning community cohorts be studied in the present and in parallel. However, using the student records database for securing background information would be important to the study.

Second, given that the population at the DeVry/GA campuses is over fifty percent African-American, there is an opportunity here to further research the impact of learning communities on their success of.

Third, it is suggested that further investigation of the impact of learning communities with faculty and students be conducted in terms of perceived benefits and drawbacks. While this was not at the center of this study, it is apparent through the faculty interviews conducted that there are some real benefits in terms of faculty-faculty interaction, student-faculty interaction and classroom delivery that could be further explored and developed.

Fourth, it is suggested that further research to be done on the culture of for-profit higher education institutions versus that of the more traditional higher education institutions. For example, a study of the expectations by administration of faculty in the for-profit sector of higher education versus the not-for-profit sector and how those expectations might influence the implementation of student success strategies such as learning communities.

Conclusion

To conclude, this study did not reveal significant findings to support the seven hypotheses which suggested that students who were involved in learning communities at DeVry University/GA would evidence a higher GPA, higher retention, and higher levels of student satisfaction compared to students who were not involved in learning communities. It was determined, however, that the experimental (learning community) group may have been less-prepared academically than the comparison group based on the difference in CPT reading, writing and algebra scores.

There were limitations to the design of this study which may or may not have had an impact on these outcomes. These limitations include (a) the inconsistent recording of

data in the student records database which limited the number of records that met the criteria of the design, (b) the change in design of the Critical Thinking and Problem Solving course from a 1-credit hour course in 2000 to a 3-credit hour course in 2002 which could impact GPA, (c) the self reporting nature of the Noel-Levitz Student Satisfaction Survey (SSI), and (d) the limited number of SSI surveys that could be matched to student records due to number of surveys that did not have student identification information recorded.

Although the official findings proved to be somewhat disappointing, there were some positive outcomes from this study. First, although the experimental group may have been less academically-prepared, they experienced no significant differences in student outcomes from the better-prepared comparison group. It may well be that without the benefit of the Learning Community experience, the experimental group would have had poorer outcomes than the comparison group. Second, the faculty interviews yield very positive comments from faculty members in terms of the opportunity to work and learn together and to build strong teams with the opportunity to do something different, something geared towards improving student outcomes. Finally, the study provided DeVry University/GA the opportunity to develop a model or framework for the implementation of learning communities and the opportunity for further research.

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