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THE INFLUENCES OF INTERACTION ON THE SATISFACTION,  
ACHIEVEMENT, AND RETENTION OF DEVELOPMENTAL  
COMMUNITY COLLEGE STUDENTS

by

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A Dissertation Submitted to the Faculty of  
Old Dominion University in Partial Fulfillment of the  
Requirement for the Degree of

DOCTOR OF PHILOSOPHY

COMMUNITY COLLEGE LEADERSHIP  
August 2007

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Shana Pribesh (Member)

## ABSTRACT

### THE INFLUENCES OF INTERACTION ON THE SATISFACTION, ACHIEVEMENT, AND RETENTION OF DEVELOPMENTAL COMMUNITY COLLEGE STUDENTS

Old Dominion University, 2007  
Elizabeth Copeland Wilmer  
Director: Dr. Alan M. Schwitzer

The purpose of this study was to examine the influence of social and academic interaction, demographic characteristics, social and academic adjustment, and learning communities on the satisfaction, achievement, and retention of developmental English community college students.

The literature presented discusses the retention theories of Tinto, Astin, and Bean and their overlapping ideas on persistence. A common thread among these theories is the role of academic and social interaction on the personal development, satisfaction, achievement, and retention of students. Learning communities represent one academic structure that has proven effective in increasing the level of academic and social interaction. Unfortunately, the existing literature provides little information to guide retention programs for underprepared community college learners.

The study was a quantitative nonexperimental correlational design with participants from nine purposefully selected developmental English classes at Virginia Western Community College. Of the 120 students that completed the survey, 50 students were learning community participants and 70 students were non-learning community participants. The survey combined several measures including a demographic information sheet, the Institutional Integration Scale, the Classroom Environment Scale,

the Student Adaptation to College Questionnaire, a satisfaction and goals information sheet, registration data, and achievement and retention information from transcript data.

The study concluded that learning community participants had higher perceived levels and types of interaction than non-learning community participants; that demographic characteristics influenced individual's levels and types of interaction; that academic achievement was influenced by satisfaction, with all other predictors having a weak relationship to achievement; and that all of the predictors studied had a weak influence on retention.

The results of the study, some of which support and some of which contradict existing literature, suggest finding an especially strong relationship between any single influence and retention may be difficult due to the diverse individual characteristics and experiences learners bring to two-year institutions. As a result, although learning communities appear to increase involvement, they are just one of many strategies probably needed to increase the retention of underprepared community college students. More research on retention is needed with underprepared students, in particular.

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This dissertation is dedicated to  
My husband Wes and daughter Ashley

and

In loving memory of my father,  
Dr. Clyde X. Copeland, Jr.

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## CHAPTER I

### INTRODUCTION

Retention is a significant concern for American community colleges. While 86% of American community college students surveyed by the Community College Survey of Student Engagement (CCSSE) (McClenney, 2004) indicated a goal of completing a certificate or associate's degree program, less than a quarter of those students enrolled 1995-6 earned this credential in the subsequent six year period. Community college students are influenced by a number of risk factors, including, but not limited to, financial barriers, competing work and family responsibilities, and transportation concerns. CCSSE found that 64% of community college students are enrolled part-time; 60% work more than 20 hours per week; 34% spend 11 hours or more a week caring for dependents; and 20% spend between six and twenty hours a week commuting to and from class (McClenney, 2004). Each of these factors influences community college students' risk of dropping out.

For students entering college underprepared, these risks are magnified, increasing the possibility of low satisfaction rates, low achievement rates, and high attrition rates. Demographically, underprepared students are similar to the overall population of community college students. However, research shows that they often have a more difficult time connecting with the academic environment, that they are uncertain of their goals, that they have little academic direction, and that they share many of the non-cognitive characteristics found in first-generation and minority students (McCabe, 2003).

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The journal model used is the fifth edition of the *Publication Manual of the American Psychological Association*.

The numbers of underprepared students in American community colleges are significant. Almost 50% of community college students enter underprepared (McClenney, 2004). More specifically, Stevens (2001) found that 41% of freshmen at two-year colleges are enrolled in developmental courses.

For underprepared community college students, retention is particularly problematic. The issue of retention is less significant for students needing remediation in only writing or intermediate algebra. However, when students need developmental coursework in reading, basic arithmetic, or a combination of subjects, their risk of not achieving their academic goals significantly increases. One in eight students needs remediation in reading. Of these students, 65% need remedial courses in three additional areas (Adelman, 1996).

Furthermore, while 55% of students needing no remedial coursework and 47% of students needing only one remedial course complete their bachelor's degree, only 24% of students needing three or more remedial courses complete their degrees (Adelman, 1996). In a less optimistic report, Bittenham, Cook, & Hall (2003) found, that only 10% of students who enter underprepared finish a bachelor's degree.

The importance of retaining underprepared students cannot be overstated. In today's world of technology, education is becoming a necessity. Manufacturing jobs are rapidly disappearing and are being replaced by information-based industries, requiring a highly-skilled workforce. Eighty percent of future jobs will require the literacy and skills provided by a college education (McCabe, 2003).

To meet this challenge, all students, including the academically underprepared, must be retained. Fortunately, of the underprepared students who successfully complete

their developmental coursework, most become productively employed. According to CCSSE (McClenney, 2004), of those who complete remedial courses: 16% will go on to professional employment; 54% to mid-level or technical positions; and 20% to high-skilled, blue collar jobs; with only 9% remaining in unskilled employment. These statistics illustrate the importance to the student and to society of finding ways to retain underprepared students not only in their developmental courses, but to completion of certificate, associate's and bachelor's degree programs.

The retention research of the Educational Testing Service (ETS), concluded that retention is directly related to student involvement and institutional commitment (Turnbull, 1986). These conclusions are supported by the retention theories of Tinto, Astin, and Bean. Of these, Tinto's Interactionalist Theory, states that students who achieve greater social and academic integration are more likely to graduate; while failure to achieve social and academic integration contributes more to voluntary attrition than any other factor (Braxton, Hirschy, & McClendon, 2004).

Social and academic integration happens both inside and outside of the classroom. In fact, according to Kuh (2001), what happens outside the classroom can be as important to persistence as what happens inside the classroom. So, as community college populations become more diverse in age, ethnic background, socio-economic status, employment status, and academic preparation levels, a higher level of importance must be placed on finding ways to integrate students into the college experience both inside and outside of the classroom. One method to increase interaction is through the use of learning communities.



### Research Questions

This study examined how the level of interaction, the type of interaction, level of social and academic adjustment, learning communities, and demographic characteristics influence satisfaction, achievement, and retention of developmental English students at Virginia Western Community College (VWCC) in Roanoke, Virginia by posing the following research questions:

1. To what degree do the level, and type, of interaction experienced by learners differ based on course format?
2. To what degree do the following demographic variables influence developmental community college students' perceived experience of type and level of academic interaction: age, gender, ethnicity, parental education level, delayed entrance to college, enrollment status, employment status, parental responsibility, financial independence, ESL status, and COMPASS placement scores?
3. To what degree are academic achievement and retention rates among developmental community college students influenced by (a) different levels and different types of academic and social interaction, (b) by perceived levels of college adjustment and social adjustment, (c) by different course formats, and (d) by their level of satisfaction?
4. What relationships, if any, exist among student satisfaction, academic achievement, and retention rates among developmental community college students?

### Definition of Terms

For the purpose of this study, the following operational definitions of terms apply:

1. Developmental or underprepared students – students who enter college lacking college-level skills as determined through the COMPASS placement test or through self-determination.
2. Retention – registering for the next semester or completing self-determined academic goals.
3. Dropout – students who do not register for the next semester or complete self-determined academic goals.
4. Optout – students who do not return because they have completed their self-determined academic goals.
5. Satisfactory academic achievement – a grade of “S” (satisfactory) in a developmental course or a grade of “R” (repeat) for students who have identified making progress in the course, even though they must repeat it, as satisfying their academic goals and who repeat the course the subsequent semester.
6. Unsatisfactory academic achievement –grades of “U” (unsatisfactory) or “W” (withdraw) in a developmental course or a grade of “R” for students whose do not identify repetition of the course as a satisfactory academic outcome.
7. Social interaction – interaction that develops relationships with classmates, instructors, or advisors, but does not involve the content of the students’ academic coursework.
8. Academic interaction –interaction with classmates, instructors, or advisors that relates to the students’ academic coursework.

9. Course format – the distinction between courses structured as stand-alone or learning community-based courses.
10. Learning community – an intentionally structured situation where students take more than one course together, where active and collaborative learning strategies are employed, and which are designed to increase interaction with faculty, advisors, and other students.

## CHAPTER II

### THE LITERATURE REVIEW

#### Introduction

This dissertation investigated the influences of social and academic interaction generally and the influences of learning communities and personal development specifically on the persistence of developmental English students at the community college level. This chapter reviews the following: (1) the community college experience, (2) developmental education, (3) the social and academic adjustment of developmental students, (4) major theories of retention found in existing literature, (5) the “learning community” construct, (6) the theoretical foundations of an integrated reading and writing course intervention for developmental English students, and (7) the setting for the study.

#### The Community College

##### *Introduction*

The community college can be defined as “a regionally accredited institution of higher education that offers the associate degree as its highest level” (Vaughan, 2000, p.2). The mission of community colleges is based on the tenants of (1) open access, (2) providing comprehensive educational programs, (3) serving the needs of the local community, (4) placing teaching and learning, rather than research and publication as areas of emphases, and (5) providing opportunities for lifelong learning (Vaughan, 2000).

In fact, the community college is a unique institution in American higher education, distinguished by its mission of open access. Open access makes two years of higher education available to almost every American regardless of financial ability,

geography, work schedule, family responsibilities, or preparation level (Cohen & Brawer, 2003; Vaughan, 2000). Community colleges are driven by a comprehensive mission that includes offering transfer programs, vocational/technical degrees, workforce development programs, dual education with high schools, developmental or remedial education programs, and lifelong learning opportunities to the local community. Generally speaking, the community college offers whatever the local community needs or demands to educate and train the population in order to provide economic stability to the region (Cohen & Brawer, 2003; Vaughan, 2000).

American community colleges serve a uniquely diverse student population. Traditional college students can be defined as being between the ages of 18 and 22, Caucasian, registered as a full-time student, and living on campus (Reason, 2003). Although diversity is increasing among both four-year and two-year colleges, it is particularly prevalent in the community college (Kuh, 2001; Reason, 2003; Schmid & Abell, 2003). Community college students tend to be older, with an average age of 29 years (Cohen & Brawer, 2003). Fifty-eight percent are female (Bryant, 2001). About 32% are ethnic minorities (Reason, 2003). Twenty-six percent are from single parent homes (Kuh, 2001). Thirty-five percent are employed full-time (Schmid & Abell, 2003). Forty-six percent are enrolled part-time (Schmid & Abell, 2003). Thirty-five percent are financial independent (Schmid & Abell, 2003). Twenty-one percent have dependents (Schmid & Abell, 2003). Eleven percent are single parents (Schmid & Abell, 2003). Fifty-one percent are first-generation college students (Vaughan, 2000). And 48% delayed entry between high school and their first college experience (Schmid & Abell,

2003). Three of four community college students have one or more characteristics that are considered non-traditional (Miller, 2003).

Although one in four American students attends a community college, less than 5% of educational research studies focus on community colleges (Pascarella and Terenzini, 1998). As a result, educators often operate in an “empirical black hole” as to the “educational impact of one of the nation’s most significant social institutions.” (p. 155) This knowledge-based “black hole” is exacerbated by the fact that much of the existing research is at least ten years old and does not reflect the rapidly evolving needs and characteristics of today’s community college students (Bailey & Alfonso, 2005).

#### *Risk Factors for Community College Students*

The historical developments leading to the contemporary community college can be summarized as a step that created a portal to higher education for students who previously had not had access and contributing to the community college’s unique mission of providing open access to education.

Just as the open access of the community college creates opportunity, it also increases the risk of student drop-out. The reasons community college students give for dropping out are varied. Some of the most frequently cited reasons are financial barriers, work-related or family-related issues, health problems, or transportation concerns (Cohen & Brawer, 2003). In 2000, the Educational Testing Service published a report listing seven demographic risk factors faced by students. These included: (1) delaying entry for more than a year after high school, (2) full-time employment, (3) part-time enrollment, (4) financial independence, (5) having dependents, (6) being a single parent, and (7) not

achieving a high school diploma. In 1996, 24% of community college students had four or more of these risk factors (Schmid & Abell, 2003).

In addition to demographic risk factors, community college students are more likely to be at risk because they do not tend to become highly involved on campus. While many community colleges attempt to offer opportunities for involvement, such as campus clubs, student government associations, or intramural athletics, many students do not take advantage of those opportunities due to competing off-campus commitments. Cohen & Brawer (2003) found that 39% of community college students in 1989 never participated in a study group and 45% never spoke to a faculty member outside of the classroom. Of those that are not retained, only one in six gave reasons associated with the college, its faculty, or classes. When interviewed, students who dropped out, said they had never consulted a faculty member or advisor before dropping out and 71% decided to leave within the first four weeks (Cohen & Brawer, 2003).

In *Attrition Research at Community Colleges*, Summers (2003) summarized the findings reported in available studies regarding risk factors for community college student dropouts. He found that age predicted attrition in a majority of studies that measured it, but not in all studies. He discovered that gender did not predict attrition and that the literature was contradictory on the roles of ethnicity and socioeconomic status. Variables that were identified as contributors to withdrawal of community college students were full-time employment, parents' educational background, competing demands of family, low high school grades, lack of educational preparation, low institutional commitment, lack of educational goals, and failure to use available student support services. Further, Summers (2003) found that students who register late and who

have frequent schedule changes are less likely to persist than those who register before the semester begins and make fewer schedule changes.

### *Defining Retention at Community Colleges*

For community college students, retention is most often defined as semester-to-semester enrollment (Summers, 2003). This definition of semester-to-semester enrollment is one accepted retention standard for community college students (Halpin, 1990; Bers & Smith, 1991). Summers (2003) also found that students do not always identify graduation as their goal. Instead, their goal may be course completion or the ability to transfer without graduating. Though, the research does not specify whether this is the case for developmental students. These findings demonstrate the need for community colleges to better define measures for satisfaction, achievement, success, and goal completion, rather than using traditional measures developed for four-year institutions.

Bonham and Luckie (1993a, 1993b) developed terms to describe community college student departure. They defined as “dropouts” those students who have left college without completing their goal and who have no intention of returning. By comparison, “stopouts” are those that have left without completing their goal, but intend to return. Further, “optouts” are those that have left prior to graduation or transfer, but have completed their self-defined goal (Bonham and Luckie, 1993a, p. 545).

Bonham and Luckie proposed that both stopouts who return, and optouts, should be defined as retained students. They believe that stopouts, most of who have left for personal reasons, are retained if they eventually return and complete their goal. Optouts



have completed their goal and should be considered successful completers (Bonham and Luckie, 1993a, 1993b).

To investigate this, Bonham and Luckie (1993a, 1993b) interviewed 399 non-returning students at Del Mar College to determine how many were dropouts, stopouts, and optouts. They found that only 3% considered themselves dropouts. Seventy-three percent identified themselves as stopouts with 54% giving a specific time that they planned to return. Those 54% were considered stopouts. Stopouts with no specific return date were considered dropouts, making the dropout rate between 3% and 26%. Four percent of those interviewed were optouts. Bonham and Luckie (1993a, 1993b) reported that similar results have been found in other studies.

#### *Summary*

The community college is unique in its mission of providing comprehensive, open-access education. Due to open-access policies, the demographic characteristics of community college students are characterized by diversity and increased risk factors. Retention of community college students can not be defined in the same way as defined by four-year institutions because community college students are more likely than four-year college students to stopout or optout.

Open access increases the risk of students entering college underprepared. Underprepared students are brought to college-level proficiency through developmental education.

## Developmental Education

### *Introduction*

*Crisis at the Core: Preparing All Students for College and Work*, published in October, 2004, by ACT, Inc. states: “Most of America’s high school students are not ready for either college or work.” Specifically, only 22% of the 1.2 million students tested were prepared for college-level courses in English, math, and science (Jacobson, 2004). Only 40% of students were prepared to earn a C or higher in their first college algebra class, while only 68% were prepared to succeed in English composition (*Crisis at the Core*, 2004). In addition, only 42% of students graduate from high school with the skills to begin college, and among those who enter college, one in four is underprepared (Hornstein, 2004). Correspondingly, a growing number of institutions now offer developmental or remedial courses in response to student need. In fact, in 1995, a National Center for Educational Statistics (NCES) study found that, nationally, 100% of public two-year institutions offer developmental coursework and 78% of all colleges with first-year students offer these classes. Forty-one percent of first-year students at two-year colleges and 22% at four-year institutions are enrolled in developmental courses (Stephens, 2001). Similarly, 53% of respondents to the 2005 CCSSE indicated that they had either taken or plan to take a developmental course (McClenny, 2005a).

One in eight students needs remediation in reading (Adelman, 1996). Of these students, 65% need remedial courses in at least three additional areas, including math (Adelman, 1996), putting these students at greater risk of attrition. Adelman (1996) illustrated that while 55% of students who needed no remedial coursework and 47% of

students who needed only one remedial course went on to complete their bachelor's degree, only 24% of students who needed three or more remedial courses completed their degree.

The increased risk of attrition among students participating in developmental coursework is a significant concern among American institutions. This issue is of moderate importance for students needing remediation in only writing or intermediate algebra. However, when students need developmental coursework in reading, basic arithmetic, or a combination of subjects, their risk of not achieving their academic goals significantly increases. Bittenham, Cook, and Hall (2003) and Boylan (1999) found that without special intervention, only 10% of these students will finish their bachelor's degrees. No specific data was found on the percentage of developmental students who complete their associate's degree.

#### *The Characteristics of Underprepared Students*

The population of underprepared students is not easily described or categorized (Higbee, Dwinell, McAdams, Goldberg, Belle, & Tardola, 1991). Moore and Carpenter (1985, p. 100) concluded "that the academically underprepared student pool is large and diverse in terms of age, socio-economic condition, previous academic performance, standardized test scores, and emotional health, and is enrolled in colleges and universities of all types nationwide."

While recognizing their diversity, McCabe (2003) found that, regarding demographic characteristics, the underprepared student population generally is more female than male; while ranging in age, but with more than half being age of 24 or greater. They are often financially disadvantaged; primarily white (although a greater

proportion of the Hispanic and African American students attending college are underprepared). In addition, they are both married and single and are as likely to be parents as non-parents. McCabe found that one-third of underprepared students are deficient in only one area, a third in two areas, or a third in all three areas; further the level of their deficiency varies tremendously. McCabe concluded that although demographically they are similar in their diversity to the overall population of community college students, there is evidence that they have a more difficult time integrating socially and academically; that they are more uncertain of their goals; that they have less academic direction; and that they share many of the non-cognitive characteristics seen in first-generation and minority students. He also concluded that these students are less prepared for taking the institutional steps required for registration or financial aid (McCabe, 2003).

In their study of developmental students at the Community College of Denver (CCD), Roueche, Roueche, and Ely (2001) found that while developmental students tended to be similar demographically with the overall college population, the two groups differed significantly in other ways. Developmental students at CCD were more likely to be high school dropouts, students with learning disabilities, adult workers returning to school for retraining, and students whose first language was not English. Roueche, Roueche, and Ely also found that poverty was common among developmental learners. Turning to non-cognitive variables, they found that developmental students often suffered from lack of confidence, fear of failure, and feelings of anger toward a school system that they feel failed them. From these findings, Roueche, Roueche, and Ely concluded that

underprepared students need not only academic preparation, but personal developmental assistance as well.

Grimes and David (1999) found that the attitudes, values, and self-expectations of underprepared students affect their academic preparation. Their study is based on Tinto's retention model, which states that family background, individual attitudes, and secondary preparation, combined with the student's goals, commitment, and the institutional structure, determine the likelihood of success. Grimes and David's survey of 500 community college students found (1) that no significant demographic differences existed between underprepared and college-ready students; (2) that underprepared students took fewer years of math, science, and foreign language in high school; (3) that underprepared students planned for fewer years of college, limiting their goals to associate degrees, while college-ready students aspired to bachelor's and graduate degrees; (4) that underprepared students rated their academic ability, intellectual self-confidence, and emotional health lower than college-ready students, while showing no significant difference in ratings of physical health, competitiveness, leadership ability, social self-confidence, or artistic ability; (5) that underprepared students spent more time watching television and partying, while college-ready students spent more time going to religious services, discussing politics, and socializing with ethnically diverse groups; (6) and that underprepared students indicated an expectation to fail one or more courses, to need extra time finishing their degree, and to need tutoring services.

Grimes and David (1999) concluded that because underprepared students have such different affective and experiential ratings, their success is predicted by more than just academic preparation. To ensure the success of underprepared students, colleges

must take a holistic approach and address both students' academic and personal development, as well as their skills deficits (Grimes and David, 1999).

Higbee et al. (1991) found that colleges must address the non-cognitive needs of underprepared students. They concluded that personal issues such as self-consciousness, isolation, concerns about financial or family matters, and unrealistic choices about classes and majors act as barriers to their success. Issues of motivation, self-esteem, aptitude, and integration into the college environment all influence their ability to achieve academic success. Higbee et al. stated that students' non-cognitive needs must be met before they can succeed and persist in an academic environment.

The 2005 CCSSE survey found that developmental students were more likely than prepared students to take advantage of college support services designed to meet their non-cognitive needs. Modeled after the *National Survey of Student Engagement*, the CCSSE has been administered for five years. In 2005, the CCSSE was administered to 133,281 students at 257 community colleges in 38 states (McClenny, 2005a). While the survey found that high-risk students, such as underprepared students, were more engaged than prepared students, it also found that they have lower aspirations, lower grades, and lower persistence rates than other students. "In other words, they are working harder, but achieving lower results" (McClenny, 2005a, p. 3).

#### *Defining Developmental Education*

Developmental education refers to a holistic approach to student education and personal development. Rooted in developmental psychology, the foundations of developmental education assert that educators must build both personal and academic skills to mold college-ready students. The term "developmental education" came into use

in the 1960s when educators realized that poor academic achievement was caused by a variety of non-cognitive factors, such as locus of control, level of autonomy, and self-efficacy (Gardner, 2000). The most common component of developmental education programs is the remedial course. Remedial courses are pre-college in level or are courses used to fill gaps between high school and college-level work. Developmental education combines remedial courses with advising, counseling, and tutoring services (Boylan, 1988a; Boylan, Bonham, & White, 1999).

Boylan (1988b) proposed that there are several psychological approaches used in developmental education, including behaviorist theory and developmental theory. Behaviorist theory uses positive or negative reinforcement to elicit the desired learning outcomes, while developmental theory assumes that students are at different levels of personal development. According to developmental theory, for education to be successful, students must be accepted at their developmental level and allowed to progress from there.

#### *Developmental Theory*

In *Education and Identity* (1969), Chickering presents his theories for the development of late adolescents. Chickering divided late adolescence into seven stages of identity development, which he called vectors (Chickering, 1969; Knefelkamp, Widick, & Parker, 1978; Martin, 2000). According to Knefelkamp et al. (1978), Chickering's seven vectors include (1) developing competence, (2) managing emotions, (3) developing autonomy, (4) establishing identity, (5) freeing interpersonal relationships, (6) developing purpose, and (7) developing integrity. Chickering theorized that colleges can assist students to develop through these vectors by exposing them to interaction with diverse

groups of people, giving them varied experiences, asking them to solve complex social and intellectual problems, requiring them to make choices, and teaching them to self-assess the feedback that they are given. Chickering's studies were based on traditional-aged, residential students attending small liberal arts colleges (Reisser, 1995).

In *Education and Identity* (Chickering & Reisser, 2<sup>nd</sup> ed., 1993), Chickering's earlier research was reexamined and adapted to a more diverse student population. Changes in the later edition involved relocating the placement of the establishing healthy relationships vector to an earlier position in the developmental sequence. In reviewing the literature, Reisser (1995) reports the finding of Straub and Rogers (1986), who found that female students received higher scores on the Student Development Task and Lifestyle Assessment's (SDTLA) relationship scale than on the autonomy scale, suggesting that women achieve autonomy in their relationships before achieving autonomy as a whole. Thus, in the second edition, Chickering and Reiser moved the relationship vector to a position just before the establishing identity vector, rather than a position just after it to clarify this change in the developmental stages.

Terenzini, Pascarella, & Blimling (1999) show that there is a large body of literature dedicated to student development during the college years, especially in the area of psychological development and its relationship to non-academic experiences associated with being a college student. Much of this literature deals with experiences like those of living in residence halls, participating in fraternities or sororities, playing intercollegiate athletics, working while in college, and interacting with faculty and peers (Terenzini et al, 1999; Kuh, 1995). While not all of these experiences affect psychological development in the same way, Astin, as reported by Terenzini et al., stated



that interaction with peers was the single most important influence on the development of college students. Terenzini et al. temper this assertion by agreeing that interpersonal interactions, with either peers or faculty, are important sources of influence on student development, but that the results are affected by the level and type of interactions. They state that development is advanced when students have the opportunity to interact with people and ideas that are different from themselves, but that development can be impeded when students isolate themselves from new ideas and people.

The findings of Martin's (2000) study of entering freshmen from a small, religiously affiliated liberal arts college supported Chickering's theory that student-faculty interaction influences development. Using the SDTLA, Martin found a relationship between student-faculty interactions and the vectors of developing competence and developing purpose. Other factors, such as involvement on campus and the influence of the college environment were also found to contribute to the development of these vectors.

Gerdes and Mallinckrodt (1994) examined Chickering's statement that adjustment to college is a complex combination of social, academic, and emotional adjustment. In their study of 209 entering freshmen from a large public university, Gerdes and Mallinckrodt (1994) tested the relationship between actual and anticipated adjustment to college and retention. They found that students tend to overestimate their academic and social ability to adjust, while underestimating their emotional ability to adjust. Their findings support theories that personal adjustment as well as academic and social integration are important to retention (Gerdes and Mallinckrodt, 1994).

Most of the existing research has been conducted on traditional-aged students at residential colleges. However, there is a growing diversity among college students, including those who attend part-time and must balance work, family, and educational responsibilities, (Pascarella & Terenzini, 1998). There are also a growing numbers of underprepared students. This growing diversity presents concerns and situations not explored in the existing research. One study by Graham and Donaldson (1999) compared the influence of involvement in college between traditional-aged and adult students. For this study, traditional students were defined as being aged 18 to 22, while adults were defined as being aged 27 and older. They found that while adult students, particularly those attending part time, were less likely to be involved in campus activities, they were highly involved in the classroom and their resulting levels of growth were higher than that of younger students. Caberera, Crissman, Bernal, Nora, Terenzini, and Pascarella (2002) studied the influence of collaborative learning on student development. Their study is based on Tinto's (1999) theories that that the classroom is the place where students experience both academic and social interaction; that for many students, especially part-time and commuter students, the classroom is the only place to achieve such integration; and that classroom involvement in the form of cooperative learning can have positive effects on persistence. Their population included 2050 second-year college students from 23 four-year institutions of various types. Caberera et al. specifically examined Chickering's vector of developing mature interpersonal relationships. They defined a student's ability to respond openly to a diverse group of people as an example of developing mature personal relationships. Their study found that students involved in cooperative learning activities grew in their ability to develop mature relationships.

Boylan (1986a, 1986b) wrote that developing identity is a critical function of the college experience. He found that for underprepared students, identity development may be happening for the first time with younger students or may be being repeated with older students returning to college after some dislocation or life change. For underprepared students, identity development is threatened by past negative academic experiences or failures or by a negative academic self-image. Boylan (1986a) stated that educators should provide meaningful interactions with faculty and other students in the classroom to encourage personal development, which will in turn promote academic development. Boylan (1986b) discussed that facing and overcoming challenges was an important aspect of Chickering's theory of development. He described Chickering's Conditions of Impact model for personal development and suggests that this model should be the basis of any developmental education program. Boylan (1998b) concluded that underprepared students will be more successful academically if they develop a sense of autonomy, competence, and identity.

*Adjustment and Development Studies on Developmental Students*

While the literature on the adjustment or developmental level of developmental students is limited, two studies address this issue. The first, *An Investigation of Developmental Students' Adaptation to College* (Valeri-Gold, Deming, Callahan, Mangram, & Errico, 1998) was based on an analysis of developmental students at an urban university. This study used the Student Adaptation to College Questionnaire (SACQ) to measure developmental students' social and academic adjustment level. A secondary purpose of the study was to determine if there were significant differences in adjustment levels of developmental students who persisted and those who did not. The

study found that developmental students fell below the established mean for the instrument on all four subscales. These subscales measure academic adjustment, social adjustment, personal-emotional level, and goal commitment/institutional attachment. However, the study did not find any significant difference in the scores of those who persisted and those who did not. Valeri-Gold et al (1998) recommended intervention programs to help these students with personal, academic, and social adjustment. They specifically recommended the use of learning communities, faculty mentoring programs, and peer groups.

In her 1993 study, *Career Decision-Making Self Efficacy and Institutional Integration of Underprepared College Students*, Peterson examined the relationship between career decision making-self efficacy and social and academic integration of underprepared students. Using Tinto's model, she studied a population of 1,549 underprepared students at the General College, the preparatory division of the University of Minnesota. Peterson defined self-efficacy as "areas in which individuals perceive certainty and uncertainty about their ability to plan and execute educational, occupational, and personal goals and objectives" and career self-efficacy as that which "identifies how students perceive their ability to perform vocationally relevant tasks in an educational setting" (Peterson, 1993, p. 661). She pointed out that the existing research shows a relationship between career decision-making and retention. In her study, Peterson found that while career decision making-self efficacy was related to both academic and social integration, it was more strongly related to academic integration than social integration. She also found a relationship between career decision making-self

efficacy and initial goals and commitments. However, she did not do a longitudinal follow-up to determine how these findings influenced retention (Peterson, 1993).

### *Summary*

Retention is a significant concern for underprepared students, especially those with deficiencies in reading or in multiple subjects. While the need for remediation in colleges is not new and developmental programs have existed for more than one hundred years, there is still little consensus on the characteristics of underprepared students, especially those attending community colleges. The developmental programs used to prepare these students for college level work have taken a holistic approach of building both academic skills and personal development. While it cannot be argued that personal development is an outcome of the college experience, it can be illustrated that underprepared students enter college with a lower level of personal development than do prepared students.

However, little research has been conducted on the development or retention of underprepared students. The majority of existing research on this population is designed to justify the existence and need for developmental education. This research has been created purely to combat the myths and arguments that remedial education does not belong at the college level. Studies on retention that have been applied to developmental students have primarily indicated higher rates of attrition, but few have considered the theories of Tinto, Astin, or Bean in relation to these students. Even fewer have reviewed the influence of learning communities or integrated reading and writing courses on developmental English students.

## Major Retention Theories

### *Introduction*

Three major approaches to improving college student retention are prominent in the existing literature: Astin's theory of student involvement, Bean's student attrition model, and Tinto's student departure model.

### *Alexander Astin's Theory of Student Involvement*

#### *Basic theory*

Astin developed his theory of student involvement as a way of explaining the existing empirical evidence on the environmental influences that contribute to student development and retention. He defines student involvement as "the amount of physical and psychological energy that the student devotes to the academic experience" (Astin, 1999b, p. 518). He postulated that the amount that a student learns and develops as the result of an academic program is directly related to the quality and quantity of involvement that the student has invested in the program. He also asserts that the effectiveness of any educational policy or program lies in its ability to increase the level of student involvement (Astin, 1999b). Astin's theory promotes ideas of active learning. He stated that simply exposing a student to information or coursework is not enough. The student must become actively involved in the learning process. Related to this are his statements concerning the role of educators. He believes that it is not what the educator does that is important; but it is what the student invests in the form of time, energy and activity that matters. In many ways Astin's theory is a theory of student development, in which rather than posing ideas related to the level of development that a student achieves,

Astin is concerned with how that student develops and the effects that this development has on long-term retention (Astin, 1999b).

*Empirical research*

Astin's 1975 longitudinal study on retention, *Preventing Students from Dropping Out*, identified environmental factors that affect students' persistence. In that study, he found that all the factors that positively influenced retention could be explained by his involvement theory, while those factors that led to attrition were the results of lack of involvement. Factors that led to persistence included living on campus, joining sororities and fraternities, playing sports, enrolling in honors programs, working on campus, and participating in student government. However, he found that the factor that contributed most to student satisfaction and retention was frequent interaction with faculty (Astin, 1999b).

In reviewing his 1984 study, *Involvement in Learning*, Astin reexamined the theories and reported them in his 1993 study, *What Matters in College?* In publishing the data of this study, he reaffirms his earlier theory that involvement is the key to enhancing all areas of a student's cognitive and psychological development. In this study, he found that the three most important forms of involvement are academic involvement, student-faculty involvement, and peer involvement. His findings reiterate that actions such as living off campus, working off campus, and attending part time were examples of non-involvement, which negatively affected students' development, satisfaction, and retention. Based on this study, he recommended that students be given more opportunity for cooperative learning activities that would increase involvement with faculty and peers inside and outside the classroom (Astin, 1999a).

Astin's theories have been cited as part of the basis for several empirical studies. Kuh's *The Effects of Student-Faculty Interaction in the 1990s* (2001) found support for Astin's theory by stating that student-faculty interaction motivates students to devote more effort and energy toward educationally purposeful activities. Volkwien, King, and Terenzini's *Student-Faculty Relationships and Intellectual Growth Among Transfer Students* (1986) found that the quality of faculty interaction, inside and outside the classroom had significant influence on transfer students' intellectual development, but that in-class involvement had a stronger influence than out of class involvement. Graham and Donaldson's *Adult Student's Academic and Intellectual Development in College* (1999) found that while adult students' involvement was necessarily different from traditional students that colleges need to find ways to stimulate different types of involvement to promote adult learning, development, and retention. And, Miller and Gerlach's *A Study of Student Departure from Developmental Courses* (1997) used the data on attrition to recommend several programs to increase interaction and reduce attrition.

### *Implications*

The influence of living on campus, which Astin identified as a factor that contributes to persistence, has been tested in a number of studies. The literature shows that students who live on campus are more likely to get involved in social, educational, and cultural experiences at college and that student involvement on campus is influenced by living on campus (Pascarella, 1993). Pascarella (1993) added to this literature with *Cognitive Impacts of Living on Campus Versus Commuting to College*, a study that found that living on campus had significant positive effects on the level of student involvement



with faculty and peers. This involvement indirectly and positively affected the students' development. Living on campus had a stronger influence on interpersonal and social self-concept than on intellectual and academic self-concept. Of all the variables measured in the study, living on campus had the largest influence on involvement. This study is reinforced by the findings of Pascarella, Bohr, Nora, Zusman, Inman, and Desler (1993), who found that freshmen who lived on campus had greater cognitive growth than those who lived off campus and that interaction with peers and faculty was more likely to occur when students live on campus. Unfortunately, because of the commuter nature of most community colleges, students do not have the opportunity to develop the positive influences of residential interactions.

#### *John Bean's Student Attrition Model*

##### *Basic theory*

Bean's Student Attrition Model is founded on the idea that student attrition is similar to employee attrition in the workforce, thus building on existing organizational turnover research. Bean believes that the behavioral intentions to stay or leave are strong indicators of persistence. He proposes that behavioral intentions are affected by experiences within the institution as well as external factors (Cabrera, Castaneda, Nora, & Hengstler, 1992). In describing his model, Bean and Eaton (2002) recognize that students enter the institution with certain pre-formed beliefs and behaviors. Upon entering the institution, the student interacts with students, faculty, and staff, while continuing to interact with previous ties outside the institution. Students then become engaged in the college community as they achieve academic and social integration. To do this, they must assess their self-efficacy and determine whether or not they have the

ability to succeed. If their self-efficacy assessment matches the experiences that they find once they enter the institution, then they are likely to achieve social and academic integration and therefore persist. A student's ability to adapt to the institutional environment is an important component of his or her ultimate satisfaction, achievement, and retention.

### *Empirical research*

The orientation of a student's locus of control also determines the student's ability to integrate into the college community. Students with an internal locus of control are much more likely to find academic and social integration than those with an external locus of control. To support this, Guarino and Hocevar (2005) report that those with an internal locus of control are more likely to persist, make higher grades, be more committed to the institution, and be more academically integrated.

Bean and Eaton (2002) found that the academic and social integration achieved through self-efficacy assessment, adaptation skills application, and locus of control characteristics, combined with the institutional environment that they experience, determine the degree of "institutional fit." According to Bean and Eaton, a student's sense of institutional fit is directly related to his/her attitude toward persistence and ultimately whether or not he/she is retained (Bean & Eaton, 2002). If students feel as if they can do the academic work, and fit in, and that they want to graduate from a particular institution, then they are more likely to graduate from that institution.

### *Implications*

A 1991 study by Bers and Smith applied Bean's theory to community college students by using the Current Student Survey to measure students' reasons for attending

college, future educational plans, future enrollment plans, levels of social and academic interaction, and demographic data. Bers and Smith (1991) found that while levels of social and academic interaction did affect retention, that educational plans and objectives, intent to reenroll, and employment status had a greater impact on semester-to-semester retention rates, thus supporting Bean's theory.

#### *Vincent Tinto's Student Departure Model*

##### *Basic theory*

Tinto's original 1975 model and revised 1987 model were developed from Spady's application of Durkheim's theories of suicide and reviews of Van Gennep's studies of the rites of passage (Ashar & Skenes, 1993; Cabrera, Castaneda, Nora, & Hengstler, 1992; Haplin, 1990; Liu & Liu, 1999; Mutter, 1992; Tierney, 1992). Tinto's model posits that the more a student becomes socially and academically integrated into the college environment, the more committed to graduation that student will become, and the more likely that student is to be retained (Mutter, 1992). Tinto recognized that students enter college characterized by a host of variables including previous background, expectations, goal commitments, and institutional commitments and that these characteristics, along with the quality of social and academic interactions on campus, ultimately determine persistence (Haplin, 1990). Thus, Tinto's theory is a two-part theory of student attrition, examining both the influence of personal characteristics and the influence of student interactions (Guarino and Hocevar, 2005). But according to Tinto, "other things being equal, the higher the level of academic and social integration of the individual into the college systems, the greater will be [the] commitment to the specific institution and the goal of college completion" (Tinto, 1975, p. 96). In this

model, commitment to the institution is an important component that mediates between academic and social integration and retention (Beil, Reisen, Zea, & Caplan, 1999).

Inherent in Tinto's theory are the ideas of rites of passage (Bean & Eaton, 2002; Liu & Liu, 1999; Nora, 2002; Tierney, 1992; Tinto, 1987). Tinto (1987) describes the process that students go through as a three-step process of separation, transition, and incorporation in which students must separate themselves from past ideas and communities; transition to the new college environment; and incorporate new ideas, values and relationships into their lives. Bean and Eaton (2002) describe Tinto's belief that the inability of a student to make this transition will result in leaving the institution, while a successful transition will end in retention and eventual graduation. Nora (2002) asserts that while a student must be receptive to new ideas and relationships, according to her interpretation of Tinto, it is unnecessary for a student to disengage totally and reject the relationships and beliefs that were held before entering the institution. Furthermore, the key to a student's successful academic and social integration is the support of family and past friends for the successful transition to new ideas and relationships. This support plays an important role in a student's commitment to the institution, to his/her educational goals, and ultimately to his/her retention.

Liu and Liu (1999) add to this by postulating that socioeconomic status, age, sex, and race all play a role in students' abilities to move through these rites of passage. In their study (1999) of students from a medium-sized Midwestern commuter university, they found that there were no significant differences in retention based on gender, that race did influence retention, that younger students are more likely to be retained than older students, and that transfer students had higher rates of retention than did freshmen

who began at the institution. However, Tierney (1992) argues that Tinto's interpretation of Van Gennep's theories of rites of passage is not sound from an anthropological point of view. Tierney points out that Van Gennep's theories are based on the concept of integrating subjects within their culture of origin and that subjects do not have the option of not being integrated, of being non-completers. In Tinto's model, students are moving from their pre-college culture into a very different culture, that of the college environment. Tierney asserts that non-mainstream students, especially minorities and non-traditional students, are being asked to integrate into a culture that is not their own, and this, combined with the option of being non-completers is inconsistent with the anthropological concept of rites of passage. For developmental students, asking them to integrate into an educational environment in which they are already uncomfortable presents more challenges to retention than prepared students face.

#### *Empirical research*

Tinto's study *Classrooms as Communities* (1997a) expands his student departure theory by exploring the relationship of active, cooperative learning with his earlier theories. In this study, Tinto states that the classroom is the place where the academic and the social meet and that for many students, especially part-time and commuter students, the classroom is the only place to achieve academic and social integration. Referencing his earlier theories, Tinto explains that while we know that interaction is important to student success and retention, we do not know how different types of interaction affect retention. This study explores how cooperative learning in the form of a learning community, the Coordinated Studies Program at Seattle Central Community College, influenced learning and persistence. The study concluded that involvement does matter

and that classroom involvement in the form of cooperative learning can have positive effects on persistence (Tinto, 1997a).

The role of active learning was further tested in a study by Braxton, Milem, and Sullivan (2000). Braxton et al. (2000) surveyed 718 full-time freshmen at a highly selective, private research university. Students were surveyed during their freshman orientation, during fall semester of their freshman year, and during spring semester of their freshman year. This study found that active learning in the classroom yields statistically significant influences on social integration, institutional commitment, and students' intent to persist. Braxton et al. (2000) suggest that the role of faculty teaching and the level of students' active participation in the classroom are directions for future study and expansion of Tinto's model.

#### *Implications*

Tinto's model, based on Durkheim, Van Gennep, and Spady, has been extensively tested and "enjoys near-paradigmatic status, as indicated by more than 400 citations and 170 dissertations pertaining to his theory" (Braxton, Milem, & Sullivan, 2000, p. 569).

#### *Relationships Between the Major Theories.*

Several studies (Milem & Berger, 1997; Cabrera, Castaneda, Nora, & Hengstler, 1992; Nora and Cabrera, 1993) have examined the relationship between these three major theorists. For example, Milem and Berger (1992) examined the effects of seven independent variables taken from a combination of Astin's theory of student involvement and Tinto's student departure model on the dependent variable, persistence. In their study of first-time freshmen at a highly selective private residential university, they found that several different forms of involvement had an effect on students' levels of institutional

commitment and that those students who became involved in the first six or seven weeks of the semester were more likely to persist than students who were not involved early. They also discovered that involvement with faculty in and out of the classroom had an important influence on retention.

Cabrera, Castaneda, Nora, and Hengstler (1992) examined the relationship between Tinto's student departure and Bean's student attrition models. They recognized that while both models considered the concept of institutional fit in relationship to retention, the variables that contribute to a successful match between student and institution were different in each model. Tinto's model placed more emphasis on academic and social integration, while Bean's model concentrated on the role of external factors. Cabrera et al. sought to find convergent validity between the two theories. In a study of first-time freshmen who were unmarried, United States citizens, under the age of 24, at a large Southwestern urban university, they found that both models were correct in their theories that persistence is related to a complex interaction between the student and the institution; that retention is based on a match between the two; and that while each model contributed different constructs, both were important in achieving an overall understanding of retention. They concluded that a more complete understanding could be reached by combining the two theories.

Similarly, Nora and Cabrera (1993) sought to determine the congruence of the concept of institutional commitment between Bean's student attrition model and Tinto's student departure model. In a study of 2,453 first-time, full-time freshmen who were unmarried, United States citizens, under the age of 24, at a large urban commuter university, Nora and Cabrera (1993) measured the following variables as they related to

persistence: certainty of institutional choice, perception of institutional prestige, sense of belonging, perception of practical value of an education from the institution, loyalty to the institution, affinity of values between the student's values and that of the institution, intent to persist, and persistence. They found that institutional commitment and affinity of values were components of the same idea and that perception of institutional quality and perception of institutional fit were indicators of institutional commitment. While institutional commitment was shown to have significant influence on both intentions to persist and actual persistence, affinity of values did not predict either intentions or persistence. These findings uphold the theories of Tinto and Bean that institutional commitment influences persistence.

*Retention Research and the Changing American College Population*

In *How College Affects Students*, Pascarella and Terenzini reviewed approximately 2,600 empirical studies conducted between 1968 and 1988, including some of those discussed above. In 1998, they came to realize that this review no longer reflected a comprehensive picture of the American undergraduate population, because the previously studied populations were limited to “traditional” aged, white, full-time students at four-year residential institutions. This population is no longer representative of American undergraduates. More current data suggest that there is a growing diversity among college students, including those who attend part time and must balance work, family, and educational responsibilities (Pascarella & Terenzini, 1998). In reconsidering his theory, Tinto stated that while academic and social involvement matter, they “matter somewhat differently in different educational settings and may influence different students in different ways” (Tinto, 1998, p. 169).



When applying the social and academic integration aspects of Tinto's model to non-traditional students at both four-year and two-year colleges, studies have found a range of conflicting and contradictory results. Guarino and Hocevar (2005), Halpin (1990), Kuh and Hu (2001), and Tinto (1998) found that academic integration had a greater effect than social integration, while Asher and Skenes (1993), Bers and Smith (1991), Summers (2003), and Whitt, Edison, Pascarella, Nora, and Terenzini (1999) discovered social interaction was more important than academic interaction. Napoli and Wortman (1998) concluded academic and social integration positively affect retention, while Borglum and Kabala (2000) did not find a relationship between academic and social integration and withdrawal rates.

Subsequent research was undertaken to better understand these apparently contradictory findings. For example, in a longitudinal *ex post facto* study of freshmen taking summer orientation at a large selective public research university, Terenzini and Wright (1987) found that social integration did not contribute significantly during the freshman and sophomore years but did contribute in the junior and senior years. They also found that while academic integration was the most important influence on retention and achievement during the freshman year, it declines in importance by the junior year and is replaced by social integration. They did conclude that academic and social involvement in all years had a positive cumulative effect on success in later years. In a study of 512 full-time freshmen at a mid-sized private research university, Beil et al. (1999) postulated that academic and social involvement do not directly influence retention, but they do influence the level of commitment that the student makes to the institution and that it is commitment, not involvement, that determines retention. They

also state that it is difficult to distinguish between the influences of academic and social involvement because there is a high degree of statistical covariance between the two influences. Whitt et al. (1999), in a study of 18 four-year and 5 two-year colleges located in 16 states, echoed Tinto's assertion that involvement is the single most important determinant of college outcomes when they found that social integration had a greater influence than academic integration.

*Why Community College Research Focuses on Tinto's Model*

The available studies of persistence done on community college students test the application of Tinto's theory with varying results (Halpin, 1990; Mutter, 1992; Napoli & Wortman, 1998; Borglum & Kubala, 2000). This concentration on Tinto's model may be related to the fact that of the three major theorists, he is the only one who has written extensively and specifically about community college students. Much of this writing (Tinto & Russo, 1994; Tinto, 1997a; Tinto, 1998) has centered on the fact that because of time constraints and other barriers, the classroom may be the only place that community college students can achieve social and academic involvement, highlighting the impact of active and cooperative learning in the classroom, including programs such as learning communities. Tinto and Russo's (1994) study, Tinto's (1997a) study on the Coordinated Studies Program at Seattle Central Community College, and Tinto and Love's (1995) study at LaGuardia Community College revealed that participation in a classroom-based learning community helped students develop a social support system of peers, bonded them to their faculty and to the college, and engaged them in the academics of the program. These characteristics were all found to contribute to continued attendance and participation, as students were able to bridge the academic and social gaps experienced

by many community college students. For Tinto, the most important revelation of these studies was the reaffirmation that involvement matters and that social and academic involvement can be achieved in a place where “going to college is but one of a number of tasks to be completed during the course of the day. Yet, even in that setting, collaborative learning ‘works.’ Indeed, it may be the only viable path to greater student involvement” (Tinto, 1997a, p. 614).

#### *Tests of Tinto’s Model on Community College Students*

Halpin (1990) tested Tinto’s model on community college students. He studied first-time, full-time, degree seeking students at a small, rural, nonresidential community college in New York state. A questionnaire based on Pascarella and Terenzini’s 1980 study was mailed to the students. This questionnaire measured student’s experiences and perceptions of college, using a 30 question, Likert scale format that included information on peer relationships, informal relationships with faculty, academic and intellectual development, faculty concern for teaching, and institutional and goal commitment. With a 76% return rate from the survey, Halpin determined that Tinto’s model does apply to retention at this community college and that academic integration had a greater impact than did social integration. Based on these findings Halpin suggests that community colleges can increase persistence by providing mechanisms for greater faculty contact in the form of smaller, more interactive classes; more faculty office hours, active advising systems; and a more accessible, involved faculty. However, it should be noted that this study is limited by the fact that only full-time, degree seeking students were included in the study, thus disregarding the diversity found in part-time and undecided students, who make up a majority of community college students, and therefore creating a study that

more closely mirrors the traditional four-year commuter institution than a typical community college setting.

Mutter (1992) tested Tinto's model at a large Midwestern community college. For this study, she used the Student Involvement Questionnaire III (SIQ III). The SIQ III is the third generation of the survey developed in 1980 by Pascarella and Chapman for a project at the University of Michigan, and further modified as the SIQ II to test Tinto's theory at the University of Ohio. The SIQ III was adapted for community college use by removing questions related to residential student experiences. The sample consisted of 872 persisting students and 577 nonpersisting students randomly selected from all degree-seeking students who had completed at least 15 credits of coursework. She received a 52.8% return rate on the instrument. From her results, Mutter concluded that social integration did not influence retention in this study, but that academic integration, including conversations with faculty, staff, or advisors on academic or career concerns, did contribute to retention. Mutter also found that goal commitment and institutional commitment were important to persistence and that those who persisted were more strongly encouraged by significant others than those who did not persist.

Napoli and Wortman (1998) tested Tinto's theory at a large multi-campus community college in New York state, considering specifically students' initial goals and institutional commitment, level of social and academic integration, end-of-term goal and institutional commitment, and level of persistence. They randomly sampled first-time, full-time, day students from each of the three campuses, using several measures administered in three applications. Napoli and Wortman concluded that academic and social integration, institutional commitment, and goal commitment do influence

persistence, but that negative events experienced on campus have a greater impact on retention and the decision to withdraw than do the positive influences of academic and social integration, institutional commitment, or goal commitment. Napoli and Wortman also determined that external demands have a significant negative influence on retention and that due to the added pressure of adjusting not only to college but to the external demands placed on them, community college students are less likely to persist than four-year students. While this study upholds Tinto's theory, it also makes new contributions by exploring the psychological and adjustment factors that influence retention. However, it is limited in its generalizability to other institutions because of the specific nature of the sample used.

Bers and Smith (1991) examined the correlation between academic and social integration and persistence at a mid-size, suburban community college in the Midwest with a secondary goal of determining the validity of an instrument designed to test academic and social integration on a four-year campus when applied to two-year community college students. Using a random sample of all enrolled students, including both full-time and part-time students, Bers and Smith administered the Current Student Survey (CSS), which measures goals and educational plans, future enrollment plans, and demographic information. Embedded within the CSS was the 1980 Institutional Integration Scale developed by Pascarella and Terenzini to assess academic and social integration. Bers and Smith found that while academic and social integration did influence persistence, social interaction made a greater contribution than did academic integration. This finding was tempered by the fact that neither academic nor social integration influenced retention as much as other factors such as educational goals,

persistence intentions, pre-college characteristics and employment status, thus supporting Tinto's theory, but giving more credence to Bean's theory. Bers and Smith caution that traditional definitions of retention should be used carefully and that the context of student goals should be considered, including the fact that graduation is not always a mark of success for community college students that for some successful completion of several classes followed by job attainment are more important than graduation.

*Retention Studies on Developmental Students at Community Colleges*

Borglum and Kubala (2000) tested Tinto's model at a large multi-campus community college in Florida. In addition to researching the application of Tinto's theories of social and academic integration, Borglum and Kubala explored the difference in retention rates for students who entered underprepared and those who enrolled ready for college-level courses. Participants included all second semester, degree-seeking students taking between nine and fifteen credit hours. Students' level of academic preparation was measured by the college's Computerized Placement Tests (CPTs), which contain tests of algebra, college level math, arithmetic, reading, and writing skills. The survey used was not described but led to the conclusion that there was no relationship between academic and social interaction and withdrawal rates, but there was a relationship between student goals and intentions and retention. The study also indicated that most of the students surveyed expressed satisfaction with their college experience. In addition, Borglum and Kubala found a significant relationship between students' levels of academic preparation and their withdrawal rates.

Claggett's (1996) study of students at a large suburban community college in Maryland revealed that students testing into developmental coursework were less likely

to succeed than those needing no developmental courses. Taking into consideration the diversity of community college students' goals and intentions, Claggett divided students into eight typologies based on their college standing and goals, including those who received a degree and transferred, those who transferred before receiving their associate's degree, those who were awarded their degree but did not transfer, sophomores in good standing, achievers (a combination of the first four groups), persisters (those still enrolled), non-achievers (those who left without completing a degree and without transferring to another institution), and students with special motives who did not intend to complete a degree. He further broke these groups into full time and part time enrollment status. Claggett's findings show that in all four groups of achievers and persisters, students needing no developmental coursework were significantly more successful than those needing developmental math and one or more other developmental classes. Within these groups, developmental and non-developmental students who enrolled full-time were significantly more successful than those enrolling part-time. More specifically, of the full-time students needing no developmental courses, 56% were achievers; while only 17% of full-time students needing developmental courses were achievers. Forty percent of full-time students needing no developmental work were non-achievers; while 76% of those needing developmental work were non-achievers.

While the above studies have discussed the higher incidence of attrition among developmental students, only a few studies were found that tested the concepts developed by any of the three major theorists on developmental community college students. These studies include one by Zhao (1999) at Prince George Community College (PGCC) in

Maryland and one by Miller and Gerlach (1997) at the University of Toledo Community and Technical College.

In his review of the literature, Zhao (1999) concluded that research on the retention of developmental students was insufficient and that the numbers of underprepared students in American higher education today signified the need for more studies. Zhao's study was a longitudinal study of 1,249 degree-seeking students at PGCC whose placement test scores identified the need for one or more developmental courses. These students entered the college in 1994. The study measured the outcomes they had achieved by 1998. The study was designed using Astin's model. The students in the study were primarily female, non-white, and under 20 years old. Students in the study were classified based on their academic outcomes in 1998 as either achievers or non-achievers. Achievers were defined as those who had completed a degree, transferred to a senior institution, or completed 30 credits with a cumulative grade point average of 2.0. Non-achievers were those who did not meet one of the requirements for achievers. While Zhao never indicated what percentage were found to be achievers or non-achievers, he did find six statistically significant predictors of academic achievement. Those predictors are credit hours earned, academic standing, cumulative grade point average, course load, number of developmental courses taken, and race or ethnicity (Zhao, 1999). This study provides indicators that might help colleges determine which students are in need of special support services.

Miller and Gerlach's (1997) study was initiated to define why 31-35% of developmental students at their medium-size, urban community college in Ohio were leaving before completing their developmental courses. In reviewing the literature, Miller



and Gerlach were unable to find any studies which focused purely on the reasons for attrition of developmental students. Citing both Astin and Tinto in their literature review, Miller and Gerlach developed a two-step study. The first step involved surveying all students who had dropped out of a developmental course during the semester under consideration. With a 43% return rate, they were able to create demographic data of the non-persisters, to catalog self-reported reasons for quitting, and to identify levels of interaction among the students surveyed. The most frequently given reason for quitting was family problems. In addition, 68% indicated that they sought no tutoring assistance even though free, conveniently scheduled tutoring was available. Sixty-one percent stated that they did not interact with faculty outside of the classroom. Of these students, one third left without knowing if they were passing their classes and 35% of those who quit knew that they were passing when they left. Given this information, Miller and Gerlach developed three separate programs to enhance retention of developmental students. The first was a one-time telephone intervention program. While initially promising, this program yielded no significant sustainable effects on retention. The second intervention strategy was a mentoring program, where students were assigned in groups of four to a mentor who met weekly with them to discuss issues such as time management, college resources, test taking, and ways to interact more positively with faculty. Eighty-seven percent of students participating in this program were retained in the course. Of those, 21 of the 23 were still in school two semesters later. This was significant when considering that only 65-69% of developmental students at the college complete developmental classes.

The third program was a skills enhancement program designed to help students while enrolled in their first developmental class. This eight-week course consisted of four hours a week of seminars on study skills, college survival strategies, computer skills, parenting skills, and career opportunities. Emphasis was placed on teaching students to establish high-quality interaction with faculty and staff. Students were assigned an advisor, with whom they worked weekly on academic and personal problems as well as goal-setting strategies. Initial success has been promising. Fifty-seven percent of students, who after completing the program were retested using an alternate form of the placement test, waiving at least one of the required developmental courses and 84% of participants were retained a year later. Based on the success of the second and third programs, Miller and Gerlach (1997) determined that when a college makes significant efforts to increase meaningful interaction with faculty and staff, developmental students are retained at a significantly higher rate than the college average for retention of developmental students.

#### *Summary of Retention Theories*

The theories of retention posed by Tinto, Astin, and Bean present different but overlapping ideas on why students remain in college or leave college. These theories were originally formulated and tested on traditional four-year institutions, but in recent years have been applied to non-traditional students, students at two-year institutions, and developmental students. A common thread in all three theories and their application in traditional and non-traditional settings is the role of academic and social integration on the development, satisfaction, achievement, and retention of students.

## Learning Communities

### *Defining Learning Communities*

Learning communities represent one academic organizational structure that has proven effective in increasing the level of academic and social interaction. Minkler (2002, p. 2) defines a learning community as a way of “deliberately structure[ing] the curriculum so that students are more actively engaged in a sustained academic relationship with other students and faculty over a longer period of time than in traditional course settings.” By comparison, Tinto defines learning communities as any time students are intentionally registered for two or more of the same classes. He found that learning communities are often organized around a central theme. Thus, learning communities provide students with the opportunity for shared and connected learning or learning that is shared by the same group of students and connected by a theme (Tinto, 1997b).

Generally speaking, learning communities are designed to meet specific local and institutional needs. However, most learning community formats are organized around the following characteristics defined by Shapiro and Levine (1999):

1. Faculty and students are organized into small groups.
2. The curriculum is structured and integrated.
3. Students establish academic and social support networks.
4. Students are given a setting to define the expectations of college life.
5. Faculty collaborate in meaningful ways.
6. Faculty and students work together on specific learning outcomes.
7. Academic support services are provided.

### *Active and Cooperative Learning*

Active and collaborative learning constructs are a central theme of learning communities. Cooperative learning is defined as students and faculty actively working together in a non-competitive environment to achieve shared learning goals. Founded on the principles of Socrates' famous "art of discourse," the apprenticeships from the medieval craft guilds, John Dewey's theories of education, and the concept of gestalt psychology, cooperative learning occurs when students work together to achieve the goals of the group. The group mentality serves to boost the confidence levels of students, thus increasing their self-esteem and potential of academic success (Johnson, Johnson, & Smith, 1998). Tinto (1997b) found that collaborative learning in a learning community enhances satisfaction, achievement, and retention. Collaborative learning is effective because rather than using the traditional lecture format, it forces the students to take a more active and responsible role in the learning process, "causing students to look forward to the class, to feel respected and needed in the pursuit of knowledge, and to respect and rely upon each other in these endeavors" (J. H. Gill, as cited in Minkler, 2002). Cross (1998) described the basis of cooperative learning as being the concept that knowledge is socially constructed by people working together rather than being formed through scientific discovery or being transferred by an authoritarian teacher passing along knowledge to students. Instead, knowledge is something that teachers and students build together. Cooperative conversations help students make sense out of ideas. This concept of socially constructed knowledge highlights the value of active over passive learning, of collaborative over individual learning, and of cooperative over competitive learning (Cross, 1998).

### *History of Learning Communities*

The characteristics defined by Shapiro and Levine and the concept of learning communities can be traced back to the philosophies of John Dewey, Alexander Meiklejohn, and Joseph Tussman. Dewey stressed the democratic role of education and close interaction between students and their teachers. He also promoted the concepts of cooperative and active learning (Dewey, 1916). Meiklejohn created one of the first organized learning communities in 1927 with his Experimental College at the University of Wisconsin. Like Dewey, he stressed the importance of preparing students to be citizens and built his program around the ideals of democracy and social function. Tussman, a student of Meiklejohn, implemented the learning community concept at Berkeley in 1965. There, he saw the role of the research university conflicting with teaching undergraduates and wanted to provide a strong foundation for first-year students. He structured the curriculum as a collaborative, interdisciplinary process (Minkler, 2002; Shapiro and Levine, 1999). Since that time, learning communities have been used with many different groups of students. Learning communities are often used with first-year students in the form of freshman interest groups (FIGs) to improve retention, with minority groups to foster inclusion, within specific disciplines to promote the culture of the profession, and with underprepared students to enhance confidence and retention (Shapiro and Levine, 1999).

### *Retention Studies on Learning Communities*

Much has been written about the relationship between learning communities and retention. Cross (1998) compared learning communities to the retention theories of Astin and Tinto. Her research indicates that learning communities are valuable because they

promote frequent interaction with faculty and other students inside and outside of the classroom, which research has shown causes students to be more likely to be satisfied, to achieve, and to persist. Cross cites Tinto and Russo's 1994 study of the Coordinated Studies Program at Seattle Central Community College as an example of the success of learning communities in promoting interaction. This study (Tinto and Russo, 1994) compared students in the coordinated studies program with students taking similar non-learning community classes. They found that students in the learning community had a more positive outlook, were more involved, and had a greater appreciation for diversity. Tinto and Love (1995) had similar findings in their study of learning communities at LaGuardia Community College. They compared learning community students and traditional students over the period of their first year in college. They concluded that students involved in the learning community had a more positive perception of their college experience, had completed more credits, had higher grade-point averages, had a slightly higher retention rate, and had a significantly higher rate of intention to continue their studies beyond their first year. These students identified group work and collaboration as important components of the learning community.

Rendon (1994) extended this concept by saying that non-traditional students are not likely to become involved on their own. Offering involvement is not enough; colleges must intrusively provide opportunities for involvement. She found that learning communities not only provided the opportunity for involvement but also helped students make the transition to college and develop positive attitudes about their education. Her study also found that learning communities enhance retention. Just as learning communities increase interaction and retention, Smith and Hunter (1988) found that

learning communities also revitalized faculty by giving them the opportunity to collaborate with other faculty.

Shapiro and Levine (1999) cataloged studies at the University of Missouri-Columbia, the University of Southern Maine, the University of Wisconsin, and Bowling Green State University, concluding that learning communities increase student involvement. They also listed studies at Temple University, the University of Missouri-Columbia, Indiana University Purdue University Indianapolis, and the University of Maryland that found learning communities increased achievement and retention.

### *Summary*

Learning communities are a structured form of learning where students take more than one class together (Cross, 1998; Minkler, 2002; Shapiro and Levine 1999; Tinto, 1997b). Learning communities have been demonstrated to increase social and academic interaction between students and faculty and students and their peers. This increased interaction facilitated by cooperative learning has been found to result in more positive perceptions of students' academic experiences, greater academic achievement, and higher rates of retention (Cross, 1998; Rendon, Smith & Hunter, 1998; Tinto, 1997b; Tinto & Love, 1995; Tinto & Russo, 1994).

## Integrated Reading and Writing Courses in Developmental Education

### *Introduction*

One way to create a learning community intended to promote the retention of developmental English students is through the use of an integrated reading and writing course. As described in his 1994 dissertation entitled *Revising English 01: The Creation of a Developmental Reading and Writing Course*, John Capps developed English 07 for

the Virginia Community College System (VCCS). English 07 was developed to help students make the connection between reading and writing as interrelated skills. This class also seeks to create a relationship between reading and writing and other areas of the curriculum as well as life outside the educational institution. Capps stated that “students’ [developmental English and] general education requirements remain a scattered array of classes whose relationship to one another—and to life beyond the academy—remains either invisible or non-existent” (Capps, n.d., p. 2) and that “at the heart of both Emerson’s and Thoreau’s philosophies of education lies the conviction that education must be capable of translating itself over and over again into real world concerns” (Capps, n.d., p. 1).

#### *Theoretical Basis*

Many of the theories which form the basis of English 07 were predicated on past theorists such as Mina Shaughnessy. Mina Shaughnessy was the director of the SEEK (Search for Education, Elevation and Knowledge) program at the City College of New York (CCNY) during a revolutionary period in remedial education, the late 1960s and early 1970s. In the early days of CCNY’s open admission policy, Shaughnessy was an advocate for underprepared students, stating that they did belong in a university setting and that they could learn to write. She believed that students learn to write not through a traditional lecture format but by actively writing. Through a long-term analysis of student writing, she sought to explain why students made the same errors over and over again in their writing and how they could overcome these errors (Reeves, 2001-2002). She accepted errors in writing as a normal part of learning, stating that basic writing “students write the way they do, not because they are slow or non-verbal, indifferent to or



incapable of academic excellence, but because they are beginners and must, like all beginners, learn by making mistakes” (Shaughnessy, 1977, p. 5).

*English 07 in the VCCS*

Based on Shaughnessy’s confidence in the ability of beginning writers to overcome their errors and improve their writing through active participation in the writing process, English 07 was proposed as a revision to the traditional approach to teaching reading and writing. Using Shaughnessy’s belief that not only students, but teachers must change, Capps (1994) proposed that teaching developmental reading and writing classes as skills-based programs with an emphasis on product and not process must be revised.

The traditional VCCS English 01 (writing) and English 04 (reading) skills-based classes were criticized as being too passive, creating learners who are dependent on the teacher for the correct answers. Capps (1994) explained that reading, done simply to define the thesis, and writing, done simply to extract correct grammar, are closed activities that have a right or wrong answer. They are teacher-centered activities and artificial exercises, forcing the students on a quest for the right answer but not asking them to think beyond that answer. They are exercises that pressure at-risk students and, when not accomplished successfully, negatively impact their already weakened academic confidence. Instead of closed, skills-based classes, Capps proposed open, student-centered activities. Student-centered activities ask students to actively discuss their own interpretation to a text they have read or to write with an emphasis on the ideas that are presented, not focusing on the grammatical errors they make. This is not to say that the

mechanics of writing are not important, but they are less important than giving developmental students a voice with which to express their ideas (Capps, 1994).

The skills-based approach of English 01 and 04 was cited as forcing at-risk students into isolation in their learning, preventing them from developing a sense of community, and asking them to motivate themselves. This concept contradicts research that suggests that literacy is a social activity and that students need external motivation to succeed (Capps, 1994). By removing the closed format and opening learning to discussion and collaborative activities that bring personal meaning into the reading and writing processes, English 07 sought to create not only a sense of community in the classroom, but external motivation to strengthen students' confidence and illustrate to them that they are capable of college-level reading and writing. "They need to see that reading and writing are purposeful, not peripheral--that the reading and writing which characterize an English class extend beyond the walls of the classroom and embrace the deepest levels of being" (Capps, 1994, p. 165).

The primary revision proposed for English 07 was that developmental reading and writing must not be taught in isolation from one another, but must instead be taught as related processes. Capps quoted Bartholomae who said that "a reading course is necessarily a writing course and writing course must be a course in reading" (as cited in Capps, 1994). To integrate reading and writing, Capps defined reading and writing as a recursive three-step processes. The reading process includes previewing, reading, and reviewing, while the writing process includes pre-writing, drafting, and revising. There is a relationship between each step in the reading process and the corresponding step in the writing process. Each step requires that students both actively read and write to

successfully accomplish that stage of the process. For example, the reading stage in the reading process should be accompanied by annotation of the text: writing in the text as it is read (Capps, 1994).

Capps also proposed that the purposes of reading and writing are to stimulate the students' natural process of reflection and communication. Thus, he suggested teaching English 07 using a thematic structure that asks students to progress from subjective and autobiographical activities that deal with the student as an individual to more objective and analytical activities that consider the student's relationship to others and to society. This approach brings personal meaning into the class and allows students to gain confidence as they slowly begin to read and write in a more academic style, "...giving students the voice they must have if they are to be successful in college and career and life. Given that voice, they can then begin to teach themselves and, perhaps for the first time, to participate in their own education" (Capps, 1994, p. 100).

#### *The Modern SEEK Program and Support for English 07*

Modern theory supports the ideas behind English 07. An anonymous author (1999) wrote of the work of Henry Levin and Bill Koski, who suggest that the "drill-and-practice" approach common to most remedial courses should be linked to college-level content courses. The translations from skills-based to content-based learning enhances persistence and academic performance. Levin and Koski also state that programs that work to improve the critical-thinking skills of underprepared students aid in performance and persistence.

Wendy Maloney (2003) echoes the ideas developed for English 07. Fittingly, she teaches in the SEEK program at CCNY. Maloney describes three goals that she has set

for her program: “(a) teaching students to take control of their learning through active, meaningful reading and writing; (b) shifting myself from the locus of authority; and (c) freeing students to be critical of texts from the perspective of their experience” (Maloney, 2003, p. 8). In her description of the practical implementation of these goals, Maloney discusses many of the same ideas that were proposed for the VCCS’s English 07, including an active, cooperative learning process; emphasis on a content-based approach rather than the traditional skills-based approach; the importance of making the course personally relevant to the student; and the combination of reading and writing as interrelated activities. In her discussion, Maloney cites a reading process that requires students to read the text multiple times, like they might write multiple drafts of a paper. During these readings students are asked to annotate the text, explore troublesome vocabulary, write questions about the text, and write summaries of the text. In this way reading becomes an active process that is combined with the writing process. This process asks students to read critically and analytically, thus training them for later college level reading. Students are often asked to work in small groups or to discuss what they have done individually, thus promoting the idea of cooperative learning. Technology is incorporated into the process, as students are asked to use email to communicate with the instructor and other class members outside of the classroom environment. They are asked to use email to distribute questions and summaries and to facilitate additional writing about the text (Maloney, 2003).

The work of Maloney is important not only because of its theoretical similarity to English 07 but also because of its documented success. SEEK students are given one year to overcome their underprepared status. Because CCNY no longer has open admissions,

after a year students must pass a proficiency exam to remain enrolled in the university.

Documentation illustrates that since the SEEK program shifted from the traditional skills-based approach to “a more integrated, student-and question-centered literacy curriculum,” success rates in terms of retention, grades, and pass rates on the university’s proficiency exam have improved dramatically. SEEK students are performing at a near 100% pass rate on the university’s standardized proficiency exam (Maloney, 2003).

### Setting

#### *Introduction*

The setting for the study is Virginia Western Community College (VWCC). Established in 1966, VWCC is a two-year comprehensive community college operated under the Virginia Community College System (VCCS) and accredited by the Southern Association of Colleges and Schools (SACS). VWCC is a suburban community college located in Roanoke, Virginia, serving a four-county region including the cities of Roanoke and Salem, Virginia (Hanson, 2004). VWCC is the fourth largest of the 23 VCCS colleges and the largest single-campus college in the system. With an annual enrollment of 4261 AFTEs or an annual headcount of 12,574 students, the college operates on a budget of 25 million dollars (Hanson, 2005a).

VWCC is somewhat consistent in its diversity to the overall demographic characteristics of community college students. Like the typical community college student, VWCCs students have an average age of 29, are 58% female (Bryant, 2001; Cohen & Brawer, 2003; Hanson, 2005a) and 53.7% are first-generation college students (Hanson, 2005c; Vaughan, 2000). Unlike the typical community college student profile, VWCC has a smaller percentage of minority students with 13% (Hanson, 2005a) as

compared to national rate of 32% (Reason, 2003). VWCC has fewer full time employed students with a rate of 19% (Hanson, 2005c) as compared to a national rate of 35% (Schmid & Abell, 2003), but more part time enrolled students with a rate of 76% (Hanson, 2005a) as compared to a national rate of 46% (Schmid & Abell, 2003). VWCC also has a higher percentage of students with dependants than the national average with a rate of 33% (Hanson, 2005d) as compared to 21% (Schmid & Abell, 2003). No data is available for the rate of students at VWCC who are from single parent homes, are financially independent, are single parents, or delayed entry to college.

#### *Developmental Education at VWCC*

VWCC offers developmental education courses in English, math, and chemistry. Placement in VWCCs developmental English and math courses is based on the COMPASS test. The COMPASS test is taken by any curricular student entering the college who has not been exempted based on high school grades, SAT scores, ACT scores, or some other criterion. All non-exempt students must take the COMPASS test prior to enrolling in an English or math course. The guidelines for placement are set forth in *Standards for Developmental Education in the Virginia Community College System: Recommendations from the VCCS Developmental Education Implementation Task Force* (Bartholomay, 1999).

Developmental courses are open-enrollment courses. Occasionally, students elect not to take the COMPASS test and self-enroll directly in developmental courses.

The percentage of enrollment in developmental courses at VWCC can be demonstrated by the results of the Freshman Survey. In this survey of 259 freshmen registered in the college's orientation course during the fall semester 2005, 45%

responded that they were currently enrolled in a developmental course; 7% said that they had been advised to take a developmental course but were not currently enrolled in one; 36.4% indicated that they had not been advised to take a developmental course; and 11.6% were unsure how to answer this question (Hanson, 2005b).

Of the developmental courses offered at VWCC, the developmental English courses include English 01, developmental writing; English 04, developmental reading; and English 07, developmental reading and writing. During the fall semester 2004, 282 students were registered for English 01, 132 for English 04, and 13 for a pilot section of English 07. The fall semester 2004 statistics show that 22.2% of students registered for English courses were registered in a developmental English course (Hanson, 2005c).

Pass rates in developmental English at VWCC show that 61.04% of students passed English 01 in 2002, while 72.7% of students passed English 04. No statistics are available for English 07. VWCC defined passing as achieving a grade of satisfactory (S) and not passing as grades of repeat (R), unsatisfactory (U), or withdrawal (W) (Hanson, 2003).

#### *Developmental Learning Communities at VWCC*

During the fall semester of 2004, a faculty committee launched a pilot learning community for developmental English and math students. While this project had some reported success, it was not continued in the following year due to lack of administrative interest. Seeing the need for such a program, the researcher along with a developmental reading specialist and a developmental writing specialist established a developmental English learning community in the fall semester of 2005. This learning community is organized around an eight-credit English 07 class.

English 07 is an integrated reading and writing course, team taught by a reading specialist and a writing specialist. In addition to the academic component, the English 07 learning community includes an intrusive advising component, use of cooperative and active learning techniques, a cultural component, a series of outside speakers, and field trip options. The mission of this learning community is to build academic skills in reading and writing, to promote personal development, to build an understanding of the college environment, and to engage students through the use of a cohort. The intrusive advising component consists of each student meeting with one of the two instructors four times during the course of the semester. The first meeting is scheduled during the first three weeks of the semester, the second prior to the withdrawal deadline, the third prior to the next semester's registration, and the fourth at a time of the students' choosing. Cultural events for the fall semester of 2005 included attending a play and an opera. A sportscaster spoke to the students about the importance of communication and a trip to the local newspaper was included in the course. This learning community meets all of the criteria for learning communities defined by Shapiro and Levine (1999).

#### *Retention at VWCC*

The reported fall-to-spring retention rate for 2001 at VWCC was 71.4% and the fall-to-fall retention rate for 2001 was 54%. Completion rates are defined by the VCCS and SCHEV as the number of graduates plus those enrolled for further education. VWCC's completion rate for 2001 was 41%. VWCC's graduation rate for 2001 was 16.3% (Hanson, 2002). No data is available for the retention, completion, or graduation rates of students who began their education at VWCC in developmental courses.



*Student Engagement at VWCC*

In the spring of 2005, 256 colleges nationwide, including the 23 VCCS colleges, participated in the CCSSE survey. Seventy-five classes at VWCC were surveyed. The sample included 955 students. Five hundred seventy-five were full-time students and 380 were part-time students. Forty-eight day classes and 27 night classes were surveyed. The survey reported engagement based on 5 benchmarks: active and collaborative learning, student effort, academic challenge, student-faculty interaction, and support for learners (McClenny, 2005b).

VWCC's results on all five benchmarks were below both the national and VCCS means. The VWCC mean for student-faculty interaction was 47.7. This is compared to a VCCS mean of 50.2 and a national mean of 50.0. Part-time students were found to have a lower mean than full-time students. The VWCC part-time mean for student-faculty interaction was 44.7, while the full-time mean was 56.3. Both were lower than the VCCS and national means for student-faculty interaction. The mean score for student-faculty interaction for students who have completed less than 29 credits (freshmen) was lower than that for students who have completed more than 30 credits (sophomores). At VWCC, the mean for freshmen was 45.6, while the mean for sophomores was 52.9 (McClenny, 2005b). No breakdown was given for the scores of students registered in developmental courses. This information indicates that the level of student engagement, particularly faculty-interaction, as measured by the CCSSE, is slightly lower at VWCC than at other community colleges in Virginia and across the nation. This information is important when considering retention rates and possible ways to improve retention at VWCC.

### Summary

The literature presented discusses the retention theories of Tinto, Astin, and Bean and their overlapping ideas on why students leave college. While originally developed and examined for students at residential four-year institutions, these theories have been revisited and revised to accommodate the more complex needs of non-traditional students, such as those at community colleges. A common thread among these theories is the potential role of academic and social interaction on the personal development, satisfaction, achievement, and retention of students.

Unfortunately, the existing literature provides little information to guide retention programs for underprepared learners at community colleges. There appears to be an “empirical black hole” (Pascarella and Terenzini, 1998, p. 155) concerning the influence of social and academic interaction on the development, satisfaction, achievement, and retention of underprepared English community college students or the influence of the concepts of learning communities and integrated reading and writing courses.

## CHAPTER III

### METHOD

#### Purpose

The purpose of this study was to examine the influence of the level of interaction, the influence of the type of interaction, the influence of demographic characteristics, the influence of the level of social and academic adjustment, and the influence of learning communities on the satisfaction, achievement, and retention of developmental English community college students.

The study was based on a review of the existent literature examining the nature of the community college, the role of developmental education, the influence of learning communities, and findings derived from three major theoretical approaches to the study of college student attrition, namely the approaches of Tinto, Astin, and Bean. Attrition factors commonly described by these three major retention theories include: the influence of social and academic integration and institutional and goal commitment.

The following research questions were asked:

1. To what degree do the level, and type, of interaction experienced by learners differ based on course format?
2. To what degree do the following demographic variables influence developmental community college students' perceived experience of type and level of academic interaction: age, gender, ethnicity, parental education level, delayed entrance to college, enrollment status, employment status, parental responsibility, financial independence, ESL status, and COMPASS placement scores?

3. To what degree are academic achievement and retention rates among developmental community college students influenced by (a) different levels and different types of academic and social interaction, (b) by perceived levels of college adjustment and social adjustment, (c) by different course formats, and (d) by their level of satisfaction?
4. What relationships, if any, exist among student satisfaction, academic achievement, and retention rates among developmental community college students?

### Research Design

The research design was a quantitative nonexperimental correlational design. The study was quantitative because it used numerical values and statistical analysis to determine results. The study was non-experimental because no treatment was applied. It was correlational because it investigated relationships among variables (McMillan & Wergin, 2002). The research design with accompanying measures has been summarized in Tables 1 through 6. As seen in Table 1, the study explored how the independent variable, demographic characteristics, influenced the level and type of interaction experienced by students, social and academic adjustment, satisfaction and goal achievement, retention, and achievement of developmental English students. Demographic characteristics might have been a positive or negative influence on these variables, or no influence. As seen in Table 2, the study explored how course format (learning community or non-learning community) influenced the level and type of interaction, social and academic adjustment, satisfaction and goal achievement, retention, and achievement of developmental English students. This influence might have been

positive or negative depending on the course format or there may have been no influence. Table 3 shows how the level of interaction influenced social and academic adjustment, satisfaction and goal achievement, retention, and achievement of developmental English students. This influence might have increased in its positive effects as the level increased or have had no influence. Table 4 shows how the type of interaction influenced social and academic adjustment, satisfaction and goal achievement, retention, and achievement of developmental English students. This influence might have increased in its positive effects as interaction of any type increased or have had no influence. Table 5 shows how the social and academic adjustment influenced retention, and achievement of developmental English students. This influence might have increased in its positive effects as the level of academic and social adjustment increased or have had no influence. Table 6 shows how satisfaction and goals influenced the retention, and achievement of developmental English students. This influence might increased in its positive effects as the level of satisfaction and goal attainment increased or have had no influence.

Table 1

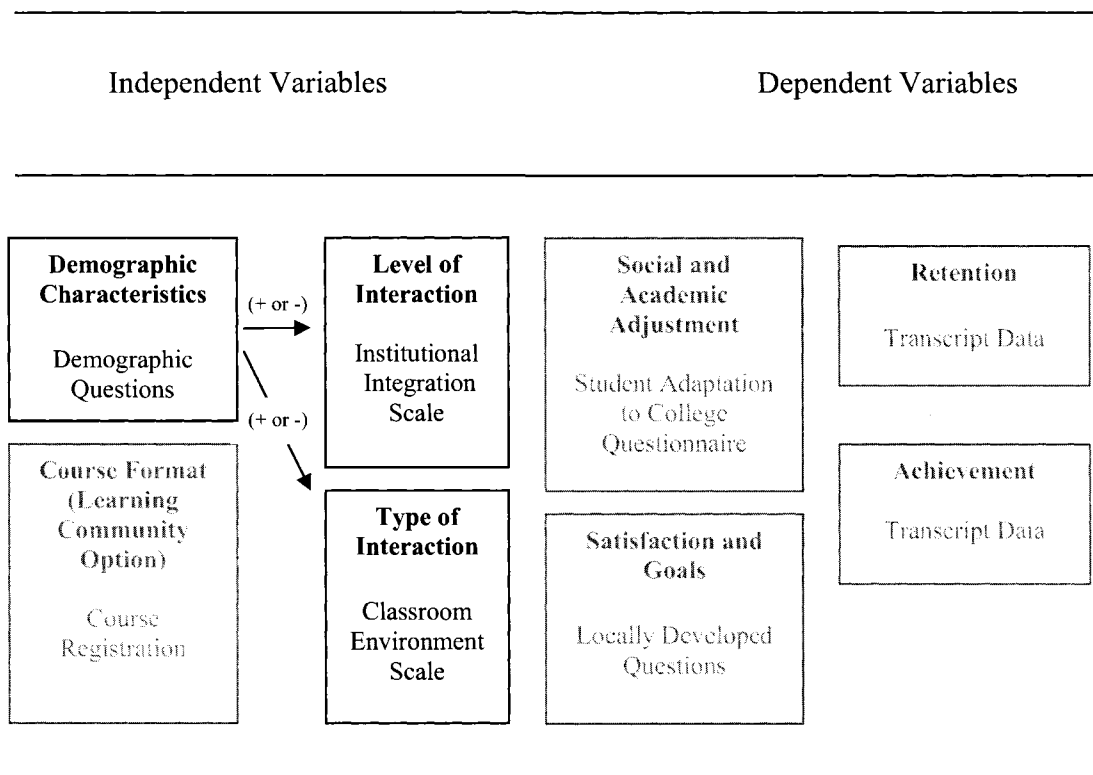
*Research Design: Demographic Characteristics*

Table 2

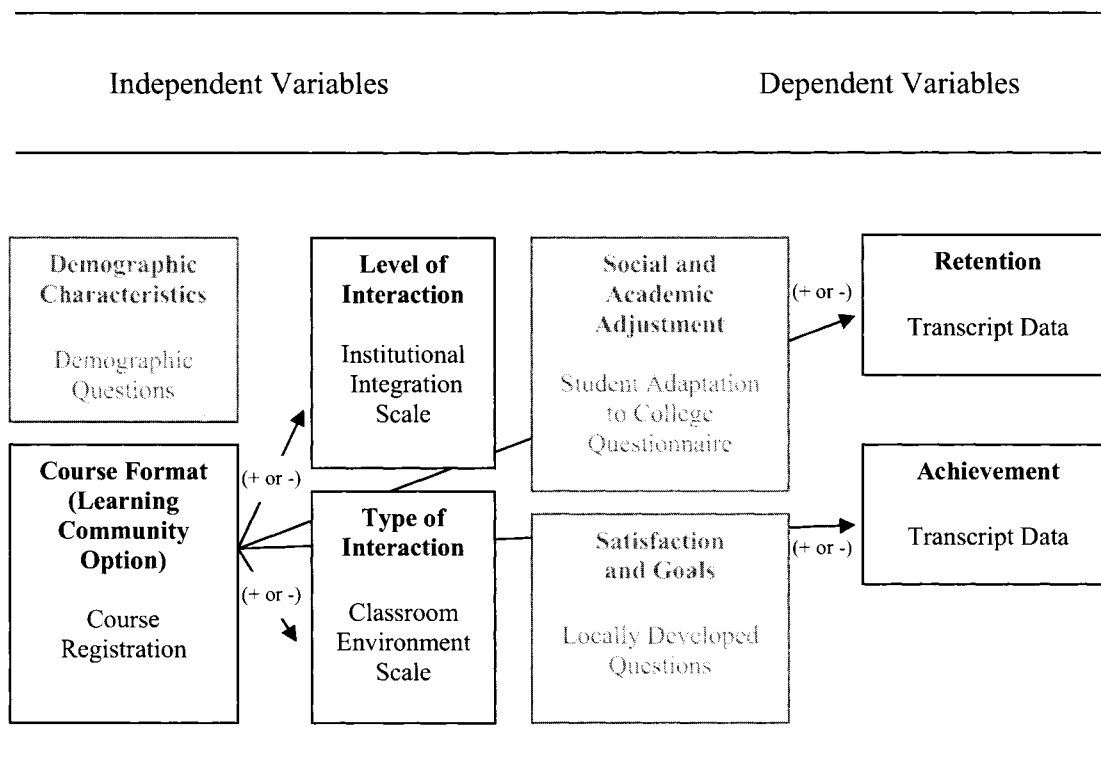
*Research Design: Course Format*

Table 3

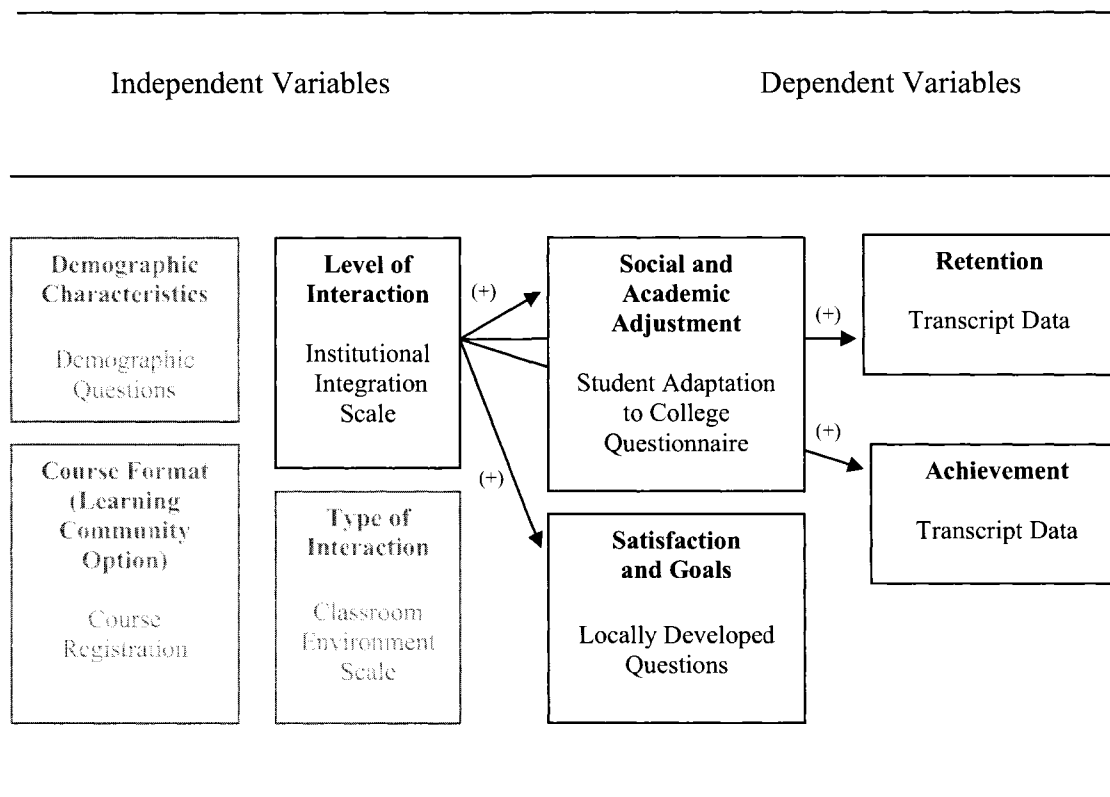
*Research Design: Level of Interaction*



Table 4

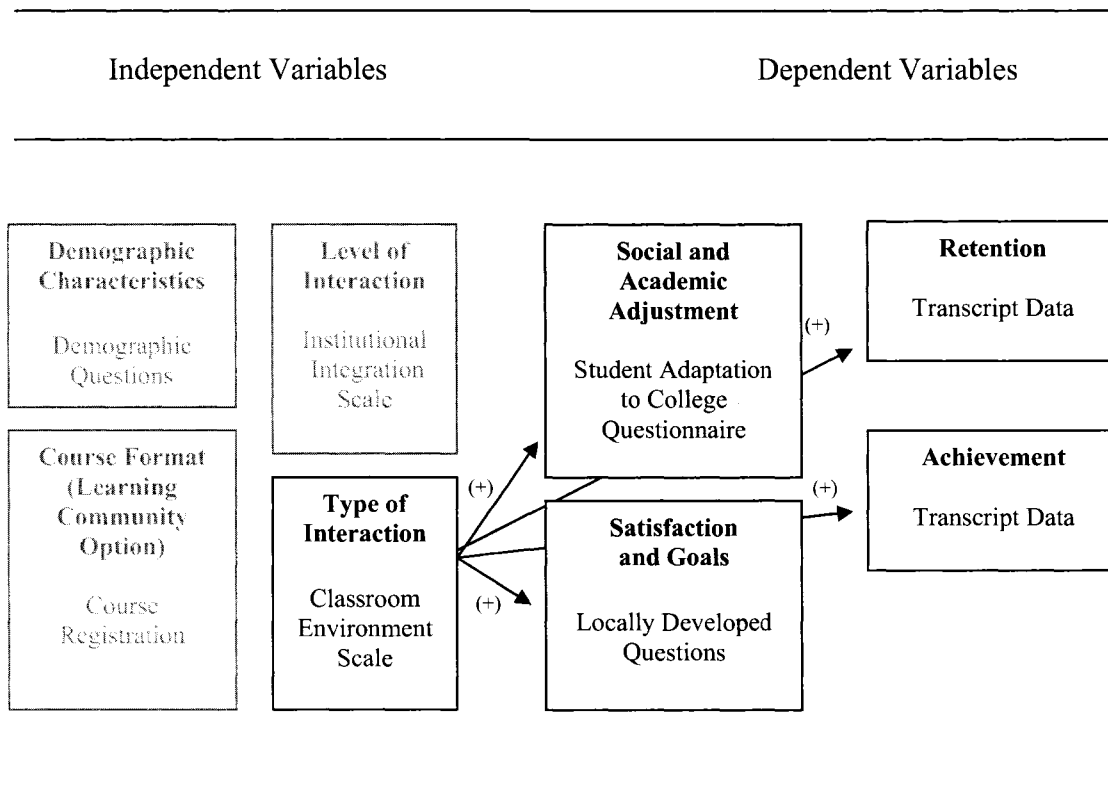
*Research Design: Type of Interaction*

Table 5

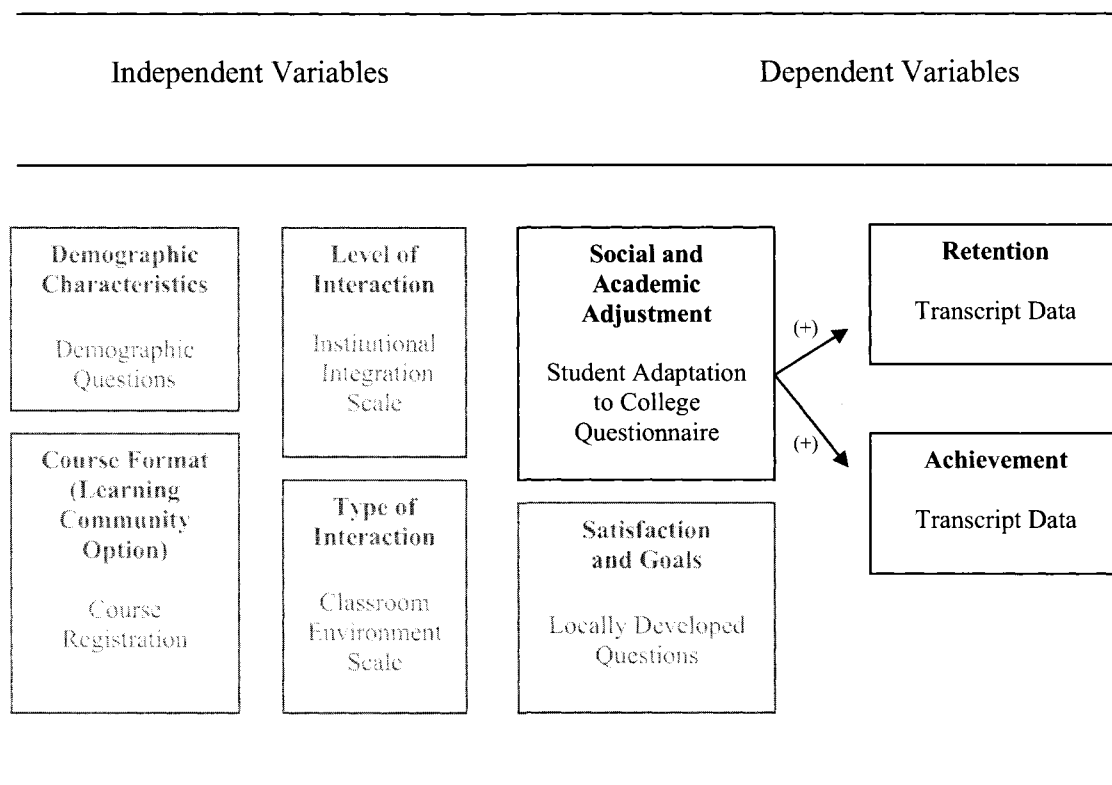
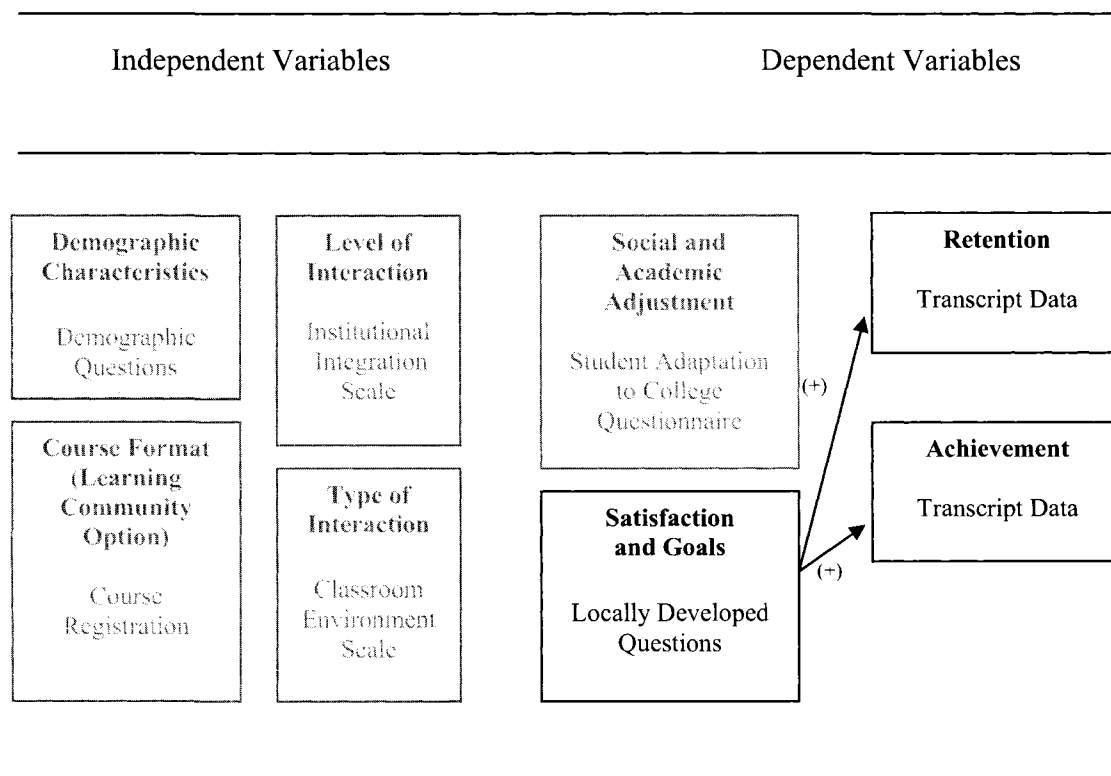
*Research Design: Social and Academic Adjustment*

Table 6

*Research Design: Satisfaction and Goals*

## Participants and Procedure

### *Participants*

The populations in English 01, 04, and 07 were a representative sample of developmental students at the institution along the lines of demographic diversity. The students in all three classes were representative of the diversity in enrollment status, age, ethnicity, socio-economic status, work schedules, preparation levels, and personal development found in the developmental courses. Past demographic characteristics indicate that while night sections may contain a slightly higher percentage of older, full-time employed, and part-time enrolled students, the diversity has not been significantly different to that of the day sections.

Students are required to take developmental English classes based on their scores on the COMPASS placement test or through self-determination of need. If the student has been determined to be underprepared by the placement test or through self-determination, that student is advised to take a developmental course. Depending on COMPASS scores, the student may be required to take English 04: Reading Improvement, English 01: Preparation for College Writing, or English 07: Reading and Writing Improvement. Registration of class section, including English 07, is through self-selection. The only criterion for placement into English 07 is that the students' COMPASS test scores indicate a need for both English 01 and English 04.

### *Specific Developmental Class Sections*

The participants were all members of nine purposefully selected developmental English classes from VWCC, who agreed to participate, yielding a sample size of approximately 155 students. The classes selected included two day and one night section

of the English 07 learning community classes, two day and one night section of the English 01 writing classes, and two day and one night section of the English 04 reading classes. The limited number of English 07 classes and night classes necessitated the use of purposeful sampling.

The three English 07 classes contained an aggregate sample size of approximately 50 students. These three classes were the only English 07 classes offered and represented the only examples of intentionally created developmental learning communities at the college. English 07 was a learning community comprised of an eight credit class that combined reading improvement and preparation for college writing content. In addition to the course content, English 07 contained an intrusive advising component, a cultural component, a career counseling component, and a series of guest speakers. The course was designed to facilitate an environment of active and cooperative learning, requiring enhanced interaction with faculty and other students.

The three English 01 and three English 04 classes were purposefully selected from the available English 01 and 04 classes. The sample included approximately 60 English 01 students and 45 English 04 students. The day classes were selected randomly from those where the instructor does not teach English 07. Avoiding classes taught by the instructors who teach English 07 deflected the validity threat of cross contamination of practices between learning community classes and non-learning community classes. The night English 01 and 04 were selected because they were the only sections of English 01 and 04 taught at night. Neither of the sections of night classes were taught by the instructors who teach English 07.

### *Response Rate*

Participation was voluntary. Because the sample came from existing whole classes and the instruments were administered during class time with the permission of the instructor, the response rate was 64%. The researcher was present when the instruments were administered to explain the purpose of the study, obtain consent, assure confidentiality, and answer any questions that students had concerning the study or the instruments. The presence of the researcher should have decreased the number of students who choose not to participate and increased the accuracy of completing the instruments.

### *Approval for the Study*

Approval to administer the questionnaire and to access students' transcripts was obtained from the Human Subjects Review Committee at Old Dominion University and from the Vice President of Academic and Student Affairs at Virginia Western Community College. The participants were advised of the voluntary nature of the study and asked to sign an informed consent agreement as part of their participation in the study. The participants were assured that confidentiality would be maintained and that results would only be reported as a group. No individual data was reported.

### *Measures*

The researcher used a questionnaire that combined several measures. Measures were selected based on their fit with the constructs measured; appropriateness for the audience; and existing data showing high reliability. Reliability (the consistency of results measured by the instrument) and validity (the extent to which the instrument measures its intended results) (Orcher, 2005) was maintained by using existing

instruments for most of the data collected, especially data that was subjective in interpretation.

The questionnaire was administered to the nine purposefully selected classes by the researcher during the seventh week of the fall semester. Milem & Berger, (1997) found that students who become involved in the first six to seven weeks of the semester were most likely to be retained. By selecting week seven of the semester, the researcher was more likely to gain participation of those who may have dropped out as a result of their midterms at week eight or just prior to the withdrawal deadline at week ten. It is possible that a small percentage of students would have already dropped out by week seven. Most of these students would have withdrawn during the first few weeks of class for a variety of personal and academic reasons. In most cases, these students were not in class long enough to become involved with their faculty or other students. Waiting until week seven gave students the opportunity to become involved with their faculty and peers and included most of those who may have dropped out before completing the semester. By administering the questionnaire during class time, the researcher expected a high return rate.

#### *Demographic Information Sheet*

A locally designed demographic information sheet was developed specifically for use in this study. These questions measured data such as age, race, gender, socio-economic status, marital status, number of dependents, hours worked each week, and enrollment status.

### *Course Format Information Sheet*

The course format was determined by enrollment. Registration in English 01 or 04 represented a non-learning community format and registration in English 07 represented a learning community format.

### *Institutional Integration Scale*

The Institutional Integration Scale (IIS) developed by Pascarella and Terenzini (1980) was used to measure the level of interaction by determining the level of social and academic integration and goal and institutional commitment. Academic integration has been defined as the student's level of academic performance and intellectual development. Social integration has been the level of peer interaction and faculty interaction experienced by the student. As suggested by Tinto, faculty interaction influences both social and academic integration. The existing levels of social and academic integration have been shown by Tinto to lead to institutional and goal commitment, which in turn leads to satisfaction, achievement, and retention (Pascarella & Terenzini, 1980).

The IIS is a thirty-four item Likert scale instrument developed to test Tinto's theories of retention (Pascarella & Terenzini, 1980). The scale contains five subscales: peer-group interactions, faculty interactions, faculty concern for student development and teaching, academic and intellectual development, and institutional and goal commitment. Pascarella and Terenzini (1980) found the IIS to be a reliable instrument for measuring all five subscales. Pascarella and Terenzini's (1980) test of the scale yielded alpha reliabilities ranging from .71 to .84. Correlations between the subscales were small and fell within a range of .01 to .33, demonstrating that each subscale measures different



qualities of institutional integration. Each of the five subscales showed statistically significant differences between those that were retained and those that dropped out with higher scores being achieved by persisters (Pascarella & Terrenzini, 1980).

Haplin (1990) validated the IIS as a measure of the influence of the level of academic and social integration on the retention of community college students. In his study, Haplin (1990) found that academic and social integration do influence retention, but that academic integration had a greater affect than social integration.

The only change made to the scale will be to replace each occurrence of the word “university” with the word “college”. This was done to make the scale appropriate for administration to community college students.

#### *Classroom Environment Scale*

The Classroom Environment Scale (CES) was used to measure the type of interaction. The CES contains nine 10 item subscales; however, only two subscales, instructor support and peer affiliation, were used for this study (Trinket & Moos, 1973).

The CES yielded a high alpha reliability of .84 for the support scale and .74 for the affiliation scale. Correlations between the subscales were moderate ( $r = .34$ ) (Trinket & Moos, 1973). High validity ratings were found in a study using middle school and high school participants (Trinket & Moos, 1973).

#### *Student Adaptation to College Questionnaire*

Social and academic adjustment was measured by the Student Adaptation to College Questionnaire (SACQ). The SACQ (Baker & Siryk, 1999) is a 67 item Likert-based instrument that is divided into four subscales: academic adjustment, social adjustment, personal-emotional adjustment, and goal commitment/institutional

attachment (Valeri-Gold et al., 1998). Valeri-Gold et al. found the SACQ to be a reliable instrument for measuring academic adjustment, social adjustment, personal-emotional adjustment, and goal commitment/institutional attachment (1998). Valeri-Gold et al. reported an alpha reliability of .92 to .95 for the scale with subscale alphas being .81-.90 for the academic adjustment scale, .83-.91 for the social adjustment scale, .77-.86 for the personal-emotional adjustment scale, and .85-.91 for the goal commitment/institutional attachment scale (Valeri-Gold et al, 1998). Valeri-Gold et al. (1998) also established the predictive validity of the SACQ for academic success and retention.

#### *Satisfaction and Goals Information Sheet*

Additional Likert-based questions were added to the instrument to measure students' level of satisfaction with the college, their classes, their faculty, their achievement, and their goals. These questions sought to define whether their goals were achieved by completing their developmental English courses as their final goal, by making progress but receiving a grade of repeat, or by completing a degree. This was used help to establish whether they were retained through future registration, optouts who are retained by satisfying their goals, or dropouts. As discussed in the literature, Bonham and Luckie (1993a, 1993b) defined optouts as those that have left prior to graduation or transfer, but have completed their self-defined goal; dropouts as students who have left college without completing their goal and have no intention of returning; and stopouts as those that have left without completing their goal, but intend to return. This study considered stopouts as dropouts due to the short nature of the study and the inability to reliably assess intentions at the midpoint of the semester being measured.

*Transcript Information Sheet*

Achievement and retention were measured with information from the student's transcript. As discussed in the literature (Bers and Smith, 1991), a student's perceived achievement may not necessarily be graduation or passage to the next class. A weak student may be satisfied with a grade of "repeat" that shows progress in a class but indicates a need to retake the class to improve skills. The achievement goal on the questionnaire was matched to the student's grade of S, R, or U to determine achievement level.

Retention was measured by enrollment in the following semester. The literature indicates that semester-to-semester retention is a more valid measure of community college student retention than the traditional year-to-year rates used in four-year colleges (Halpin, 1990; Bers & Smith, 1991; Summers, 2003).

The questionnaire was coded with the students' unique college identification number. This coding enabled the researcher to match each student's questionnaire to their transcript to determine the relationship between variables measured by the questionnaire and variables measured by the transcript.

Students' transcripts were generated following the end of the drop/add period for the spring semester. At that time, the grades used to measure achievement and the registration data used to measure retention were reflected on the transcripts.

Table 7 illustrates the measures and instruments for the study.

Table 7

*Measures and Instruments*

Measure	Instrument
Demographic Characteristics	Demographic Information Sheet
Course Format	Registration for Learning Community or Non-Learning Community Course
Level of Interaction	Institutional Integration Scale
Type of Interaction	Classroom Environment Scale
Social and Academic Adjustment	Student Adaptation to College Questionnaire
Satisfaction and Goals	Satisfaction and Goals Information Sheet
Achievement	Transcript Data
Retention	Transcript Data

### Data Analysis

Descriptive statistics were used to establish the means and standard deviations of the data and to facilitate subsequent analysis of the research questions.

A one-way analysis of variance (ANOVA) was used to determine if there is a statistically significant difference in the satisfaction rates, achievement rates, and retention rates for each independent variable, including the level of interaction, the type of interaction, and the level of social and academic adjustment. A separate test was run for each of the independent variables. A one-way ANOVA also determined if there is a difference in the achievement and retention rates based on the level of satisfaction experienced by the subjects. One-way ANOVA was used when there are multiple levels of the independent variable and multiple dependent variables.

An independent sample t-test was used to determine if there is a difference in the level of interaction between students registered in the learning community courses and those registered in the non-learning community courses. An independent sample t-test was used because through self-selection of section, this is a true independent sample. This test looked for the difference in mean values of the level of interaction of each group. An independent sample t-test was also used to determine if there is a difference between the type of interaction experienced by learning community and non-learning community students.

The difference in the level of interaction based on each of the demographic variables tested was determined by an independent sample t-test when there were only two levels measured or by a one-way ANOVA when there were more than two levels measured. The difference for each demographic characteristic was analyzed separately.

The difference in the type of interaction based on the demographic data was analyzed in the same way as the level of interaction.

Linear regression analysis was used to determine which of the independent variables (level of interaction, type of interaction, level of social and academic adjustment, course format, and satisfaction) were predictors of achievement and retention.

A multiple linear regression analysis was used to explain the amount of variance in achievement rates based on all of the predictor variables. Multiple regression analysis showed the significance of each independent variable as a predictor of achievement when considered in relationship to the other variables and also showed the strength of each variable as a predictor of achievement.

A multiple linear regression analysis was also used to explain the amount of variance in retention rates and the significance of each independent variable as a predictor of retention.

A correlation was used to determine the relationship between satisfaction and achievement, satisfaction and retention, and achievement and retention.

### Summary

The purpose of this study was to determine the influence of the level of interaction, the influence of the type of interaction, the influence of the level of social and academic adjustment, the influence of learning communities, and the influence of demographic characteristics on the satisfaction, achievement, and retention of developmental English community college students.

The study was conducted in two parts: (1) collecting self-reported data through a questionnaire, which combines several existing instruments with locally developed questions, and (2) matching the questionnaires to student transcripts to determine achievement and retention. The findings of the analysis are found in chapter four.

The findings will be used to extend the knowledge on the relationship between of the level of interaction, the type of interaction, the level of social and academic adjustment, the influence of learning communities, and the influence of demographic characteristics and the satisfaction, achievement, and retention rates of developmental English students. These concepts have been tested extensively on students at 4-year residential institutions and to a lesser extent on community college students, but little has been written about their influence on developmental community college students.

The findings will serve to guide the researcher in creating data-driven programs to satisfy the needs of developmental English students at VWCC.

The findings will be disseminated locally and in professional venues such as conference presentations and journal articles. Findings will be disseminated within the bounds of the human subjects approval.

## CHAPTER IV

### RESULTS

#### Introduction

The purpose of this study was to examine the influence of the level of interaction, the influence of the type of interaction, the influence of demographic characteristics, the influence of the level of social and academic adjustment, and the influence of learning communities on the satisfaction, achievement, and retention of developmental English community college students.

This chapter summarizes the demographic characteristics of the participants and the statistical analysis of data in response to the research questions for the study.

#### Participants

The participants were members of nine purposefully selected developmental English classes from VWCC, who agreed to participate, yielding a sample size of 120 students. The classes were selected to include two day and one night section of the English 07 learning community classes, two day and one night section of the English 01 writing classes, and two day and one night section of the English 04 reading classes.

#### *Response Rate*

Participation was voluntary. Because the sample comes from existing whole classes and the instruments were administered during class time with the permission of the instructor, the response rate was high. The researcher was present when the instruments were administered to explain the purpose of the study, obtain consent, assure confidentiality, and answer any questions that students had concerning the study or the instruments.



There were 187 students registered for the selected classes. The instruments were administered during the seventh week of the semester, in the classes that met on October 3, October 4, and October 5, 2006. During administration of the instruments, 133 of the 187 registered students were present. Of those 133 students, 120 completed the instruments. Five students were enrolled in two classes that were surveyed and were excused from taking the survey more than once. Eight students did not complete the survey for the following reasons: one was an English as a Second Language (ESL) student who did not understand the questions; one student had just returned from the war in Iraq and did not feel that his emotional state was representative of the students at the institution; four students missed a page while completing the survey; one student skipped enough questions that his response was not considered valid; and one student chose the middle response to all questions and was not considered to have taken the survey seriously.

Of the 120 students who completed the survey, 50 students were members of a learning community class and 70 students were members of a non-learning community class. The attendance rates of learning community students on the days the survey was administered were higher than attendance rates of non-learning community students with 79.37% of enrolled learning community students completing the survey and 56.45% of enrolled non-learning community students participating.

#### *Participant Demographic Characteristics*

Participants self-identified the following demographic characteristics: age, gender, ethnicity, parental education level, time since high school graduation, enrollment status, employment status, number of dependents, single parent status, financial

dependence, ESL status, semester in college, number of times enrolled in the course being surveyed, and goals. Student's COMPASS placement scores in reading and writing were obtained from student records. Course format was obtained by registration data.

The mean age for all students surveyed was 21.98 years with ages ranging from 17 to 55 years of age. Students had a mean of .76 dependents and scored COMPASS reading scores with a mean of 66.50 and writing scores with a mean of 44.76. Students scoring below 76 on the writing portion of the COMPASS test are considered developmental students, as are students who score below 81 on the reading portion of the test. Table 8 summarizes the demographic data for age, number of dependents, COMPASS reading scores, and COMPASS writing scores.

Table 8

*Demographic Characteristics I*

Characteristic	Mean	Standard Deviation	Minimum	Maximum
Age	21.98	7.553	17	55
Dependents	.76	1.283	0	6
COMPASS Reading	66.50	15.204	20	95
COMPASS Writing	44.76	23.175	1	89

Note: N = 120 for all characteristics.

Other demographic data revealed that 59.2% of students were female; that 55.8% of students were white and 23.3% were African American; that 47.5% were first generation college students; that 51.7% graduated from high school the previous year; that 65.8% were enrolled full-time, that 24.2% were not employed while 28.3% were employed 40 hours a week or more; and that 94.2% identified completing a degree as their goal. Table 9 summarizes the demographic data for the frequencies of gender, ethnicity, parental education level, time since high school graduation, enrollment status, employment status, status as a single parent, status of financial dependence, ESL status, semester in college, number of times enrolled in the course, goals, and course format.

Table 9

*Demographic Characteristics II*

Characteristic	Frequency	Percent
Gender		
Male	49	40.8
Female	71	59.2
Parental Education: College Attendance		
Both	22	18.3
Mother only	28	23.3
Father only	13	10.8
Neither	57	47.5

Table 9: Continued

Characteristic	Frequency	Percent
Ethnicity		
African American	28	23.3
African	4	3.3
Asian	6	5.0
White	67	55.8
Hispanic	6	5.0
Other	8	6.7
High School Graduation		
Last May or June	62	51.7
1-2 years ago	22	18.3
3-5 years ago	10	8.3
More than 5 years ago	25	20.8
Did not graduate	2	1.7
Enrollment Status		
Part-time	41	34.2
Full-time	79	65.8

Table 9: Continued

Characteristic	Frequency	Percent
Employment		
Not employed	29	24.2
1-10 hours per week	3	2.5
11-20 hours per week	22	18.3
21-39 hours per week	32	26.7
40 or more hours per week	34	28.3
Single parent	15	12.5
Financially independent	57	47.5
ESL	21	17.5
First semester in college	94	78.3
First semester in course	106	88.3
Goal		
Complete degree	113	94.2
Complete class only	8	6.7
Skill progression	31	25.8
Course Format		
Learning community	50	41.7
Non-learning community	70	58.3

*Demographic Comparison to College Averages*

These demographic findings of surveyed developmental English students were reflective and different from the demographic characteristics of all VWCC students in the following ways: Developmental English students were slightly younger at 22 years of age than the average VWCC student, who is 29 (Hanson, 2005a). Developmental English students were similar in gender, with 59% being female; to the average VWCC student, where 58% are female (Hanson, 2005a). More developmental English students were minority students, 44%, as compared to 13% of the overall VWCC population (Hanson, 2005a). Fewer developmental English students were first-generation college students, 48%, as compared to 54% (Hanson, 2005c). More developmental English students were employed full-time with a rate of 28% as compared to the VWCC average of 19% (Hanson, 2005a). Fewer developmental English students were enrolled part-time, 34%, as compared to the college average of 76% (Hanson, 2005a). At 33%, the rate for students with dependents was the same for developmental English students as it is for the overall college population (Hanson, 2005d). No demographic data was available for comparison of rate of delayed entry since high school, single parents, ESL students, first semester students, first time in course students, or student goals. COMPASS reading and writing scores are only required for developmental students and learning communities are only available to developmental English students, so no comparisons were available for these measures.

## *Comparison of Learning Community and Non-Learning Community Students*

### *Demographic Comparisons*

Demographic comparisons of the students surveyed from the learning community and non-learning community classes indicate that the groups were demographically similar in gender, ethnicity, parental education of both parents, parental education of the mother, delayed entry from high school, employment status, number of dependents, single parent status, rate of financial independence, ESL rates, first time in course rates, and goals.

The areas where these students were statistically significantly different ( $p < .1$ ) occur in the areas of age, father's education, first-generation status, enrollment status, first semester in college rates, and COMPASS scores in both reading and writing. A one way ANOVA indicated that the difference between the ages of learning community students ( $M = 20.34$ ,  $SD = 5.309$ ) and non-learning community students ( $M = 23.14$ ,  $SD = 8.663$ ) was statistically significant,  $f(118) = 4.122$ ,  $p = .045$ , with learning community students being younger than non-learning community students. Likewise, an independent sample t-test of first-generation status was found to have a statistically significant difference,  $t(118) = 3.368$ ,  $p = .001$ , between learning community students ( $M = .60$ ,  $SD = .493$ ) and non-learning community students ( $M = .30$ ,  $SD = .463$ ), with fewer first generation learning community students than non-learning community students. Enrollment status was also statistically significantly different,  $t(118) = -2.413$ ,  $p = .017$ , between learning community students ( $M = .78$ ,  $SD = .418$ ) and non-learning community students ( $M = .57$ ,  $SD = .498$ ), indicating more full-time enrolled learning

community students. COMPASS reading scores had statistically significant differences,  $f(108) = 3.285$ ,  $p = .073$ , between the groups with learning community students showing lower scores ( $M = 63.49$ ,  $SD = 14.769$ ) than non-learning community students ( $M = 68.75$ ,  $SD = 15.251$ ). COMPASS writing scores also were lower for learning community students ( $M = 37.83$ ,  $SD = 20.233$ ) than for non-learning community students ( $M = 49.77$ ,  $SD = 24.010$ ) and were demonstrated to be statistically significantly different,  $f(110) = 7.675$ ,  $p = .007$ .

#### *Achievement and Retention Comparisons*

A comparison of the students surveyed from the learning community and non-learning community classes indicated that the learning community students had higher rates of achievement, but lower retention rates. Table 10 summarizes the frequencies of students from each course format who achieved grades of “S”, “R”, or “U” and the frequencies for retention of each group.

Table 10

#### *Achievement and Retention Comparison*

Characteristic	Frequency	Percent
Grade of “S”		
Learning Community	36	72
Non-Learning Community	45	64.3



Table 10: Continued

Characteristic	Frequency	Percent
Grade of "R"		
Learning Community	7	14
Non-Learning Community	14	20
Grade of "U"		
Learning Community	6	12
Non-Learning Community	9	12.9
Retention		
Learning Community	39	78
Non-Learning Community	60	85.7

### *Summary*

In summary, the learning community students surveyed were younger, less likely to be first-generation students, more likely to be full-time enrolled, and had lower COMPASS reading and writing scores than non-learning community students, but were otherwise similar in demographic characteristics. Learning community students had a higher rate of achievement, but lower rate of retention than did non-learning community students.

## Statistical Analysis of the Research Questions

### *Research Question 1*

To what degree do the level, and type, of interaction experienced by learners differ based on course format?

An independent sample t-test was conducted on each of the five subscales of the Institutional Integration Scale (IIS) and the two subscales of the Classroom Environment Scale (CES) to determine if there was a statistically significant difference in the level and type of interaction experienced by learners based on course format.

These results indicated a statistically significant difference ( $p < .1$ ) between students participating in a learning community and those not participating in a learning community in the level of peer interaction, the level of faculty interaction, the perceived level of faculty concern, and the peer affiliation found in the classroom. In each case, the learning community students had a higher perceived level than the non-learning community students. The test yielded the results found in table 11.

Table 11

### *Level and Type of Interaction Based on Course Format*

Scale	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
IIS: Peer Interaction				-2.105	118	.037
Non-learning community	70	22.43	5.000			
Learning community	50	24.36	4.890			

Table 11: Continued

Scale	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
IIS: Faculty Interaction				-3.601	118	.000
Non-learning community	70	16.69	3.693			
Learning community	50	19.14	3.665			
IIS: Faculty Concern				-1.818	118	.072
Non-learning community	70	20.34	3.930			
Learning community	50	21.62	3.591			
IIS: Acad/Intel Dev.				-1.536	118	.127
Non-learning community	70	25.04	3.947			
Learning community	50	26.18	4.069			
IIS: Instit/Goal Commit				-.468	118	.641
Non-learning community	70	26.24	3.173			
Learning community	50	26.52	3.234			
CES: Faculty Support				-1.283	118	.202
Non-learning community	70	7.21	3.409			
Learning community	50	7.92	2.212			
CES: Peer Affiliation				-1.980	118	.014
Non-learning community	70	4.60	4.447			
Learning community	50	6.58	4.031			

Note:  $p < .1$

### *Research Question 2*

To what degree do the following demographic variables influence developmental community college students' perceived experience of type and level of academic interaction: age, gender, ethnicity, parental education level, delayed entrance to college, enrollment status, employment status, parental responsibility, financial independence, ESL status, and COMPASS placement scores?

#### *Age*

A one-way ANOVA was conducted on each of the five subscales of the IIS and the two subscales of the CES to determine if there was a statistically significant difference in the level and type of interaction experienced by learners based on age. A statistically significant difference ( $p < .1$ ) was found for the IIS' level of peer interaction,  $f(23) = 1.8333$ ,  $p = .022$ ; for the IIS' level of academic and intellectual development,  $f(23) = 1.708$ ,  $p = .038$ ; and for the CES' peer affiliation scale,  $f(23) = 1.642$ ,  $p = .050$ . However, in each of these areas there was no clear pattern indicating a range of ages that was different from other ages. While no clear pattern exists, the data suggests that age does make a difference in the levels of peer interaction, the level of academic and intellectual development, and peer affiliation of learners.

#### *Gender*

An independent sample t-test was conducted on each of the five subscales of the IIS and the two subscales of the CES to determine if there was a statistically significant difference in the level and type of interaction experienced by learners based on gender. A statistically significant difference ( $p < .1$ ) was found for the level of faculty interaction,  $t(118) = -1.682$ ,  $p = .095$ ; the level of faculty concern for student development and

teaching,  $t(118) = -2.786$ ,  $p = .006$ ; the level of academic and intellectual development,  $t(118) = -2.124$ ,  $p = .036$ ; the level of institutional and goal commitment,  $t(118) = -2.040$ ,  $p = .044$ ; and the faculty support found in the classroom,  $t(118) = -2.344$ ,  $p = .021$ . In each case, female learners reported higher levels of interaction than male learners. Table 12 illustrates the levels and types of interaction based on gender.

Table 12

*Level and Type of Interaction Based on Gender*

Scale	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
IIS: Peer Interaction				-.532	118	.596
Male	49	22.94	4.683			
Female	71	23.44	5.272			
IIS: Faculty Interaction				-1.682	118	.095
Male	49	17.00	4.103			
Female	71	18.20	3.636			
IIS: Faculty Concern				-2.786	118	.006
Male	49	19.73	4.177			
Female	71	21.66	3.380			
IIS: Acad/Intel Dev.				-2.124	118	.036
Male	49	24.59	3.780			
Female	71	26.15	4.084			

Table 12: Continued

Scale	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
IIS: Instit/Goal Commit				-2.040	118	.044
Male	49	25.65	3.086			
Female	71	26.85	3.188			
CES: Faculty Support				-2.344	118	.021
Male	49	6.76	3.778			
Female	71	8.03	2.151			
CES: Peer Affiliation				-.543	118	.588
Male	49	5.16	4.079			
Female	71	5.61	4.584			

Note:  $p < .1$

### *Ethnicity*

An independent sample t-test was conducted on each of the five subscales of the IIS and the two subscales of the CES to determine if there was a statistically significant difference in the level and type of interaction experienced by learners based on ethnicity. Learners self-selected their ethnicity from the following list: African-American, African, Asian, White, Hispanic, or other. The only scale where a statistically significant difference ( $p < .1$ ) was reported was for the level of faculty interaction experienced by white students,  $t(118) = 1.800$ ,  $p = .074$ . These 67 students reported a lower level

( $M = 17.15$ ,  $SD = 3.791$ ) of faculty interaction than did the 53 non-white students ( $M = 18.42$ ,  $SD = 3.870$ ).

#### *Parental Education*

An independent sample t-test was conducted on each of the five subscales of the IIS and the two subscales of the CES to determine if there was a statistically significant difference in the level and type of interaction experienced by learners based on parental education. Learners were asked to identify college attendance of both parents, mother only, father only, or neither parent. No statistically significant difference ( $p < .1$ ) was reported on any scale for students who reported both parents attended college or that only their mother attended college.

The 13 students who reported that only their fathers attended college were found to have a statistically significant difference,  $t(118) = 2.052$ ,  $p = .042$ , in the level of academic and intellectual development with that level being lower ( $M = 23.38$ ,  $SD = 5.767$ ) than the 107 students whose father did not attend college or where neither or both parents attended college ( $M = 25.78$ ,  $SD = 3.710$ ). Students whose father did attend college also reported a decreased perception of faculty support ( $M = 6.00$ ,  $SD = 5.416$ ) than did students whose fathers did not attend college or where neither or both parents attended college ( $M = 7.69$ ,  $SD = 2.516$ ). For these students a statistically significant difference was found,  $t(118) = 1.956$ ,  $p = .053$ .

For students where neither parent attended college, first-generation college students, a statistically significant difference was found in their peer affiliation,

$t(118) = 2.043, p = .043$ . These 57 students reported a lower perception of peer affiliation ( $M = 4.58, SD = 4.660$ ) than did the 63 students where one or both parents attended college ( $M = 6.19, SD = 3.979$ ).

#### *Delayed Entry into College*

An independent sample t-test was conducted on each of the five subscales of the IIS and the two subscales of the CES to determine if there was a statistically significant difference in the level and type of interaction experienced by learners based on whether or not they delayed entry into college. Statistically significant differences ( $p < .1$ ) were found for students who graduated in May or June of the year they began college, for those who entered college one to two years after completing high school, and for students who started college more than five years after completing high school.

For students who graduated or completed their GED in May or June and began college the following fall, statistically significant differences were found in their perceived levels of faculty interaction, levels of faculty concern for student development and teaching, levels of academic and intellectual development, and levels of institutional and goal commitment from students who delayed entry into college. These students perceived a lower level of faculty interaction, a lower level of faculty concern, a higher level of academic and intellectual development, and a lower level of institutional and goal commitment. Table 13 illustrates these findings, comparing May/June graduates with those who delayed entry to college.



Table 13

*Level and Type of Interaction Based on Delayed Entry to College*

Scale	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
IIS: Peer Interaction				1.330	118	.186
May/June Graduates	62	22.65	4.946			
Delayed Entry Graduates	58	23.86	5.076			
IIS: Faculty Interaction				4.070	118	.000
May/June Graduates	62	16.40	3.792			
Delayed Entry Graduates	58	19.10	3.452			
IIS: Faculty Concern				2.861	118	.005
May/June Graduates	62	19.94	4.125			
Delayed Entry Graduates	58	21.88	3.229			
IIS: Acad/Intel Dev.				3.364	118	.001
May/June Graduates	62	24.37	4.134			
Delayed Entry Graduates	58	26.74	3.537			
IIS: Instit/Goal Commit				1.925	118	.057
May/June Graduates	62	25.82	3.180			
Delayed Entry Graduates	58	26.93	3.122			
CES: Faculty Support				.828	118	.409
May/June Graduates	62	7.29	3.281			
Delayed Entry Graduates	58	7.74	2.626			

Table 13: Continued

Scale	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
CES: Peer Affiliation				-.946	118	.346
May/June Graduates	62	5.79	4.417			
Delayed Entry Graduates	58	5.03	4.328			

Note:  $p < .1$

For the 22 students who began college one or two years after graduating from high school or completing their GED, statistically significant differences ( $p < .01$ ) were found in their perceived levels of faculty interaction and faculty concern for student development and teaching as compared to the 98 students who did not delay entry or who delayed entry more than two years. For students delaying entry for one to two years, a statistically significant difference in their perceived level of faculty interaction,  $t(118) = -2.263$ ,  $p = .025$ , with that level being higher ( $M = 19.36$ ,  $SD = 3.710$ ) than for students who did not delay entry or delayed entry by more than two years ( $M = 17.34$ ,  $SD = 3.815$ ). For students who delayed entry for one or two years, their perceived level of faculty concern was also perceived to be statistically significantly,  $t(118) = -2.370$ ,  $p = .019$ , higher ( $M = 22.59$ ,  $SD = 2.702$ ) than for students who did not delay or who delayed more than two years ( $M = 20.49$ ,  $SD = 3.949$ ).

For the 10 students who began college three to five years after completing high school or their GED, there were no statistically significant differences found in their level or type of interaction from the sample of 110 other students.

For students who began college more than five years after completing high school or their GED, statistically significant differences ( $p < .1$ ) were found in their perceived increased level of faculty interaction, increased level of academic and intellectual development, and their decreased perception of peer affiliation from those who began college less than five years after completing high school or their GED. Table 14 compares the findings for students who delayed entry by less than five years with those who delayed entry by more than five years.

Table 14

*Level and Type of Interaction Based on Delayed Entry by More than 5 Years*

Scale	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
IIS: Peer Interaction				-1.308	118	.193
Delayed Entry > 5 Years	25	24.30	4.830			
Delayed Entry < 5 Years	95	22.93	5.056			
IIS: Faculty Interaction				-2.329	118	.022
Delayed Entry > 5 Years	25	19.28	3.208			
Delayed Entry < 5 Years	95	17.29	3.927			

Table 14: Continued

Scale	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
IIS: Faculty Concern				-.593	118	.555
Delayed Entry > 5 Years	25	21.28	3.542			
Delayed Entry < 5 Years	95	20.77	3.912			
IIS: Acad/Intel Dev.				-2.762	118	.007
Delayed Entry > 5 Years	25	27.44	3.343			
Delayed Entry < 5 Years	95	25.01	4.046			
IIS: Instit/Goal Commit				-1.419	118	.159
Delayed Entry > 5 Years	25	27.16	2.764			
Delayed Entry < 5 Years	95	26.15	3.271			
CES: Faculty Support				-.022	118	.983
Delayed Entry > 5 Years	25	7.52	3.380			
Delayed Entry < 5 Years	95	7.51	2.884			
CES: Peer Affiliation				2.119	118	.036
Delayed Entry > 5 Years	25	3.80	4.690			
Delayed Entry < 5 Years	95	5.85	4.207			

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Note:  $p < .1$

### *Enrollment Status*

An independent sample t-test was conducted on each of the five subscales of the IIS and the two subscales of the CES to determine if there was a statistically significant difference in the level and type of interaction experienced by learners based on part-time or full-time enrollment. The only scale where a statistically significant difference ( $p < .1$ ) was reported was for the level of academic and intellectual development. On this scale the 41 students who were enrolled part-time reported a higher level of development ( $M = 26.46$ ,  $SD = 3.867$ ) than did students who were enrolled full-time ( $M = 25.03$ ,  $SD = 4.035$ ) with a statistically significant difference of  $t(118) = 1.878$ ,  $p = .063$ .

### *Employment Status*

An independent sample t-test was conducted on each of the five subscales of the IIS and the two subscales of the CES to determine if there was a statistically significant difference in the level and type of interaction experienced by learners based on employment status. Learners self-selected their employment status from the following groupings: Not employed, employed 1-10 hours per week, employed 11-20 hours per week, employed 21-39 hours per week, or employed 40 or more hours per week. The only scale where a statistically significant difference ( $p < .1$ ) was reported was for the level peer affiliation,  $t(118) = 1.894$ ,  $p = .061$ , for those students who were employed 40 or more hours per week. For these 34 students, lower level of peer affiliation ( $M = 4.24$ ,  $SD = 4.997$ ) was reported than for the 86 students who were employed less than 40 hours per week ( $M = 5.9$ ,  $SD = 4.035$ ).

### *Parental Responsibility*

An independent sample t-test was conducted on each of the five subscales of the IIS and the two subscales of the CES to determine if there was a statistically significant difference in the level and type of interaction experienced by learners based on single parent status. Of the 15 students who reported being single parents, a statistically significant difference was found in their perceived levels of increased faculty interaction, increased academic and intellectual development but decreased faculty support and decreased peer affiliation than was found in students who were not single parents. Table 15 illustrates these differences.

Table 15

#### *Level and Type of Interaction Based on Single Parent Status*

Scale	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
IIS: Peer Interaction				-.246	118	.806
Single Parents	15	23.53	6.707			
Other Students	105	23.19	4.778			
IIS: Faculty Interaction				-2.901	118	.004
Single Parents	15	20.33	3.478			
Other Students	105	17.33	3.782			
IIS: Faculty Concern				-1.439	118	.153
Single Parents	15	22.20	3.364			
Other Students	105	20.69	3.869			

Table 15: Continued

Scale	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
IIS: Acad/Intel Dev.				-2.324	118	.022
Single Parents	15	27.73	3.411			
Other Students	105	25.20	4.015			
IIS: Instit/Goal Commit				-.832	118	.407
Single Parents	15	27.00	2.928			
Other Students	105	26.27	3.226			
CES: Faculty Support				2.522	118	.013
Single Parents	15	5.73	3.693			
Other Students	105	7.76	2.793			
CES: Peer Affiliation				2.406	118	.018
Single Parents	15	2.93	4.949			
Other Students	105	5.78	4.190			

Note:  $p < .1$

A one-way ANOVA was conducted on each of the five subscales of the IIS and the two subscales of the CES to determine if there was a statistically significant difference in the level and type of interaction experienced by learners based on their number of dependents. For these 40 students, a statistically significant difference ( $p < .1$ ) was found for the IIS' level of faculty interaction,  $f(6) = 35.364$ ,  $p = .023$ ; and for the

IIS' level of academic and intellectual development,  $f(6) = 31.967$ ,  $p = .060$ . In each case, the means for the students with 1 or more dependents was higher than for those with no dependents. However, there were no clear patterns suggesting that a specific number of dependents made a difference, just that having dependents made a difference.

#### *Financial independence*

An independent sample t-test was conducted on each of the five subscales of the IIS and the two subscales of the CES to determine if there was a statistically significant difference in the level and type of interaction experienced by learners based on financial independence. Of the 57 students who reported being financially independent, a statistically significant difference was found in their perceived levels of increased faculty interaction, increased faculty concern for student development and teaching, increased academic and intellectual development, and increased institutional and goal commitment. Table 16 illustrates this data.

Table 16

#### *Level and Type of Interaction Based on Financial Independence*

Scale	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
IIS: Peer Interaction				-1.637	118	.104
Financially Independent	57	24.02	5.020			
Financially Dependent	63	22.52	4.964			



Table 16: Continued

Scale	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
IIS: Faculty Interaction				-3.774	118	.000
Financially Independent	57	19.04	3.459			
Financially Dependent	63	16.51	3.893			
IIS: Faculty Concern				-3.338	118	.001
Financially Independent	57	22.05	3.324			
Financially Dependent	63	19.81	3.967			
IIS: Acad/Intel Dev.				-3.980	118	.000
Financially Independent	57	26.96	3.469			
Financially Dependent	63	24.21	4.061			
IIS: Instit/Goal Commit				-2.743	118	.007
Financially Independent	57	27.18	2.947			
Financially Dependent	63	25.62	3.240			
CES: Faculty Support				-1.419	118	.159
Financially Independent	57	7.91	1.776			
Financially Dependent	63	7.14	3.728			
CES: Peer Affiliation				1.140	118	.257
Financially Independent	57	4.95	4.478			
Financially Dependent	63	5.86	4.265			

Note:  $p < .1$

### *ESL Status*

An independent sample t-test was conducted on each of the five subscales of the IIS and the two subscales of the CES to determine if there was a statistically significant difference in the level and type of interaction experienced by learners based on whether or not English was their first language. No statistically significant differences were found on any scale for the 21 students who reported that English was not their first language.

### *COMPASS Reading Score*

A one-way ANOVA was conducted on each of the five subscales of the IIS and the two subscales of the CES to determine if there was a statistically significant difference in the level and type of interaction experienced by learners based on their COMPASS reading score. The only scale where a statistically significant difference ( $p < .1$ ) was found was for their level of institutional and goal commitment,  $f(51) = 1.429$ ,  $p = .094$ . However, there was no clear pattern indicating that a higher or lower score increased or decreased their institutional or goal commitment, just that their scores did make a difference in their level of commitment.

### *COMPASS Writing Score*

A one-way ANOVA was conducted on each of the five subscales of the IIS and the two subscales of the CES to determine if there was a statistically significant difference in the level and type of interaction experienced by learners based on their COMPASS writing score. Statistically significant differences ( $p < .1$ ) were found for their level of peer interaction,  $f(46) = 1.553$ ,  $p = .051$  and their perception of peer affiliation,  $f(46) = 1.525$ ,  $p = .058$ . However, as with their reading scores, there was no clear pattern indicating that a higher or lower score increased or decreased these levels,

just that their scores did make a difference in their level of peer interaction and perception of peer affiliation.

### *Summary*

The above data indicates that learners' perceived experience of the level and type of interaction is influenced by demographic characteristics.

The IIS scale measuring the level of peer interaction was influenced by age and COMPASS writing scores, but no pattern existed in either area to indicate whether this level was positively or negatively influenced, just that it was influenced.

The level of faculty interaction measured by the IIS scale was positively influenced by females, by learners who delayed entry by one or two years and by more than five years, by single parents and those with dependents, and by financially independent students. The level of faculty interaction was negatively influenced by white students and by students who did not delay entry to college.

The perceived IIS level of faculty concern for student development and teaching was positively influenced by female students, negatively influenced by those who did not delay entry into college, and positively influenced by those who delayed entry for one to two years or more than five years.

The academic and intellectual development reported by learners on the IIS scale was influenced by age; positively influence by gender, by those who did not delay entry into college or delayed entry by more than five years, by those enrolled part-time, by single parents and those with dependents, and by students who are financially independent; and negatively influenced by students whose father was the only parent to attend college.

The IIS scale measuring the level of students' perceived level of institutional and goal commitment was positively influenced by female students, negatively influenced by those who did not delay entry, positively influenced by financially independent learners, and influenced by COMPASS reading scores.

The CES measure of faculty support found that female learners and those whose father was the only parent to attend college felt increased levels of faculty support, while single parents felt decreased levels of support.

Peer affiliation as measured by the CES scale was reduced for students whose fathers were the only parent to attend college, for those who delayed entry for more than five years, and for those who are employed for 40 or more hours per week. Peer affiliation was also influenced by age and COMPASS writing scores, but with no pattern of increased or decreased perceptions of affiliation exists.

### *Research Question 3*

To what degree are academic achievement and retention rates among developmental community college students influenced by (a) different levels and different types of academic and social interaction, (b) by perceived levels of college adjustment and social adjustment, (c) by different course formats, and (d) by their level of satisfaction?

#### *Influences on Academic Achievement*

To measure the influences on academic achievement, a linear regression analysis was run using academic achievement as the dependent variable. A separate linear regression was run for each of the following independent variables: level and type of academic and social interaction, level of academic and social adjustment, course format,

and level of satisfaction. This was used to determine which independent variables were a strong predictor of academic achievement when considered without the influence of other variables. Academic Achievement was run using grades of “S” (Satisfactory), including those 5 students who received an “R” but identified course progress as a goal; grades of “R” (Repeat); and grades of “U” (Unsatisfactory). Grades of “W” (Withdrawn) were not considered because only two members of the sample received this grade.

Satisfaction was found to be a significant predictor of achieving a grade of “S” ( $p = .000$ ) with 20.5% of the variance in achievement resulting from satisfaction. A  $\beta$  value of .452 shows a moderate relationship between satisfaction and achieving a grade of “S”

A linear regression analysis found that faculty concern for student development and academic and social adjustment were significant predictors of achieving a grade of “S” with a moderate to weak predictor value. Faculty concern was significant ( $p = .000$ ) with a  $\beta$  value of .383 and 14.7% of the variance in achieving a grade of “S” resulting from faculty concern. While, academic and social adjustment was significant ( $p = .000$ ) with a  $\beta$  value of .381 with 14.5% of the variance in achieving a grade of “S” resulting from academic and social adjustment.

Satisfaction was also found to be a significant ( $p = .000$ ) moderate to weak negative predictor of achieving a grade of “R” with a  $\beta$  value of -.367 with 13.5% of the variance of achieving a grade of “R” resulting from satisfaction.

Weak predictor values were found for all other independent variables for the grades of “S”, “R”, and “U”. Table 17 demonstrates the data for these relationships.

Table 17

*Predictors of Achievement*

Predictor	$r^2$	$\beta$	Sig.
Grade "S"			
Peer Interaction	.025	.157	.087
Faculty Interaction	.018	.132	.149
Faculty Concern	.147	.383	.000
Academic/Intellectual Dev.	.103	.321	.000
Institutional/Goal Commit.	.078	.280	.002
Faculty Support	.044	.209	.022
Peer Affiliation	.000	.002	.980
Academic/Social Adjustment	.145	.381	.000
Course Format	.007	.081	.378
Satisfaction	.205	.452	.000
Grade "R"			
Peer Interaction	.032	-.179	.050
Faculty Interaction	.047	.009	.018
Faculty Concern	.105	.009	.000
Academic/Intellectual Dev.	.100	-.317	.000
Institutional/Goal Commit.	.042	-.204	.025
Faculty Support	.114	-.338	.000
Peer Affiliation	.033	-.181	.048

Table 17: Continued

Predictor	$r^2$	$\beta$	Sig.
Grade "R": Continued			
Academic/Social Adjustment	.078	-.280	.002
Course Format	.006	.078	.398
Satisfaction	.135	-.367	.000
Grade "U"			
Peer Interaction	.001	.038	.682
Faculty Interaction	.000	.002	.979
Faculty Concern	.045	-.212	.020
Academic/Intellectual Dev.	.010	-.099	.281
Institutional/Goal Commit.	.058	-.241	.008
Faculty Support	.006	.080	.387
Peer Affiliation	.033	.183	.045
Academic/Social Adjustment	.049	-.220	.016
Course Format	.000	-.013	.890
Satisfaction	.077	-.278	.002

Note:  $p < .1$

A multiple linear regression analysis shows that 32.3% of variance in achievement of a grade of “S” can be explained by the following predictors: peer interaction, faculty interaction, faculty concern for student development and teaching, academic and intellectual development, institutional and goal commitment, faculty support, peer affiliation, academic and social adjustment, course format, and satisfaction. Table 18 demonstrates the predictor value of each variable on achieving a grade of “S” when considered in relationship to the other variables. Table 18 shows that these predictors have a weak predictor value. Of these weak predictors, satisfaction had the strongest positive influence on achieving a grade of “S” followed by faculty concern for student development and teaching and academic and social adjustment.



Table 18

*Predictors of Achieving a Grade of "S"*

Predictor	$\beta$	Sig.
Peer Interaction	.036	.742
Faculty Interaction	-.235	.037
Faculty Concern	.230	.053
Academic/Intellectual Dev.	.089	.426
Institutional/Goal Commit.	.112	.186
Faculty Support	-.007	.945
Peer Affiliation	-.066	.519
Academic/Social Adjustment	.219	.002
Course Format	.082	.335
Satisfaction	.247	.021

Note:  $p < .1$

A multiple linear regression analysis shows that 23.3% of variance in achievement of a grade of "R" can be explained by the predictors. Table 19 demonstrates the predictor value of each variable on achieving a grade of "R" when considered in relationship to the other variables. Table 19 shows that the predictors had a weak predictor value.

Table 19

*Predictors of Achieving a Grade of "R"*

Predictor	$\beta$	Sig.
Peer Interaction	.058	.620
Faculty Interaction	.043	.718
Faculty Concern	-.045	.721
Academic/Intellectual Dev.	-.123	.304
Institutional/Goal Commit.	-.070	.438
Faculty Support	-.190	.062
Peer Affiliation	-.128	.240
Academic/Social Adjustment	-.101	.316
Course Format	-.005	.954
Satisfaction	-.189	.096

Note:  $p < .1$

A multiple linear regression analysis shows that 24.4% of variance in achievement of a grade of "U" can be explained by the predictors. Table 20 demonstrates the predictor value of each variable on achieving a grade of "U" when considered in relationship to the other variables. Table 20 shows that faculty concern for student development and teaching and faculty support were found to be a statistically significant predictors of achieving a grade of "U", with faculty concern being a weak negative

predictor and faculty support being a weak positive predictor. All predictors had a weak predictor value.

Table 20

*Predictors of Achieving a Grade of "U"*

Predictor	$\beta$	Sig.
Peer Interaction	-.049	.695
Faculty Interaction	.172	.191
Faculty Concern	-.256	.046
Academic/Intellectual Dev.	.063	.608
Institutional/Goal Commit.	-.114	.240
Faculty Support	.245	.022
Peer Affiliation	.123	.296
Academic/Social Adjustment	-.087	.688
Course Format	-.183	.122
Satisfaction	-.087	.378

Note:  $p < .1$

### *Influences on Retention Rates*

To measure the influences on retention, a linear regression analysis was run using retention as the dependent variable. A separate linear regression was run for each of the following independent variables: level and type of academic and social interaction, level of academic and social adjustment, course format, and level of satisfaction. This was used to determine which independent variables were strong predictors of retention when considered without the influence of other variables. Retention was defined as those students who registered for courses in the following semester or who satisfactorily completed the class if that was their only goal. Those completing the class as their only goal represented only 7% of the students surveyed.

A linear regression analysis found that none of the independent variables tested was a substantial predictor of retention. All variables tested had very weak predictor values and most had very weak negative predictor values. In no case was the variance in retention more than 4% based on the influence of any of these variables when considered individually. Table 21 demonstrates the data for these relationships.

Table 21

#### *Predictors of Retention I*

Predictor	$r^2$	$\beta$	Sig.
Peer Interaction	.041	-.202	.027
Faculty Interaction	.024	-.155	.092
Faculty Concern	.001	-.038	.679

Table 21: Continued

Predictor	$r^2$	$\beta$	Sig.
Academic/Intellectual Dev.	.024	-.154	.093
Institutional/Goal Commit.	.003	-.059	.525
Faculty Support	.004	-.062	.504
Peer Affiliation	.028	-.167	.069
Academic/Social Adjustment	.009	.093	.310
Course Format	.010	-.100	.277
Satisfaction	.000	.018	.841

Note:  $p < .1$

A multiple linear regression analysis shows that 11.9% of variance in retention can be explained by the following predictors: peer interaction, faculty interaction, faculty concern for student development and teaching, academic and intellectual development, institutional and goal commitment, faculty support, peer affiliation, academic and social adjustment, course format, and satisfaction. Table 22 demonstrates the predictor value of each variable on retention when considered in relationship to the other variables. Table 22 shows that these predictors have a weak predictor value. Of these weak predictors, social and academic adjustment had the strongest positive influence on retention.

Table 22

*Predictors of Retention II*

Predictor	$\beta$	Sig.
Peer Interaction	-.191	.126
Faculty Interaction	-.112	.381
Faculty Concern	.055	.684
Academic/Intellectual Dev.	-.151	.237
Institutional/Goal Commit.	-.082	.396
Faculty Support	-.017	.877
Peer Affiliation	-.067	.567
Academic/Social Adjustment	.241	.027
Course Format	-.009	.929
Satisfaction	.080	.509

Note:  $p < .1$

*Research Question 4*

What relationships, if any, exist among student satisfaction, academic achievement, and retention rates among developmental community college students?

A correlation was run to demonstrate the relationship among satisfaction, achievement, and retention of developmental community college students. This

correlation, found in table 23, shows a moderate relationship,  $\beta = .452$ , between satisfaction and achievement; a weak relationship between achievement and retention,  $\beta = .242$ ; and a very weak relationship between satisfaction and retention,  $\beta = .018$ .

Table 23

*Correlations Among Satisfaction, Achievement, and Retention*

Relationship	$r^2$	$\beta$	Sig.
Satisfaction/Achievement	.181	.452	.000
Satisfaction/Retention	.000	.018	.841
Achievement/Retention	.059	.242	.008

Note:  $p < .1$

### Summary

In summary, learning community participants were found to have higher perceived levels of peer interaction, faculty interaction, faculty concern for student development and teaching, and peer affiliation in the classroom than non-learning community participants. Demographic characteristics were found to influence levels and types of interaction with gender, parental education, delayed entry to college, parental responsibility, and financial independence influencing more categories of interaction than other demographic factors. Academic achievement of a grade of "S" was found to be moderately influenced by satisfaction with all other predictors having a weak relationship

to achieving a grade of “S”. All predictors were found to have a weak relationship to achieving a grade of “R” or “U”. None of the predictors had more than a weak influence on retention. A moderate relationship was found between satisfaction and achievement, a weak relationship between achievement and retention, and almost no relationship was found between satisfaction and retention.



## CHAPTER V

### CONCLUSION

#### Introduction

The purpose of this study was to examine the influence of the level of interaction, the influence of the type of interaction, the influence of demographic characteristics, the influence of the level of social and academic adjustment, and the influence of learning communities on the satisfaction, achievement, and retention of developmental English community college students.

This chapter summarizes the findings in response to the existing literature, discusses implications, presents the limitations of the study, and explores recommendations for future research.

#### Summary of the Findings

The study's findings suggest that learning community participants had higher perceived levels and types of interaction than non-learning community participants. Further, individuals' demographic characteristics had an influence on the levels and types of interaction- with gender, parental education, delayed entry to college, parental responsibility, and financial independence influencing more categories of interaction than other demographic factors. When considering academic achievement, findings were that a grade of "S" was moderately influenced by satisfaction with all other predictors having a weak relationship to achieving a grade of "S" and that all predictors had a weak relationship to achieving a grade of "R" or "U". None of the predictors had more than a weak influence on retention. When considering the relationship among satisfaction, achievement, and retention, a moderate relationship was found between satisfaction and

achievement, a weak relationship between achievement and retention, and almost no relationship was found between satisfaction and retention.

#### Findings in Relationship to Existing Literature

The findings of this study are both supportive of and contradictory to, the existent literature. This is not surprising, given that many of the existing studies were conducted at four-year institutions rather than two-year community colleges. This is reflective of the fact that less than 5% of educational research is conducted at community colleges (Pascarella and Terenzini, 1998) and that much of what exists is more than ten years old (Bailey & Alfonso, 2005).

The results of the study suggest that students participating in a learning community have a statistically significantly higher level of interaction than do non-learning community participants on measures of peer interaction, faculty interaction, the perceived level of faculty concern, and the peer affiliation found in the classroom. It should also be noted that while not statistically significantly different, learning community participants had a higher mean level of interaction on all interaction scales measured and on both types of interaction, interaction with faculty and with peers. These findings support earlier studies that learning communities increase interaction and student involvement (Cross, 1998; Rendon, 1994; Shapiro & Levine, 1999; Tinto & Love, 1995; Tinto & Russo, 1994).

The findings also suggested that demographic characteristics influence students' perceived levels and types of interaction. The data suggested that age has an influence, but with no regular pattern; that being female increased the level and type of interaction on all scales; that delaying entry for any amount of time, being a first generation college

student, and being financially independent increased the level on all scales except peer affiliation; and that ethnicity, ESL status, and enrollment status had little effect on the level and type of interaction. Of these demographic characteristics, only the fact that learning community participants were younger and less likely to be first generation college students separated them from non-learning community participants when considering factors that affect the level and type of interaction.

The demographic characteristics of students in this study are similar to the diverse demographic tendencies of community college students in general in terms of age, gender, ethnicity, full-time employment, part-time enrollment, single parent status, first-generation college student status, and delayed entry to college (Cohen & Brawer, 2003; Kuh, 2001; Reason, 2003; Schmid & Abell, 2003; Vaughan, 2000). These students are at risk not only due to demographic characteristics but due to their lack of involvement on campus (Cohen & Brawer, 2003). Tinto (1999) found that the classroom is the only place for many community college students to experience social and academic integration. This finding is supported by this study which illustrates that despite demographic diversity and demographic influences on interaction, interaction is increased when intentional treatments, such as learning communities, are applied.

This study also considered the influences of (a) level and type of interaction, (b) level of academic and social adjustment, (c) course format, and (d) level of satisfaction on academic achievement and retention.

The findings illustrate that the level and type of interaction had only a weak relationship with achievement and retention. This is contradictory to the basic tenants of both Astin's and Tinto's theories of retention. Astin's theory of retention postulates that

the effectiveness of any program lies in its ability to increase the level of student involvement (Astin, 1999b). Tinto's theory recognizes both the influence of personal characteristics and the influence of student interaction (Guarino and Hocevar, 2005), but presents social and academic integration as the more important of the two in terms of the influence on retention (Tinto, 1975). Tinto's model, focusing on the role of active learning in the classroom as a way to increase involvement and therefore retention, was shown to be effective by Braxton et al. (2000). This is supported in this study by the fact that the learning communities, who apply active learning techniques, had a higher level of interaction than the non-learning community participants. However, when applied to the diverse population of non-traditional and developmental students, Tinto's model has had contradictory results (Borglum & Kabala, 2000; Miller & Gerlach, 1997; Napoli and Wortman, 1998). Of these contradictory results, Tinto explained that while academic and social involvement matter, they "matter somewhat differently in different educational settings and may influence different students in different ways" (Tinto, 1998, p. 169). This could explain some of the contradictory findings reported by this study.

The findings of the study also indicate that the level of academic and social adjustment of developmental students had an influence on achievement and retention, supporting the findings of Boylan (1998b) and Peterson (1993), but not those of Valeri-Gold et al (1998). Boylan concluded that social and academic adjustment did positively influence the achievement of underprepared students and Peterson noted a relationship between social and academic adjustment and retention in developmental students, while Valeri-Gold et al. did not find a difference in the scores of those who persisted and those who did not (Boylan, 1998b; Peterson, 1993; Valeri-Gold et al., 1998).

The course format, learning community or non-learning community participation, was found to have a positive relationship to achievement and a negative relationship to retention, neither of which was statistically significant in its impact. This is contradictory to the existing literature, which states that learning communities have been shown to have a positive influence on both achievement and retention rates (Cross, 1998; Rendon, Smith & Hunter, 1998; Tinto, 1997b; Tinto & Love, 1995; Tinto & Russo, 1994).

The findings also suggested that satisfaction had an influence on achievement but almost no influence on retention. This is contradicted and supported by the existing literature. Much of the literature expresses a direct relationship between increasing satisfaction through increased interaction with faculty and peers and higher achievement and retention rates. This is particularly true in the research on underprepared students. Grimes and David (1999) and Higbee et al. (1991) both concluded that taking a holistic approach to developmental education and addressing students' non-cognitive needs as well as their academic needs is important to their satisfaction and success. However, in support of the study's results, the 2005 CCSSE survey (McClenny, 2005a) found that underprepared students were more likely to participate in student support services with increased satisfaction in their experience, but were still achieving lower grades and lower retention rates.

Finally, this study considered the relationship between students' rates of satisfaction, achievement, and retention. It found a relationship between satisfaction and achievement; between achievement and retention, but only a weak relationship between satisfaction and retention. Most of the existing literature simply groups these concepts together without discussing their relationship.

## Implications for Practice

### *Introduction*

The findings of this study has the following implications for practice in the developmental English program at VWCC: (1) the learning community model does both directly and indirectly impact student satisfaction, achievement, and retention to a greater extent than does non-participation and therefore should be applied where feasible to developmental English classes; (2) demographic factors do influence the level and type of interaction, indicating that faculty should be trained to consider the individual demographic characteristics of students to increase their awareness of risk factors and therefore provide more individualized assistance based on the individual risks and needs of students; (3) social and academic adjustment do have a relationship to achievement and retention, creating the need for more individualized assessment and assistance for developmental students; (4) increased interaction benefits all students, so while the learning community model is not appropriate for all developmental English students at VWCC, a variety of interventions, such as active and cooperative learning, and intrusive advising, might be used in non-learning community classes to increase interaction and should be adopted in those classes where feasible; and (5) the influence of interaction through intrusive advising to address the whole student, not just his or her academic deficiencies, can be expanded. One strategy is to add a specially created student development class to the learning community and require all non-learning community students to take this class during their first semester at VWCC.

### *Support for the Learning Community Model*

The use of the learning community model is supported by the findings, with learning community participants showing an increased level of both faculty and peer interaction and an increased level of satisfaction with their learning experience. Furthermore, the findings support the use of learning communities through an indirect relationship to increased retention rates.

The findings of this study imply that while demographic characteristics influence the level and type of interaction experienced by learners, that for the students surveyed the demographic characteristics of learning community participants and non-learning community participants were similar. Therefore, the experience of increased levels of interaction by participants versus non-participants was not significantly influenced by demographic characteristics but rather than by their participation in the learning community.

Additional correlations, not explored in the research questions, show a relationship between satisfaction and increased levels of interaction. A moderate relationship occurred between satisfaction and the levels of faculty interaction,  $\beta = .421$ ; between satisfaction and faculty concern for students,  $\beta = .560$ ; and between satisfaction and academic and intellectual development,  $\beta = .501$ ; while a weak relationship was found between satisfaction and the level of peer interaction. This suggests that academic integration has a stronger influence than does social interaction on the satisfaction levels of the students' surveyed and that there is a positive relationship between the level and type of interaction and satisfaction. Additionally, satisfaction is shown by the study to

influence achievement. And, to a small degree, achievement is shown to influence retention.

This relationship between satisfaction and increased levels of interaction can be used to create an indirect relationship between interaction and retention. While the study finds no direct relationship between participation in a learning community and increased levels of retention, there is an indirect relationship. This indirect relationship can be traced by the fact that learning community participation influences interaction, that interaction influences satisfaction, that satisfaction influences achievement, and that achievement influences retention, concluding that learning communities indirectly increase retention by increasing satisfaction through increased interaction. This indirect relationship between increased interaction and retention supports the continued use and expansion of the learning community model at VWCC.

#### *Increase Faculty Awareness of Demographic Factors*

Because demographic factors have been shown to potentially influence the level and type of interaction experienced by learners, faculty should be trained to be aware of these relationships and be provided with tools to assist them in using this knowledge to increase interaction with students who have at-risk demographic characteristics. One such tool to increase interaction is the use of intrusive advising. Intrusive advising gives the faculty one-on-one contact with students and can facilitate the use of individualized methods to increase their interaction, satisfaction, achievement, and retention. Intrusive advising is currently in use by learning community faculty and should be expanded to other developmental classes at VWCC where feasible. Demographic considerations should be added to the training for all developmental faculty, learning community and



non-learning community, who apply intrusive advising and the student entrance surveys in these classes should be updated to reflect demographic questions.

*Apply Social and Academic Adjustment Assessments*

Because social and academic adjustment have been found, both by the existing literature and this study, to be related to achievement and retention, an assessment, such as the SACQ, should be applied as part of the entrance survey for developmental English classes that use intrusive advising. With assistance from student services, developmental faculty can use the results of this assessment to develop individualized advising and counseling plans for students based on their level of adaptation to the college environment. These plans may indicate the need for additional student development classes, participation in student development mini-workshops, or participation in specialized student services programs. This assessment and the resulting assistance are congruent with the basic theory of developmental education, which is to address the needs of the whole student, not just his or her academic deficiencies.

*Apply Active Learning and Intrusive Advising to Non-Learning Community Classes*

Because not all developmental English students need both reading and writing coursework, the current learning community model is not appropriate for all developmental students. However, many of the practices used by the learning community program, such as active and cooperative learning and intrusive advising, can be used in other classes to increase interaction. Faculty teaching non-learning community classes should be encouraged to use these techniques where feasible. In-service workshops can be used to provide training and experienced faculty could serve as trainers and mentors when further questions arise.

*Employ Student Development Classes*

The influence of interaction and adjustment to college can be expanded by adding a specially created student development class to the learning community and by requiring all non-learning community students to take this class during their first semester at VWCC.

A student success or orientation course serves the purpose of orienting students to the college environment and providing them with basic study skills and academic management techniques to successfully navigate their experiences in college. A student development course is the natural place to extend development beyond the implementation of academic skills. This environment would serve as an appropriate setting to initiate a series of non-cognitive tests to help students to understand their learning styles, personality characteristics, and aptitudes. For underprepared students, such a course could also serve as a place to provide them with the socialization to the practices of a college environment that are often not understood by these students. This provides them with topics such as academic policies, communication skills, campus resources, relationship building skills, stress reduction skills, time and financial management skills, decision making skills, and goal setting skills. However, it is essential that they begin this course during their first semester of developmental coursework as it provides them with a connection to the institution and the skills to persist through that critical semester.

*Limitations*

The study was limited by the following validity and generalizability concerns as well as limitations of the design: the ability to generalize the study to other community

colleges, the potential of selection bias, the influence of the past history of the treatment, the accuracy of self-reported student information, questions over the equality of instructor effectiveness, the assumption of causal conclusions, the influence of researcher bias, the potential for cross-contamination of sections, the limitation of a post-test only design, and the incomplete nature of a model that is not fully specified.

#### *Validity and Generalizability Concerns*

Because this study was conducted on a single campus, the ability to generalize the results to a larger population of developmental students is limited. The generalizability of the study is further limited by the specific nature of the learning community that was used. This learning community pairs specific developmental reading and writing classes along with a cultural component and an intrusive advising component. It is unique in its approach, making generalizability to other learning communities and other community colleges difficult.

Selection bias occurred because of the limited number of class sections of developmental English students available at VWCC. Because of this limited sample, a purposeful selection of sections was used. In some cases, the section selected represented the only section of its type. Examples of these sections include the learning community sections of both day and night classes and the night classes in both reading and writing. Purposeful selection creates the possibility of selection bias.

Techniques for increasing interaction in the learning community format have been presented at conferences and discussed in local student engagement forums, creating a history of the use of the learning community format and interaction techniques at VWCC. Instructors in non-learning community based courses are aware of these

techniques. These techniques are used in varying levels by non-learning community instructors, creating the possibility of contamination of the data.

The survey data from students was based on self-reported perceptions and responses, limiting the accuracy of this data through students intentionally or unintentionally misrepresenting their responses. It is possible that students could unintentionally misrepresent their responses by not understanding the questions asked in the measure or intentionally by not being interested enough to take the time to honestly answer the questions.

Instructors purposefully selected for their effectiveness in the classroom teach the learning community sections, creating a confounding variable. However, instructors in the non-learning community classes have also received performance evaluations of “very good” or “excellent”, demonstrating their effectiveness in the classroom. The college emphasizes the importance of developmental programs and assigns the strongest faculty, both full-time and part-time, to all developmental classes. So while the learning community faculty were selected for their exemplary teaching effectiveness, all faculty teaching developmental classes have been demonstrated to be effective teachers.

Researcher bias does exist in this study. The researcher supervises the developmental English courses and has worked with the reading and writing specialists to develop the English 07 learning community. She has been a proponent of the learning community format and the use of intrusive advising practices. However, given her own understanding that a bias exists, she has worked to respond to the results of the study, not influencing them, and not intentionally skewing them based on her own bias.

Cross-contamination of sections was not expected because of students switching sections from English 01 and 04 to English 07. If section switching did occur, it happened only in the first week of class, before any of the benefits of registration in English 07 were applied.

#### *Limitations of the Design*

Because this is a correlational design, it established relationships between variables. Causality cannot be inferred from these relationships. This study is not intended to demonstrate causal conclusions between the variables but rather to establish relationships between variables so that effective treatments for future practice can be developed based on those relationships.

Since this study is a post-test only design, there was no control of inherent threats because of pre-existing conditions.

The design model in this study has not been fully specified. In any study, there will always be additional variables that were not measured which influence the results of the study. One such variable that was noticed by the researcher in this study was the difference in participation rates of learning community and non-learning community students. The researcher found that 79.37% of enrolled learning community students completed the survey, while only 56.45% of enrolled non-learning community students participated. This is confounded by the fact that retention rates would differ significantly if those who were not surveyed were included in the results. The researcher found that while 86% of non-learning community participants surveyed were retained, only 64% of all non-learning community participants were retained. And, while 78% of learning community participants surveyed were retained, 70% of all learning community

participants were retained. These results suggest that the students surveyed in both the learning community and non-learning community classes were more likely to be retained than the students who did not attend on the day the survey was administered. Because more learning community students attended than non-learning community students, a comparison of retention rates between the two groups may not be accurate. This difference in retention levels could have effected the outcome of the study.

#### Recommendations for Future Research

The following recommendations have been made for future research:

1. Increase generalizabilty by replicating the study at other community colleges with similar learning community programs.
2. Increase the accuracy of this study, by increasing the sample size by administering the instruments to future classes at VWCC.
3. Increase the accuracy of this study by changing the methodology to include a greater response rate from participants, therefore, increasing the reliability rates of retention findings.
4. Increase the scope of the study by adding a research question exploring the relationship between the measures of the level and type of interaction and satisfaction.
5. Increase the scope of the study by adding a research question exploring the difference in frequencies of students' achievement and retention rates based on course format.

6. Increase the information provided by the study by extending the scope to include a longitudinal component that tracks the retention rates of learning community and non-learning community participants through the point of graduation.
7. Increase the information provided by the study by using a longitudinal component to track the level of satisfaction and how that relates to students who stop out after one semester but return in future semesters and how that relates to long term retention as measured by graduation or completion of goals.

### Conclusion

This study examined how the level and type of interaction, the level of social and academic adjustment, participation in a learning community, and demographic characteristics influenced the satisfaction, achievement, and retention of developmental English students at VWCC.

It can be concluded from this study that learning community participants were found to have higher perceived levels and types of interaction than non-learning community participants; that demographic characteristics did influence the levels and types of interaction; that academic achievement of a grade of “S” was found to be influenced by satisfaction with all other predictors having a weak relationship to achieving a grade of “S”; that all predictors were found to have a weak relationship to achieving a grade of “R” or “U”; that none of the predictors had more than a weak influence on retention; that a moderate relationship was found between satisfaction and achievement, a weak relationship between achievement and retention, and almost no relationship was found between satisfaction and retention.

From these findings, it can be implied that the learning community model does both directly and indirectly impact student satisfaction, achievement, and retention to a greater extent than does non-participation and, therefore, should be applied where feasible to developmental English classes; that demographic factors do influence the level and type of interaction, indicating that faculty should be trained to consider the individual demographic characteristics of students to increase their awareness of risk factors and, therefore, provide more individualized assistance based on the individual risks and needs of students; that social and academic adjustment do have a relationship to achievement and retention, creating the need for more individualized assessment and assistance for developmental students; that while the learning community model is not appropriate for all developmental English students at VWCC, many of the concepts, such as active and cooperative learning and intrusive advising, can be used to increase interaction in non-learning community classes and should be adopted in those classes where feasible; and that the influence of interaction and student adjustment can be expanded by adding a specially created student development classes to the learning community and by requiring all non-learning community students to take this class during their first semester at VWCC .

The results of the study, which support and contradict existing literature, point to the fact that the diversity of community college students, their lack of campus involvement, and their competing responsibilities and priorities make it extremely difficult to find a strong relationship between any single influence and retention. This is particularly true for underprepared students. While learning communities do increase



involvement, they are just one of many solutions that must be applied simultaneously to increase the retention of underprepared community college students.

These findings suggest the need for future research in this area. This study has added to the existing literature on retention of developmental community college students, the influence of learning communities on retention of developmental community college students, and the influence of social and academic interaction on retention of developmental community college students. The researcher hopes that this study will inspire other studies that broaden the research on community colleges and lessen the “empirical black hole” (Pascarella and Terenzini, 1998, p.155) found in community college research, especially as it relates to developmental education.

## REFERENCES

- ACT. (2004). *Crisis at the core: Preparing all students for college and work*. Retrieved October 16, 2004 from [http://www.act.org/path/policy/pdf/crisis\\_exec\\_summary.pdf](http://www.act.org/path/policy/pdf/crisis_exec_summary.pdf)
- Adelman, C. (1996, October 4). The truth about remedial work. *The Chronicle of Higher Education*. Retrieved October 16, 2004 from <http://chronicle.com/prm/che-data/articles.dir/art-43.dir/issue-06.dir/06a05601.htm>
- Altbach, P. G. (2001). The American academic model in comparative perspective. In P. G. Altbach, P. J. Gumport, & D. B. Johnston (Eds.), *In Defense of American Higher Education* (277-303). Baltimore: The Johns Hopkins University Press.
- Ashar, H., & Skenes, R. (1993, Winter). Can Tinto's student departure model be applied to nontraditional students? *Adult Education Quarterly*, 43(2), 90-100.
- Astin, A. W. (1975). *Preventing students from dropping out*. San Francisco: Jossey-Bass.
- Astin, A. W. (1993). *What matters in college?* San Francisco: Jossey-Bass.
- Astin, A. W. (1999a). Involvement in learning revisited: Lessons we have learned. *Journal of College Student Development*, 40(5), 587-598.
- Astin, A. W. (1999b). Student involvement: A developmental theory for higher education. *Journal of College Student Development*, 40(5), 518-29.
- Bailey, T. R., & Alfonso, M. (2005). *Paths to persistence: An analysis of research on program effectiveness at community colleges*. Columbia University: Community College Research Center.
- Baker, R.W., & Siryk, B. (1999). *Student Adaptation to College Questionnaire*. Los Angeles: Western Psychological Services.

- Bartholomay, A. C. (1999). *Standards for developmental education in the Virginia Community College System: Recommendations for the VCCS developmental education implementation task force*. Virginia Community College System.
- Bean, J., & Eaton, S. B. (2002). The psychology underlying successful retention practices. *Journal of College Student Retention: Research, Theory & Practice*, 3(1), 73-89.
- Beil, C., Reissen, C. A., Zea, M. C., & Caplan, R. C. (1999). A longitudinal study of the effects of academic and social integration and commitment on retention. *NASPA Journal*, 37(1), 376-385.
- Bers, T. H., & Smith, K. E. (1991). Persistence of community college students: The influence of student intent and academic and social integration. *Research in Higher Education*, 32(5), 539-556.
- Bittenham, R., Cook, R., & Hall, J. B. (2003). Connections: An integrated community of learners. *Journal of Developmental Education*, 27(1), 18-20, 22, 24-5. Retrieved June 12, 2004, from <http://wilson.txt.hwwilson.com/pdf/02444/WDUMN/8SB.pdf>
- Bonham, L. A., & Luckie, J. A. (1993a). Community college retention: Differentiating among stopouts, dropouts, and optouts. *The Community College Journal of Research and Practice*, 17(6), 543-554.
- Bonham, L. A., & Luckie, J. A. (1993b). Taking a break in schooling: Why community college students stop out. *The Community College Journal of Research and Practice*, 17(3), 257-270.

- Borglum, K., & Kubala, T. (2000). Academic and social integration of community college students: A case study. *Community College Journal of Research and Practice*, 24(7), 567-576.
- Boylan, H. R. (1986a). Models of student development: Part I. *Research in Developmental Education*, 3(4), 5-8.
- Boylan, H. R. (1986b). Models of student development: Part II. *Research in Developmental Education*, 3(5).
- Boylan, H. R. (Ed.). (1988a). Characteristics of developmental programs. *Review of Research in Developmental Education*, Pilot Issue #2, 3-6.
- Boylan, H. R. (Ed.). (1988b). Theoretical foundations of developmental education. *Review of Research in Developmental Education*, 3(3), 1-5.
- Boylan, H. R. (1999). Developmental education: Demographics, outcomes, and activities. *The Journal of Developmental Education*, 23(2), 2-8.
- Boylan, H. R., & Bonham, B. S. (1994). Seven myths about developmental education. *Research and Teaching in Developmental Education*, 10(2), 5-12.
- Boylan, H. R., Bonham, B. S., & White, S. R. (1999). Developmental and remedial education in postsecondary education. *New Directions for Higher Education*, 27(4), 87-101.
- Braxton, J. M., Hirschy, A. S., & McClendon, S. A. (2004). Understanding and reducing college student departure. ASHE-ERIC Higher Education Reports, 30(3), XI-XII, 1-97. Retrieved June 12, 2004, from [http:// wilson.txt.hwwilson.com/pdf/full/04367/4VT66/DSV.pdf](http://wilson.txt.hwwilson.com/pdf/full/04367/4VT66/DSV.pdf)

- Braxton, J. M., Milem, J. F., & Sullivan, A. S. (2000, September-October). The influence of active learning on the college student departure process: Toward a revision of Tinto's theory. *The Journal of Higher Education*, 71(5), 569-590.
- Bryant, A. (2001). Community college students: Recent findings and trends. *Community College Review*, 29(3), 77-93.
- Cabrera, A. F., Castaneda, M. B., Nora, A., & Hengstler, D. (1992, March-April). The convergence between two theories of college persistence. *The Journal of Higher Education*, 63(2), 143-164.
- Cabrera, A. F., Nora, A., Crissman, J. L., Terenzini, P. T., Bernal, E. M., & Pascarella, E. T. (2002). Collaborative learning: Its impact on college students' development and diversity. *Journal of College Student Development*, 43(1), 20-34.
- Capps, J. S. (n.d.). *A modest proposal for freshman composition: A response to "A new vitality in general education" and "50 hours: A core curriculum for college students."* Unpublished manuscript.
- Capps, J. S. (1994). Revising English 01: The creation of a developmental reading and writing course (Doctoral dissertation, Virginia Polytechnic Institute and State University, 1994). *Dissertation Abstracts International*, 55 (09A), 00229.
- Chickering, A. W. (1969). *Education and identity*. San Francisco: Jossey-Bass.
- Chickering, A. W., & Reisser, L. (1993). *Education and identity* (2<sup>nd</sup> ed.). San Francisco: Jossey-Bass.
- Clagett, C. A. (1996). Correlates of success in the community college: Using research to inform campus retention efforts. *Journal of Applied Research in the Community College*, 4(1), 49-68.

- Cohen, A. M., & Brawer, F. B. (2003). *The American community college* (4<sup>th</sup> ed.). San Francisco: Jossey-Bass
- Cross, P. (1998). Why learning communities? Why now? *About Campus*, 3(3), 4-11.
- Dewey, J. (1916). *Democracy and education*. New York: Macmillan.
- Dotzler, J. J. (2003). A note on the nature and history of post-secondary developmental education in America. *Mathematics and Computer Education*, 37(1), 121-125.
- Gardner, J. N. (2000). The changing roles of developmental educators. *Journal of College Reading and Learning*, 3(1), 5.
- Gerdes, H., & Mallinckrodt, B. (1994). Emotional, social, and academic adjustment of college students: A longitudinal study of retention. *Journal of Counseling and Development*, 72(3), 281-288.
- Graham, S., & Donaldson, J. F. (1999, Spring). Adult students' academic and intellectual development in college. *Adult Education Quarterly*, 49(3), 147-161.
- Grimes, S. K., & David, K. C. (1999). Underprepared community college students: Implications of attitudinal and experiential differences. *Community College Review*, 27(2), 73-92.
- Guarino, A. J., & Hocevar, D. (2005). Tinto's model and locus of control. *College and University Journal*, 80(4), 43-44.
- Halpin, R. L. (1990). An application of the Tinto model to the analysis of freshmen persistence in a community college. *Community College Review*, 17(4), 22-32.

- Hanson, D. (2002). *Table 4.5: Retention and graduation rates for students enrolled in associate degree programs*. Virginia Western Community College, Office of Institutional Research and Planning. Retrieved February 18, 2006 from <http://www.vw.vccs.edu/factbook / retengradrate.html>
- Hanson, D. (2003). *Table 4.4: Developmental course pass rates*. Virginia Western Community College, Office of Institutional Research and Planning. Retrieved January 21, 2006 from <http://www.vw.vccs.edu/factbook/DevPass.html>
- Hanson, D. (2004). *Institutional profile*. Virginia Western Community College, Office of Institutional Research and Planning. Retrieved January 14, 2006 from <http://www.vw.vccs.edu/factbook/VWCCProfile.html>
- Hanson, D. (2005a). *Fast Facts*. Virginia Western Community College, Office of Institutional Research and Planning. Retrieved January 14, 2006 from <http://www.vw.vccs.edu/factbook/ FastFacts.html>
- Hanson, D. (2005b). *Table 2.3: Developmental course enrollment*. Virginia Western Community College, Office of Institutional Research and Planning. Retrieved January 21, 2006 from <http://www.vw.vccs.edu/factbook/DevCourse.html>
- Hanson, D. (2005c). *Virginia Western Community College freshman survey: Fall 2005*. Virginia Western Community College, Office of Institutional Research and Planning. Retrieved January 21, 2006 from <http://www.vw.vccs.edu/factbook/Freshmen05.html>

Hanson, D. (2005d). *Virginia Western Community College survey of student engagement.*

Virginia Western Community College, Office of Institutional Research and

Planning. Retrieved June 23, 2006 from

<http://www.vw.vccs.edu/factbook/CCSSE2005.html>

Higbee, J. L., Dwinell, P. L., McAdams, C. R., GoldbergBelle, E., & Tardola, M. E.

(1991). Serving underprepared students in institutions of higher education.

*Journal of Humanistic Education and Development*, 30, 73-80.

Hornstein, A. (2004, September 14). Market spotlight: Focus on developmental education.

*Roadmap to Success*, 3(6). Retrieved September 22, 2004 from

<http://www.plato.com/community/roadmap/2004/09/market.html>

Jacobson, J. (2004). Core curricula in high schools provide inadequate preparation for

college work, report says. *The Chronicle of Higher Education*. Today's News.

Retrieved October 15, 2004, from [http://chronicle.com/daily/2004/10/](http://chronicle.com/daily/2004/10/2004101502n.htm)

2004101502n.htm

Johnson, D. W., Johnson, R. T., & Smith, K. A. (1998). Cooperative learning returns to

college. *Change*, 30(4), 26-36. Retrieved June 12, 2004, from

<http://pqasb.pqarchiver.com/change/doc/31954423.html>

Knefelkamp, L., Widick, C., Parker, C.A., & Associates. (1978). Applying new

developmental findings. Washington: Jossey-Bass.

Kuh, G. D. (1995, March - April). The other curriculum: Out-of-class experiences

associated with student learning and personal development. *The Journal of Higher*

*Education*, 66(2), 123-155.



- Kuh, G. D. (2001). College students today: Why we can't leave serendipity to chance. In P. G. Altbach, P. J. Gumport, & D. B. Johnston (Eds.), *In Defense of American Higher Education* (277-303). Baltimore: The Johns Hopkins University Press.
- Kuh, G. D., & Hu, S. (2001, Spring). The effects of student-faculty interaction in the 1990s. *The Review of Higher Education*, 24(3), 309-332.
- Liu, E., & Liu, R. (1999). An application of Tinto's model at a commuter campus. *Education*, 119(3), 537-541.
- Maloney, W. H. (2003). Connecting the texts of their lives to academic literacy: Creating success for at-risk first year college students. *Journal of Adolescent & Adult Literacy*, 46(8), 664-73. Retrieved June 12, 2004, from <http://wilson.txt.hwsilson.com/pdf/full/04940\WDYV5\USJ.pdf>
- Martin, L. M. (2000). The relationship of college experiences to psychosocial outcomes in students. *Journal of College Student Development*, 41(3), 292-301.
- McCabe, R. H. (2003) *Yes we can! A community college guide for developing America's underprepared*. United States of America: League for Innovation in the Community College and American Association of Community Colleges.
- McClenny, K. M. (Director). (2004). *Engagement by design: Community college survey of student engagement: Community college survey of student engagement: 2004 findings*. The University of Texas at Austin: Community College Leadership Program. Retrieved July 7, 2005 from [http://www.ccsse.org/publications/CCSSE\\_reportfinal2004.pdf](http://www.ccsse.org/publications/CCSSE_reportfinal2004.pdf)

- McClenny, K. M. (Director). (2005a). *Engaging students, challenging the odds: Community college survey of student engagement: 2005 findings*. The University of Texas at Austin: Community College Leadership Program.
- McClenny, K. M. (Director). (2005b). *Community college survey of student engagement*. The University of Texas at Austin: Community College Leadership Program.
- McMillan, J. H., & Wergin, J. F. (2002). *Understanding and evaluating educational research* (2<sup>nd</sup> ed.). Upper Saddle River, NJ: Merrill Prentice Hall.
- Milem, J. F., & Berger, J. B. (1997). A modified model of college student persistence: Exploring the relationship between Astin's theory of involvement and Tinto's theory of student departure. *Journal of College Student Development*, 38(4), 387-400.
- Miller, K., & Gerlach, J. (1997). A study of student departure from developmental courses. *Research and Teaching in Developmental Education*, 13(2), 71-84.
- Miller, M. A. (2003). Our students, ourselves. *Change*, 35(2), 4. Retrieved, June 9, 2004 from <http://pqasb.pqarchiver.com/change/doc/301408791.html>
- Minkler, J. E. (2002). ERIC review: Learning communities at the community college. *Community College Review*, 30(3), 46-63. Retrieved June 12, 2004, from <http://wilson.txt.hwsilson.com/pdf/full/03788/W6B9M/VSI.pdf>
- Moore, W., Jr., & Carpenter, L. N. (1985). Academically underprepared students. In L. Noel, R. Levitz, D. Saluri, & Associates (Eds.), *Increasing Student Retention* (pp. 95-115). San Francisco: Jossey-Bass Publishers.
- Mutter, P. (1992). Tinto's theory of departure and community college student persistence. *Journal of College Student Development*, 33(4), 310-317.

- Napoli, A. R., & Wortman, P. M. (1998). Psychological factors related to retention and early departure of two-year community college students. *Research in Higher Education, 39*(4), 419-455.
- Nora, A. (2002). The depiction of significant others in Tinto's *Rites of Passage*: A reconceptualization of the influence of family and community in the persistence process. *Journal of College Student Retention: Research, Theory & Practice, 3*(1), 41-56.
- Nora, A., & Cabrera, A. F. (1993). The construct validity of instructional commitment: A confirmatory factor analysis. *Research in Higher Education, 34*(2), 243-251.
- Orcher, L. T. (2005). *Conduction research: Social and behavioral science methods*. Glendale, CA: Pyrczak Publishing.
- Pascarella, E. T. (1985). The influence of on-campus living versus commuting to college on intellectual and interpersonal self-concept. *Journal of College Student Personnel, 26*(4), 292-299.
- Pascarella, E. T. (1993). Cognitive impacts of living on campus versus commuting to college. *Journal of College Student Development, 34*(3), 216-220.
- Pascarella, E. T., & Terenzini, P. T. (1980). Predicting freshman persistence and voluntary dropout decisions from a theoretical model. *The Journal of Higher Education, 51*(1), 60-75.
- Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students: Findings and insights from twenty years of research*. San Francisco: Jossey-Bass.
- Pascarella, E. T., & Terenzini, P. T. (1998). Studying college students in the 21<sup>st</sup> century: Meeting new challenges. *The Review of Higher Education, 21*(2), 151-165.

- Peterson, S. L. (1993). Decision-making self-efficacy and institutional integration of underprepared college students. *Research in Higher Education*, 34(6), 659-685.
- Reason, R. D. (2003). Student variables that predict retention: Recent research and new developments. *NASPA Journal*, 40(4), 172-191.
- Reeves, L. (2001-2002). Mina Shaughnessy and open admissions at New York's City College. *The NEA Higher Education Journal*, Winter, 117-128. Retrieved July 6, 2004, from <http://www.nea.org/he/heta01/w01-02p117.pdf>
- Reisser, L. (1995). Revisiting the seven vectors. *The Journal of College Student Development*, 36(6), 505-511.
- Rendon, L. I. (1994, August). Beyond involvement: Creating validating academic and social communities in the community college. Keynote address presented at American River Community College, Sacramento, CA.
- Roueche, J. E., Roueche, S. D., & Ely, E. E. (2001). Pursuing excellence: The Community College of Denver. *Community College Journal of Research and Practice*, 25(7), 517-537.
- Schmid, C. & Abell, P. (2003). Demographic risk factors, study patterns, and campus involvement as related to student success among Guilford Technical Community College students. *Community College Review*, 31(1). Retrieved May 30, 2004 from Wilson Web Database.
- Shapiro, N. S., & Levine, J. H. (1999). *Creating learning communities: A practical guide to winning support, organizing for change, and implementing programs*. San Francisco, CA: Jossey-Bass.

- Shaughnessy, M. P. (1977). *Errors and expectations: A guide for the teacher of basic writing*. New York: Oxford University Press.
- Smith, B. L., & Hunter, M. R. (1988). Learning communities: A paradigm for educational revitalization. *Community College Review*, 15(4), 45-51.
- Stephens, D. (2001). *Increasing access: Educating underprepared students in U.S. colleges and universities past, present, and future*. Retrieved September 22, 2004 from <http://faculty.etsu.edu/Stephen/increasingaccess.htm>
- Straub, C., & Rogers, R. (1986). An exploration of Chickering's theory and women's development. *Journal of College Student Personnel*, 27, 216-224.
- Summers, M. D. (2003, Spring). Attrition research at community colleges. *Community College Review*, 30(4), 64-84.
- Terenzini, P. T., Pascarella, E. T., & Blimling, G. S. (1999) Students' out-of-class experiences and their influence on learning and cognitive development: A literature review. *The Journal of College Student Development*, 40(5), 610-623.
- Terenzini, P. T., & Wright, T. M. (1987). Influences on students' academic growth during four years of college. *Research in Higher Education*, 26(2), 161-179.
- Tierney, W. G. (1992). An anthropological analysis of student participation in college. *The Journal of Higher Education*, 63(6), 603-618.
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, 45, 89-125.
- Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition* (2<sup>nd</sup> ed.). Chicago: The University of Chicago Press.

- Tinto, V. (1997a). Classrooms as communities: Exploring the educational character of student persistence. *The Journal of Higher Education*, 68(6), 599-623.
- Tinto, V. (1997b). Enhancing Learning via community. *The NEA Higher Education Journal*, 13(1), 53-58.
- Tinto, V. (1998). Colleges as communities: Taking research on student persistence seriously. *The Review of Higher Education*, 21(2), 167-177.
- Tinto, V., & Love, A. G. (1995, February). *A longitudinal study of learning communities at LaGuardia Community College* (R117G10037). University Park, PA: National Center for Postsecondary Teaching, Learning, and Assessment. (ERIC Document Reproduction Service No. ED380178)
- Tinto, V., & Russo, P. (1994). Coordinated studies programs: Their effect on student involvement at a community college. *Community College Review*, 22(2), 16-25.
- Tricket, E. J., & Moos, R. H. (1973). Social environment of junior high school and high school classrooms. *Journal of Educational Psychology*, 65, 93-102.
- Turnbull, W. W. (1986). Involvement: The key to retention. *The Journal of Developmental Education*, 10(2), 6-11
- Valeri-Gold, M., Deming, M. P., Callahan, C., Mangram, M. T., & Errico, M. (1998). An investigation of developmental students' adaptation to college. *Research and Teaching in Developmental Education*, 15(1), 35-46.
- Vaughan, G. B. (2000). *The community college story* (2<sup>nd</sup> ed.). Washington, D. C.: Community College Press.

- Volkwein, J. F., King, M. C., & Terenzini, P. T. (1986). Student-faculty relationships and intellectual growth among transfer students. *The Journal of Higher Education*, 57(4), 413-430.
- Whitt, E. J., Nora, A., Edison, M., Terenzini, P. T., & Pascarella, E. T. (1999). Interactions with peers and objective and self-reported cognitive outcomes across three years of college. *Journal of College Student Development*, 40(1), 61-78.
- Zhao, J. C. (1999, June). Factors affecting academic outcomes of underprepared community college students. Paper presented at the Annual Forum of the Association for Institutional Research, Seattle, WA.

## APPENDICES

## Appendix A

## Student Survey

**Virginia Western Community College  
Learner Survey Packet****IMPORTANT STUDENT INFORMATION FOR YOU TO READ BEFORE YOU  
COMPLETE THE QUESTIONNAIRE PACKET!**

This packet contains a series of questionnaires related to thoughts and feelings you have about yourself, your studies, and the subject of developmental English at Virginia Western Community College. The time and effort you put into this project will help us look at the issues affecting how our students learn and how we may help students to achieve greater success their developmental English classes.

Your answers will be completely confidential. This form, information sheet, and packets will be stored in a locked file cabinet in a secure room. Your instructor will not see your responses. Your answers will be reported so that you cannot be identified.

Your participation is voluntary. Although it is important to us that you complete the entire packet, you can choose to stop participation at any point. Your participation today will in no way affect your grades or the services you receive here at VWCC.

There are no right or wrong answers in this packet, so please just make your honest and best judgment. Although the questions are in no way intended to prove distressful, if you do have questions or concerns related to the questions, please consult with the proctors.

Please be sure to answer every item. It is important to choose an answer for every question and not leave any blank.

Please sign here to indicate that you understand and are ready to participate:

---

*Signature*

**Now please follow the directions that are given for completing each part of the packet.**

*Thank you for your participation!*



## I. Demographic Information Sheet

Instructions: *Please respond to the following questions by either checking the appropriate box or writing the appropriate answer in the blank provided.*

1. Age in years: \_\_\_\_\_
2. Gender
  - ☐ Male
  - ☐ Female
3. Ethnicity
  - ☐ African-American
  - ☐ African
  - ☐ Asian
  - ☐ Caucasian
  - ☐ Hispanic
  - ☐ Other: Please specify \_\_\_\_\_
4. Parent's Education
  - ☐ Both of my parents attended college
  - ☐ My mother attended college, but not my father
  - ☐ My father attended college, but not my mother
  - ☐ Neither of my parents attended college
5. I graduated from high school or completed my GED
  - ☐ Last May
  - ☐ 1-2 years ago
  - ☐ 3-5 years ago
  - ☐ more than 5 years ago
  - ☐ I did not complete my high school degree or GED
6. Student Status
  - ☐ Full-time Student (enrolled for 12 hours or more)
  - ☐ Part-time Student (enrolled in fewer than 12 hours)
7. Employment Status
  - ☐ Do not work
  - ☐ Work 1 – 10 hours per week
  - ☐ Work 11 – 20 hours per week
  - ☐ Work 21 – 39 hours per week
  - ☐ Work 40 or more hours per week
8. Number of Dependents (includes children and/or adults under your everyday care)
 

<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> More than 5: please specify how many _____
--	---

9. I am a single parent

- [ ] Yes  
[ ] No

10. I am financially independent (not supported by parents or claimed on their tax return)

- [ ] Yes  
[ ] No  
[ ] Don't know

## II. Institutional Integration Scale

Instructions: Rate each of the following questions using the scale below. Circle only one answer. Don't spend much time thinking about any one question. Use your first response. If you decide to change your answer, put an X through the first answer and circle your final choice.

	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
1. Since coming to this college, I have developed close personal relationships with other students.	5	4	3	2	1
2. The student friendships I have developed at this college have been personally satisfying.	5	4	3	2	1
3. My personal relationships with other students have had a positive influence on my personal growth, attitudes, and values.	5	4	3	2	1
4. My personal relationships with other students have had a positive influence on my intellectual growth and interest in ideas.	5	4	3	2	1
5. It has been difficult for me to meet and make friends with other students.	5	4	3	2	1
6. Few of the students I know would be willing to listen to me and help me if I had a personal problem.	5	4	3	2	1
7. Most students at this college have values and attitudes different from my own.	5	4	3	2	1
8. My non-classroom interactions with my developmental English faculty have had a positive influence on my personal growth, values, and attitudes.	5	4	3	2	1
9. My non-classroom interactions with my developmental English faculty have had a positive influence on my intellectual growth and interest in ideas.	5	4	3	2	1
10. My non-classroom interactions with my developmental English faculty have had a positive influence on my career goals and aspirations.	5	4	3	2	1

Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1	
11. Since coming to this college I have developed a close, personal relationship with at least one faculty member.	5	4	3	2	1
12. I am satisfied with the opportunities to meet and interact informally with my developmental English faculty members.	5	4	3	2	1
13. My developmental English faculty are generally interested in students.	5	4	3	2	1
14. My developmental English faculty are generally outstanding or superior teachers.	5	4	3	2	1
15. My developmental English faculty are willing to spend time outside of class to discuss issues of interest or importance to students.	5	4	3	2	1
16. My developmental English faculty are interested in helping students grow in more than just academic areas.	5	4	3	2	1
17. My developmental English faculty are genuinely interested in teaching.	5	4	3	2	1
18. I am satisfied with the extent of my intellectual development since enrolling in this college.	5	4	3	2	1
19. My academic experience has had a positive influence on my intellectual growth and interest in ideas.	5	4	3	2	1
20. I am satisfied with my academic experience at this college.	5	4	3	2	1
21. Few of my courses this year have been intellectually stimulating.	5	4	3	2	1
22. My interest in ideas and intellectual matters has increased since coming to this college.	5	4	3	2	1
23. I am more likely to attend a cultural event (for example: a concert, play, lecture, or art show) now than I was before coming to this college.	5	4	3	2	1
24. I have performed academically as well as I anticipated that I would.	5	4	3	2	1
25. It is important for me to graduate from college.	5	4	3	2	1
26. I am confident that I made the right decision in choosing to attend this college.	5	4	3	2	1
27. It is likely that I will register for classes at this college next semester.	5	4	3	2	1
28. It is not important for me to graduate from this college.	5	4	3	2	1
29. I have no idea at all what I want to major in.	5	4	3	2	1
30. Getting good grades is not important to me.	5	4	3	2	1

### III. Classroom Environment Scale

Instructions: *This scale is made up of a list of statements about your section of developmental English, which you may or may not believe is true. For each statement circle True (T) if you believe that the statement is probably true or False (F) for each statement that you believe is probably not true. Although some questions may be difficult to answer, it is important that you pick one answer for each item. Remember that this is not a test and there are no right or wrong answers.*

In your section of developmental English:

True or False		
T	F	1. It is easy to get a group together to work on a project.
T	F	2. Students enjoy working together on projects in this class.
T	F	3. Students in this class aren't very interested in getting to know other students.
T	F	4. Sometimes the instructor embarrasses students for not knowing the right answer.
T	F	5. The instructor takes a personal interest in students.
T	F	6. This instructor wants to know what students themselves want to learn about.
T	F	7. There are groups of students who don't get along in class.
T	F	8. It takes a long time to get to know everybody by his or her first name in class.
T	F	9. This instructor "talks down" to students.
T	F	10. If students want to talk about something this instructor will find time to do it.
T	F	11. This instructor does not trust students.
T	F	12. Some students in this class don't like each other.
T	F	13. A lot of friendships have been made in this class.
T	F	14. Students in this class get to know each other really well.
T	F	15. The instructor is more like a friend than an authority.
T	F	16. The instructor goes out of his or her way to help students.
T	F	17. Students don't have much of a chance to get to know each other in this class.
T	F	18. Students have to watch what they say in this class.
T	F	19. This instructor spends very little time just talking with students.
T	F	20. Students enjoy helping each other with assignments.

#### **IV. Student Adaptation to College Questionnaire**

The SACQ (Baker & Siryk, 1999) is a copyrighted instrument under production by Western Psychological Services. Information about the SACQ can be obtained by contacting the publisher at:

12031 Wilshire Blvd. Los Angeles, CA 90025-1251  
Telephone: (800) 648-8857 - FAX: (310) 478-7838

## V. Satisfaction and Goals Information Sheet

Instructions: *Rate your satisfaction level with each of the following statements using the scale below. Circle only one answer. If you decide to change your answer, put an X through the first answer and circle your final choice.*

	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
1. I am satisfied with my developmental English class.	5	4	3	2	1
2. I am satisfied with the quality of instruction in my developmental English class.	5	4	3	2	1
3. I am satisfied with my achievement in my developmental English class.	5	4	3	2	1
4. I am satisfied with my overall experience at Virginia Western.	5	4	3	2	1
5. I am satisfied with the services provided to me at Virginia Western.	5	4	3	2	1

Instructions: *Please respond to the following questions by either checking the appropriate box, writing the appropriate answer in the blank provided, or circling the appropriate choice.*

- Put a check mark beside each of the following that are important to you. If anything on the list is not important put N/A beside that option.  
☐ Make progress with the skills learned in my developmental English class.  
☐ Earn a grade of "S" in my developmental English class.  
☐ Complete an associate's degree or certificate.
- Would you consider a grade of "R" successful if you felt that you had improved your skills but were not ready to move forward to English 111.  
☐ Yes  
☐ No
- True or False: My only goal in this class is to complete the class. I do not plan to go on to other classes. Circle one: T or F
- True or False: My goal is to successfully complete this class then complete an associate's degree or certificate program. Circle one: T or F.

## Appendix B

## IRB Approval

TO: Alan Schwitzer  
FROM: James Onate, PhD ATC  
Chair, Old Dominion University Darden College of Education  
Human Subject Research Committee

SUBJECT: Research Project: Notification of Exempt Status  
DATE: 9-13-06

This letter serves as official notice that your research project (HSR 08/#2) codename “Interaction – Schwitzer/Wilmer” has been found exempt by the Old Dominion University Darden College of Education’s Human Subject Research Committee. Research may begin. By acting as the responsible project investigator of this research project, Alan Schwitzer has agreed to conduct a responsible and ethical research investigation and to notify the Old Dominion University Darden College of Education Human Subject Research committee of any changes that may occur during the course of the investigation. If changes have occurred that cause a need for the Old Dominion University Institutional Review Board to review the research investigation due to change in exempt status or Federal funding it is your responsibility as the responsible project investigator to notify that committee immediately.

Good Luck with your research investigation.

James Onate, PhD ATC  
Chair, Old Dominion University Darden College of Education  
Human Subject Research Committee

## Appendix C

## Institutional Approval

**VIRGINIA WESTERN**  
**COMMUNITY COLLEGE**

VICE PRESIDENT OF ACADEMIC AND STUDENT AFFAIRS

To: Ms. Elizabeth Wilmer

From: John Capps

Date: August 1, 2006

Re: Permission to Conduct Research

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I have read your dissertation proposal entitled "The Influences of Interaction on the Satisfaction, Achievement, and Retention of Developmental Community College Students," and I am granting permission for you to conduct research at Virginia Western Community College. In completing your research, you may conduct surveys among both faculty and students; review pertinent information in Virginia Western's SIS; and, with student consent, access the academic records of individual students.



## VITA

ELIZABETH COPELAND WILMER

Old Dominion University  
 Darden College of Education, Room 210  
 Department of Educational Leadership and Counseling  
 Norfolk, Virginia 23529

## EDUCATION

Ph.D., Community College Leadership, Old Dominion University, in progress.  
 M.F.A., Photography, The Savannah College of Art and Design, 1991.  
 B.A., Economics, The University of the South, Cum Laude, 1989.

## TEACHING, ADMINISTRATIVE, AND PROFESSIONAL ACTIVITIES

Virginia Western Community College, Roanoke, Virginia.

## Positions:

- Dean of Humanities, 2003-present.
- Interim Dean of Humanities, 2002- 2003.
- Program Head, Art Department, 2000- 2003.
- Professor of Art and Communication Design, 2006-present.
- Associate Professor of Art and Communication Design, 2003-2006.
- Assistant Professor of Art and Communication Design, 1999-2003.
- Adjunct Instructor, Art and Communication Design, 1998- 1999.

## Special Projects:

- Chair, VCCS Fire Science Curriculum Taskforce, 2005.
- Co-author, VWCC Student Discipline Policy, 2004-2005.
- Co-chair, Student Success Program for Developmental Students, 2005-2006.
- Developmental Learning Community Advisory Committee, 2003-2004.
- Faculty Advisor: Phi Theta Kappa, 2002-2005.
- SACS Self-Study: Committee Chair for Distance Learning, 2001-2002.

## Academic Honors.

- VCCS Chancellor's Fellowship, 2006.
- Phi Beta Kappa, initiated May 1989.

## Papers and Presentations.

- Wilmer, E. (in press). Student support services for the underprepared student.  
*Inquiry: The Journal of the Virginia Community Colleges.*
- Wilmer, E., Boylan, K., & Ashcraft, B. (2005, October). *English 07: A Cooperative and Active Learning Environment to Promote the Success of Developmental English Students at Virginia Western Community College.* Presented at the meeting of the Virginia Association of Developmental Educators, Virginia Beach, VA.