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STUDENT ENGAGEMENT VARIABLES THAT INFLUENCE ACADEMIC ACHIEVEMENT AMONG HISPANIC STUDENTS AT THE COMMUNITY COLLEGE LEVEL

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By

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STUDENT ENGAGEMENT VARIABLES THAT INFLUENCE ACADEMIC ACHIEVEMENT AMONG HISPANIC STUDENTS AT THE COMMUNITY COLLEGE LEVEL

A Dissertation APPROVED FOR THE
DEPARTMENT OF EDUCATIONAL LEADERSHIP AND POLICY STUDIES

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Dedication

I would like to dedicate this work to my tenacious daughter, Angee. She has always served as a role model for overcoming adversity and hanging in there to complete something that is important. In addition, my parents Walter C. Pindell Jr. and Lela Pearl Pindell, always made me believe I could do anything I set out to do.

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ABSTRACT

The more students are engaged in their collegiate experience the more likely they are to do well academically, be retained, and achieve their education goals. Student engagement is a key to student success. The study's goal was to examine student engagement factors that influenced academic achievement, with the focus on Hispanic students at a community college. Data from the Community College Survey of Student Engagement was used to examine the research questions outlined in this study.

This study found student-faculty interaction to be the only statistically significant positive influence on academic achievement among Hispanic students. While the reminder of the college student engagement experiences were not statistically significant, active and collaborative learning practices were the second strongest positive influence on academic achievement and the level of academic challenge was the strongest negative influence.

The strongest positive influences on academic achievement for Hispanic students are two of the college experience variables that are, for the most part, under the control of faculty. With both of these sets of college experience variables, Student-Faculty Interaction and Active and Collaborative Learning, faculty members provide the learning environment in which these experiences can thrive and make a difference for Hispanic student academic achievement. It is critical that faculty develop methods to incorporate best practice strategies that ensure learning environments are active, involving, and well suited to the needs of Hispanic students.

STUDENT ENGAGEMENT VARIABLES THAT INFLUENCE ACADEMIC ACHIEVEMENT AMONG HISPANIC STUDENTS AT THE COMMUNITY COLLEGE LEVEL

CHAPTER I

Introduction

Hispanics became the largest minority group in the United States in 2003. The Census Bureau projected that the Hispanic population will continue to grow more than any other group in the U. S well into the middle of the century (*The Chronicle Review*, 2003). Data from Llagas and Snyder (2003) in a National Center for Education Statistics (NCES) report indicates that fifty-one percent of the nation's population growth between 2000 and 2050 will be Hispanic. Further, by 2020, Hispanics are expected to represent one-fourth of the U. S. population, more than three times their current number; one in five children under the age of eighteen will be of Hispanic origin.

The Hispanic population, for purposes of my study, is referred to as Hispanic. However, many authors and other studies refer to this population as Latino/Latina or Chicano/Chicana. Authors cited statements in reference to ethnicity in my study were not changed but in general refer to the overall Hispanic population. In addition, references to African Americans are stated as cited authors referred to this population.

A look at the age structure among Hispanics shows that nearly 40% are below the age of 19, which compares to 29% in the overall population (Sorensen, Brewer, Carroll & Bryton, 1995). The median age in 2000 for Hispanics in the U. S. was 26.6 compared to 38.6 for Whites and 30.6 for African Americans (Llagas & Snyder, 2003). The fact that

there is a large percentage of the Hispanic population at the younger age level is significant because of the anticipated influx of these individuals into the college ranks.

Contreras (2004) noted that "an important feature of the Latino experience is the increasing segregated concentration of large numbers of Latinos in a handful of states in large, urban areas polarized by racial tensions" (p. 228). In addition, he pointed out that in the year 2000, half of all Latinos lived in two states: California (11 million) and Texas (6.6 million). In the Texas Gulf Coast region, the location for my study, the racial/ethnic mix in 2000 among the 15-to-34 age group was 40% White, 17% African-American, and 37% Hispanic; projections for 2015 for the region are 29% White, 15% African-American, and 50% Hispanic (*Closing the Gaps*, 2000).

The tremendous increase in the U. S. Hispanic population illustrated above, points to a future wherein colleges and universities will experience escalating Hispanic student enrollments. The *Chronicle Almanac* 2004-05 reports that Hispanic enrollment at U. S. colleges and universities in the fall of 1990 was 782,400 (5.7% of the overall college enrollment) compared to 1,560,600 (9.8% of the overall enrollment) in the fall of 2001. This growth represents a 101% increase during that period. From 1988 to 1998 Latino college enrollment in the U. S. increased by 85%, the highest growth rate among the four major ethnic minority groups (Hernandez & Lopez, 2004). Carnevale (2003) projects that by the year 2015 the number of new Hispanic students in higher education will increase by more than one million, raising the percentage of Hispanic undergraduate students from 11% in 1995 to 15% by the year 2015.

Of the total number of Hispanic students enrolled in U. S. higher education institutions in the Fall Semester 2001, 904,300 (57%) were enrolled at community

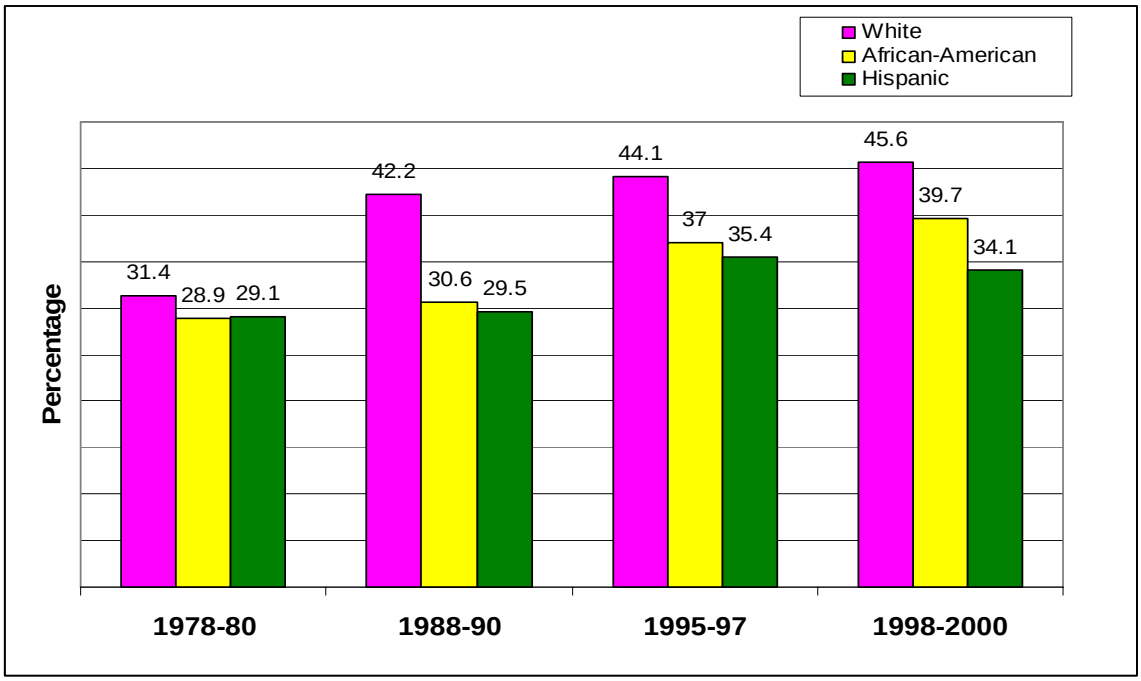
colleges (*Chronicle Almanac* 2004-05). According to Miller and García (2004), Hispanic enrollment in higher education has continued to be skewed toward 2-year institutions, where Hispanics represent 14% of the total enrollment. In comparison, Hispanics represent 7% of the total enrollment at 4-year institutions.

Most of the Hispanic population in the continental United States resides in the states of Texas and California. The Texas Higher Education Plan (2002), projects that "by 2008, Texas will become a minority majority state and Hispanics will account for more than 40% of the state's population" (p. 7). However, Texas achieved the minority majority status sooner than predicted, as noted in an August 2005 article in the Contra Costa Times. According to the Times article, Texas has now become the fourth state to have a non-white majority population, according to the U. S. Census Bureau (Caldwell, 2005). The Texas Higher Education Plan (2002) calls for increasing higher education participation rates for Hispanics in Texas from 3.7% to 4.4% (101,600 students) by the year 2005, to 5.1% (120,000 students) by the year 2010, and to 5.7% by the year 2015. According to a Texas Higher Education Coordinating Board Progress Report (2004), Hispanic enrollment has reached only 53.2% of the targeted increase for the 2005 participation goal, while target enrollments for other populations, such as African Americans, have been achieved or surpassed.

While Hispanic enrollment at educational institutions has been increasing dramatically, Hispanics are still underrepresented at the college level. In a look at 1998-2000 college participation rates of high school graduates, ages eighteen to twenty four, Whites participated at 45.6%, African Americans at 39.7% and Hispanics at 34.1% (Harvey, 2003). Figure 1 outlines the participation rates from 1978 to 2000. Note that

participation rates of Hispanics grew by 17.2% during this period, which is significant in comparison. Hispanics are not participating equal to the level of other populations, their rate of participation is not increasing at the level of the other two groups shown, and just as important is the fact that their numbers enrolled in higher education are not keeping up with the general population growth.

Figure 1: College Participation Rates of 18- to 24-year-old High School Graduates, by Race/Ethnicity: Selected Years, 1978-80 to 1998-2000



Source: U. S. Census Bureau. Current Population Survey Reports, School Enrollment-Social and Economic Characteristics of Students, 1980-2000.

Some evidence suggests that the level of participation of Hispanics is not related to the value that they place on higher education. A survey conducted by *Public Agenda* in 2000 asked high school parents to identify the factor most important for success of their children (Carnevale, 2003). Sixty-five percent of Hispanic parents identified a

college education. This compares to 35% of all of the parents surveyed, 33% of non-Hispanic White parents, and 47% of African American parents.

Once Hispanic students do reach the college level, their educational attainment rates (as shown in Table 1) do not match the levels of either Whites or African Americans. During the period of 2000-2002 the percentage of Hispanics 25 to 29 years old completing four or more years of college was 9.7, verses 33.8 for Whites and 17.3 for African Americans (Harvey, 2003). The data in Table 1 (which is excerpted from the *Chronicle Almanac*, 2004-05) illustrates the disparity.

Table 1

Educational Attainment of the U.S. Population for Racial and Ethnic Groups, 2003

Highest level reached	**White (non Hispanic)**	**Black**	**Hispanic (any race)**
8th grade or less	3.6%	6.4%	26.1%
Some high school, no degree	7.0%	13.6%	16.9%
High-School diploma	32.9%	35.2%	27.4%
Some College, no degree	17.6%	19.9%	13%
Associate degree	8.8%	7.5%	5.2%
Bachelor's degree	19.7%	12.2%	8.3%
Master's degree	7.4%	4%	2.1%
Doctoral degree	1.3%	0.5%	0.4%
Professional degree	1.7%	0.6%	0.6%
Numbers of adults (in millions)	133.5	20.5	21.2

Note: The figures are based on a Census Bureau survey of 50,000 households conducted in March 2003, and cover adults age 25 and older.

This data clearly demonstrates that Hispanics are not reaching the same levels of educational attainment as Whites and African Americans. Looking at educational attainment longitudinally, Table 2 shows a troubling trend among Hispanics (Martinez & Aguirre, 2003).

Table 2

Educational Attainment by Race and Ethnicity, 1990 and 2000

Year	**High School***			**College****		
	White	Black	Latino	White	Black	Latino
1990	79%	66%	54%	22%	11%	12%
2000	88%	72%	57%	28%	14%	11%

* Persons 25 years old and older
** 4 or more years

The trend illustrated above raises questions regarding what colleges and universities should do in order to have a positive impact on the academic achievement and consequent educational attainment of Hispanics. Faculty and staff in higher education have long been concerned with identifying the factors that contribute to student academic performance, which is demonstrated by the amount of research that has been conducted on this issue. The identification and examination of factors that contribute to student academic achievement can provide the information necessary to develop strategies and interventions aimed at making students successful in reaching their educational goals.

Persistence (or retention) is a major factor in explaining why many Hispanic students are not very successful in attaining degrees or certificates and persistence cannot be accomplished without students performing academically. In a European Access

Network Conference presentation, Tinto (2002) makes the critical point that there is much interest in both knowing what works in increasing student retention (particularly for students of color), and in conducting research that documents effectiveness of these efforts.

Since academic performance leads to persistence and persistence is the path to educational attainment, issues related to persistence must be examined. Studies investigating persistence comprise one of the most widely reported areas of research dealing with college students in higher education (Metz, 2004). Funding for support programs and services at the institution, state and federal level has been and continues to be substantial, even though there are recent efforts in congress to reduce some higher education programs targeting underrepresented populations.

A topic of on-going research has been in the area of student involvement, also referred to as student engagement. Tinto (2002) summarizes positions regarding involvement framed by several leading theorists in the field:

> Educational theorists such as Alexander Astin, Ernest Boyer, and I have long pointed to the importance of academic and social integration or what is more commonly referred to as involvement to student retention. The more students are academically and socially involved, the more likely they are to persist and graduate. A wide range of studies in a variety of settings and for a range of students have confirmed that the more frequently students engage with faculty, staff and their peers, the more likely, other things being equal, that they will persist and graduate. Simply put, involvement matters (p. 3).

As an outgrowth of research on the issue of student involvement Kuh and others began a research movement in the area of student engagement, specifically how engagement factors influence academic achievement. Consistent with the results of recent research (Pike, 1999, 2000; Pike & Killian, 2001), academic and social involvement are thought to have a direct effect on gains in learning and intellectual development (as cited in Pike & Gonyea, 2003). Kuh, Schuh, Whitt and Associates (1991) make clear that "the research is unequivocal: students who are actively involved in both academic and out-of-class activities gain more from the college experience than those who are not so involved" (p. xi). The implication is that higher levels of involvement by students positively influences academic achievement.

Given the on-going interest and research in student academic achievement, retention, and attainment, student engagement research has become increasingly important, particularly in regard to Hispanic students. Student engagement is very clearly a critical connection to students' academic achievement. Some research has focused on the retention of Hispanics, but little or no research exists regarding student engagement factors and how they contribute to the academic achievement of Hispanic students.

Within the small coterie of research studies on student engagement, an even smaller number focus on two-year colleges. If community colleges enroll a large segment of the college student populations, especially students of color, then it becomes even more critical to understand issues related to student engagement and academic achievement in the community college setting. This is especially true since student engagement leads to academic achievement, which is the conduit to immediate benefits

(such as graduation or the pursuit of further education) and more long-term benefits (such as better jobs after graduation).

Nationwide, there are rising expectations from state and federal governments, accrediting organizations, governing boards and the general public. For example, community colleges are expected to respond more effectively to issues of student retention, student learning and institutional performance (Community College Survey of Student Engagement [CCSSE], n.d.). Such issues are even more urgent when the focus is on students of color. My study contributes to the body of knowledge related to the identification of factors that influence academic achievement of Hispanic students at the community college level.

Statement of the Problem

The growing Hispanic population in the United States will continue to highlight the demand for higher education for this population in the foreseeable future. Haro (2004) points out that "approximately 58% of Latino enrollment in American higher education is at two-year colleges [Martinez & Aguirre, 2002]" (p. 207). Information available from different sources indicates that, in some major states like California and Texas with large Hispanic populations and well-established community college systems, the percentage of Latinos attending two-year colleges may exceed the national norm.

According to Fry (2002), Latino college students over the age of 24 years old are more likely than their peers of any other racial/ethnic group to be enrolled at two-year institutions. Further, as Latinos get older, an ever greater share attends two-year schools, with more than 55% of Latino undergraduates over the age of 35 years old attending two-year colleges.

Community colleges and other two-year institutions typically feature a number of characteristics, according to Fry (2002), that helps explain their appeal to Latino students. As a rule, tuition is lower compared to four-year colleges and degree programs are often designed to accommodate part-time students, with classes scheduled in the evenings to accommodate students with full-time jobs. Fry also points out that many community colleges welcome students with low levels of academic achievement or aptitude, and also offer classes in English as a second language.

Flores (1994) notes that there is little documentation on the effects of community college attendance in terms of educational outcomes and the long-term economic returns. Low achievement is clearly a precursor of dropping out, and Latino students do perform below national averages on most skills at all grade levels (Fashola and Slavin, 1997).

Colleges face the challenge of finding ways to help students become successful in performing academically, persisting, and attaining educational goals. In the case of Hispanic students, this is no easy task. Perhaps there is hope for students enrolled in community colleges, because these institutions have long distinguished themselves through their efforts to put students first and emphasize teaching and learning. Innovations in curriculum, teaching strategies, and support services for students have been hallmarks of these institutions.

Consequently, the problem becomes one of identifying strategies that are successful and barriers that inhibit success in order to solve problems of Hispanic student academic achievement. Such research could inform constituents about the future development of strategies and interventions that will have a greater chance of assisting Hispanic students achieve academically and thus reach their educational goals. The

success with which community colleges address these issues may alleviate many societal problems facing the Hispanic population, including their economic and psychological well-being.

Summary of Problem

The writing is on the wall. When population growth and consequent increasing higher education enrollments by Hispanics are coupled with the problems of academic achievement, persistence, and attainment, colleges and universities have a daunting task before them in addressing these issues and providing learning environments where Hispanics can successfully perform academically and thus achieve their higher educational goals.

Purpose of the Study

The main purpose of my study is to examine the relationship between student engagement and academic achievement of Hispanic students in a community college setting. The focus on the Hispanic population in higher education is chosen mainly for the following reasons:

- The documented increasing numbers of Hispanics in colleges and universities, specifically in community colleges;
- The existing problems with low levels of academic achievement, persistence and educational attainment and;
- The lack of research related to student engagement among Hispanic students.

Definitions

Academic Achievement – Academic achievement, for purposes of my study, is defined as academic performance and is measured by the cumulative grade-point-average (GPA).

Attainment – Attainment means that the students have graduated by having successfully completed all requirements for their diplomas or degrees.

Hispanic population – Hispanics in this study are persons of Cuban, Mexican, Puerto Rican, South or Central American, or Spanish culture or origin and referred to as Hispanics or left as cited in a reference.

Student Engagement – Engagement usually represents the intersection of time and energy students devote to their college experiences, both inside and outside of the classroom.

Persistence – In the broadest concept persistence refers to a situation in which students are continuing to enroll, either at their original institution or a new institution to which they have transferred.

Retention – Institutional retention most frequently refers to those students who remain at the same institution from semester to semester. At the College where my study was conducted, retention is defined in several ways. Retention information is evaluated for specific terms, such as fall to spring or fall to fall and is normally broken down by the general population, new students and other sub populations. National retention rates usually are broken down by new and returning students.

Research Questions

The research questions for this study are:

1. What student background characteristics were related to the student engagement indices among Hispanic students?
2. How were these student engagement indices related to student achievement?
3. How did the interaction between student background characteristics and student engagement indices influence student achievement?

Significance of Study

Academic achievement is one of the most important precursors to persistence and ultimately to graduation. When stronger Hispanic student persistence and graduation rates are achieved because students are performing academically, all of the other worthy post-educational outcomes will follow. Put in a broader sense, Fry (2002) contends that the road to economic advancement for Latinos must run through college.

Evaluating academic achievement data is an important component of the process of developing programs and services to assist Hispanic students in improving academic performance. Miller and García (2004) note that good academic-performance data and related information on these students could contribute to greater understanding among senior officials and faculty members of the importance of improving academic outcomes for Latinos and for other underrepresented students.

Education pays off for individuals, but there are also payoffs to society. Over a lifetime, people who have college degrees (and concomitant higher earnings) pay significantly more in taxes than people who have only high school diplomas (Sorensen, Brewer, Carroll & Bryton, 1995). Sorensen et al. calculates the impact on tax revenues using different scenarios with varying levels of educational attainment and concludes that "our calculations indicate that the effect is considerable enough that the continued under-

education of Hispanics will exact a high economic toll for individuals and society" (p. 6). These are societal issues that are inevitable and will have to be addressed in some manner.

Carnevale (2003) aptly phrases the issue by stating "the continuing education gap for Hispanics translates directly into an earnings gap" (p. 21). He outlined an occupational hierarchy in 1998 in the U. S. that divides jobs held by prime-age workers (30-59 years old) in to three major segments. In the first tier (highest paying jobs-elite and managerial professional jobs), 16% of Hispanics held these jobs compared to 39% of Whites and 23% of African Americans. Compared to the highest paying jobs, "good" jobs (craft workers, technicians and clericals) were distributed more equally among the groups. In the less-skilled jobs (retail, personal services, and other minimally skilled occupations), which are low-wage jobs, a much higher proportion of these workers are Hispanics and African Americans. Fifty-one percent of Hispanics workers held these lowest-paid jobs compared to 23% for Whites. Carnevale (2003) further points out that:

> If Hispanic workers had the same educational attainment as non-Hispanic White workers, and if they were paid equally for their given level of education, the infusion of new more highly educated human capital would increase U. S. income by $118 billion every year, adding $41 billion in annual tax revenues to the national coffers (p. 25).

Conversely, the negative impact on the tax base and the national economy is very alarming. Martinez (2003) makes it clear that American society has been slow in opening its eyes to see Latinos as participants in its social fabric. While the facts are out

there for the public to see, there does not seem to be a strong wide-spread understanding of how significantly this will have an impact on the future of the United States.

Reversing these trends in the job market for Hispanics will take monumental efforts on the part of society in general, and particularly in education. The results of my study inform community college efforts to have a positive impact on Hispanic students' academic achievement and resultant attainment of their educational goals.

While it may seem callous to focus on the economic impact, as realistic as this may be, higher education has moral responsibilities and obligations to society that must be considered. Colleges and universities must meet the needs of their constituents, which includes the changing demographics in their communities. Just as educational curriculum is adapted to the changing needs of business and industry, higher education must reform itself to ensure that all students, including Hispanics, have maximum opportunities for success. History tells us what happens in a society where a segment of the population is left behind and/or kept in a weak position. There are numerous clear examples of the slow progress groups such as women and African Americans have made in the job market.

Academic achievement and student success can be defined in many ways, but for the most part, higher education officially defines these in terms of grades and graduation. Intermediary success is mostly classified as persistence/retention, course completion or meeting individual goals (which is more difficult to track). There is limited research on the topic of persistence of Hispanic students, as Lesure-Lester (2003) points out in a recent article: that "there is a timely need for research to examine reasons for the low retention of Latino students attending two-year colleges" (p. 12). Consequently,

examining student engagement for Hispanics leads us to find ways to ensure that Hispanics do achieve academically and thus are successful in reaching their educational goals.

My study contributes to the body of knowledge relating to student engagement factors that influence academic achievement for Hispanic students. In other words, what contributes to the academic success of Hispanic students in the community college?

Limitations of the study are outlined in detail at the end of Chapter III, but because this is a study conducted at one community college, the results may not be generalized to all community colleges. However, the study design and selected survey instrument provide the data needed to accomplish the intended objectives of my study.

CHAPTER II

Theoretical Framework and Relevant Literature

Introduction

This project examines the relationship between student engagement and academic achievement by Hispanic students in a community college setting. Academic achievement is measured by the student's overall grade-point-average (GPA). College GPA*s* are used in my study because they have been shown to be a strong indicator of academic achievement.

Pascarella (1985) states that "cumulative grades represent perhaps the best available and commonly accepted measure of learning during college, with the exception of standardized tests such as the Graduate Record Exam" (p. 340). Astin (1993), after an extensive review of the literature and studies, concludes that GPA, despite its limitations, appears to reflect the student's actual learning and growth during the undergraduate years.

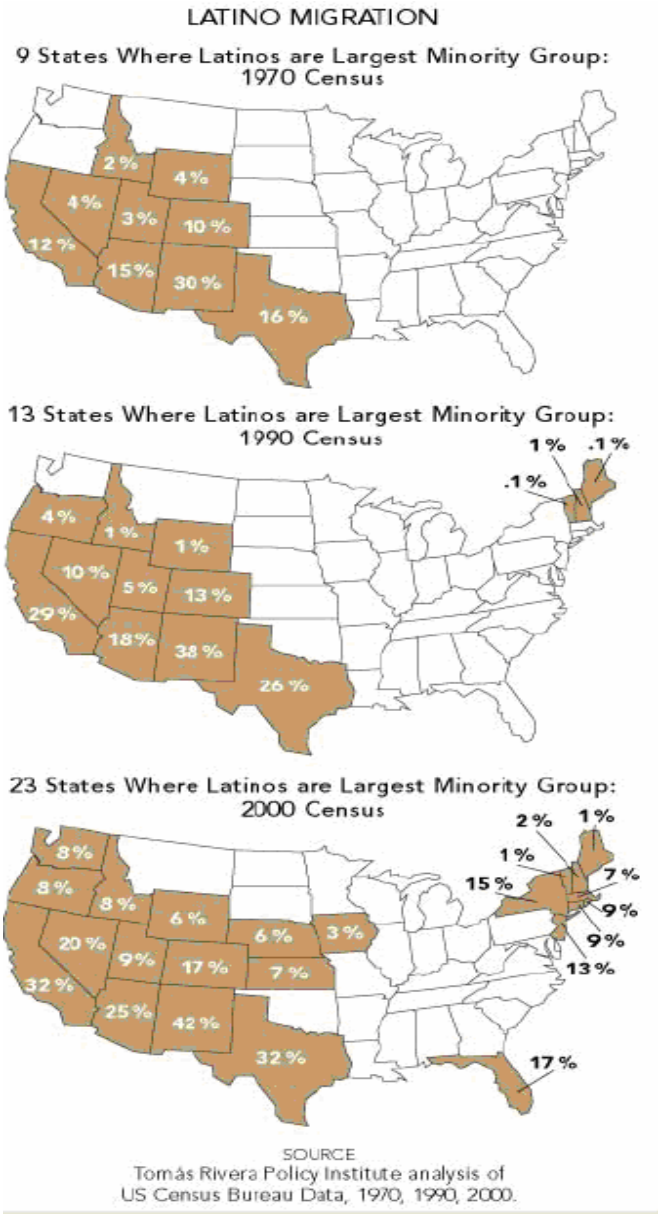
The topics in this Chapter relate to academic achievement and student engagement literature and research in higher education. The format supports the need to understand the issues related to both the research questions and related theory. The literature and research search also supports the variables identified for my study.

National and State Demographics

An overview of the demographic changes in Hispanic population in the United States is provided in Chapter I. The tremendous increase in the overall Hispanic population that has and will occur is critical in setting one component of the foundation for the need of my study. Consequently, additional information is essential. Figure 2 is

taken from the *Closing the gaps: Improving educational outcomes for Hispanic children* report and provides a full graphical overview of the growth in this country (Pachon, Tornatzky & Torres, 2003):

Figure 2: States with the largest Latino populations



Schmidt (2003) shows in Table 3 how significant the Hispanic population increase is in relation to the overall population growth in the U. S.

Table 3

Hispanic versus U. S. Population Increase

Population in Millions	1990	2002	Percentage Increase
Hispanic	22.4	38.8	73%
U. S.	248.8	288.4	16%

SOURCE: U.S. Census Bureau

In the State of Texas, which has the second highest population growth for Hispanics in United States, there was a 53.7% increase in Hispanics from 1990 to 2000 as shown in Table 4.

Table 4

Texas Hispanic versus U.S. Population Change

4-1-2000 Hispanic Population Rank	State	4-1-2000	4-1-1990	Numeric Change	Percent Change	Average Annual Percent Change
	United States	35,305,818	22,354,059	+12,951,759	57.9%	4.6%
2	Texas	6,669,666	4,339,905	+2,329,761	53.7%	4.3%

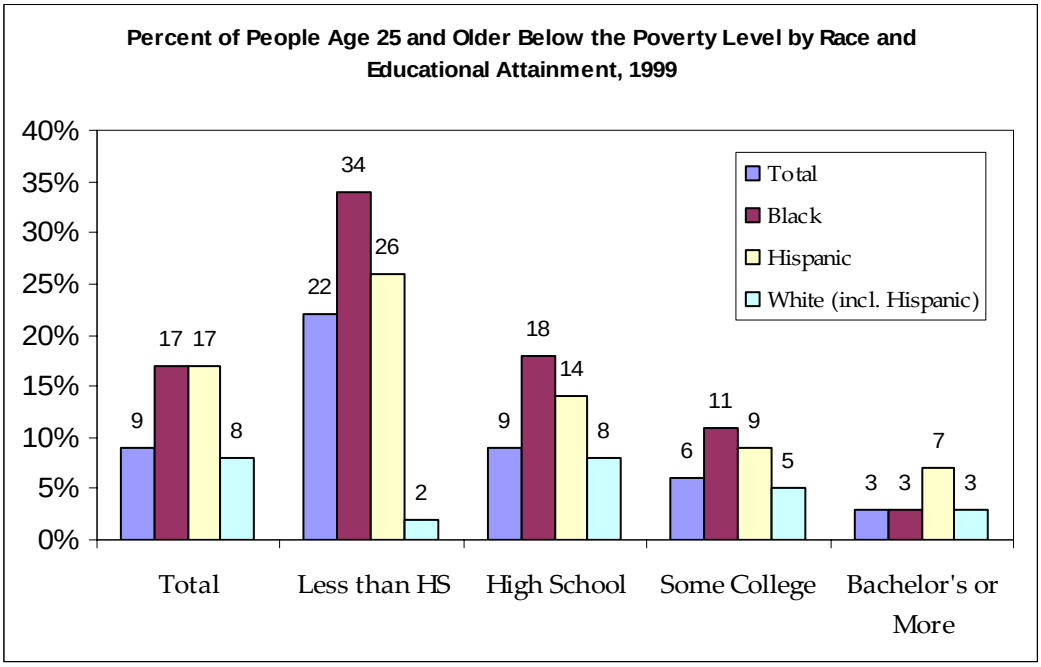
Source: U. S. Census Bureau

The Hispanic population is diverse, being composed of individuals classified as Mexican (58%), Puerto Rican (10%), Cuban (4%), Dominican (2%) and other (26%) (Puente & Chun, 2002). As college professionals, it is important to be aware of the differences within the culture of the overall Hispanic population, as this knowledge

contributes to the overall understanding of this population in the educational environment.

As mentioned in Chapter I, the economic impact to society is critical but the future of Hispanics and their quality of life is just as important. Figure 3 provides information concerning poverty levels and educational attainment (Swail, Redd & Perna, 2003). "Poverty poses a serious challenge to children's access to quality learning opportunities and their potential to succeed in school" (Llagas & Snyder, 2003, p. 12).

Figure 3: Percent of People Age 25 and Older Below Poverty Level by Race and Educational Attainment, 1999



An important related issue is the number of undocumented residents in the U. S. Following several years of steady growth, the number reached an estimated 10.3 million in March 2004, with undocumented Mexicans numbering 5.9 million, or 57% of the total (Passel, 2005). As of March 2005, the undocumented population reached nearly 11 million, including more than 6 million Mexicans. Although most undocumented

migrants are young adults, there is also a sizeable childhood population. About one-sixth of the population, some 1.7 million people, is under 18 years of the age. The undocumented Hispanic population enrolled in colleges, especially in the Border States, will be a particular challenge for support programs and services. In addition to the obvious language issues, these individuals are not eligible for traditional financial aid programs.

In Galveston County, Texas, the location of my study, the Hispanic population increased by 45.1% from 1990 to 2000 with a 3.7% annual rate of increase (U. S. Census Bureau, 2000). In addition, in Galveston County the projected 2005 Hispanic population increase between the ages of 5-17 is 24.5%, compared to the Hispanic national average of 24.4% and the overall population increase of 18.9%. These data point to an increasing influx of college age students.

Even though the Hispanic population continues to increase, Hispanic students remain severely underrepresented and underserved in higher education (Schmidt, 2003). Colleges have made some progress. The following are several critical points Schmidt makes in a Chronicle of Higher Education article:

- Hispanics represent about 18% of the college-age population, but they account for just 9.5% of all students at the nation's higher-education institutions, and just 6.6% of enrollments at four-year colleges.
- Hispanics are the least-educated major racial or ethnic group, with 11% of those over the age of 25 attaining a bachelor's degree, compared with 17% of Black, 27% of White, and 47% of Asian-American adults.

- More than two-fifths of Hispanic adults over 25 never graduated from high school, and more than one-fourth have less than a ninth-grade education.
- Hispanic children are much less likely than White children to have a parent who attended college.
- On the whole, Hispanic students are far likelier than White students to be enrolled in two-year colleges, to be working to support themselves or their families, or attending college part-time.
- Hispanics have the lowest rate of graduate-school enrollment of any major racial and ethnic group. (pp. 2-9)

Among 18- to 24-year-olds, 44% of Hispanic undergraduates attend a two-year school, as opposed to about 30% of both White and African American undergraduates. Attachment to family and community, as well as economic need, appears to be factors in Latinos' exceptionally high rate of enrollment in two-year colleges (Fry, 2002). Fry explores how much academic deficiencies contribute to low graduation rates, and to what extent Hispanic students encounter difficulties integrating themselves socially on college campuses. Both questions are important issues that need to be studied and are included in my study.

In terms of overall Hispanic educational attainment, "we were doing better in the '70s than we are in the 21st century," says Raul Yzaguirre, president of the National Council of La Raza, one of the nation's largest Hispanic-advocacy groups (as cited in Schmidt, 2003). In many parts of the country, colleges' efforts to serve minority

populations remain focused almost solely on African American students, even where local Hispanic populations are escalating.

The Report of the President's Advisory Commission on Educational Excellence for Hispanic Americans (2003) states that too many Americans set low expectations for Hispanic youth and that Hispanic families, while they have high expectations for their children, they lack the knowledge to fulfill these expectations. In addition, the federal government does not adequately research, monitor, measure and coordinate programs that would benefit Hispanic children and their families, despite the nation's rapidly growing Hispanic American population.

The problem does not begin at the higher education level. In Galveston County, Texas, the 2000-2001 attrition/dropout rates in the public school systems for Hispanic students was 52%, compared to 41% for African Americans, and 32% for Whites (Intercultural Development Research Association [IDRA], 2001). An IDRA report notes reasons for Hispanic student under-achievement, which include school finance inequities, segregation and poverty, lack of Hispanic school staff, lack of multicultural training for staff, lack of financial aid, and bilingual/ELS programs (Green, 2000).

Theories of Student Engagement and Involvement

Student engagement represents college experience in my study and as such, it is important to have a full understanding of the aspects of student engagement as well as the related research in the field. Kuh, Kinzie, Schuh, Whitt and Associates (2005) point out that what students do during college counts more in terms of what they learn and whether or not they will persist in college than who they are or even where they go to college. Further, Kuh et al. note that the research substantially demonstrates that the time and

energy students devote to educationally purposeful activities is the single best predictor of their learning and personal development (Astin, 1993; Pascarella & Terenzini, 1991).

Kuh et al. (2005) state that perhaps the best-known set of engagement indicators is Chickering and Gamson's *Seven Principles for Good Practice in Undergraduate Education*. The principles include student-faculty contact, cooperation among students, active learning, prompt feedback, time on task, high expectations, and respect for diverse talents and ways of learning. The seven principles serve as a foundation for the college experience variables that are used in my study, which are covered in depth in Chapter III. Kuh notes that "all of these factors and conditions are positively related to student satisfaction, learning and development on a variety of dimensions, and persistence (Astin, 1984, 1985, 1993; Brufee, 1993, Goodsell, Maher & Tinto, 1992; Johnson, Johnson, & Smith, 1991; McKeachie, Pintrich, Lin & Smith, 1986; Pascarella & Terenzini, 1991; Pike 1993; Sorcineli, 1991)" (p. 9).

According to Kuh et al. (2005), student engagement has two key components that contribute to student success. The first is the amount of time and effort students put into their studies and other activities and the second is the ways the institution allocates resources and organizes learning opportunities and services to induce students to participate and benefit. These two components are critical elements of the college experience variables in my study. They provide an understanding of the construct of student engagement.

Two definitive publications summarize the research conducted on the impact college has on students in higher education: *Impact of College on Students* (Feldman, 1969) and *How College Affects Students* (Pascarella & Terenzini, 1991, 2005).

Pascarella and Terenzini's most recent book provides a comprehensive overview of theories and models of student involvement. The theories of involvement are important for understanding the underpinnings of student engagement and are summarized here.

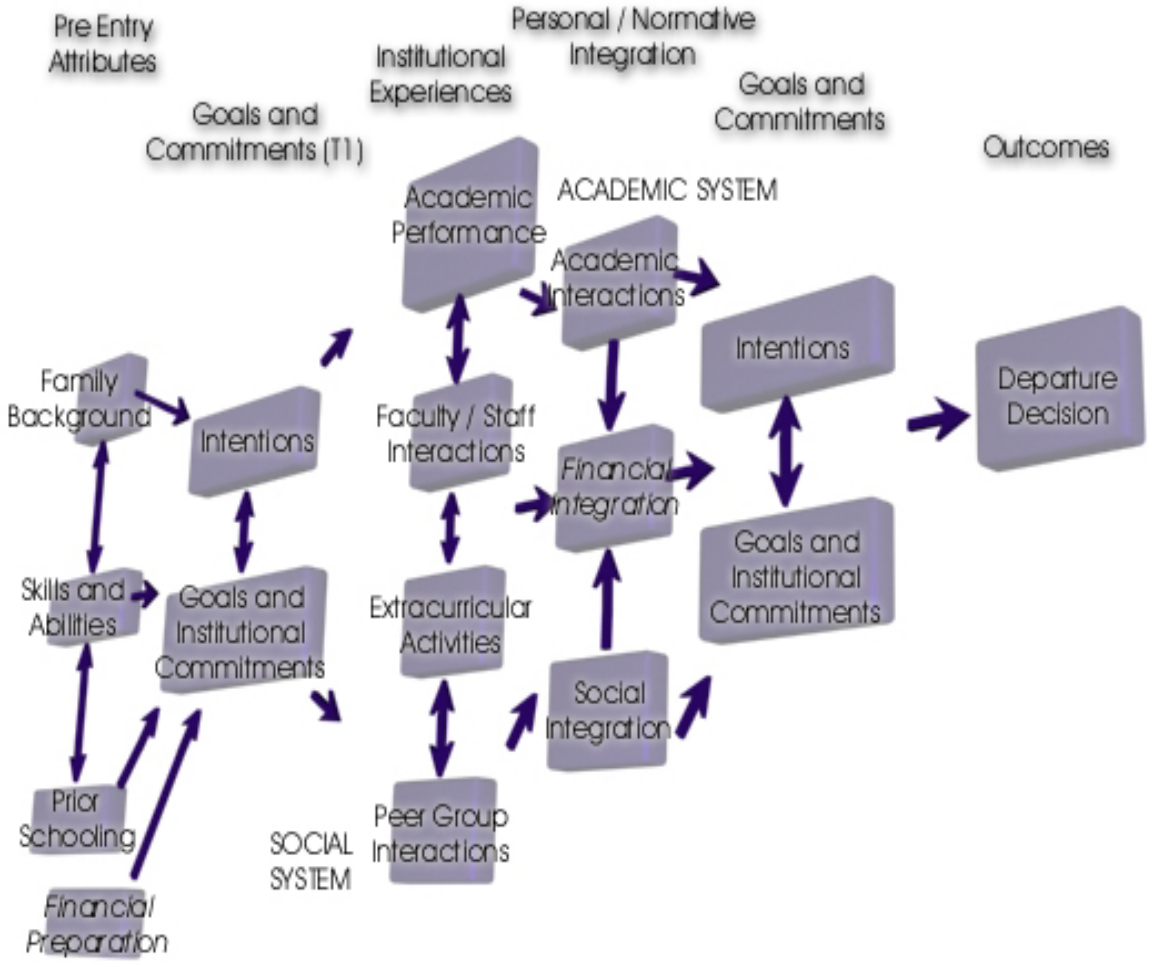
Pascarella and Terenzini (2005) point out that much of the research on persistence, degree completion, and educational attainment rests on theories delineating a set of interconnected constructs and dynamics presumed to underlie enrollment behaviors and educational attainment (Bean, 1980, Bean & Metzner, 1985; Rootman, 1972; Sewell & Houser, 1975; Spady, 1970; Tinto, 1975, 1987, 1993). Although these theories vary in the constructs and dynamics specified as salient, each identifies a series of academic and social encounters, experiences, and forces that shape persistence and attainment. Pascarella and Terenzini add that these constructs and dynamics are portrayed as the notions of academic and social engagement or the extent to which students become involved (Astin, 1985). Involvement or student engagement is examined in my study. In the broadest of terms, student engagement is a set of student experiences and the degree to which students become engaged.

Numerous models of academic and social engagement have been developed and used over the years as a framework for continuing research. Tinto's theory on student departure is probably the most widely used framework guiding research into the complex persistence-related interconnections among students and their college experiences (Pascarella & Terenzini, 2005). The basic premise of Tinto's model of student departure is that social and academic integration are essential to student retention (Rendón, Jalomo & Nora, 2000). "Negative or malintegrative experiences serve to weaken intentions and commitments, especially commitment to the institution, and thereby enhance the

likelihood of leaving" (Tinto, 1993, p. 115). Conversely, positive experiences or given attributes would lead to retention, academic achievement and attainment and Tinto's model identifies and analyzes the factors that lead to these desired outcomes.

Others such as Cabrera, Stampan, and Hansen (1990), built upon Tinto's basic model and included additional indicators, such as financial considerations (see Figure 4). Family background, skills and abilities, prior schooling, and financial preparation all have been shown to have an impact on departure decisions. My study is patterned after the causal modeling utilized in the Cabrera et al. model. The methodology in such models has been used in numerous studies and attempts to explain factors that lead to academic achievement, cognitive development, persistence, and attainment as well as a host of other outcomes. In addition, some of the background variables are included and are critical in the design of my study.

Figure 4: Path Model for Departure Decisions



In the early 1970's Alexander Astin proposed one of the most durable and influential college impact models (Pascarella & Terenzini, 2005). The input-environment-outcome (I-E-O) model is a conceptual and methodological guide to the study of impact of college. The I-E-O model, according to Astin (1993) has undergone a number of refinements over the years but the basic elements have remained the same. "Inputs" refer to characteristics of the student at the time of entry into college; "environment" refers to the various programs, policies, faculty, peers, and educational experiences to which the student is exposed; and "outcomes" describes the student's

characteristics after college exposure. The I-E-O model also contains many of the same concepts utilized in my study, such as background characteristics and educational experiences. Many current studies in the area of student engagement also use features of the I-E-O model as a basis.

In 1985 Astin also proposed a "theory of involvement" to explain the dynamics of student change and development, stating simply that students learn by becoming involved (Pascarella & Terenzini, 2005). The elements of this theory can be described as the investment of psychological energy as well as the learning theory of time on task.

Pascarella and Terenzini (2005) posit a general casual model for assessing the effects of differential environments on student learning and cognitive development. They also suggest that growth is a function of direct and indirect effects of five main sets of variables. These five variables are student background characteristics, organizational characteristics, institutional environment, interactions with faculty and peers, and quality of effort. These variables interact with and influence other sets of variables to explain changes in student learning and cognitive development. All of these factors are components of my study to some degree.

In 1989 Weidman proposed a model of undergraduate socialization that incorporates both psychological and social-structural influences on student change (Pascarella & Terenzini, 2005). Weidman's model, to a greater extent than previous models, posits a continuing socializing role for parents (even when students live away from home) and for other noncollege groups such as peers. It is clear that family plays a significant role in the Hispanic culture and my study explores family support as a factor. According to Rhodes and Rhodes, African Americans and Hispanics attribute more

importance to family relationships than do Whites (Gallingani, 1990). Mexican-Americans have been found to rely on their extended family network and to seek little support from outside sources.

Pascarella and Terenzini (2005) conclude that all of the models outlined above share several characteristics:

- The context in which a student acts and thinks is assigned a prominent and specific role.
- Institutional structures, policies, programs and services, as well as the attitudes, values, and behaviors of others who occupy institutional environments, are all identified as potential influences for change.
- Students are considered active participants in the change process but the environment is seen as an active force that not only affords opportunities for change-inducing encounters but also can induce particular kinds of responses.
- Student traits and characteristics are considered important. (pp. 59-60)

My study uses components of the characteristics described by Pascarella and Terenzini. Hispanic characteristics (background variables) are examined along with the students' perceptions of the institutional environment with respect to their educational experiences.

Research on Hispanic Student Engagement/Involvement/Student Attrition

Research conducted specifically on Hispanic students is somewhat limited except in referencing data as a part of a larger study. Research on minority/ethnic populations has focused primarily on African Americans. Numerous articles and books discuss the support systems needed to ensure academic achievement and resultant persistence and

graduation of Hispanic students, but the research is still sparse. However, because of the recent growth of the Hispanic population and increasing concerns about academic achievement, persistence, and attainment research is beginning to coalesce.

Cappell, Gutierrez and Timm (2004) examine Latino background and involvement indicators to explain achieved GPA at a four year college. Their study found that the strongest causal predictors of GPA were academic preparation and degree of English language (based on acculturation). Their study was conducted at a university with fraternities and sororities -- very different from the community college setting.

A relevant study on this topic was conducted by LeSure-Lester (2003). The study examined the relationship between coping styles and academic persistence decisions of Latino students in two-year colleges. The study investigated the coping styles that Latino students use to manage stress encountered in college and attempted to determine whether these coping styles (measured by responses on a coping styles inventory) differentially influenced college persistence decisions. The study showed that coping styles had a significant impact on college persistence decisions of Latino students. The results further showed key factors determining persistence of Latino students included academic development, faculty concern, and faculty interest in students. Student-faculty interaction factors are a major component within educational experiences in my study.

According to Hurtado and Carter (1996), enough about the unique experiences of Latino students, including those who have overcome significant barriers to attend four-year institutions, is not currently known. They conducted a study to provide clarification regarding feelings of integration from the perspective of Latino students. How their sense of belonging differs from measures of integration used in higher education research

was examined. The study utilized four primary sources of student data and was part of a national study of Latino college students identified as semifinalists National Merit Scholarship awards (Hurtado & Carter, 1996). Hurtado and Carter's study focused on the sense of belonging for students in the junior and senior years. Hurtado and Carter noted the importance of early experiences in determining Latino's sense of belonging in later years. The sources for their study are high achieving students who differ considerably from the population in my study.

Swail, et al., (2003) state that "there are a number of factors related to retention, and researchers have found differences, as well as similarities, between White students and students of color" (p. viii). Those factors include academic preparedness, campus climate, commitment to educational goals and the institution, social and academic integration and financial aid. Completing a rigorous curricular program during high school appeared to be a more important predictor of college persistence than test scores, particularly for African American and Hispanic students.

Terenzini, Springer and others found that precollege characteristics showed first-generation students were more likely to be Hispanic, come from low-income families, have weaker cognitive skills, have lower degree aspirations, and have been less involved with peers and teachers while in high school (as cited in Swail, et al., 2003). The number of hours spent studying had a positive impact on first-generation students' gains in reading skills during their first year, which suggests a need to increase these students' study time, possibly through study groups, peer tutoring, and financial assistance to reduce students' off-campus work hours. The background characteristics in my study

include level of parental education, which has been shown to be a factor that influences academic achievement.

Other studies also found significant correlations between academic preparation and persistence for low achievers (Porter, 1989) and Hispanic students (Astin, 1982); thus further supporting Tinto's theory of academic integration and college persistence (as cited in Swail, et al., 2003). Prior levels of education attainment are examined in my study, which is important since previous studies show that this issue has an impact on academic achievement.

Tinto (1993) explains that one might expect that persons from cultural backgrounds and/or home communities with low rates of higher education participation may face severe handicaps in attempting to complete degree programs. Tinto notes that Padilla's 1991 study of Chicano students is quite revealing, because it highlights the sense of social isolation and the strong pressures (students feel) by peers and significant others to maintain their ethnic allegiances and heritage while enrolled in college. While my study does not directly address these issues, related factors such as collaboration with other students and faculty-student interaction are examined.

Hurtado notes that many minority students are not likely to give up their affiliations and lose contact with their cultural groups in order to find membership in a new college world (Rendón, et al., 2000). Many Latino immigrants maintain extensive and frequent contact with Mexico and in many Latino cultures separation is often not a viable option, because family is a source of rootedness and strength. Rendón, et al. also note that according to Zambrana, many minorities leave college due to "cultural assaults" on their sense of identity and self-esteem; that creates stress and tension. The degree to

which Hispanic students are involved on campus is the heart of my study and support of family is examined.

Rendón et al., (2000) in *Reworking the student departure puzzle* attempt to provide a critical analysis of Tinto's student departure theory (1975, 1987, 1993) and conclude that while traditional theories of student retention and involvement have been useful in providing a foundation for the study of persistence, they need to be taken further. They added that much more work needs to be done to uncover race, class, and gender issues that impact retention for diverse students in diverse institutions. Examining the variables for Hispanics in my study is a focused attempt to provide information to enhance the body of knowledge on student engagement and academic achievement for this population.

Nora's 1990 study of financial aid and retention among Chicano community college students argues that the interplay between financial aid and financial resources is paramount to student persistence (as cited in Tinto, 1993). Results of this study showed that financial aid/resource factors were found to have a larger impact on retention than did students' high school grades and their accumulative grade-point averages. The sources that students use to pay their tuition are examined to determine the relationship of finances to both student engagement and academic achievement.

Clearly, further research on Hispanics in higher education is needed, especially community college research, and to understand what contributes to academic achievement success of this population. This need is noted in a study by Santiago, Andrade and Brown (2004), which looked at policies that promote student success.

Recommendations from their study included support for continued research on Latino students and institutional practices.

Student Development Theories

While the body of research and theory on student development in college is extensive and varied it is generally not specific to the Hispanic population. Nevertheless, such research does lay the foundation with which to examine the underpinnings of student engagement theory and research.

Pascarella and Terenzini (2005) frame theories and models of student development and change into two broad families – one composed of developmental theories and models, which address human growth; and the second, college impact models, emphasize change associated with the institution and student experiences. Delworth et al. (1989) categorize developmental theory into four groups: psychosocial, cognitive-structural, person-environment interaction and typological. What follows is a very brief overview of these general theories.

Psychosocial

Delworth et al. (1989) describe psychosocial theories as those attempting to describe the developmental tasks that occupy adults at different phases or time in the life span. "In contrast to most psychologists of their time, these theorists (Jung, Buhler, Massarik, Erickson, & Havighurst) have argued that human development continues throughout the life span and that a basic underlying psychosocial structure guides this development" (as cited in Delworth et al., 1989, p. 122). Some of the most notable theorists in the psychosocial arena are Carl Gustav Jung and Erick Erickson. Chickering

and Reisser (1993) refer to Erick Erickson as the progenitor of the psychosocial model (as cited in Pascarella & Terenzini, 2005).

"Probably no psychosocial theorist has had more influence on the research on college student development or administrative efforts to promote it than Arthur Chickering" (Pascarella & Terenzini, 2005, pp. 20-21). This influence is particularly relevant in the seven vectors of college student development that Chickering identified; this model has withstood the test of time. Those seven vectors include achieving competence; managing emotions; moving through autonomy toward independence; establishing identity; and developing mature interpersonal relationships, purpose, and integrity. The theory was originally written to address the developmental needs of the traditional age college students of the 1960s but is equally pertinent to contemporary students of all ages (Higbee, n.d.).

This model had been used continuously for research purposes since it was introduced in 1969, and the original proposition that human development should be the organizing purpose for higher education has been validated consistently (Chickering & Reisser, 1996). While growth and development as such are not examined in my study, designing and organizing programs and services that take human development theory into account is essential. Programs and services are examined in my study in terms of the degree to which students are engaged, thus providing the link to development theory and student engagement.

Other psychosocial models that merit attention are those relating to identity formation, gender, race-ethnicity, or sexual orientation (Pascarella & Terenzini, 2005). Ruthellen Josselson (1973, 1987, and 1996) is best known for her theory of identity

development among women. Four other racial and ethnic models that have attracted attention are Cross's model of Nigrescence, Helm's people of color racial identity model, Helm's White racial identity model and Phinney's model of ethnic identity development (Pascarella & Terenzini, 2005). These models have particular relevance in my study, even though none is specific to Hispanics, and are outlined in some detail.

William Cross (1971a, 1971b, 1980, 1991, and 1995) offers a theory of African-American identity where he examines its sociohistorical and conceptual roots (as cited in Pascarella & Terenzini, 2005). Cross examines Black identity as taking shape through five hierarchical stages:

1) Preencounter, the individual's world view is frequently Eurocentric, and being Black is either not a salient factor or is seen as a social stigma.
2) Encounter, involves an experience or an accumulation of experiences that threaten the individual's understanding of the place of Blacks in the world, engenders a range of emotions, and triggers a reinterpretation of initial views and beliefs.
3) Immersion-emersion, where the individual is in between and searches for a new understanding of self as Black. Immersion in the world of Blackness.
4) Internalization, the dissonance is resolved, a new world view emerges, and the individual returns to a personality more stable and calm than in Stage 3. (pp. 25-26)

Cross does suggest that this model may apply to other groups, but it's applicability to Hispanics has yet to be established. Again, while these issues are not

explicitly explored in my study there is no doubt that Hispanics could share some of the same world views.

Pascarella and Terenzini (2005) complete the description of the second phase of the identity formation by arguing that the individual's commitment to White society is intellectualized through various forms of acceptance or through curiosity. This intellectualization proceeds until White identity is no longer threatened by race and the individual is open to information about other races; seeks greater understanding personally and in others; and values racial and cultural similarities and differences. This model by Cross was developed for Whites and people of color and informs my study in that it relates to the campus environment and how Hispanics perceive all aspects of campus programs, services and the people who provide them.

Phinney's (1990, 1992) model asserts that ethnic identity is one dimension of a person's social identity and that individuals may have both negative and positive views of their group (as cited in Pascarella & Terenzini, 2005). Ethnic identity is not static but changes with the individual's accumulation of experiences, personal development, and shifts in social and historical context.

Models relating to racial identity development, while not examined as such in my study, do provide an important overview of individual development in relation to race. People are an accumulation of their experiences and these experiences contribute to how and to what degree students engage in the educational environment and how they perceive that environment.

Cognitive-structural

None of the cognitive-structural theories outlined below have a direct impact on my study but are important in providing an understanding of the development process. While age is a factor as a background characteristic and is examined, age cannot solely define where an individual is in the development process. An assumption in development theory is that as one gains experience and progresses in age, development occurs. My study does not tie age to the development process, but an overview of cognitive-structural theories does contribute to the knowledge base that is important in understanding students.

The foundations of cognitive-structural development theory were laid by Piaget, who identified the basic concepts and assumptions of this family of thought, and Kohlberg, who refined and extended Piaget's work on moral development (Delworth et al., 1989). Delworth et al. further note that encountering cognitive conflict results in developmental change (Rodgers, 1980). In other words, a person's current way of thinking and making sense of experience is challenged by a different and structurally more advanced way of reasoning. Kohlberg's is a cognitive stage theory that identifies three general levels of moral reasoning (Pascarella & Terenzini, 2005).

Perry, Kitchener and King developed theories of intellectual or epistemological development (Delworth et al., 1989). Cognitive-structural development refers to how people cognitively perceive, organize, and evaluate questions of knowledge and valuation. Perry calls this intellectual development and Kitchener and King term it reflective judgment. Perry's scheme of intellectual and ethical development asserts that

development is comprised of two major parts, with the cumulative stage being the perception of all knowledge and values as relative (Pascarella & Terenzini, 2005).

Magolda's epistemological reflection model, influenced by Perry and others, asserts that women's ways of knowing do not align well with Perry's positions (Pascarella & Terenzini, 2005). Through her study of both men and women, four ways in which college students "make meaning" were identified. Gender-related differences in reasoning were noted.

Person-environment

Person-environment theories are not, strictly speaking, developmental, in that they do not attempt to explain in detail either the nature of specific processes of student development or growth (Pascarella & Terenzini, 1991). These theories and models do focus in detail on the environment and how it influences behavior through interactions with characteristics of the individual (Pascarella & Terenzini, 2005). Person-environment theories attempt to identify some origins of behavior and provide frameworks for discussing student change and college effects. Six theoretical viewpoints will be reviewed, including Barker's theory of behavioral settings; Clark and Trow's subculture approach; Holland's personality types and model environments; Stern's need x press = culture theory; Moos' social climate dimensions; and Pervin's transactional approach. Walsh (1978) makes the point that to explore behavior independent of its context is meaningless.

Barker's theory of behavioral settings is part of the family of theories where college students are shaped by the environment rather than shaping the environment: "The basic rationale for Barker's theory is that behavior settings (a cluster of related

behavior-milieu parts) select and shape the behavior of people who inhabit them" (Walsh, 1978, p. 105). Barker maintains that people tend to behave in highly similar ways in specific environments, regardless of their individual differences as people, with the type of environment the predictor of behavior. While Barker acknowledges that the individual and the environment must be taken into account, his research is focused primarily on the environment. For purposes of my study the environment for all participants is similar, even though each student has different experiences in that environment. Student engagement can be examined taking the environment into account; however, the student's perception of experiences in the environment cannot stand on its own because the individual's background must also be considered.

Another theory with environment as an influencing factor is the subculture approach. It has been used by those analyzing college environments and has been primarily concerned with identifying attitudinal or behavioral dimensions for students (Walsh, 1978). In their 1966 model, Clark and Trow outline four student subcultures (academic, nonconformist, collegiate and vocational). The categories are based on the combination of students' identifications with ideas and with their college. Clark and Trow argue that while students might participate in more than one of the subcultures, one would be sufficient to identify a student's major orientation. The cultural dimensions within the institution where my study was conducted are considered; however, specifics within the environment other than perceptions of actual engagement issues are not be part of the design.

Authors of human aggregate models describe the environment and its influence of the aggregate characteristics of its occupants (Pascarella & Terenzini, 2005). Holland's

work on vocational choice is one of best known studies. Holland posits human behavior as a function of personality and environment (Walsh, 1978). Holland is best known in educational circles for the Strong Vocational Interest Inventory, used frequently in career guidance programs. The theory is based on typifying people in one or more personality types, with six types identified: realistic, investigative, artistic, social, enterprising, and conventional. The theory's second assumption is that "the environments in which people live may be characterized by their resemblance to one or more model environments" (p. 107). Holland asserts that people who fit specific types search for an environment that fits their type (e.g., artistic types search for artistic environments). This study does not attempt to address issues included in this particular theory.

Another model where college students and their environment are the focus was developed by Stern (Pascarella & Terenzini, 1991). The needs-press model argues that the 'press' occurs when situational pressure causes individuals to behave in certain ways. The environment press manifests itself in terms of the activities and interpersonal interactions of the individuals in the environment. Again, while not directly examined in my study, perceptions of the environment by Hispanic students are examined and could certainly be influenced by pressures in the environment.

Moos' developed a related model primarily concerned with describing environments as perceived by the people in them and suggests that environments, like people, have unique personalities (Walsh, 1978). Moos' first assumption is that psychosocial qualities of the perceived climate may be inferred from behavioral perceptions. His second assumption is that individuals' perceptions of the environment influence behaviors in that environment. Examining student engagement in my study

involves participants' perceptions of the environment, though not specifically using Moos' approach.

Pervin's transactional approach model is a phenomenologically oriented theory. Pervin asserts that behavior can be best understood as interactions of transactions between the individual and the environment (Walsh, 1978). He states "that individuals will tend to evidence higher performance, more satisfaction, and reduced dissonance in environments that tend to be congruent with their personality characteristics" (p. 109). He maintains that there are environments for each individual that tend to match the individual's perceptions of self.

All of these theories are significant for understanding why students perceive their environments in different ways, even though my study does not address any aspect of the theories directly. It is important to have a clear and comprehensive understanding of the environment; and background characteristics of the study participants and my study contributes to this understanding.

Learning Theory

Learning theory is another area of theory that is important in understanding the issues being addressed in my study. Academic achievement by Hispanics is a critical component of the study, while learning is not directly being examined. According to Gagné (1977), learning is a change in human disposition or capability, which persists over a period of time, and which is not simply ascribable to processes of growth. Learning as a process (rather than an end product) focuses on "what happens" when the learning occurs and (Merriam & Caffarella, 1991) explanations of what happens are called learning theories.

Three general categories described by Bigge (1982) are used to outline the information that follows. These three categories are 1) mental discipline theories of mind substance family, (2) stimulus-response conditioning theories of behavioristic family and (3) cognitive theories of Gestalt-field family.

Mental Discipline

According to Bigge (1982), mental discipline theory consists of four theories of learning: theistic, humanistic, natural unfoldment or self-actualization, and the apperception or Herbartianism. The first two originate in the mental discipline theories of the mind substance family and the last two from the apperception family. Both theories were developed prior to the twentieth century but continue to be highly influential in today's schools. In the mental discipline theory, learning consists of students' minds being disciplined or trained. “Exercising the muscle of the mind” is a core principle with strict discipline maintenance also key.

These theories could be applied in examining aspects of student learning but my study does not address the specific theory. However, even though learning is not directly being examined in my study the underlying concept of learning is indirectly observed. Participants in my study provide information on their perceptions of the learning process, so understanding how students learn is beneficial.

Stimulus-Response Conditioning Theories of the Behaviorist Family

Bigge’s (1982) second category, one of the prominent families of contemporary learning theory, includes the stimulus-response (S-R) conditioning theories: S-R bond, conditioning with no reinforcement, and conditioning through reinforcement. The first of

these, the S-R bond or connectionistic theory of learning, states that conditioning specific response patterns are connected with specific stimuli.

The second theory in this family is conditioning with no reinforcement, with John Broadun Watson a key researcher. Watson's manifesto appeared in 1913, after which psychology would no longer be a science of consciousness; rather, it would be a science of behavior (O'Donnell, 1985). In Watson's writings, learning is viewed as a matter of establishing individual associations (conditioned responses) firmly based in the nervous system. More complex human acts are considered to be chains of conditioned responses (Gagné, 1977). Clark L. Hull and B. F. Skinner are most often associated with reinforcement theory.

The educational environment does provide a fertile ground for research related to the S-R theory but here again, this study does not examine this theory directly. The behavior of students in response to faculty in student engagement is particularly relevant in my study, even though the S-R theory is not examined specifically.

Cognitive Theories of Gestalt-field Family

Three theories of learning can be found in this family: 1) insight, 2) goal-insight and 3) cognitive-field. Gestalt-field psychologists consider learning phenomena to be closely related to perception (Bigge, 1982). Consequently, they define learning in terms of reorganization of the learner's perceptual or psychological world -- the person's psychological field.

In the insight theory, Bigge (1982) regards learning as a process of developing new insights or "sight." "Insights occur when an individual, in pursuing his purposes, sees new ways of utilizing elements of his environment, including his own bodily

structure" (p. 96). Kurt Koffka and Max Wertheimer are key individuals associated with this theory.

The second theory in this family is goal-insight, which aids students in developing high-quality insights (Bigge, 1982). The conception of humankind's moral and actional nature is represented as neutral-interactive, purposive individuals whose interaction consists of sequential relationships with their environments. Key individuals in this theory include Boyd H. Bode and Raymond H. Wheeler, with Ernest E. Bayles a contemporary proponent.

The last theory in this family is the cognitive-field, designed to help students restructure their life spaces and gain new insights into their contemporaneous situations (Bigge, 1982). Cognitive field draws primarily from the study of human motivation. Cognitive-field psychology's purpose is to formulate tested relationships that are predictive of the behavior of individuals in their specific life spaces or psychological situations. Further, in order to understand and predict such behavior, one must consider individuals and their psychological environment as a pattern of interdependent factors and function. Key figures in this area include E. C. Tolman, Kurt Lewin, John Dewey, Gordon W. Allport, Aldelbert Ames, Jr., and Rollo May. Contemporary proponents are Edward L. Deci, Morris Bigge, Jerome Bruner, Donald Snygg, Morton Deutsch, and Sigmund Koch.

Understanding what motivates people to learn, and grasping how this learning takes place are valuable in informing efforts to isolate factors that contribute to academic achievement. While the learning theories outlined here are not included in the research

design as such, they are a critical in informing the overall thought process of examining what contributes to academic achievement.

Background Characteristics

Astin (1989) argues that four variables – ethnicity, gender, high school grades and SAT scores – are the most likely significant correlations of retention across campuses, although the effect may vary depending on the institution. The instrument that was used to gather data for my study is the Community College Survey of Student Engagement (CCSSE). The survey, administered to community college students, asks questions that assess institutional practices and student behaviors that correlate highly with student learning and student retention (CCSSE Overview, n.d.). Background characteristics as self-reported on the instrument and relevant to my study include gender, English as a second language, age, marital status, highest academic credential, parents' highest level of education, whether or not the student has children living with him or her, types of education since high school, full- or part-time student status, number of total hours earned, sources students use to pay tuition, and support of immediate family. What follows is a discussion of the literature and research findings on these characteristics.

Age Group

Student development theory and learning theory make clear that students will be in varying levels of development in relation to learning and maturity. While there is not a specific age that corresponds to development of areas such as higher reasoning skills, maturation does have an affect on that development.

Hutchinson (2003) found in a study examining persistence of first-time students, that students over the age of 20 displayed noticeably lower rates of persistence. In

addition, older transfer students (with a mean age of 29) were more likely to persist to degree completion than were students of similar ages. Hutchinson notes that Horn (1996) contributed the nontraditional age factor as a risk factor in degree attainment and persistence.

Bean and Metzner (1996) found that several studies conducted at commuter institutions reported a positive association between students' age and attrition from college. However, other research at these types of institutions failed to note a significant association.

Age of a student can be considered in terms of the maturation process, which is discussed in both student development theory and learning theory. Astin (1996) notes that a negative relationship between any given change and age at college entry would constitute evidence that the change is in part maturational as opposed to a result of the environment. The issue of age should also be taken into account; and my study includes age as a background characteristic in examining the college experience variables.

Full- or Part-time Student Status

Brawer (1996) reviews research on retention and attrition in the United States and concludes that the most prevalent characteristic among studies of non-persisters is part-time attendance (as cited in Hall, 2001). Horn and Carroll (1996) examine postsecondary education participation of undergraduates who are not "traditional" college students, and found that part-time enrollment was associated with lower rates of persistence and attainment compared with full-time enrollment.

Several studies at 2- and 4-year institutions, primarily commuter schools, provide strong evidence that students who were enrolled on a part-time basis were more likely to

drop out of college (Alfred, 1973; Behrendt, 1974; Brunner et al., 1978; Cohen, 1969; Everett, 1979; Fetters, 1977; Martin, 1974; Knoell, 1976; Smith, 1980; Tweddale, 1978) (as cited in Bean & Metzner, 1996). Older students are more likely to enroll part-time due to other responsibilities. While my study does not address the dropout issue, most part-time students have more outside responsibilities; this may impact their engagement both in and outside the classroom. Consequently, the influence student status (full- or part-time enrollment) has on the college experience is examined.

Gender

Using a national sample of undergraduates, in 2002 Leppel reported that factors influencing persistence may be different for males and females (as cited in Hutchinson, 2003). Her study's findings on persistence indicate that women's observed persistence rate was higher than that of men; however, the difference was not statistically significant. A study by DuBrock and Fenske in 2000 showed gender to have no impact on retention, unlike Somers (1995) who found that women depart college at a greater rate than men (as cited in Herzog, 2004). In their study, women were found to be at greater risk of transferring to another institution, but they are no more likely to drop out than men.

In the area of educational attainment, the rate of high school completion in 1998 for females was 90% and 87% for males (ERIC Clearinghouse on Urban Education, n.d). In 1998, 66% of female Hispanics completed high school, compared to 60% of males. The completion rate for four or more years of college in 1998 for all adults aged 25-29 was 27%: 29% for females and 26% for males. Over the past 25 years the completion rates for females increased almost 12 percentage points compared to a 2% increase for males.

According to an NCES report (Freeman, 2004), younger generations of females (aged 39 or younger) have essentially attained parity or surpassed males in attainment of bachelor's and graduate degrees. Across the adult population ages 25 or older, similar percentages of males and females had bachelor's degrees in 2002. Gender identity might be psychologically important to Latinos' and Latinas' self-concept due to the differential social status of men and women in both Latino and larger societies (Miville and Helms, 1996).

Clearly, gender is a background variable that has been demonstrated (even though there are mixed results) to have an influence on attainment. Consequently, gender is examined in my study.

Marital Status

According to Hutchinson (2003), marriage can have a positive motivational effect and a negative time effect for college students and at the same time can cause stress, because of heavy commitments that may limit study time. A spouse can provide emotional support and additional motivation to complete college. In addition, the effects of marital status on education tend to vary by gender. Being married increases the probability that males will complete a degree, but decreases the likelihood for females (Leppel, 2002). Leppel further reported that marriage has a protective effect for males, but tends to be detrimental for females.

Hutchinson (2003), in examining first time college students (FTIC), found that the marriage-gender dynamic did not necessarily apply to students in his study. Among FTIC students, marriage did not appear to influence persistence. However, transfer married

males actually persisted at slightly lower rates than married females, but the proportion was small.

Marriage status has the potential to carry with it additional outside responsibilities and has been shown to influence persistence and attainment in some studies. This background variable is examined in my study.

Children Living with the Student

Bean and Metzner (1996) note that Staman found that the number of children a student has is negatively associated with persistence for continuing students age 22 or older, but showed no significant effect for younger students. In addition, Bean and Metzner cite Reehling's observations that at several community colleges older female students who failed to accomplish their educational goal had a significantly greater number of children living at home than students who attained their goals.

Clearly, family responsibility that includes children living at home can have an impact on students' persistence and academic achievement. My study examines that factor.

Sources Students use to Pay Tuition

Research findings are mixed regarding the impact of financial aid. Most of what has been studied relates to the impact of student's status on financial aid and persistence. Gilligani (1994) did a comprehensive review of the research and cites Tinto who found that financial aid had little effect on persistence. Gilligani also notes Leslie and Brinkman found financial aid a positive influence on persistence. Some of the variability in findings can be explained by the fact that different types and amounts of aid were examined. Financial problems are often cited as a reason for students withdrawing.

Santiago and Brown (2004) state that for Latino students, college costs and available financial aid are among the most significant factors that influences their decision to enroll in college. Further, among all ethnic groups, Latinos receive the lowest average amount of financial aid awarded—both by type and source of aid.

While my research does not address the influence of financial aid on academic achievement, the issue of access made available by financial aid is important. Second, if persistence is affected by financial aid or the ability to stay in school because of the availability of financial resources, then the sources students us to pay tuition is an important variable, and thus is examined in my study.

Immediate Family Support

Swail et al. (2003) conclude, after extensive review of prior research, that the most significant factors determining whether students are prepared for and motivated to enroll in college are the rigor of their precollege curriculum and the support of peers, family, and friends—regardless of race, ethnicity, gender, income, or almost any other background variable. Further, he states that new student orientation should look beyond the student and offer opportunities to families and significant others, as the college experience is truly an experience for the entire family and not just the student. Bean and Vesper (1992) find that parental support and encouragement is the strongest predictor of persistence at a small liberal arts college that enrolls high numbers of first-generation students (as cited in Stage & Hossler, 2000). Family support is included as a background variable in my study.

English as the Students' Native or Secondary Language

In a study conducted by Cappell, Gutierrez and Timm (2004), academic preparation and degree of English language based cultural assimilation emerged as the strongest direct effects for predicting GPA. They speculated that the effect of language and degree of Anglo assimilation and acculturation operate through two mechanisms. The first is a pure language ability factor. The second effect operates through an awareness and appreciation of, and integration into the academic culture.

Cappell et al. (2004) also note that higher levels of interactions with Anglos, and higher levels of English language based cultural communications, are positively associated with academic performance. They note that the effects may reflect a partial measurement of ability to navigate the "academic culture" or of the ability to understand the "academic idiom."

Language is an important variable to consider in examining academic performance and engagement of Hispanics. Whether or not English is the native language of study participants is included in my study.

Highest Educational level obtained by the Mother or Father

The educational level of parents has received a great deal of attention in research on student attainment and enrollment in higher education. Findings in Hu and St. John (2001), Paulsen and St. John (2002), Cofers and Somers (1998), and Leppel (2002) show that low-income or first-generation students (Ishitani, 2003) are more likely at risk of dropping out (as cited in Herzog, 2004).

Skaling (1971) concluded from a review of the literature that parents' level of education was the most powerful predictor of traditional student persistence (as cited in

Bean & Metzner, 1996). Trombley and Youhanna (2004) noted that students whose parents have no education beyond high school are considerably less likely to succeed than those whose parents have completed a bachelor's degree. Parents' education remains significant for persistence and bachelor's degree attainment.

First-generation status was a significant predictor of leaving before the second year in looking at persistence at four year colleges (Choy, 2001). In addition, first-generation students were less likely than others to return to a 4-year institution once they left. Choy reported that among those who overcome the barriers to access and enroll in postsecondary education, students whose parents did not attend college remain at a disadvantage with respect to staying enrolled and attaining a degree. Educational levels of both the mother and father are included as variables in my study.

Highest Level of Academic Credential earned by Student

Many studies have examined performance in high school. Bean and Metzner (1996) cite Tinto, Patanges and Creedon's findings that high school grade average and high school rank were stronger predictors of persistence than scores on tests of academic ability. While high school performance is not being examined in my study, the level of previous educational attainment is included.

Number of Hours Previously completed by Students

Obvious to point out is that the more college courses students complete, the more students learn, develop and know how to navigate the educational environment. Research on this issue was not found; however, it stands to reason that this background variable is important and is included in my study.

Summary

A literature review in this day and time, given the wealth of information on the Internet, can be unending. After a thorough review, it is clear that a great deal of information exists concerning the Hispanic population in terms of growth and makeup, and also a good deal of data on education attainment issues. In addition, numerous papers and books outline strategies for education programming and services. Theories of student engagement/involvement, student development theory, and the literature on the background variables are the most useful and meaningful for my study.

In comparison to the empirical evidence that exists on persistence and academic achievement for the general population, to include fairly extensive work on African Americans, there is little research in these areas on Hispanic students. It has yet to be determined to what degree the research and literature on the general population will fit the Hispanic population.

CHAPTER III

Design of the Study

This is an ex-post-facto study with an overall purpose of identifying selected variables of student engagement related to Hispanic student academic achievement at a community college. Data from the Community College Survey of Student Engagement (CCSSE) was used to examine these relationships. The results of my study can help direct resources toward those practices and strategies that can best help Hispanic students achieve academic success.

Research Questions

1. What student background characteristics were related to the student engagement indices among Hispanic students?
2. How were these student engagement indices related to student achievement?
3. How did the interaction between student background characteristics and student engagement indices influence student achievement?

The study of academic achievement itself is complicated. Therefore, in order to enhance internal validity of my study, the research focused on issues related to academic achievement only, so that not as many co-variates needed to be controlled. This in essence is a similar effect (better internal validity) brought about by the use of "homogenous grouping" in research (restricting an otherwise diverse population or sample into a more restricted group). The disadvantage of this procedure is that the findings can be generalized to academic achievement only, leaving out information about other important phenomena (e.g. persistence or graduation). However, internal validity of my study is enhanced.

Setting for the Study

The setting for my study is a small community college in the Gulf Coast region of southeast Texas. College of the Mainland (COM), a comprehensive community college, enrolled its first class of 414 students in September, 1967. Currently it enrolls over 4,000 credit-seeking students each fall and spring. Another 12,000 students enroll in continuing education courses, which include vocational technical courses funded through a contact hour formula by the State of Texas. The College offers transfer degree programs and awards Associate of Arts and Associate of Science degrees. In addition, the College offers allied health, public service, and technical and occupational programs and grants Associate of Applied Science degrees and certificates.

The College is governed by a seven member Board of Trustees elected by the residents of the College District to serve six-year terms. The Board, at the time the study was conducted was made up of six males and one female; and had one African American and one Hispanic member. Recently, an additional African American female was elected to replace the Hispanic member. The current Board is made up of two African American females and five White males.

The northern portion of the county, while in the service area, is not in the taxing district. College of the Mainland is located approximately thirty miles southeast of Houston, Texas. College of the Mainland has legislative authority to serve all of Galveston County except for Galveston Island. The College is accredited by the Southern Association of Colleges, and completed the reaccredidation process in 2003. In addition, the College is accredited by the Texas Higher Education Coordinating Board, is

a member of HACU (Hispanic Association of Colleges and Universities), and a number of other national organizations.

The College's Statement of Values include commitments to value "student success because it is at the center of everything we do" and "diversity and commit to be an open, fair-minded institution where diversity is encouraged" (2004-2005 College Catalog). The College has established four-year Strategic Directions, which currently includes the goal of attaining Hispanic Serving Institution (HSI) status by the Fall of 2008. HSI status requires an institution to have a Hispanic full-time-equivalent (FTE) enrollment of 25%. COM had 19.1% Hispanic FTE enrollment in the Spring 2005 session, which represented a 13.9% increase over the previous spring.

The College enrolled the most credit-seeking students in its history during the Spring 2005 semester with a 4164 headcount. Sixty percent were female and 39.7 % male. In addition to the 19.1% Hispanic enrollment, the remainder of the enrollment include: 16.9% African American, 2.2% Asian/Pacific Islander, .8% American Indian/Alaskan, 58.6% White, and 2% unknown.

Hispanic enrollment at COM has grown from 15.9% in Fall 2000 to the current level. Hispanic students are very actively involved on the campus in student government, clubs and organizations, college councils and committees, and participation in strategic and other planning processes. Several of the current Student Government Association leaders are Hispanic, including the President. The College has a Multicultural Team with a mission to "foster the awareness and appreciation of diversity, multiculturalism, and global interdependences by sponsoring, supporting, and promoting educational and cultural events and activities on campus and in the community" (2004-2005 College

Catalog, p. 84). In addition, a Diversity Council was formed in 2004 to address hiring and related diversity issues on campus.

Participants

The study cohort consisted of students who identified themselves as Hispanic in two CCSSE surveys administered in the spring of 2003 and 2004 at College of the Mainland. Hispanic students were selected due to their high representation at the community college level and represent the fastest growing ethnic group in the state of Texas and College of the Mainland's service area. Perhaps most importantly, a critical need exists to understand issues related to student engagement among Hispanic students and how this dynamic correlates to their academic achievement (which leads to persistence and educational attainment).

The CCSSE survey is being used across the country at community colleges and provides useful data regarding student engagement. While summary reports relating results from across the country have been published based on the data from CCSSE survey, there has been no specific analysis or research done on Hispanic students and the relationship between engagement and academic achievement. Having a greater understanding of this relationship will have important implications for future programming.

Kuh et al. (2005) argues that "one way to use student engagement data effectively is to identify the least engaged students" (p. 315). Kuh goes on to point out that it makes sense, with limited time and resources, to target interventions designed for students in the lower ends of student engagement.

Resources are becoming increasingly scarce in higher education across the country as well as in Texas. The Closing the Gaps legislative mandate, implemented by the Texas Higher Education Coordinating Board in 2000, was not funded by the state. In fact, state funding has decreased over the last three years. Increases in Hispanic student enrollment, retention and attainment are required, but without appropriate funding it is difficult, if not impossible, to reach these mandated targets. Consequently, examining what contributes to the academic achievement of Hispanic students becomes significantly more important when considering the continuing limitations on funding.

Instrumentation (including administration of survey)

Instrument

The Community College Survey of Student Engagement (CCSSE) was used to obtain data on student engagement. This survey instrument was specifically designed to measure student engagement, and most items on the survey pertain to time spent on activities that previous research has shown to be related to desired outcomes of a college education. There are five series of items that directly measure educational engagement (Marti, n.d.):

1. The College Activities section uses twenty items to measure the frequency with which students engage with instructors, other students, and in classroom activities.
2. The Mental Activities section has six questions on the extent to which course work emphasizes activities such as analyzing the basic elements of an idea, synthesizing ideas, and making judgments about information and arguments.

3. Academic Preparation items measure the number of textbooks assigned, the number of non-assigned books read, and the number of papers written.
4. Opinions about Your College is a set of seven items that measure the extent to which a college emphasizes providing social support, exposure to diverse backgrounds, and financial support.
5. Student Services items measure the frequency, satisfaction, and importance of eleven services, such as academic advising, tutoring, and financial aid advising. (pp. 2-3)

CCSSE was established in 2001 as a project of the Community College Leadership Program at The University of Texas at Austin. CCSSE works in partnership with the National Survey of Student Engagement (NSSE), a survey that focuses on four-year colleges and universities (CCSSE Overview, n.d.). The NSSE survey, administered in four-year institutions, emerged in response to concerns about quality in American undergraduate education and about the lack of emphasis on student learning in the major (and highly visible) college rankings in the United States.

From the beginning there was a recognized need for a student engagement survey specifically designed for community and technical colleges (CCSSE Overview, n.d.). Thus, CCSSE was launched with the intention of producing new information about community college quality and performance that would enhance institutional efforts to improve student learning and retention, while also providing policymakers and the public with more appropriate ways to gage the quality of undergraduate education.

Sample and Administration

The CCSSE is administered to students in randomly selected classes (credit courses only) at each participating college. The required number of course sections to be surveyed is determined by the total sample size needed to reduce sampling error and to ensure valid sampling results. Sample sizes range from approximately 600 to 1,200 students, depending on institutional size (CCSSE Sampling and Administration, n.d.).

CCSSE is administered to students in classes stratified by time of day – morning, afternoon, and evening – from institutional class data files (CCSSE Sampling and Administration, n.d.). The targeted sample size is about 20% of total credit enrollment. Survey administration takes place in the classroom during regularly scheduled class meeting times and is not announced to the students in advance. In addition to producing a higher response rate than purely voluntary surveys, classroom administration avoids a non-respondent bias.

The CCSSE survey was administered according to administration CCSSE guidelines at College of the Mainland in the spring of 2003 and 2004. The data from these two administrations were utilized for my study.

Rationale for use of Instrument

The CCSSE was selected because it is specifically designed to measure student engagement in the community college setting and has been subjected to validity and reliability checks. The instrument is made up of items that provided the data needed to conduct my study.

CCSSE's advisory board is made up of experts in the field. Peter Ewell, Vice President for the National Center for Higher Education Management Systems, chairs the

Advisory Board. Other notable board members include: George Kuh, Chancellor's Professor and Director of NSSE at Indiana University; John E. Roueche, Community College Leadership Program at the University of Texas and; Vincent Tinto, Distinguished Professor, Syracuse University.

NSSE, the forerunner of the CCSSE, has been administered at four-year colleges across the United States since 2000, and CCSSE since 2001. Psychometric properties of the NSSE instrument have been explored extensively, according to Marti (n.d.), and it has been demonstrated that the instrument is reliable and valid (Kuh, Hayek, Carini, Ouimet, Gonyea, & Kennedy, 2001; Kuh, 2002). There is a high degree of intentional overlap between the NSSE and CCSSE instruments, with 56 of the 79 items measuring student engagement on the NSSE instrument appearing on the CCSSE.

Study Variables

Background Characteristics

As discussed in the review of the literature, the background variables used in my study have been judged or shown in previous research studies to be closely related to academic achievement which leads to student retention and educational attainment. The following student background variables were analyzed for their relationship to the student engagement indices (the actual response categories are shown where there are ranges):

- Age (Age ranges changed from 2003 to 2004 and consequently, had to be combined into these categories: Under 18, 18-29, 30-39, 40-49 and 50+). The changes occurred in the 19 to 29 age category and then in the 50 and above ranges, which resulted in combining some age categories within those ranges.

- Gender
- Student status as full- or part-time
- Number of credit hours previously earned at the college where this study was conducted (a. None; b. 1-14 credits; c. 15-29; d. 30-44; e. 45-60; and f. over 60)
- Whether or not students are married
- Whether or not students have children living with them
- Sources students use to pay tuition at the College (a. My own income/savings; b. parent or spouse/significant other's income/savings; c. employer contributions; d. grants & scholarships; e. student loans [bank, etc.]; and f. public assistance)
- Whether or not students immediate family is supportive of attendance in college (extremely, quite a bit, somewhat, and not very)
- Whether or not English is their native language
- Highest level of academic credential earned by student (a. none, high school diploma or GED; b. vocational/technical certificate; c. associate degree; d. bachelor's degree; e. master's/doctoral/professional degree)
- Highest level of education obtained by the mother and father (a. not a high school graduate; b. high school diploma or GED; c. some college, did not complete degree; d. associate degree; e. bachelor's degree; e. master's degree/1st professional; f. doctorate degree; and g. unknown)

Benchmarks of Student Engagement

College experiences are the second set of variables and the CCSSE benchmarks are the actual variables. Kuh (2002) contends that higher engagement levels and higher grades go hand-in-hand. The relationship and influence of the CCSSE Benchmarks on the dependent variable, academic achievement, is one focus of my study. CCSSE developed benchmarks, which are "groups of conceptually related survey items that address key areas of student engagement" (Marti, 2004, p. 12). These five benchmarks are Active and Collaborative Learning, Student Effort, Academic Challenge, Student-Faculty Interaction, and Support for Learners. These benchmarks denote areas that educational research has shown to be important in quality educational practice, and they provide useful ways to look at each college's performance (CCSSE website). The following section provides an overview of the survey items included in the benchmark areas:

Academic Challenge. Survey items included in this benchmark address the nature and amount of assigned academic work, the complexity of cognitive tasks presented to students, and the standards faculty members use to evaluate student performance.

Active and Collaborative Learning. Survey items associated with this benchmark assess whether students are actively involved in their education, have opportunities to think about and apply what they learn in different settings, and collaborate with others to solve problems or master challenging content.

Student Effort. These survey items indicate to what extent students are applying themselves in the learning process and engaging in activities important to their learning and success.

Student-Faculty Interaction. Interaction with faculty members strengthens students' connections to the college and helps them focus on their academic progress. The items used in this benchmark assess the extent of these interactions, both in and outside of the classroom.

Support for Learners. Items associated with this benchmark indicate to what extent students are using key academic and student support services and how much importance they ascribe to services such as advising, academic and career planning, academic skill development, financial aid, and others that may affect learning and retention. (p.12)

The Seven Principles of Good Practice outlined by Chickering and Gamson (1991) serve as a foundation for several of the benchmarks. The good practices for undergraduate education:

1. Encourage student-faculty contact.
2. Encourage cooperation among students.
3. Encourage active learning.
4. Gives prompt feedback.
5. Emphasizes time on task.
6. Communicates high expectations.
7. Respects diverse talents and ways of learning. (p. 63)

Because these benchmarks are used in the data analysis as variables in my study and they have been shown to have a strong link with academic achievement, it is important to have a brief overview of the literature relating to these benchmarks.

Active and Collaborative Learning

Analysis of the research literature (Chickering & Gamson, 1987) suggests that students must do more than just listen; they must read, write, discuss, or be engaged in solving problems (Bonwell & Eison, 1991). Most importantly, to be actively involved, students must engage in such higher-order thinking tasks as analysis, synthesis, and evaluation, following Bloom's Taxonomy of Learning Objectives.

Smith and MacGregor (1992) state that collaborative learning (as an umbrella term), describes the many educational approaches involving joint intellectual effort. The authors' review of the research led them to conclude that involvement in learning, involvement with other students, and involvement with faculty are factors that make an overwhelming difference in student retention and success in college. Furthermore, a sizeable volume of experimental and correlational evidence suggests that active student involvement in learning has a positive impact on the acquisition of course content (Pascarella & Terenzini, 2005).

Donovan, Bransford and Pellegrini (1999) state that cultural differences can affect students' comfort level in working collaboratively or individually. This is an important aspect in for understanding and creating a learner-centered environment is designed to meet the needs of all students.

Kuh et al. (2005) maintain "that students learn more when they are intensely involved in their education and have opportunities to think about and apply what they are

learning in different settings" (p. 193). Active and collaborative learning pedagogies must be used as aids to student learning.

Academic Challenge

One of the *Seven principles for good practice in undergraduate education* from Chickering and Gamson (1987) includes faculty communicating high expectations to students. They maintain that expecting more from students will result in getting more from them, and that high expectations are important for everyone.

Kuh et al. (2005), concurring with Chickering and Gamson, maintains that high expectations for academic excellence are the foundation for creating a campus environment that values and rewards academic achievement. In this book *Student success in college: Creating conditions that matter,* Kuh et al. report on a cooperative effort by twenty institutions to identify policies and practices associated with student success. He notes that in these institutions, students are held accountable for meeting established standards while providing the support structures many students require to successfully perform at high levels. Practices that these institutions employ include informing students of high expectations from the very beginning, and expecting significant time-on-task for writing, reading and class preparation.

Student Effort

Pace advocates that what students get out of college depends not only on what the college does, but also the quantity and quality of effort that students put into college (Pascarella & Terenzini, 1991). In 1984, Pace constructed an instrument, the College Student Experiences Questionnaire (CSEQ), with a series of scales which measure the amount, scope, and quality of effort students invest in using opportunities and facilities

provided by an institution (Astin, 1989). Using this instrument on large samples of students at 19 colleges, Pace "suggests not only that the various scales measuring quality of student effort have strong internal consistency reliability, but also that they may be potentially quite useful in explaining different dimensions of achievement during college" (p. 336).

According to Kuh et al. (2005), one of the key components that contributes to student success is the amount of time and effort students put into their studies and other activities that lead to experiences and outcomes that constitute student success. Research by Pace (1984), Astin (1985) and Pintrich (1995) have underscored the importance of student effort and involvement in their learning (cited in Centra and Gaubatz, n.d.).

Student-Faculty Interaction

Chickering and Gamson (1987) state that frequent student-faculty contact in and out of class is the most important factor in student motivation and involvement. Knowledgeable faculty will enhance students' intellectual commitment and encourage them to think about their own values and future plans.

Arredondo (1995) reports from a study conducted from institutions around the U.S. that students who spend more hours talking to faculty outside of class, get involved with professors' research projects, or are guests in a professors' homes, will be more likely to aspire to higher degrees. Similarly, students who are satisfied with the opportunities they have to talk to professors or with the amount of contact available with faculty and administration will be more likely to aspire to higher degrees.

Kuh et al. (2005) maintain that students learn firsthand how to think about and solve practical problems by interacting with faculty both inside and outside of the

classroom. As a result of this interaction, faculty members become role models, mentors and guides for lifelong learning. Their study makes clear that meaningful interactions between students and their faculty are essential to high-quality learning experiences.

Support for Learners

Kuh et al. (2005) state that students perform better and are more satisfied at colleges that are committed to their success and where positive working and social relations are cultivated among different groups on campus. While colleges and universities make resources available that students can use to enhance academic skills or to enrich the quality of their social life, institutions should also find ways to induce students to actually use these resources.

It is not enough to establish quality support services: students also have to effectively use these services. Therefore, "intrusive" measures and practices often need to be in place to ensure student participation. Equally important is ensuring that students know about available resources from the beginning, preferably early in their first semester.

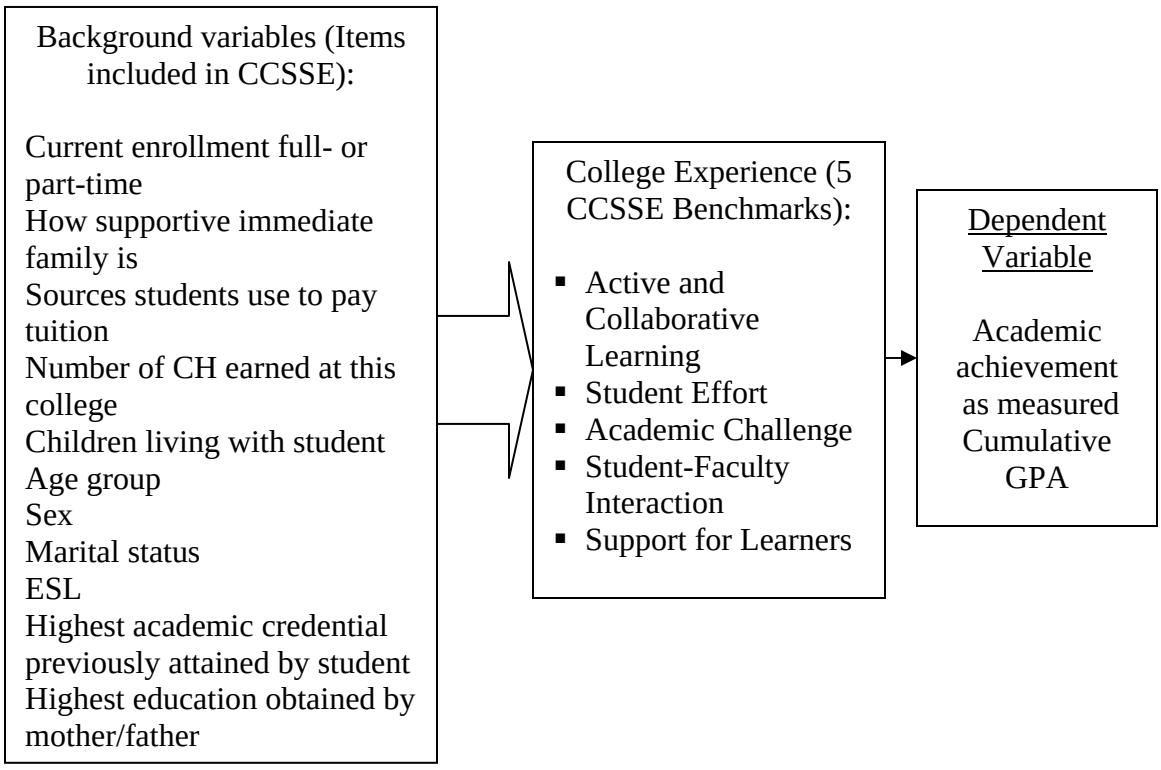
Academic Achievement

The academic achievement variable will be measured by actual cumulative grade point averages for participants who reported their student ID number. The cumulative GPA*s* were retrieved from College of the Mainland's student record data base.

Development of the Path Model

Figure 5 is the path diagram that provides an overview of the initial variables included.

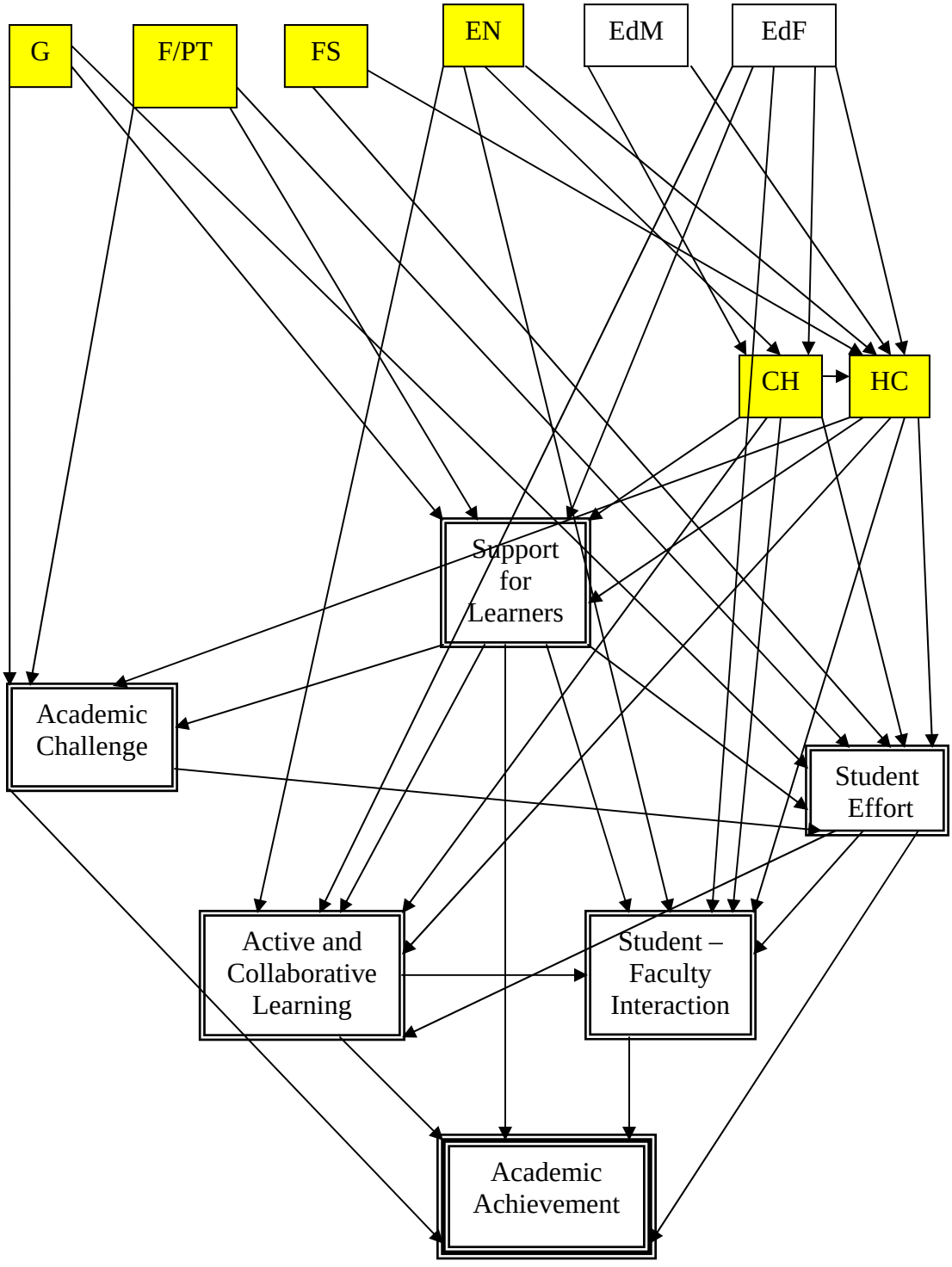
Figure 5: Path Diagram for Initial Study Variables



ANOVA was calculated to determine the relationship of the means on the CCSSE benchmarks for each background characteristic variable. Because the engagement indices are measured continuously and the background variables categorically, an analysis of variance (ANOVA) was used. This yielded a significant effect, at the .05 level, on nine background variable means on benchmarks. The ANOVA results are part of what was utilized to develop a path model. Six background variables were identified due to the lack of a significant effect on the five benchmarks. Two of the variables, the educational level of the mother and father, were not eliminated because of the strength of prior research. The four background variables omitted in the path model include marital status, age, whether or not there were children living at home, and sources of payment.

Figure 6 is the model that resulted from the ANOVA analysis (shaded variables significant as a result of ANOVA) and the hypothesized paths from what was found in the literature.

Fiaure 6: Initial Path Model



CH = Credit Hours Earned at COM
EdF = Educational Level Father
EdM = Educational Level Mother
EN = English as Native Language
FS = Family Support
F/PT = Full- or Part-time student status
G = Gender
HC = Highest Credential Earned

Path Analysis

Path Analysis (Webley & Lea, n.d.) is an "extension of multiple regression and lets us look at more than one dependent variable at a time and allows for variables to be dependent with respect to some variables and independent with respect to others" (p. 1). According to Pedhazur (1982), for each independent variable in the equation there is a path coefficient indicating the amount of expected changed in the dependent variable as a result of the unit change in the independent variable. Path analysis was used to examine the data in order to estimate the magnitude and significance of the causal connections between the variables under study.

Multiple regressions were generated on each of the dependent variables across the model (Figure 7) to calculate the path coefficients (data shown in Chapter IV). The path model is recursive, meaning that the arrows flow one way. In a recursive model a variable cannot be both cause and effect at the same time.

Tests of Adequacy of Proposed Model

Simon-Blalock Technique

To test the adequacy of the proposed model, the Simon-Blalock technique was employed. This technique allows one to test for the existence of linkages between variables in a recursive model of any size and the results indicate whether or not an omitted linkage should be included in the model (Asher, 1983). The fully recursive model for the original proposed model can be found in Figure 8. This model includes all possible linkages between the study variables. Linkages which were omitted are represented by the dashed lines. The actual values of the partial correlations for the omitted linkages were further compared to the predicted value of zero.

Asher (1983) points out that the decisions about model construction must involve interplay of theory and data. "Where confidence in one's theory is high, theoretical considerations should probably be given greater weight in the model testing" (p. 23). Where linkages were found to be significantly different from zero, they were further examined to ensure that including the linkage in the model would not seriously violate the underlying theory. Results of this analysis were utilized to add linkages to the original proposed model. The revised model is presented in Figure 9.

Goodness of Fit.

Pedhauzur (1982) describes the goodness of fit analysis procedure as an overall test that the model does not fit the data. The goodness of fit test produces a statistic, Q, which ranges from 0 to 1. The closer the Q is to 1, the better the fit between the proposed model and the data.

The Q statistic was tested for significance, which results in a statistic W, which approximates the X^2 distribution. According to Pedhauzur (1982), significance tests are affected by sample size and when there is a large sample size, there is a high probability that even when the model fits the data well it will be rejected on the grounds of statistical significance. He further suggests that more attention be paid to the Q, the measure of goodness of fit, rather than the results of the test of significance.

Decomposition of Partial Correlations

Miller (1993) describes the decomposition of partial correlations as the final step in a path analysis. This final step consists of decomposing the partial correlation between pairs of variables into direct, indirect, and spurious effects. Miller goes on to state that one of the main advantages to path analysis is the decomposition process that allows one

to measure the direct and indirect effects of one variable on another. According to Asher (1983), the magnitude of the direct, indirect, and total effects of variables can be compared.

Direct effect is due to the path between two variables and the indirect effect is due to paths through intermediate variables (Path Analysis from the Internet). The unanalyzed effect is due to correlated exogenous variables and the spurious effect is due to third variable causes. Direct, indirect and total effects will be reported in my study.

Limitations of Study

1. The cumulative GPA was used as the academic achievement dependent variable. There were only 31 valid student ID numbers available. Consequently, only 31 cumulative GPA*s* were used in the data analysis (the rule of thumb for inferential statistics is there should not be less than 30).
2. The background variables included in the CCSSE instrument may not include all factors related to Hispanic student academic achievement. Swail et al. (2003) point out that research has shown differences, as well as similarities, between White students and student of color in the study of retention factors. Included in the retention factors is academic preparedness, which is not measured by CCSSE.
3. The results are from one community college and, therefore, may not reflect a comprehensive view nor be generalized to community college populations.
4. The instrument, while tested for reliability and validity, does rely on self reporting. Kuh, (2002) points out that the validity and credibility of self-reports have been examined extensively (Baird, 1976; Berdie, 1971; Pace, 1985; Pike 1995; Pohlmann & Beggs, 1974; Turner & Martin, 1984). He summarizes the

research by concluding, that a good deal of the evidence shows that students are accurate, credible reporters of their activities and how much they have benefited from their college experience. Such accuracy is dependent on the items being clearly worded and students having the information required to accurately answer the questions.

Despite these limitations, the data from the CCSSE survey was very useful in this researcher's pursuit of the three research questions in my study.

CHAPTER IV

Results

As stated previously, the purpose of my study was to examine the relationship between student engagement and academic achievement of Hispanic students in a community college setting. Three research questions guide the study with the data originating in administration of the CCSSE by College of the Mainland in the spring of 2003 and 2004.

Because the focus of my study is on Hispanic student engagement and academic achievement, those respondents who indicated that their racial identification was Hispanic, Latino or Spanish (2003 survey, item #37 and 2004, item #34) were included in the cohort and used for the data analysis. There were 247 total respondents from both the 2003 and 2004 administrations who indicated that they were Hispanic, Latino or Spanish.

The following is a general description of the sample used for this study in terms of their responses to the demographic related items on the survey:

- 59.1% are female and 40.1% male
- 38.1% are less than full-time students at the College and 61.1% are full-time
- 58.3% most frequently take classes in the morning or afternoon, 37.2% in the evening, and .8% on the weekend
- 30% are married and 68.8% are not married
- 72.5% are between the ages of 18-29, 13.4% - 30-39, 8.9% - 40-49, 3.2% - 50 and older (note that the age range category changed from 2003 to 2004 so some ranges had to be combined)

- 39.3% have children living with them and 60.3% do not
- For 68% of subjects English is their native language and for 31.2% it is not
- 4.0% do not have a high school diploma or GED and 74.9 % do; 11.7% have a vocational/technical certificate; 6.5% have an Associate degree; 1.6% have a bachelor's degree or higher
- 75% of the subject's mothers do not have a bachelor's degree and 11.7% do have a bachelor's degree or higher
- 73.7% of the subject's fathers do not have bachelor's degree and 9.7% do have a bachelor's degree or higher

Background Characteristics

The background characteristics (and item # on surveys) examined in my study include:

- age (2003 #32, 2004 #29);
- gender (2003 #33, 2004 #30);
- student status as full- or part-time (2003 #19, 2004 #2);
- number of credit hours previously earned at the College where my study was conducted (2003 #25, 2004 #23);
- whether or not students are married (2003 #34, 2004 #31);
- whether or not students have children living with them (2003 #30, 2004 #28);
- sources students use to pay tuition at the College (2003 #16, 2004 #18);

- whether or not students immediate family is supportive of college attendance (2003 #14, 2004 #16);
- whether or not English is their native language (2003 #35, 2004 #32);
- highest level of academic credential earned by student (2003 #38, 2004 #35) and;
- highest level of education obtained by the mother and father (2003 #39, 2004 #36).

Table 5

Descriptive data on GPA and Benchmarks

	N	Mean	Standard Deviation
Cumulative GPA	31	2.975	.8060
Academic Challenge	247	.6586	.13197
Active and Collaborative Learning	246	.5242	.12788
Student Effort	247	.5050	.13752
Student Faculty Interaction	246	.5205	.14603
Support for Learners	244	.5560	.17416

Evaluation of Background Characteristics for Inclusion in Path Model

As a beginning step in determining which of the background characteristics should be included in the path model, a one-way ANOVA was calculated to determine the relationship of the means on the CCSSE benchmarks for each background variable. This yielded a significant effect, at the .05 level, on nine background variable means on benchmarks. Fisher's LSD was employed as a post hoc test. Six background variables

were identified due to the lack of a significant effect on the five benchmarks. Two of the variables, educational level of the mother and father, were not eliminated because of the strength of prior research. The four background variables omitted in the path model include marital status, age, whether or not there were children living at home, and sources of payment of tuition. The following summarizes the results of ANOVA (full results – average scores and Post Hoc results can be found in Appendix C):

1. The dependent variable is the Student Effort benchmark and the independent variable is immediate family support, which yielded a significant effect: [F (3,238) = 2.739; p< .05].
2. The dependent variable is the Student Effort benchmark and the independent variable is full-time student status or part-time student status, which yielded a significant effect: [F (1,243) = 4.442; p< .05].
3. The dependent variable is the Active and Collaborative Learning benchmark and the independent variable is total credit hours earned at the college, which yielded a significant effect: [F (5,234) = 2.547; p< .05].
4. The dependent variable is Academic Challenge and the independent variable is gender, which yielded a significant effect: [F (1, 243) = 6.933; p < .05].
5. The dependent variable is the Active and Collaborative Learning benchmark and the independent variable is English as the Native Language, which yielded a significant effect: [F 1, 242) = 4.043; p< .05].

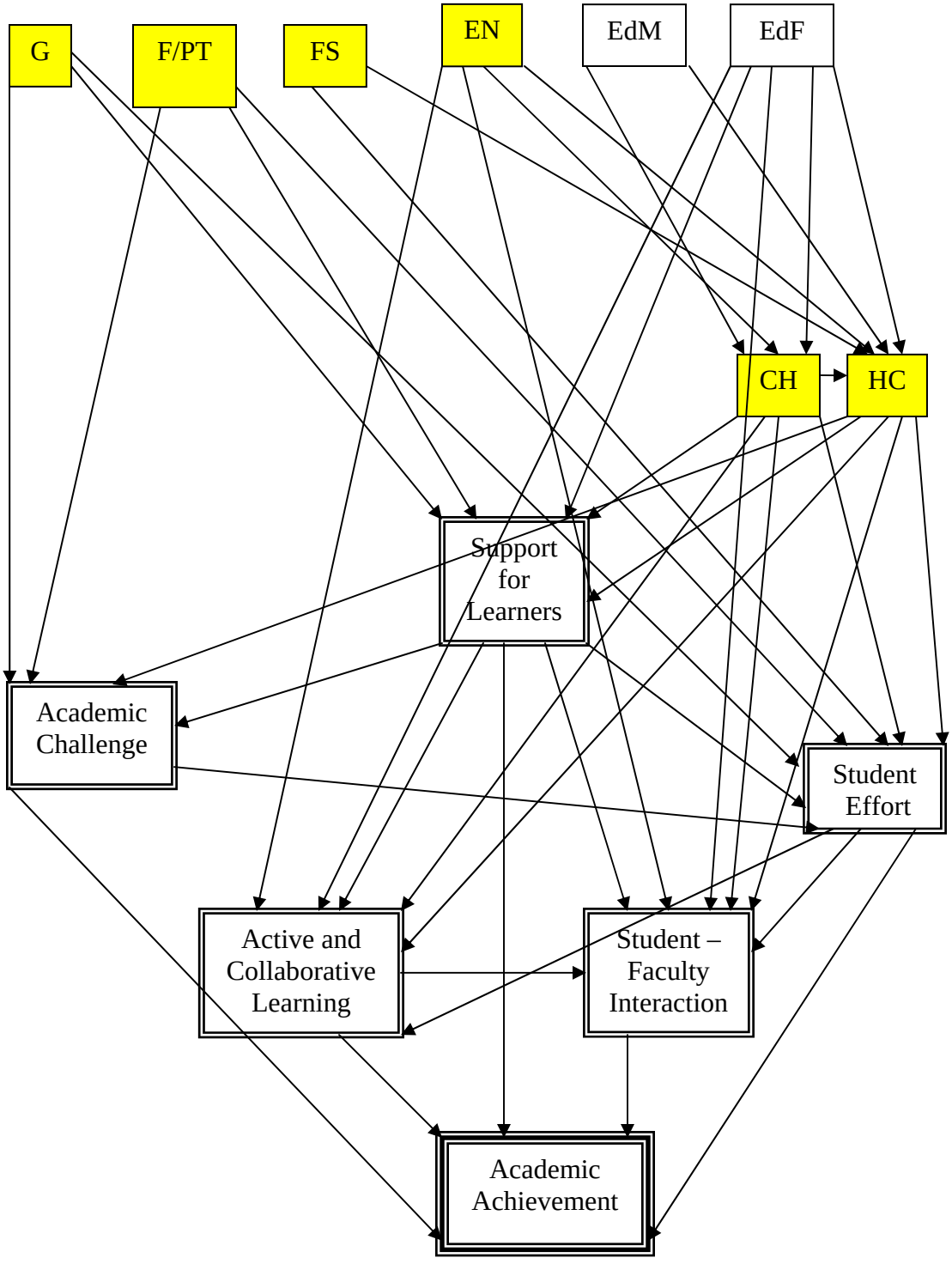
6. The dependent variable is the Academic Challenge benchmark and the independent variable is the highest academic credential earned, which yielded a significant effect: [F (5,238) = 3.383; p< .05].

Path Model and Path Analysis

The path diagram includes linkages that implicitly represent hypotheses that can be tested by estimating the magnitude of the relationship (Asher, 1983). Establishing a path model that can generate substantial confidence is recommended by Asher. Further, the confidence in the model should result from theoretical or substantive reasoning about the linkages between the variables to be studied. The ANOVA analysis resulted in identification of variables that were eliminated from the path model but statistical analysis, as Asher points out, should be used in coordination with a critical thinking process that results from the researcher being totally familiar with current theory and research.

The background variables selected for the path model include those identified through ANOVA, and while the education level of parents did not have an outcome of significance in ANOVA, the literature and research outlined in Chapter II relating to parental education levels is very compelling, and thus this variable is included in the revised path model. Figure 7 is the path diagram which represents the hypotheses after the variables were excluded as a result of the ANOVA analysis. The shaded variables are those identified as significant through ANOVA.

Fiaure 7: Path Model after ANOVA



CH = Credit Hours Earned at COM
EdF = Educational Level Father
EdM = Educational Level Mother
EN = English as Native Language
FS = Family Support
F/PT = Full- or Part-time student status
G = Gender
HC = Highest Credential Earned

Correlations

Table 6 illustrates the correlations between the five CCSSE benchmark variables and participants cumulative GPA*s*. Actual cumulative GPA*s* were collected from COM's student database for the portion of the sample that had ID numbers identified. According to Pedhazur (1973), correlations among variables may suggest causal linkages, but do not provide proof of causation. Although there were no significant correlations found between cumulative GPA and the five benchmarks, the size of the correlations needs to be considered. Some correlations, especially those between the benchmarks and cumulative GPA, may not be significant due to the small sample size. For example, the correlation between Active and Collaborative Learning and GPA (.348), indicates a moderate association between the variables. Also, at the moderate association level is the Student-Faculty Interaction benchmark and GPA (.293). Not as strong, but worth noting, is the negative association between Academic Challenge and GPA (-.167). Student Effort (-.069) and Support for Learners (.041) had a very small correlation sizes with GPA.

Each of the benchmarks was significantly correlated with all of the other benchmarks ($p< 0$ .01), as illustrated in Table 6. The Student-Faculty Interaction and Active and Collaborative Learning benchmarks had the strongest association with an $\underline{r}$ = .540. The second strongest association exists between Academic Challenge and Active and Collaborative Learning ($\underline{r}$ = .533) and is followed closely by Student-Faculty Interaction and Academic Challenge ($\underline{r}$ = .530).

Table 6

Correlations Matrix – CCSSE Benchmarks and Cumulative GPA

Variables	Cumulative GPA	Active and Collaborative Learning	Student Effort	Academic Challenge	Student Faculty Interaction
Active and Collaborative Learning	.348 N= 31				
Student Effort	-.069 N = 31	.349** N = 246			
Academic Challenge	-.167 N = 31	.533** N = 246	.488** N = 247		
Student-Faculty Interaction	.293 N = 31	.540** N = 245	.424** N = 246	.530** N = 246	
Support for Learners	.041 N = 31	.275** N = 243	.324** N = 244	.405** N = 244	.345** N = 244

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

The correlation matrix for the background variables and cumulative GPA, as seen in Table 7, only had four significant correlations (listed in order of strength):

- Educational level of the father and educational level of the mother ($\underline{r} = .537$, $p < .01$)
- Highest credential earned and total number of credit hours earned ($\underline{r} = .310$, $p < .01$)
- Educational level of the mother and English as the native language ($\underline{r} = -.184$, $p < .01$)
- Education level of father and English as the native language ($\underline{r} = -.161$, $p < .05$)

Again, while no significance was found between cumulative GPA and other variables, it is worth noting the size of some of the correlations. Gender (.202), full-time/part-time student status (.159), and total credit hours earned (.287) have moderate positive associations with GPA. English as a native language has a moderate negative association with GPA (-.209). Statistical significance is highly influenced by sample size, which may explain the lack of significance in the small sample size for GPA (n = 31).

Table 7

Correlation Matrix for Background Variables (Pearson Correlation)

Variables	Cum GPA	Gender	FS	EN	EdM	EdF	FT/PT	CH
Gender	.202 n = 31							
FS	-.024 n = 31	-.034 n = 241						
EN	-.209 n = 31	-.012 n = 243	-.004 n = 240					
EdM	.076 n = 31	-.005 n = 213	.060 n = 212	-.184** n = 213				
EdF	-.057 n = 31	.113 n = 205	.113 n = 202	-.161* n = 205	.537** n = 196			
FT/PT	.159 n = 31	.043 n = 243	.027 n = 241	-.041 n = 243	.025 n = 213	.028 n = 204		
CH	.287 n = 31	-.054 n = 240	-.066 n - 237	-.091 n = 239	.102 n = 210	-.040 n = 203	-.037 n = 239	
HC	.056 n = 31	-.025 n = 243	-.005 n = 240	.089 n = 242	.030 n = 213	-.075 n = 205	-.044 n = 242	.310** n = 240

FS = Family Support, EN = English as Native Language, EdM = Educational Level - Mother, EDF = Educational Level - Father, FT/PT = Full-time/ Part-time student status, CH = Credit Hours Earned at COM, HC = Highest Credential

*Correlation is significant at the 0.05 level (2-tailed) ** Correlation is significant at the 0.01 level (2 tailed)

The significant correlations for the benchmarks and background variables, as can be seen in Table 8 are as follows:

- Support for Learners and 1) gender ($\underline{r}$ = -.203, $p < 0.01$) and 2) family support ($\underline{r}$ = -.203, $p < 0.01$)
- Active and Collaborative Learning and total number of credit hours completed ($\underline{r}$ = .196, $p < 0.01$)
- Academic Challenge and 1) gender ($\underline{r}$ = -.167, $p < 0.01$), 2) full-time/part-time student status ($\underline{r}$ = .138, $p < 0.05$), and 3) highest credential earned ($\underline{r}$ = .127, $p < 0.05$)
- Student Effort and 1) full-time/part-time student status ($\underline{r}$ = .134, $p < 0.05$) and 2) total credit hours earned ($\underline{r}$ = .133, $p < 0.05$)
- Student-Faculty Interaction and 1) total number of credit hours earned ($\underline{r}$ = .141, $p < 0.05$) and 2) highest credential earned ($\underline{r}$ = .133, $p < 0.05$)

Table 8

Correlation Matrix for Benchmarks and Background Variables

Variables	Active and Collaborative Learning	Academic Challenge	Student Effort	Student-Faculty Interaction	Support for Learners
Gender	.059 n = 244	-.167** n = 245	.060 n = 245	.009 n = 245	-.203** n = 244
FS	.040 n = 242	.019 n = 242	-.027 n = 242	-.001 n = 242	.203** n = 240
EN	-.128* n = 244	-.016 n = 245	-.007 n = 245	-.026 n = 244	.045 n = 242
EdM	.005 n = 214	-.016 n = 214	-.023 n = 214	.054 n = 214	-.090 n = 212
EdF	.067 n = 205	.084 n = 206	-.018 n = 206	.032 n = 206	-.076 n = 204
FT/PT	.064 n = 245	.138* n = 245	.134* n = 245	.098 n = 244	.125 n = 242
CH	.196** n = 240	.025 n = 241	.133* n = 241	.141* n - 241	-.006 n = 239
HC	.103 n = 243	.127* n = 244	.053 n = 244	.133* n = 244	-.055 n 242

FS = Family Support, EN = English is not Native Language, EdM = Educational Level - Mother, EDF = Educational Level - Father, FT/PT = Full-time/Part-time student status, CH = Credit Hours Earned at COM, HC = Highest Credential

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2- tailed)

Goodness of Fit

The Goodness of Fit test is an analytical procedure to test the model for significance where a rejection of the null hypothesis indicates that the proposed model does not fit the data. The analysis was executed for the hypothesized path model and

resulted in Q = .51. The significance of Q can be determined by calculating W, which has an approximate chi square distribution. The Q statistic was tested for significance, with the result of W = 143.31 ($p < .01$). This would indicate that the proposed model does not fit the data. However, as pointed out previously, significance tests are affected by sample size and when there is a large sample size, there is a high probability that even when the model fits the data well, it will be rejected on the grounds of statistical significance (Pedhauzur, 1982). The Q statistic, the measure of goodness of fit, should be weighed more heavily than the results of the test of significance.

Simon-Blalock

The fully recursive path model in Figure 8 was used to test for the existence of linkages that were left out of the hypothesized model. A fully recursive model includes all of the original paths as well as paths that were excluded (shown as dashed lines), either because of existing theory or statistical analysis. The Simon-Blalock technique resulted in linkages that were significantly different from zero that were not in the hypothesized model, as can be seen in Table 9.

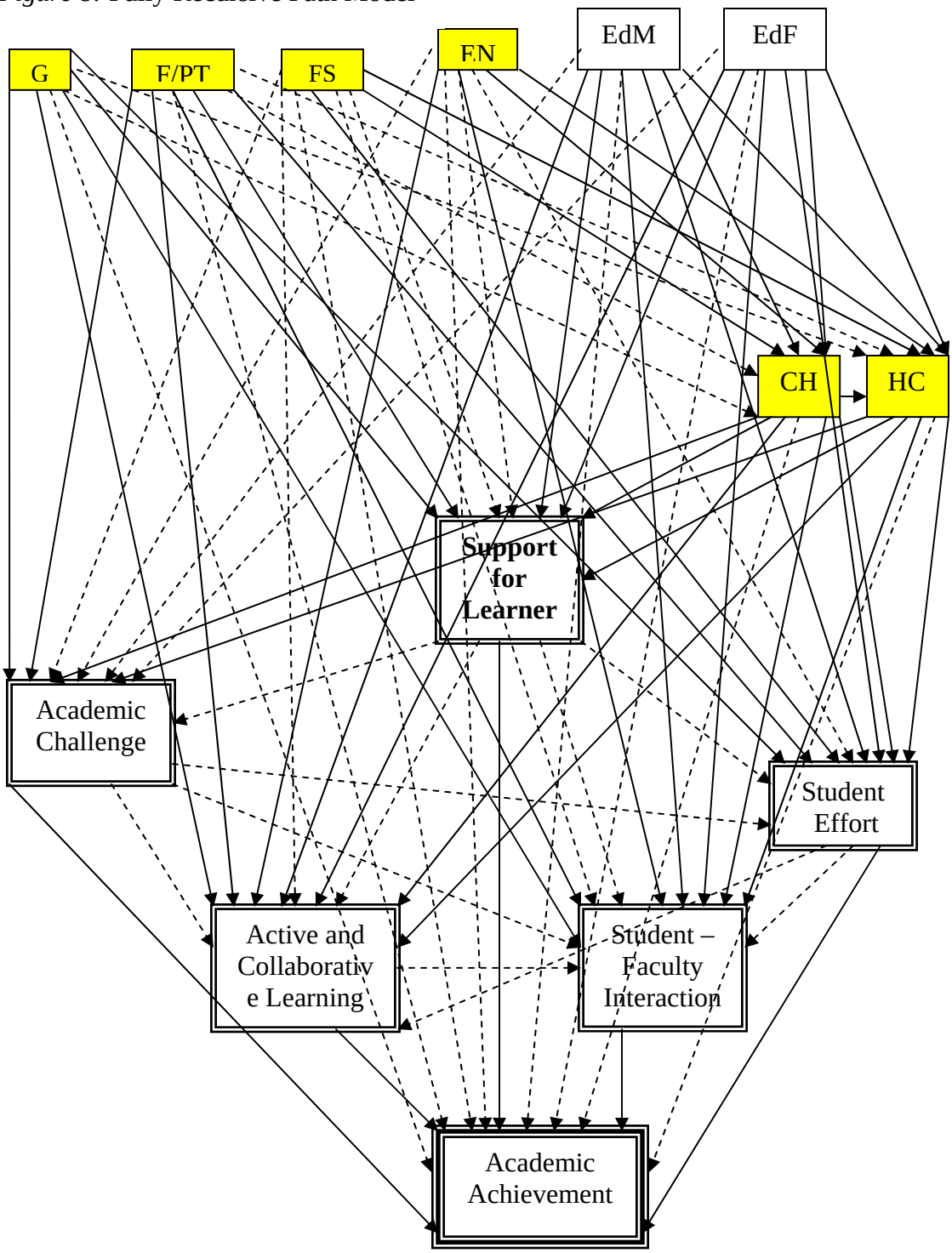
Table 9

Coefficients from Simon-Blalock Technique

Dependent Variable	Independent Variable	Standardized Coefficient (Beta)	t	significance
Active and Collaborative Learning	Academic Challenge	.396	4.990	.000
Student Effort	English is native Language	.900	2.153	.033
	English is not native language	.936	2.238	.027
Student-Faculty Interaction	Academic Challenge	.184	2.373	.019
Support for Learners	Family Support	.135	1.907	.058

The results of the Simon-Blalock were examined in light of the theory and literature and all of the linkages were added to the path model (Figure 8).

Figure 8: Fully Recursive Path Model



CH = Credit Hours Earned at COM
EdF = Educational Level Father
EdM = Educational Level Mother
EN = English as Native Language
FS = Family Support
F/PT = Full- or Part-time student status
G = Gender
HC = Highest Credential Earned

Second Goodness of Fit

The paths identified from the Simon-Blalock test were added to the path model, and the goodness of fit test was calculated again. The test resulted in Q = .648 which is higher than the first goodness of fit test of Q = .51. Although the test of significance resulted in rejection of the null hypothesis (W = 91.91), indicating that this revised model may not be a good fit for the data, the value of Q increased substantially after adding in the paths from the Simon-Blalock. This result, Q = .648 (versus .51), is an indication that the second path model is a better fit than the original model. The results of the significance test may be an artifact of the large sample size (n = 247).

Decomposition of Effects

As described in Chapter III, the final step in a path analysis is the decomposition of the partial correlation between pairs of variables into direct, indirect, and spurious effects (Miller, 1993). The path coefficients are shown in full in the path model in Figure 9. For purposes of my study, the direct, indirect, and total effects were computed (Table 10). The direct effect is due to the path between two variables, the indirect effect is due to paths through intermediate variables, and the total effect is the sum of the direct and indirect effects.

Table 10

Indirect and Direct Effects on the Study of Variables (underlined)

	Direct Effect	Indirect Effect	Total Effect
Total credit hours earned			
Engl is the native language	-.402	0	-.402
Engl is not native language	-.508	0	-.508

Educational level of the mother	.147	0	.147
Educational level of the father	-.127	0	-.127
Highest credential earned			
Total credit hours earned	.286	0	.286
Family support	.038	0	.038
Engl is a native language	.222	.063	.285
Engl is not native language	.398	.114	.512
Educational level of the mother	.086	.042	.128
Educational level of the father	-.094	-.036	-.13
Academic challenge			
Female	-.293	-.024	-.317
Male	-.374	-.129	-.503
Full-time student status	-.624	.731	.107
Part-time student status	-.702	.681	-.021
Highest credential earned	.128	-.021	.107
Total Credit Hours earned	0	.307	.307
Support for Learners	.475	0	.475
Family Support	0	.104	.104
Engl is the native language	0	-.211	-.211
Engl is not native language	0	-.491	-.491
Educational level of the mother	0	.102	.102

Educational level of the father	0	-.197	-.197
Active and collaborative learning			
Academic challenge	.433	0	.433
Engl is native language	.301	-.424	-.123
Engl is not native language	.196	1.639	1.835
Educational level of the mother	-.031	.457	.426
Educational level of the father	-.215	-.476	-.691
Support for learners	.103	.216	.319
Total credit hours earned	.166	1.152	1.318
Highest credential earned	-.005	.042	.037
Student Effort	.054	0	.054
Student effort			
Female	-.161	-.142	-.303
Male	.220	.073	.293
Full-time student status	-.193	.777	.584
Part-time student status	-.257	.672	.415
Family support	-.064	.429	.365
Engl is native language	.550	.398	.948
Engl is not native language	.606	.784	1.39
Educational level of the mother	0	.213	.213

Educational level of the father	0	.340	.340
Total credit hours earned	.093	.840	.933
Highest credential earned	-.023	.046	.023
Academic challenge	.430	0	.430
Support for learner	.116	.204	.320
Student-faculty interaction			
Female	0	-.120	-.120
Male	0	-.203	-.203
Full-time student status	0	.263	.263
Part-time student status	0	.772	.772
Family support	0	.292	.292
Engl is native language	-.199	1.562	1.363
Engl is not native language	-.174	2.876	2.702
Educational level of the mother	0	.749	.749
Educational level of the father	0	-.974	-.974
Total credit hours earned	.046	2.584	2.63
Highest credential earned	.032	.368	.4
Academic challenge	.218	.222	.44
Student Effort	.155	.018	.173
Support for learner	.120	.264	.384
Active and collaborative learning	.332	0	.332

Support for Learners			
Female	-.050	0	-.050
Male	-.272	0	-.272
Full-time student status	1.539	0	1.539
Part-time student status	1.433	0	1.433
Family support	.173	-.007	.166
Engl is native language	0	.013	.013
Engl is not native language	0	.157	.157
Educational level of the mother	0	-.04	-.04
Educational level of the father	0	-.221	-.221
Total credit hours earned	.011	.241	.252
Highest credential earned	-.045	0	-.045
Academic achievement			
Female	0	-.2.253	-2.253
Male	0	-2.22	-2.22
Full-time student status	0	-.916	-.916
Part-time student status	0	-1.244	-1.244
Family support	0	-l.214	-1.214
Engl is native language	0	-l.564	-1.564
Engl is not native language	0	-1.008	-1.008
Educational level of the mother	0	-2.157	-2.157

Educational level of the father	0	-4.424	-4.424
Total credit hours earned	0	1.313	1.313
Highest credential earned	0	-1.11	-1.11
Academic challenge	-.326	.812	.486
Support for learner	.089	.32	.665
Active and collaborative learning	.345	.137	.482
Student Effort	-.208	.09	-.118
Student Faculty Interaction	.413	0	.413

Overview of Effects

Total Credit Hours Earned

The variables hypothesized to influence directly the total credit hours earned were English as the native language (yes and no) and the educational level of the mother and father. None of these paths were found to be significantly different from zero ($p < .05$). However, the English as the native language variable accounted for approximately 40% of the total variance in total credit hours earned with a moderate negative relationship (direct effect) of -.402. Where English was not the native language, approximately 51% of the total variance was accounted for by this variable with the total credit hours earned, and there was a moderate to high negative relationship (direct effect) of -.508. The educational level of the mother had a small positive influence with total credit hours earned (.147) and the educational level of the father had a small negative influence (-.127).

Highest Credential Earned

The variables hypothesized to influence directly the highest credential earned variable included family support, English as a native language, educational level of the mother and father, and total number of credit hours earned. The only path that was found to be significantly different from zero was total number of credit hours earned ($p < .01$). English as the native language variable had a low positive relationship (direct effect) of .222 with highest credential earned, and low to moderate positive relationship (indirect effect) of .285, which accounted for 29% of the total variance. Where English was not the native language, there was a low to moderate positive influence (direct effect) of .398 with the highest credential earned variable, and a moderate positive indirect relationship of .512. Approximately 51% of the total variance was accounted for by this variable.

Academic Challenge Benchmark

The variables hypothesized to influence directly the Academic Challenge variable included gender, full- and part-time student status, highest credential earned and the Support for Learner benchmark. Three of those paths were found to be significantly different from zero – full- and part-time student status ($p < .05$), highest credential earned ($p < .05$), and Support for Learner ($p < .01$). Full-time student status accounted for 62% of direct variance (-.624) and 11% of the total variance in Academic Challenge variable and part-time student status 2% of the total variance but had a high negative direct influence (-.702). Highest credential earned accounted for approximately 11% of the total variance but a direct influence of .128. The Support for Learners variable had a moderate to high positive direct influence (.475).

While not significant, the relationships of gender and the Academic Challenge variable are worth noting. Females had a low to moderate negative direct relationship with the Academic Challenge variable (-.293), a low to moderate indirect relationship (.317), and accounted for approximately 32% of the total variance in Academic Challenge. Males had a low to moderate negative direct relationship with Academic Challenge (-.374), a moderate to high indirect relationship (-.503), and accounted for 50% of the total variance.

Total credit hours earned had a low to moderate indirect positive relationship (.307) with the Academic Challenge variable and accounted for approximately 31% of the total variance. Both the English as a native language and English is not the native language variables had a negative indirect influence on the Academic Challenge variable, but the latter was moderate at -.491. The English is not the native language variable accounted for 49% of the total variance with Academic Challenge.

Active and Collaborative Learning Benchmark

The variables hypothesized to influence directly the Active and Collaborative Learning variable were English as a native language, the educational level of the mother and father, Academic Challenge, Support for Learner, the total number of credit hours earned, and the highest credential earned. Two of those paths were found to be significantly different from zero: Academic Challenge ($p < .01$), which accounted for 43% of the total variance on the Active and Collaborative Learning variable; and total number of credit hours earned ($p < .05$), which accounted for over 100% of the total variance. While English not the native language variable had a low positive direct influence on this variable (.196), the indirect influence was a very high positive (1.639),

and the total was also very high with a positive influence of 1.835 (accounted for over 100% of the total variance). The effect can be most likely be explained by the fact that the indirect positive intermediate paths included the total number of credit hours earned and the Support for Learners variable.

The educational level of the mother had a low negative influence on the Active and Collaborative Learning variable at -.031, but a moderate indirect positive influence of .426 (accounted for approximately 43% of total variance). However, educational level of the father had a fairly low negative direct influence of -.215, but a moderate to high indirect influence of -.691 (accounted for 69% of total variance). The Support for Learners variable had a low direct influence, .103, but a low to moderate indirect influence of .319 (accounted for approximately 32% of total variance).

Student Effort Benchmark

Eleven variables, as detailed in Table 10, were hypothesized to be direct predictors of the Student Effort variable. Only two of those variables were found to be significantly different from zero: English not the native language ($p < .05$), which accounted for over 100% of the total variance on the Student Effort and Academic Challenge variables ($p < .01$), which accounted for 43% of the total variance. Several variables (see Table 10 for effects) were found to have low to moderate influences on Student Effort – female (negative, accounted for 30% of total variance), male (positive, 29% of total variance), family support (negative direct but positive indirect, 37% of total variance), educational level of the father (positive, 34% of total variance), and Support for Learner (positive, 32% of total variance). Part-time student status had moderate influence (negative direct but positive indirect, 42% of total variance). English as the

native language (accounted for 95% of the total variance) and total credit hour earned (accounted for 93% of total variance) had high positive influences on the Student Effort variable.

Student-Faculty Interaction Benchmark

Eight variables, as shown in Table 10, were hypothesized to influence directly the Student-Faculty Interaction variable. Three of those are background variables and none were found to be significantly different from zero. All four of the other benchmarks were found to be significantly different from zero ($p < .01$).

Full-time student status and family support were found to have low positive indirect influences on the Student-Faculty Interaction variable (accounted for 26% and 29% of total variance respectively). Highest credential earned had a low moderate positive influence and accounted for 40% of total variance. Part-time student status (positive), the educational level of the mother (positive) and the educational level of the father (negative) were found to have a high indirect influence on the Student-Faculty Interaction variable (accounted for 77%, 75%, 97% of total variance respectively). English as native language, English not the native language and total credit hours earned were found a very high positive influence (accounted for 136%, 270%, and 260% of the total variance respectively).

Support for Learners Benchmark

The variables hypothesized to influence the Support for Learner benchmark were gender, full- and part-time student status, family support, total credit hours earned and highest credential earned. Three of those paths were found to be significantly different from zero. They include full-time student status ($p < .01$), which accounted for 154% of

the total variance; part-time student status ($p < .01$), which accounted for 143% of total variance and; family support ($p < .01$), which accounted for 17% of the total variance.

Both female and male status had direct low negative relationships, with male status having accounted for 27% of the total variance on the Support for Learners variable. The educational level of the father accounted for 22% of the total variance and there was a low negative indirect relationship. Total credit hours accounted for 25% of the total variance and there was low positive total influence on the Support for Learners variable.

Academic Achievement

The five CCSSE benchmark variables were hypothesized to influence directly academic achievement, but only one of these paths, Student-Faculty Interaction, was found to be significantly different from zero ($p < .05$), and it accounted for approximately 41% of the total variance on academic achievement. While not significant, Active and Collaborative Learning accounted for 35% of the total variance by this variable--there was a moderate positive relationship. Academic Challenge accounted for 49% of the total variance by this variable and had a moderate to high negative relationship. Support for Learner had a very low direct relationship but a moderate to high indirect relationship, which accounted for approximately 67% of the total variance by this variable. Student Effort had a low direct negative relationship, a smaller indirect relationship, and accounted for 12% of the total variance by this variable.

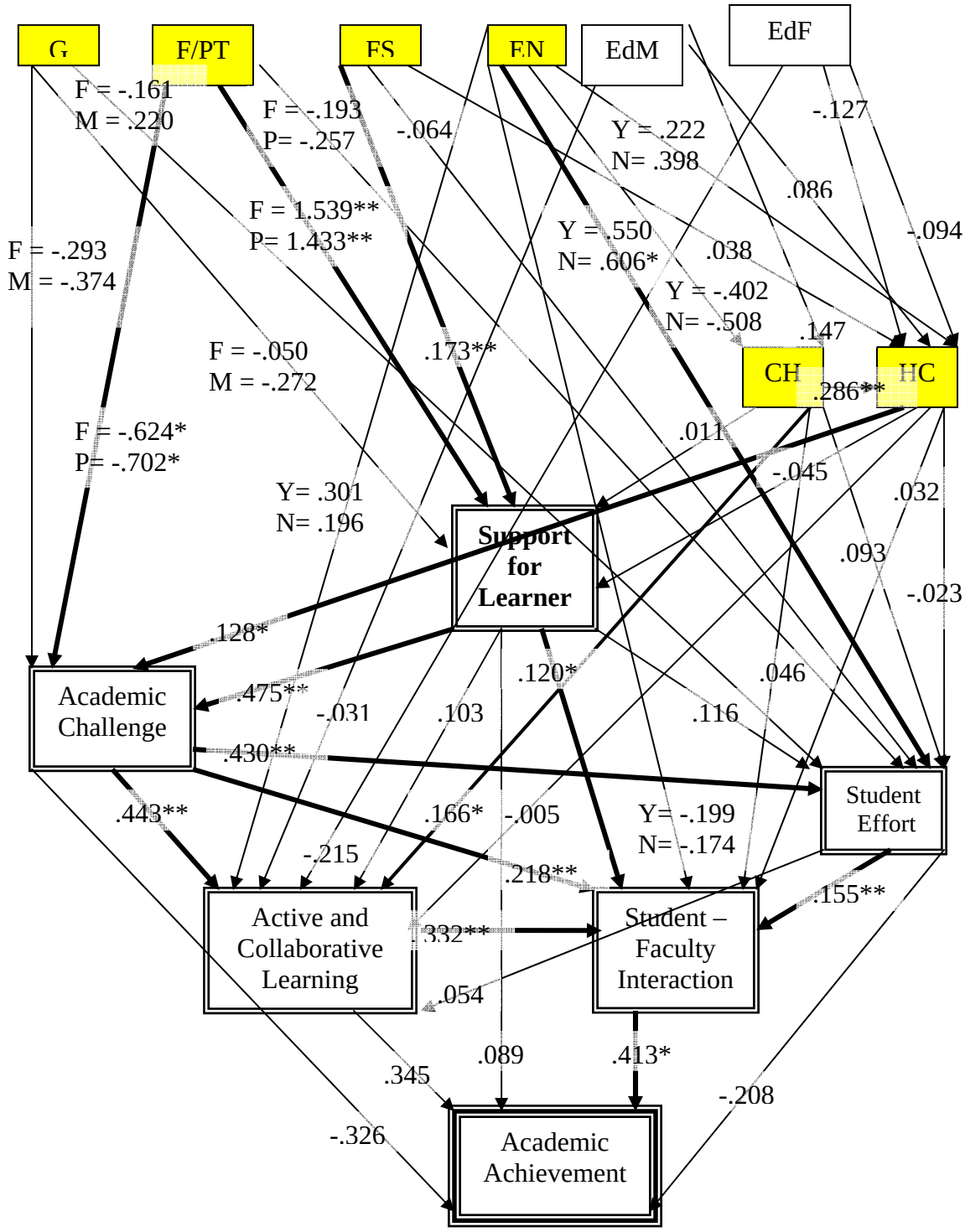
The indirect paths all had very high relationships both positive and negative, which can be explained by the fact that all of the paths flowed through most of the other

paths in the model. Except for total credit hours earned, the relationships were all high or very high negative relationships with academic achievement.

Final Path Model

Figure 9 is the final path model with path coefficients shown for each path variables. Arrows indicate the direction of hypothesized influence. Values indicate the actual path coefficient for each relationship. The paths that were significant either at the .01 or .05 level have thicker lines.

Fiaure 9: Final Path Model (includes Path Coefficients)



CH = Credit Hours Earned at COM
EdF = Educational Level the Father
EdM = Educational Level the mother
EN = English as Native Language

** $p < .01$ and * $p < .05$

FS = Family Support
F/PT = Full- or Part-time student status
F=FT, P= PT
G = Gender
HC = Highest Credential Earned

CHAPTER V

Introduction and Review

The purpose of my study was to examine the relationships between student engagement and academic achievement of Hispanic students in a community college setting. This was accomplished by using data from two administrations of the Community College Survey of Student Engagement (CCSSE). The CCSSE instrument was selected because it was designed to measure student engagement in community colleges. College of the Mainland administered the CCSSE for their own purposes in 2003 and 2004.

A path model was developed that includes variables hypothesized to influence other variables in the model. Path Analysis was selected to address the research questions. Background characteristics deemed relevant to my study were developed through a review of the literature. What follows is a discussion of the results presented in the order the data analysis proceeded, culminating in recommendations and implications for practice.

Discussion of Results

Descriptive Data

Benchmark Means

While not addressing a specific research question, Table 11 shows the means of the Hispanic population (used in my study) compared to the overall survey respondents.

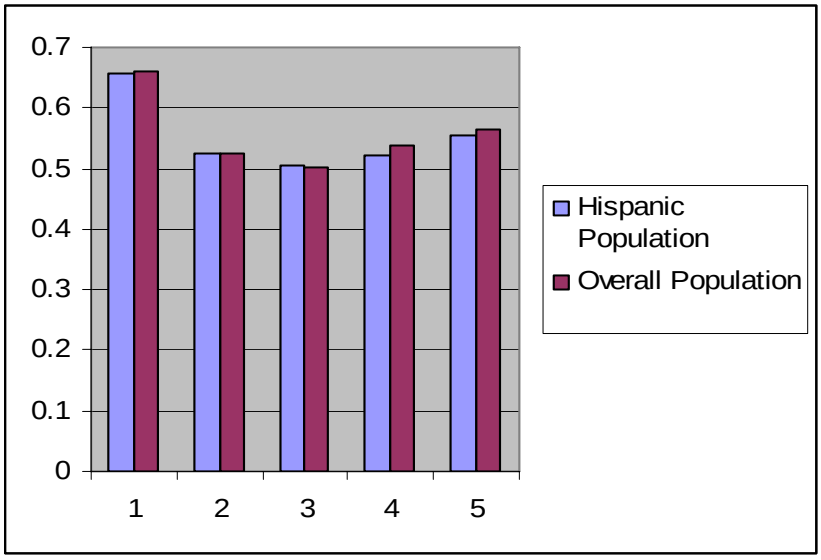
Table 11

Hispanic Benchmark Means Compared to Overall Survey Population

Benchmark	Hispanic Population		COM Overall Respondents	
	N	Mean	N	Mean
1. Academic Challenge	247	.6586	1201	.6617
2. Active and Collaborative Learning	246	.5242	1200	.5261
3. Student Effort	247	.5050	1202	.5024
4. Student-Faculty Interaction	246	.5205	1199	.5371
5. Support for Learners	244	.5560	1197	.5645

The benchmark means are not highly dissimilar. With the exception of the Student Effort Benchmark, the overall means on the benchmarks for Hispanic students are lower than the overall survey population (as can be seen in Figure 10).

Figure 10: Benchmark mean comparison



1 = Academic Challenge, 2 = Active and Collaborative Learning, 3 = Student Effort, 4 = Student- Faculty Interaction, and 5 = Support for Learners

Taking a closer look at the means of the Hispanic population compared to the overall respondents' means on specific items making up the benchmarks, Table 13 shows items for Hispanics where there were marked differences.

Table 12

Benchmark Item Description and Hispanic Means compared to Overall Survey Population

Benchmark	Item Description	Hispanic mean compared to overall respondents
Student Effort (Overall mean higher than general population)	Prepared two or more drafts of a paper or assignment before turning it in	Higher mean
	Frequency of use of skill labs (writing, math, etc.)	Higher mean
	Frequency of use of peer or other tutoring	Lower mean
	Preparation for class (studying, reading, writing, rehearsing or other activities related to	Lower mean

	your program).	
Academic Challenge	Number of written papers or reports of any length	Higher mean
	Worked harder than you thought you could to meet an instructor's standards or expectations	Lower mean
Active and Collaborative Learning	Working with classmates outside of class to prepare class assignments	Higher mean
	Working with other students on projects during class	Higher mean
	Asked questions in class or contributed to class discussions	Lower mean
Student Faculty Interaction	Used email to communicate with an instructor	Lower mean
	Discussed grades or assignments with an instructor	Lower mean
	Talked about career plans with an instructor or advisor	Lower mean
	Discussed ideas from your readings or classes with instructors outside the class	Lower mean
	Received prompt feedback (written or oral) from instructors on your performance	Lower mean
	Worked with instructors on activities other than coursework	Lower mean
Support for Learner	Helping you cope with your non-academic responsibilities (work, family, etc.)	Higher mean
	Providing financial support you need to afford your education	Higher mean
	Frequency of use of academic advising/planning services	Lower mean
	Frequency of use of career counseling	Lower mean

ANOVA

Using the preliminary path model (Figure 5) that included background and the student engagement variables, ANOVA was conducted as a method of determining the relationships of the means. Of the six background variables that did not indicate significant effects on the CCSSE benchmarks, four were eliminated from the model. These variables--marital status, age, whether or not there were children living at home, and sources of payment--were all of consequence in the literature but not strong enough to leave in the model. Therefore, these variables were not considered in subsequent correlations and in the path analysis. However, the literature and research related to educational levels of parents was very strong, and those two variables, as well as those variables showing a significant influence, remained in the model.

Correlations

Correlations among CCSSE Benchmarks and Cumulative GPA

There were no significant relationships found between the benchmarks and GPA but the correlations between Active and Collaborative Learning, Student-Faculty Interaction, and GPA indicate moderate associations. There is a low negative association between the Academic Challenge variable and GPA. While Chickering and Gamson (1987) assert that expecting more from students will result in getting more from them, my study showed a higher level of academic challenge resulted in lower GPA*s*. While this is not consistent with the relevant literature, Hispanics may have more difficulty with higher levels of academic challenge for a number of reasons. Difficulty with academic challenge could include problems with English, which could translate into oral communication, reading and writing issues. In addition, there was a low negative

correlation for the Student Effort variable and GPA and a very low positive correlation for the Support for Learners variable and GPA. The sample size used for the correlations between the benchmarks and GPA (n=31) may explain why no significance resulted. Had GPA*s* been available for a larger segment of the population, the correlations may have been different.

All of the CCSSE benchmarks were significantly correlated with the other benchmarks ($p < .01$). The sample size for the correlations between the benchmarks was much larger (n ranged from 243-247). This indicates that all of the benchmarks positively influenced each other.

Correlations for Background Variables

Pearson's Correlation was calculated on the background variables and GPA and resulted in no significance between GPA and the other variables. However, the gender and full- and part-time student status variables had moderate positive associations with GPA. Total credit hours earned also had a moderate positive association, which would indicate that the more credit hours Hispanic students complete, the higher their GPA*s*. English as a native language had a moderate negative association with GPA. Gender, English as native language and full- and part-time student status were run as combined variables and, consequently, it is only known that there is an association with the combined variables. The small sample size (n=31) here again, could explain the lack of significance.

There were three background variable correlations that were significant at $p < .01$, and one at $p < .05$. Those include the educational level of the mother with the educational level of the father; highest credential earned with total number of credit hours earned; and

educational level of the mother and father with English as a native language ($p < .05$). The first two results were expected correlations and match the variables hypothesized to be related. The educational level of the mother and father and English as a native language were also correlations that followed predictions.

Correlations for Benchmarks and Background Variables

Gender and family support were negatively correlated with the Support for Learner variable ($p < .01$). Gender was run as a combined variable but was run separately in the path analysis, which will provide more illuminating data on the relationship of these variables. The negative correlations between family support and the Support for Learners variable does not fit the literature on the general population but may indicate that Hispanic students are more likely to seek help and support from their families as opposed to campus support services or may reveal a lack of awareness by the subjects in my study.

The Active and Collaborative Learning variable was positively correlated with total credit hours earned ($p < .01$), which would indicate that the more credit hours Hispanic students earned, the more they were actively involved in their education. The Academic Challenge variable was negatively correlated with gender ($p < .01$) and positively correlated with full- and part-time student status ($p < .05$) and highest credential earned ($p < .05$). Gender will be reviewed as separate variables in the path analysis as well as will full- and part-time student status.

The total credit hours earned variable and full- and part-time student status were positively correlated with the Student Effort variable ($p < .05$). Student effort is the extent

to which students apply themselves and the positive correlation indicates that Hispanic students who earned more credit hours exercised more effort in their education.

Both total credit hours earned and highest credential earned positively correlated with the Student-Faculty Interaction variable ($p < .05$). In both cases, the positive correlations indicate that Hispanic students who had more credit hours and a higher educational credential were more likely to interact with faculty both in and outside of the classroom.

Goodness of Fit and Simon-Blalock

The Goodness of Fit test was calculated and resulted in Q = .51, and the Q statistic was tested for significance (W = 143.31). This would indicate that the proposed model does not fit the data. The fully recursive model, all hypothesized paths and those left out, was used to determine if there were linkages significantly different from zero. Four linkages were added back to the model as a result of the test and after careful consideration of the relevant literature.

A second Goodness of Fit test was conducted after the additional paths from the Simon-Blalock test were added and an increase in the Q resulted (Q = .648). While the revised model was still not a good fit for the data, the value of Q increased substantially. The second path model is a better fit for the data. As Pedhauzur (1982) stated, the Q statistic should be weighed more heavily than the test of significance and because this path model very complex, having a Q of .648 in the researcher's opinion is informative and a fairly good fit for the data.

According to Pedhauzur (1982), it would be inappropriate to engage in tests of different models in search of the *one* that fits the data, thus, to continue to add or

eliminate paths to attempt to increase the fit would not be proper. This would also violate Asher's (1983) contention that the researcher should have substantial confidence in his or her path model. This confidence results from theoretical or substantive reasoning about the linkages between the variables and not solely from statistical analysis.

Path Analysis and Discussion of Direct, Indirect, and Total Effects

Figure 9, the final path model, includes all of the direct path coefficients that resulted from generating multiple regressions on each of the dependent variables across the model. Table 10 includes the decomposition of the partial correlations between pairs of variables into direct, indirect and total effects (the sum of the direct and indirect is the total effect). Some authors have suggested that the sum of the direct and indirect effects be referred to as the effect coefficient of the variable taken as the cause on the effect variable (Pedhauzur, 1982).

Direct Paths (and Total where there is no Indirect Effect)

The direct paths that had a high or moderate to high influence on their dependent variables and total effects where there was no indirect effect were (independent variable shown first and dependent variable second):

- English not native language relationship with total credit hours earned (-.508). This would indicate that Hispanic students for whom English is not their negative language were less likely to have completed a high number of credit hours. There was no indirect effect, therefore the total effect was -.508.
- Full- and part-time student status relationship with the Academic Challenge benchmark variable (-.624 and -.702). Regardless of the course

load of Hispanic students, this variable had a negative influence on the participants' responses relating to the level of academic challenge in their course work.

- English as the native language and where English is not the native language relationships to the Student Effort variable (.550 and .606). For this population, whether or not their native language is English, students applied themselves in the learning process at a high level.
- Full- and part-time student status relationship variable with the Support for Learner variable (1.539 and 1.433). Both full- and part-time Hispanic students indicated that they used academic and student support services at a high level. This does conflict with other data, which will be discussed in the overview section.

Indirect Paths and Total Effects

The indirect paths that had a high or moderate to high influence on their dependent variables were (independent variable shown first and dependent variable second):

- Full- and part-time student status variables relationships with the Academic Challenge variable (.731 and .681). Regardless of the course load of the Hispanic student, this variable had a positive indirect influence on the participants' responses relating to the level of academic challenge in their course work. Note that the direct effects were negative. This can be explained by the fact that the indirect paths were mediated through the intermediate variable, Support for Learners, where in both cases the paths

were significant ($p < .01$). Consequently, when Hispanic students made use of the academic and support services available to them, the influence on academic challenge changed from a negative effect to a positive effect. The total effects, however, were at a low level of influence because the indirect effects off-set the direct.

- English is not the native language variable relationship with the Active and Collaborative Learning variable (1.639). The direct relationship was low but when this variable was mediated through other intermediate variables, such as Support for Learner, total credit hours earned, Academic Challenge, and Student Effort, the influence was very positive. The total effect was also extremely high (1.835). This result does not fit with current literature and comes as a surprise. The indication is that Hispanic students (for whom English is not the native language) were more likely to be actively involved in their education once the subjects had the college experiences included in the intermediary variables.
- Full- and part-time student status variables influence with the Student Effort variable (.777 and .672). The direct influence of these variables was at a negative low level (-.193 and -.257). When these variables passed through the Support for Learner and Academic Challenge intermediate variables, the influence changed from a negative to a positive predictor. This tells us those Hispanic students who utilized support services and/or had a high level of academic challenge in their course work, were more likely to apply themselves in the learning process. The

total effect was also high for full-time student status (.584) but moderate to high for part-time student status (.415).

- English as the native language and where English is not the native language variables relationship with the Student Effort variable (.398 and .784). The total effect for both variables was very high (.948 and 1.39). Whether or not English is the native language for Hispanic students, this population applied themselves to the learning process and engaged in activities important to their learning and success at a high level.
- Total credit hours earned variable influence on the Student Effort variable (.840). The direct variable had a low positive influence (.093) but when mediated through the Support for Learners and Academic Challenge intermediate variables, the influence was very positive. The total effect was also very high at .933. When this population took advantage of support services and/or had a higher level of academic challenge they were more likely to apply themselves in the learning process at a higher level.
- Part-time student status variable influence on the Student-Faculty Interaction variable (.772). There was no direct effect so the total effect is .772. The influence of the full-time student status variable on Student-Faculty Interaction was low at .263. The part-time student status variable passed through the intermediate variables Support for Learner, Student Effort, and Academic Challenge, all of which had moderate to high paths to Student-Faculty Interaction. This data would be a sign that part-time

Hispanic students were more likely to interact with faculty both in and outside the classroom. The impact of the other intermediary variables was important and this could also be explained by the fact that part-time students are more likely to be older, have full-time jobs, and consequently be more comfortable approaching and interacting with faculty.

- English as the native language and where English is not the native language variables influence with the Student-Faculty Interaction variable (1.562 and 2.876). With both of the independent variables, the direct influence was a low negative (-.199 and -.174). When the intermediary variables were taken into account to determine the indirect effect, the results were noteworthy influences. The most positive influences occurred when the paths passed first through the intermediary total credit hour and highest credential earned variables and then through the other benchmarks. Thus this population was highly likely to have strong interactions with faculty, when mediated through the benchmarks (student engagement experiences at the College).
- Educational levels of mother and father variables relationships with the Student-Faculty Interaction variable (.749 and -.974). There were no direct effects by these variables. The educational level of the mother was a strong positive predictor of faculty interaction and the opposite was true for the educational level of the father. Seventy-five percent of the subject's mothers do not have a bachelor's degree compared to 73.7% of the fathers. The only real difference in this item is that 11.7% of the

subjects' mothers have a bachelor's degree or higher compared to 9.7% for fathers. This higher level of advanced degrees could account to some extent for the higher level of interaction with faculty. The intermediary variables that positively influenced these effects were, once again, the other benchmarks (college engagement experiences).

- Total credit hours earned variable relationship with the Student-Faculty Interaction variable (2.584). The direct effect was a very low positive (.046). Once this variable passed through the other CCSSE benchmarks the influence of this variable changed in a very positive manner.
- There were several independent variables that had indirect effects on academic achievement, but no direct effect. These variables -- gender, full- and part-time student status, family support, English as native language (and not), educational levels of the mother and father and highest credential earned -- all of which had high negative relationships (see Table 10 for effect sizes). The path model in my study is very complex and, consequently, all of these variables had many paths that contributed to the effect sizes. For example, educational level of the mother variable had 38 different paths that led to academic achievement. Some of those paths had negative path coefficients.
- The only indirect effect that was positive was the total credit hours earned variable (1.313). This variable was hypothesized to be a predictor of the benchmarks (and thus academic achievement). This variable only leads to the college experience variables (benchmarks), with the exception of

leading to the highest credential earned variable. This would indicate that the more credit hours Hispanic students complete, the more likely they were to have higher cumulative GPA*s*.

Total Direct Effects on Academic Achievement

- The CCSSE benchmarks (independent variables) were the only variables that were hypothesized to have a direct effect on academic achievement. Of those, Student-Faculty Interaction was the only variable that did not pass through another variable, and had the largest effect size at .413 ($p<$ .05). This would indicate that the more Hispanic students interacted with faculty the more likely they were to have higher cumulative GPA*s*. Student-faculty contact is the first principle included in Chickering and Gamson's Seven Principles for Good Practice in Undergraduate Education. Thus this finding holds up for the Hispanic population in my study.
- The Active and Collaborative Learning variable had a moderate direct positive influence on academic achievement at .345. This variable path passed through the Student-Faculty Interaction benchmark for a total effect size of .482. This would denote that the more Hispanic students were actively involved in their education, the more likely they were to have higher GPA*s*. In addition, when this population was actively involved and interacted with faculty, the likelihood of higher GPAs increased.

- The Academic Challenge variable relationship with academic achievement (-.326). The indirect effect size was .812 with a total effect size of .486, which occurred because this variable flowed through three other benchmarks, of which all had positive path coefficients. The direct relationship, however, would indicate that the more this population was challenged in coursework, the lower their GPA*s*.
- The Student Effort variable relationship with academic achievement (-.208). The indirect effect size was .09. This variable flowed through both Student-Faculty Interaction and Active and Collaborative Learning. This would indicate that student effort for this population was not a positive predictor of academic achievement.
- The Support for Learner variable had small positive influence on academic achievement (.089) but a total effect size of .665. The Support for Learner variable passed through all of the other benchmarks, which would indicate that when all of these educational experiences are encountered and coupled with Hispanic students using support services, their likelihood of having higher GPA*s* increased.

Conclusions, Recommendations and Implications for Practice

CCSSE Benchmark Overview

Student-Faculty Interaction

The strongest predictor of academic achievement and the only benchmark variable that was significant ($p < .05$) in this model was student-faculty interaction. This fits with Chickering and Gamson's (1991) *Seven Principles of Good Practice,* where

good practice includes encouraging student-faculty contact. The correlation size was moderate and the means on the items in this category for Hispanic respondents were slightly lower than the general population participating in this survey. Part-time students interact at a higher level than full-time students. Hispanic students who have completed more credit hours interact with faculty to a greater degree. Where the mother of Hispanic cohorts had a higher level of education, they were more likely to interact with faculty at a higher level.

Given that a higher level of student-faculty interaction led to higher GPAs for Hispanic students in my study, which makes the practices related to this benchmark positive influences on higher GPAs, it would be important to focus efforts on strategies that support these practices. This could include providing support and coaching for Hispanic students in finding ways to strengthen their interacting skills. This should occur early in the student's educational career and needs to be tailored to a learning format that fits the style of the individual learner. Workshops could be part of the overall strategy, but many in this population may need a more practical and hands-on approach (consistent with active and collaborative learning strategies). The tailoring of learning formats would require a comprehensive assessment of skills to include an assessment of learning styles, but the individual student's level of language skill needs to be taken into account so a clear picture of style emerges from the assessment. There are many learning style assessment tools on the market and support staff or faculty should be responsible for interpretation and strategy building. It is critical that these staff members be fully trained in the interpretation of the instrument selected.

This comprehensive assessment of skills should culminate in the development of an individualized learning plan for Hispanic students. This learning plan should be developed by qualified professionals with appropriate experiences. Implementation and monitoring the learning plans will require adequate professional staff dedicated to ensuring that Hispanic students are provided the direction and resources needed to accomplish the goals outlined in their plan.

Skill areas that Hispanic students would need to build or enhance can be derived directly from the CCSSE item content in the Student-Faculty Interaction benchmark. These skills include: methods to broach subjects such as grades and status on the class; ways to discuss readings or class material outside the class situation; and using email to communicate effectively with faculty.

In addition, the benchmark items include discussion of career plans either with a faculty member or advisor. Institutions must reach out to work with Hispanic students in career planning. This should occur during the first or second semester of enrollment and career guidance activities may need to be conducted both in English and in Spanish. Faculty could be a part of the process by speaking on careers in workshops.

Skill building for students is not the only issue related to ensuring strong student-faculty interaction. Hispanic students must have confidence in themselves and be secure in their skills to be effective in the interactions. Rendón and Nora maintain that influences that limit Hispanic student persistence include low self-esteem, self-doubt and anxiety (cited in Jalomo, 2003). Interaction skills can be learned through training and development but self-esteem building must be an integral component of all of the

activities/training as well as incorporated in methods used by faculty to create strong and involving learning environments.

Assisting Hispanic students develop skills to be successful in their interactions with faculty is just one component of what it will take to ensure that strong exchanges take place. The faculty members have to encourage this interaction and to do so they need to understand and be sensitive to Hispanic cultures. Patton and Giffin (1981) contend that culture is, in the long run, the most important environmental factor influencing our interpersonal communication. In addition, faculty need be comfortable with their own interaction skills. To that end, training in the areas of cultural sensitivity and effective communication should be highly encouraged (if not required) for faculty, as most faculty members did not receive this kind of training during college. Needs assessments with faculty should be conducted to identify skills/knowledge necessary for faculty to be effective in working with Hispanic students. Effective communication training should include understanding non-verbal communication geared to this population, enhancing strong listening skills, and may in some cases include communicating in Spanish.

Lastly, colleges should find ways to structure activities where Hispanic students meet with and get to know faculty. This could be done by sponsoring faculty/staff-student interactive events (such as teas) where faculty who have the largest numbers of Hispanic students enrolled in their classes are targeted. Classes that students take at the beginning of their college careers should also be identified, especially development (remedial) course work.

Kuh et al. (2005) describes the policies and practices that encourage student-faculty interaction, and those applicable to community colleges include:

- Designing first-year seminars and capstone experiences
- Encouraging students to use electronic technology
- Recruiting and rewarding faculty who are willing to spend time with students outside the classroom
- Using mentoring and other programs to link students directly with faculty members
- Arranging physical facilities to encourage informal interaction.

While these practices apply to a general population, they can also apply to Hispanics if adapted to ensure that cultural and language issues are addressed.

Active and Collaborative Learning

The Active and Collaborative Learning benchmark was the second strongest predictor of academic achievement in my study (had a moderate but not significant influence). The correlation size was also at a moderate level and the means on benchmark items were slightly lower than the general population. Since this variable had a moderate influence on academic achievement, it follows that it would be beneficial to work with Hispanic students and colleges to ensure maximization of these college experiences.

Chickering and Gamson (1991) include cooperation between students and active learning among the good practices for undergraduate education. These and other issues are included in the CCSSE items in this benchmark. Some of the same skills outlined in the last section can contribute to active and collaborative learning as well. Building

presentation skills would also be beneficial, which could be accomplished by Hispanic students taking specific course work, such as public speaking. In addition, coaching and practice sessions led by staff could assist students in developing presentation skills.

Carkhuff (1980) outlines specific skills that can be developed to improve communication with others. Those skills include attending, responding, personalizing, and initiating and could be practiced in dyads or triads. When using the triad model, one person is an observer, critiques interactions, and provides helpful feedback for improvement. Faculty members could get involved with these practice sessions, which would make them more realistic and even more effective.

Many of the skills needed for active and collaborative learning are related to communication, which has been discussed. Working in groups is pivotal to success in collaborative learning. However, more advanced interpersonal skills are needed to effectively work in groups. Developing strong human relation skills will greatly benefit Hispanic students in their collaborative work with other students.

Several of the items in this benchmark involve working with other students, both in and outside the classroom. Such activities can be structured by faculty members or by support programs where study and discussion groups are formed for specific classes or topic areas. Students need skills to be effective in these environments, but it is the responsibility of college to ensure that such opportunities are available. Kuh et al. (2005) suggest that course assignments be structured to require students to provide feedback to their peers. In addition, they suggest that credit courses could provide incentives for students to tutor and mentor other students.

Learning communities are a fairly recent phenomenon, which Tinto (2002) describes as students being required to enroll in courses together and share the experience of learning the curriculum in courses with content and activities coherently linked. Many campuses have implemented learning communities as a strategy to ensure collaboration. Ensuring that Hispanic students are successful in this environment would require extra effort on the part of faculty. The communication and cultural issues discussed previously would be important to ensuring the success of the learning community environment for Hispanic students.

Academic Challenge

The Academic Challenge Benchmark was the strongest negative predictor; holding true in the correlations and the fact that the means on the CCSSE items for Hispanics were lower, for the most part, than the general survey population. Having high expectations for academic excellence of students, according to Kuh et al. (2005), is the foundation for creating a campus environment that values and rewards academic achievement. Since this variable was a negative predictor of academic achievement for the study population, and Kuh et al. (2005) contend that a way to effectively use student engagement data is to identify the least engaged students, it is important to find methods to ensure that Hispanic students can meet high expectations. Curriculum should not be watered down, but on the other hand, support programs should be in place to assist students in being successful.

As a starting point, students should only be placed in courses for which they have the academic skills necessary for successful completion. The usual methods for determining readiness are placement testing and the meeting of course prerequisites.

Issues regarding the placement testing for the Hispanics often surface, in that language can complicate the testing outcomes. Correct placement is the key, and thus it is important to have effective and appropriate advisement and testing systems in place. Where students need language development, colleges must have strong preparation courses, as well as related support programs. English as Second Language programs are common at community colleges, but students often get into the regular developmental course cycles, which seldom deal effectively with the language issue. This is particularly true for Hispanic students who have attended high school in the U. S. If students get in courses where they need either language development or other prerequisites skills to be successful, faculty have to identify these students and make referrals to advisement or other resources to assist students.

In addition to having requisite academic skills, Hispanic students as well as all students, need competence in areas such as study skills, test taking and note taking. Workshops and online study guides should be offered for this population. Hispanic students need to utilize tutoring programs and work in study groups.

The CCSSE items for this benchmark include skills outlined in Bloom's taxonomy (1956) such as analyzing, synthesizing, organizing, and application of knowledge. On most of these items, Hispanic student means are lower than the general survey population. All of these critical thinking skills can be developed in the classroom, but faculty members must structure learning activities to accomplish this development. Many methods and activities can be employed, including structured writing assignments that promote critical thinking. Faculty training and development in this area would be crucial. Tutors and study group facilitators should be trained in techniques to develop

critical thinking skills. Workshops could also be held for Hispanic students with exercises and activities structured to promote development of critical thinking skills.

Other CCSSE items include questions about the amount of work students perceive they have completed (numbers of papers, books read, etc.). Hispanic student means on these items are, for the most part, higher than the general survey population. Because these issues are important to academic achievement, Hispanic students should be prepared for the amount of work in any given class and should plan to incorporate the required time and effort into their study regimen. Coaching students on these issues, especially early in their college careers, could be incorporated in workshops discussed previously.

Student Effort

The Student Effort variable was also a low to moderate negative predictor of academic achievement. The correlation with academic achievement was also at a very low negative level. Interestingly, the mean for the CCSSE items for Hispanic students were higher than the mean for the general survey population. The item means that were lower include frequency of use of tutoring, number of books read on their own (not assigned), and preparation for class. While this benchmark was low to moderate negative predictor, the cohort influence on the Student Effort benchmark was high, indicating that Hispanic students applied themselves.

Emphasizing time on task is one of the good practices advocated by Chickering and Gamson (1991), which is incorporated in the items on this benchmark. In addition, Kuh (2005) listed time and effort as one of the two key components that contribute to

student success. These findings do not support either Chickering and Gamson's practices or Kuh's keys to success.

These findings are puzzling but, as pointed out previously, could be explained by the small sample size (n = 31). Nonetheless, because this benchmark was a negative predictor of academic achievement, it is all the more important to explore strategies that will ensure that Hispanic students apply themselves in the learning environment.

Many of the strategies already discussed apply, which include workshops and other support activities. An aggressive effort needs to occur to ensure that Hispanic students are made aware of the availability of tutoring services and skill labs. Institutions need to make sure that both individual and group tutoring are available. Tutors need to be trained to ensure that they have both the skills and knowledge needed to work with the Hispanic population, including cultural sensitivity and, where needed, fluency in Spanish.

Support for Learner

The Support for Learner variable was a very low positive predictor of academic achievement, and the correlation was also consistent with this finding. The Hispanic student benchmark item means were slightly lower also. Hispanic students did not feel that they were provided the support they needed in the academic area. However, the full- and part-time student status variables both had a very positive influence on the Student Effort variable.

This comes back to the importance of an early, aggressive effort being made to ensure that Hispanic students are aware of and use support services. Hispanic students must be comfortable in approaching staff for help. One means of establishing this

comfort level is to hire staff with whom Hispanic students can identify. It is important to hire a diverse staff that is fluent in Spanish.

This early awareness of college support programs and services should be incorporated in a comprehensive first-year experience program for Hispanic students. A good deal of evidence and literature documents what works with first-time college students. John N. Gardner and his colleagues at the University of South Carolina's National Resource Center for the First-Year Experience and Students in Transition have published their programs extensively and offer numerous conference and other training opportunities. First-year experience programs should be tailored to meet the specific needs of Hispanic students.

Miller and García (2004) advocate for the inclusion of mentoring programs as part of the educational experience for Hispanic students. The President's Advisory Commission on Educational Excellence for Hispanic Americans (2003) includes peer mentoring as a strategy that increases retention and graduation rates for Hispanic students. Not only do colleges need to develop and implement mentoring programs, but the mentors need special training to work with the Hispanic population. Mentoring programs have been effective across the country, but unless mentors have cultural sensitivity training and can demonstrate that sensitivity, these programs won't be successful. In addition, mentors need to be knowledgeable about support services and other strategies to assist students. Being a mentor for Hispanic students is an important commitment, and mentors need to be rewarded for their time and effort. Mentors are frequently volunteers and if there is no funding to pay these individuals, colleges need to find other methods to reward mentors. Recognizing them at activities where they are

distinguished for their commitment is just one way of rewarding mentors. Other low-cost methods can be identified if staff is creative.

Hispanic participants have lower means than the general survey population in the frequency of use of academic advising/planning and career counseling. As stated previously, it is the college's responsibility to be aggressive in reaching out to Hispanic students. Colleges must ensure that there are adequate resources with approachable, knowledgeable, and culturally sensitive staff.

Background Characteristic Variables

Information on specific background characteristics can inform the development and targeting of strategies for improving academic achievement with Hispanic students. The study participants who had earned a higher level of credit hours, and who were more likely to apply themselves, had stronger interactions with faculty and as a consequence, higher GPAs. This no real surprise, but this information can be used to help build skills in Hispanic students who are first-time students or who have not completed many credit hours. Knowing what contributes positively to academic achievement, and using that in first year experience and other programs can assist Hispanic students.

While there is mixed data on Student Effort, the English as a native Language and where English is not the native language variables positively influenced the Student Effort variable. Hispanic students in my study applied themselves. Whether enrolled full- or part-time, Hispanic students used academic and support services at a high level. Part-time students interact with faculty at a higher level. Subjects whose mothers have a higher level of education interact more strongly with faculty.

Interaction of the CCSSE Benchmarks

The paths among the benchmarks are, with a couple of exceptions, significant ($p<$ .01 and $p<$ .05). All of the benchmarks have a positive influence on all of the other benchmarks. In the decomposition of the effects it was clear that many variables that passed through any of the benchmarks were mediated in a positive manner. What this demonstrates is the fact that all of these college experiences interact in a positive manner and together influence academic achievement favorably.

What Community College Must Do

Santiago et al. (2004) assert that "commitment to Latino student success begins with the president and the administration and permeates throughout the institution" (p. 5). They further emphasize that institutional leaders should set the tone for commitment and accountability for student success. In addition, if Latino students are not completing degrees, institutional leaders need to take responsibility for determining institutional practices than can improve students' opportunity for success.

Valverde (2004) contends that education must move away from our national fixation that the problem is centered on the student; to no longer blame the victim. As long as the educational community continues to do this, necessary changes will not be made and true systemic reform will not occur. Miller and García (2004) found certain elements that must be in place if colleges are to be successful in graduating Latino students. These elements relating to student success include:

- Top leadership must be committed to the concept of greater inclusion
- Faculty should be engaged with student performance
- Personal attention to students should be extended beyond the classroom

- Peer support should be offered to students
- Financial aid should be provided to allow for full-time attendance
- Various campus-wide assistance programs should be linked to form a continuum for students
- Continuous evaluation of programs should occur to allow for modifications of processes and goals

Faculty and support staff must work as a team to form this "continuum for linking campus-wide assistance programs" to the classroom (be it on-line or the traditional format) in order to develop the strong learning environment needed to ensure academic achievement by Hispanic students. Often support program and service staff members are isolated from "the academic side of the house" and many faculty members are not knowledgeable about programs and services available to assist Hispanic students (as well as other students). The attitude by faculty that "it's their job to inform students about support services and to get students to use those services" will not meet this challenge. There has to be full buy in and support if this integrated team approach between faculty and support staff is to be successful.

Colleges must also maximize the use of institutional data to determine where at-risk strategies should be targeted, which allows for effective use of resources. Maintaining strong institutional research functions with staff trained in using institutional data to design effective tracking and evaluation systems is critical.

Institutions must take the issues of Hispanic student academic achievement, retention, and attainment seriously. This can only occur if college administrators, faculty, and staff members understand the issues and commit to an educational environment

where Hispanic cultures are valued. It is critical for college administrations to take responsibility for ensuring that a paradigm shift occurs; toward a paradigm that no longer blames the victim (as Valverde suggested). The strategies, programs, and services that have been recommended will not be inexpensive or easy to develop and implement. Funding will follow if the commitment is there.

Recommendations for Future Research

This study could be replicated in a situation where GPA*s* are available for a larger Hispanic population. The small N for GPA*s* may have limited the study and findings. In addition, if the study could be conducted on a larger Hispanic cohort from all community colleges involved with CCSSE, the results could be generalized to all community colleges. That would require member colleges to participate by providing academic data on the students, which is problematic because participants are not required to include ID numbers, except on a voluntary basis.

Summary

This study found the Student-Faculty Interaction variable to be a significant influence on academic achievement in Hispanic students. In addition, the Active and Collaborative Learning benchmark was the second strongest positive predictor of academic achievement while the Academic Challenge variable was the strongest negative predictor. However, Academic Challenge had a significant positive influence directly on three of the other benchmarks—Active and Collaborative Learning, Student Effort, and Student-Faculty Interaction. The Student Effort variable was a low to moderate negative predictor of Academic Achievement and Support for Learner a very low positive influence.

These findings confirm the importance of using some of the principles in Chickering and Gamson's (1987) Seven Principles for Good Practice in Undergraduate Education, including student-faculty contact, cooperation among students, and active learning. However, their practices of time on task and having high expectations for students are not supported by the findings of my research.

Hispanic students who had earned a higher number of credit hours were more likely to apply themselves, had stronger interactions with faculty, and had higher GPA*s*. Both full- and part-time students utilized academic support services at a high level, even though the Support for Learner variable had only a small positive influence on academic achievement. In addition, part-time students interacted more strongly with faculty, which could be explained by the fact that part-time students are older, thus more mature, and have had more experience in the area of interpersonal interactions.

It is significant to note that the strongest positive influences on academic achievement for Hispanic students are two of the college experience variables that are, for the most part, under the control of faculty. With both of these sets of college experience variables, Student-Faculty Interaction and Active and Collaborative Learning, faculty members provide the learning environment in which these experiences can thrive and make a difference for Hispanic student academic achievement.

Tinto (2002) notes that getting students involved is no simple matter, especially when students commute to campus, work while in college, and have substantial family responsibilities. For these students, the classroom may be the only place where they meet each other and the faculty, and the only place where engagement in academic matters is

possible. Astin (2002) contends that college classrooms are not very involving and in too many classrooms the experience of learning is still one of isolation and passivity.

Given that the most positive influences on academic achievement are those benchmarks and practices that are under the control of faculty, and given that many classrooms are not very involving and still have students in passive roles, a change must occur if colleges are to be successful in assuring that Hispanic students achieve academically. Tinto (2002) outlines a number of reforms that are underway in the United States, which include strategies recommended earlier in this Chapter. These strategies include active and collaborative learning and the use of learning communities. In addition, Tinto advocates the use of classroom assessment techniques that provide students and faculty frequent feedback about student learning and the use of supplemental instruction strategies where academic assistance is connected to specific courses and to specific student academic needs. This supports the earlier recommendation that an individualized plan of improvement be developed for Hispanic students based on a comprehensive assessment of their learning needs.

However, it is incumbent on faculty to find methods to ensure learning environments incorporate best practice strategies that are well suited to Hispanic students. To that end, community college administrations must find ways (including identification of adequate funding) to support faculty development in learning best practice strategies and further to build their knowledge and skills to create culturally sensitive and welcoming learning environments. Faculty need to involve academic support staff in developing strong linkages with support services for Hispanic students. General referral

is not enough. Faculty and support staff must work as a team to develop a strong learning environment for Hispanic students.

My study is a first step to beginning the process of understanding the influences of college student engagement practices on Hispanic student academic achievement. Because there has been so little research done with Hispanic students in the community college environment, there is much to be done in order to learn successful strategies that will build institutional commitment, create a culturally sensitive environment, and to find methods to ensure student academic achievement and consequent educational goal attainment.

There must be a strong commitment to the success of Hispanic students by administration, faculty and staff. Institutions must have strong institutional research functions in place and be dedicated to implementing support systems that will ensure academic achievement and consequent retention and attainment for all Hispanic students. The future of this country depends on how successful community colleges can be in these efforts.

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The Community College Student Report 2003

1 **In your experiences <u>at this college</u> during the current school year, about how often have you done each of the following? Please use a black or blue pen. Mark your answers as shown in the following example. Example: ☒ or ☒**

		Very Often	Often	Some-times	Never
a.	Asked questions in class or contributed to class discussions	☐	☐	☐	☐
b.	Made a class presentation	☐	☐	☐	☐
c.	Prepared two or more drafts of a paper or assignment before turning it in	☐	☐	☐	☐
d.	Worked on a paper or project that required integrating ideas or information from various sources	☐	☐	☐	☐
e.	Come to class without completing readings or assignments	☐	☐	☐	☐
f.	Worked with other students on projects during class	☐	☐	☐	☐
g.	Worked with classmates outside of class to prepare class assignments	☐	☐	☐	☐
h.	Tutored or taught other students (paid or voluntary)	☐	☐	☐	☐
i.	Participated in a community-based project as a part of a regular course	☐	☐	☐	☐
j.	Used an electronic medium (list-serv, chat group, Internet, etc.) to discuss or complete an assignment	☐	☐	☐	☐
k.	Used e-mail to communicate with an instructor	☐	☐	☐	☐
l.	Discussed grades or assignments with an instructor	☐	☐	☐	☐
m.	Talked about career plans with an instructor or advisor	☐	☐	☐	☐
n.	Discussed ideas from your readings or classes with instructors outside of class	☐	☐	☐	☐
o.	Received prompt feedback (written or oral) from instructors on your performance	☐	☐	☐	☐
p.	Worked harder than you thought you could to meet an instructor's standards or expectations	☐	☐	☐	☐
q.	Worked with instructors on activities other than coursework	☐	☐	☐	☐
r.	Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	☐	☐	☐	☐
s.	Had serious conversations with students of a different race or ethnicity other than your own	☐	☐	☐	☐
t.	Had serious conversations with students who differ from you in terms of their religious beliefs, political opinions, or personal values	☐	☐	☐	☐

2 **During the current school year, how much has your coursework <u>at this college</u> emphasized the following mental activities?**

		Very much	Quite a bit	Some	Very little
a.	Memorizing facts, ideas, or methods from your courses and readings so you can repeat them in pretty much the same form	☐	☐	☐	☐
b.	Analyzing the basic elements of an idea, experience, or theory	☐	☐	☐	☐
c.	Synthesizing and organizing ideas, information, or experiences in new ways	☐	☐	☐	☐
d.	Making judgments about the value or soundness of information, arguments, or methods	☐	☐	☐	☐
e.	Applying theories or concepts to practical problems or in new situations	☐	☐	☐	☐
f.	Using information you have read or heard to perform a new skill	☐	☐	☐	☐

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3 **During the current school year, about how much reading and writing have you done at this college?**

	None	1 to 4	5 to 10	11 to 20	More than 20
a. Number of assigned textbooks, manuals, books, or book-length packs of course readings	☐	☐	☐	☐	☐
b. Number of books read on your own (not assigned) for personal enjoyment or academic enrichment	☐	☐	☐	☐	☐
c. Number of written papers or reports of any length	☐	☐	☐	☐	☐

4 **Mark the box that best represents the extent to which your examinations during the current school year have challenged you to do your best work at this college.**

Extremely Challenging	7 ☐	6 ☐	5 ☐	4 ☐	3 ☐	2 ☐	1 ☐	Extremely Easy

5 **Which of the following have you done, are you doing, or do you plan to do while attending this college?**

	I Have Done	I Plan To Do	I Have Not Done, Nor Plan To Do
a. Internship, field experience, co-op experience, or clinical assignment	☐	☐	☐
b. Coursework in a foreign language other than English	☐	☐	☐
c. Study abroad	☐	☐	☐
d. English as a second language course	☐	☐	☐
e. Developmental/remedial reading course	☐	☐	☐
f. Developmental/remedial writing course	☐	☐	☐
g. Developmental/remedial math course	☐	☐	☐
h. Study skills course	☐	☐	☐
i. Honors course	☐	☐	☐
j. College orientation program or course	☐	☐	☐
k. Organized learning communities (linked courses/study groups led by faculty or counselors)	☐	☐	☐

6 **How much does this college emphasize each of the following?**

	Very much	Quite a bit	Some	Very little
a. Encouraging you to spend significant amounts of time studying	☐	☐	☐	☐
b. Providing the support you need to help you succeed at this college	☐	☐	☐	☐
c. Encouraging contact among students from different economic, social, and racial or ethnic backgrounds	☐	☐	☐	☐
d. Helping you cope with your non-academic responsibilities (work, family, etc.)	☐	☐	☐	☐
e. Providing the support you need to thrive socially	☐	☐	☐	☐
f. Providing the financial support you need to afford your education	☐	☐	☐	☐
g. Using computers in academic work	☐	☐	☐	☐

7 **About how many hours do you spend in a typical 7-day week doing each of the following?**

		Hours per week					
		None	1 to 5	6 to 10	11 to 20	21 to 30	More than 30
a.	Preparing for class (studying, reading, writing, rehearsing, doing homework, or other activities related to your program)	☐	☐	☐	☐	☐	☐
b.	Working for pay on campus	☐	☐	☐	☐	☐	☐
c.	Working for pay off campus	☐	☐	☐	☐	☐	☐
d.	Participating in college-sponsored activities (organizations, campus publications, student government, intercollegiate or intramural sports, etc.)	☐	☐	☐	☐	☐	☐
e.	Providing care for dependents living with you (parents, children, spouse, etc.)	☐	☐	☐	☐	☐	☐
f.	Commuting to and from classes	☐	☐	☐	☐	☐	☐

8 **Mark the box that best represents the quality of your relationships with people <u>at this college</u>.**

	Your relationship with:	
a. **<u>Other Students</u>** Friendly, supportive, sense of belonging	**b.** **<u>Instructors</u>** Available, helpful, sympathetic	**c.** **<u>Administrative Personnel & Offices</u>** Helpful, considerate, flexible
7 ☐	7 ☐	7 ☐
6 ☐	6 ☐	6 ☐
5 ☐	5 ☐	5 ☐
4 ☐	4 ☐	4 ☐
3 ☐	3 ☐	3 ☐
2 ☐	2 ☐	2 ☐
1 ☐	1 ☐	1 ☐
Unfriendly, unsupportive, sense of alienation	Unavailable, unhelpful, unsympathetic	Unhelpful, inconsiderate, rigid

9 **How much has YOUR EXPERIENCE AT THIS COLLEGE contributed to your knowledge, skills, and personal development in the following areas?**

		Very much	Quite a bit	Some	Very little
a.	Acquiring a broad general education	☐	☐	☐	☐
b.	Acquiring job or work-related knowledge and skills	☐	☐	☐	☐
c.	Writing clearly and effectively	☐	☐	☐	☐
d.	Speaking clearly and effectively	☐	☐	☐	☐
e.	Thinking critically and analytically	☐	☐	☐	☐
f.	Solving numerical problems	☐	☐	☐	☐
g.	Using computing and information technology	☐	☐	☐	☐
h.	Working effectively with others	☐	☐	☐	☐
i.	Learning effectively on your own	☐	☐	☐	☐
j.	Understanding yourself	☐	☐	☐	☐
k.	Understanding people of other racial and ethnic backgrounds	☐	☐	☐	☐
l.	Developing a personal code of values and ethics	☐	☐	☐	☐
m.	Contributing to the welfare of your community	☐	☐	☐	☐
n.	Developing clearer career goals	☐	☐	☐	☐
o.	Gaining information about career opportunities	☐	☐	☐	☐

10 **This section has three parts. Please answer all three sections, indicating (1) HOW OFTEN you use the following services, (2) HOW SATISFIED you are with the services, and (3) HOW IMPORTANT the services are to you AT THIS COLLEGE.**

		(1) FREQUENCY OF USE				(2) SATISFACTION				(3) IMPORTANCE		
		Often	Some-times	Rarely/ Never	Don't know/ N.A.	Very	Some-what	Not at all	N.A.	Very	Some-what	Not at all
a.	Academic advising/planning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Career counseling	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Job placement assistance	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Peer or other tutoring	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Skill labs (writing, math, etc.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Child care	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
g.	Financial aid advising	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
h.	Computer lab	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
i.	Student organizations	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
j.	Transfer credit assistance	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
k.	Services for people with disabilities	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

11 **How likely is it that the following issues would cause you to withdraw from class or from this college? *(Please respond to each item)***

		Very Likely	Likely	Somewhat Likely	Not Likely
a.	Working full-time	☐	☐	☐	☐
b.	Caring for dependents	☐	☐	☐	☐
c.	Academically unprepared	☐	☐	☐	☐
d.	Lack of finances	☐	☐	☐	☐
e.	Educational goals changed	☐	☐	☐	☐
f.	Change in carreer plans	☐	☐	☐	☐
g.	Moving/relocating	☐	☐	☐	☐
h.	Transfer to a 4-year college or university	☐	☐	☐	☐

12 **In terms of attending this college, how do you think of yourself? *(Mark only one)***

If employed:

☐ Primarily as a student working to meet expenses

☐ Primarily as an employee who is taking classes

If not employed:

☐ Primarily as a student who is taking classes

☐ Primarily as someone other than a student, e.g., parent, retiree, job-seeker who is taking classes

13 **How supportive are your friends of your attending this college?**

☐ Extremely ☐ Quite a bit

☐ Somewhat ☐ Not very

14 **How supportive is your immediate family of your attending this college?**

☐ Extremely ☐ Quite a bit

☐ Somewhat ☐ Not very

15 **Indicate which of the following are your reasons/goals for attending this college? *(Please respond to each item)***

		Primary goal	Secondary goal	Not a goal
a.	To complete a certificate program	☐	☐	☐
b.	To obtain an Associate degree	☐	☐	☐
c.	To transfer to a 4-year college or university	☐	☐	☐
d.	To obtain job-related skills	☐	☐	☐
e.	To update job skills	☐	☐	☐
f.	To take one or more courses for self-improvement	☐	☐	☐
g.	To change careers	☐	☐	☐
h.	To obtain knowledge in a specific area	☐	☐	☐

16 **Indicate which of the following are *sources* you use to pay your tuition at this college? *(Please respond to each item)***

		Major source	Minor source	Not a source
a.	My own income/savings	☐	☐	☐
b.	Parent or spouse/ significant other's income/savings	☐	☐	☐
c.	Employer contributions	☐	☐	☐
d.	Grants & scholarships	☐	☐	☐
e.	Student loans (bank, etc.)	☐	☐	☐
f.	Public assistance	☐	☐	☐

17 **Did you begin college at this college or elsewhere?**

☐ Started here ☐ Started elsewhere

18 **Since high school, which of the following types of schools have you attended other than the one you are now attending? *(Please mark all that apply)***

☐ Proprietary (private) school or training program
☐ Public vocational-technical school
☐ Another community or technical college
☐ 4-year college or university
☐ None

19 **Thinking about this current academic term, how would you characterize your enrollment at this college?**

☐ Full-time ☐ Less than full-time

20 **When do you plan to take classes at this college again?**

☐ I will accomplish my goal(s) during this term and will not be returning
☐ Summer 2003
☐ Fall 2003
☐ Winter/Spring 2004
☐ I have no current plan to return
☐ Uncertain

21 **In how many classes are you presently enrolled at this college?**

☐ 1 class ☐ 2 classes
☐ 3 classes ☐ 4 classes
☐ 5 classes ☐ 6 classes or more

22 **At this college, in what range is your overall college grade average?**

☐ A ☐ A- to B+ ☐ B
☐ B- to C+ ☐ C ☐ C- or lower
☐ Do not have a GPA at this school
☐ Pass/fail classes only

23 **When do you most frequently take classes at this college? *(Mark one only)***

☐ Day classes (morning or afternoon)
☐ Evening classes
☐ Weekend classes

24 **Which types of classes do you most frequently take at this college? *(Mark one only)***

☐ Classroom based courses
☐ Internet based courses
☐ Correspondence courses
☐ Televised courses

25 **How many TOTAL credit hours have you earned at this college, not counting the courses you are currently taking this term?**

☐ none ☐ 1-14 credits
☐ 15-29 credits ☐ 30-44 credits
☐ 45-60 credits ☐ over 60 credits

26 **At what other types of institutions are you taking classes this term? *(Please mark all that apply)***

☐ None
☐ High school
☐ Another community or technical college
☐ Vocational/technical school
☐ 4-year college/university
☐ Other

27 **How many classes are you *presently* taking at OTHER institutions?**

☐ None ☐ 1 class ☐ 2 classes
☐ 3 classes ☐ 4 classes or more

28 **Would you recommend this college to a friend or family member?**

☐ Yes ☐ No

29 **How would you evaluate your entire educational experience at this college?**

☐ Excellent ☐ Good ☐ Fair ☐ Poor

30 **Do you have children who live with you?**

☐ Yes ☐ No

31 **If you have children living with you, which of the following best describes your child care situation?** ***(Mark one only)***

☐ Not applicable/no children

☐ I do not have children that need child care

☐ I have excellent child care

☐ I have child care but it is inconsistent

☐ Child care is difficult to arrange/hard to find

☐ Child care is a major issue for me

32 Mark your age group.

☐ 17 or younger

☐ 18 ☐ 19 to 22 ☐ 23 to 25 ☐ 26 to 29

☐ 30 to 39 ☐ 40 to 49 ☐ 50 to 59 ☐ 60 plus

33 **Your sex:** ☐ Male ☐ Female

34 **Are you married?** ☐ Yes ☐ No

35 **Is English your native (first) language?**

☐ Yes ☐ No

36 **Are you an international student or foreign national?**

☐ Yes ☐ No

37 **What is your racial identification?** ***(Mark all that apply)***

☐ American Indian or other Native American

☐ Asian, Asian American or Pacific Islander

☐ Native Hawaiian

☐ Black or African American

☐ White, Non-Hispanic

☐ Hispanic, Latino, Spanish

☐ Other: _____

38 **What is the highest academic credential you have earned?**

☐ None

☐ High school diploma or GED

☐ Vocational/technical certificate

☐ Associate degree

☐ Bachelor's degree

☐ Master's/doctoral/professional degree

39 **What is the highest level of education obtained by your:**

		Mother	Father
a.	Not a high school graduate	☐	☐
b.	High school diploma or GED	☐	☐
c.	Some college, did not complete degree	☐	☐
d.	Associate degree	☐	☐
e.	Bachelor's degree	☐	☐
f.	Master's degree/ 1st professional	☐	☐
g.	Doctorate degree	☐	☐
h.	Unknown	☐	☐

40 **Using the list provided, please write the code indicating your program:**

41 **Have you taken this survey in another class this term?**

☐ Yes ☐ No

Your responses will remain confidential and individual responses will not be reported.

Please provide your student identification number (OPTIONAL)

Additional Items

	A	B	C	D	E
1	☐	☐	☐	☐	☐
2	☐	☐	☐	☐	☐
3	☐	☐	☐	☐	☐
4	☐	☐	☐	☐	☐
5	☐	☐	☐	☐	☐
6	☐	☐	☐	☐	☐
7	☐	☐	☐	☐	☐
8	☐	☐	☐	☐	☐
9	☐	☐	☐	☐	☐
10	☐	☐	☐	☐	☐
11	☐	☐	☐	☐	☐
12	☐	☐	☐	☐	☐
13	☐	☐	☐	☐	☐
14	☐	☐	☐	☐	☐
15	☐	☐	☐	☐	☐
16	☐	☐	☐	☐	☐
17	☐	☐	☐	☐	☐
18	☐	☐	☐	☐	☐
19	☐	☐	☐	☐	☐
20	☐	☐	☐	☐	☐

Thank you for sharing your views.

The Community College Student Report 2004

Instructions: It is essential that you use a No. 2 pencil to complete this survey. Mark your answers as shown in the following example: ● Correct Mark ⊘ ⊗ ◒ ⊙ Incorrect Marks

1. Did you begin college at this college or elsewhere? ○ Started here ○ Started elsewhere

2. Thinking about this current academic term, how would you characterize your enrollment at this college? ○ Full-time ○ Less than full-time

3. Have you taken this survey in another class this term? ○ Yes ○ No

4. In your experiences at this college during the current school year, about how often have you done each of the following?	Very often	Often	Some-times	Never
a. Asked questions in class or contributed to class discussions	○	○	○	○
b. Made a class presentation	○	○	○	○
c. Prepared two or more drafts of a paper or assignment before turning it in	○	○	○	○
d. Worked on a paper or project that required integrating ideas or information from various sources	○	○	○	○
e. Come to class without completing readings or assignments	○	○	○	○
f. Worked with other students on projects during class	○	○	○	○
g. Worked with classmates outside of class to prepare class assignments	○	○	○	○
h. Tutored or taught other students (paid or voluntary)	○	○	○	○
i. Participated in a community-based project as a part of a regular course	○	○	○	○
j. Used the Internet or instant messaging to work on an assignment	○	○	○	○
k. Used e-mail to communicate with an instructor	○	○	○	○
l. Discussed grades or assignments with an instructor	○	○	○	○
m. Talked about career plans with an instructor or advisor	○	○	○	○
n. Discussed ideas from your readings or classes with instructors outside of class	○	○	○	○
o. Received prompt feedback (written or oral) from instructors on your performance	○	○	○	○
p. Worked harder than you thought you could to meet an instructor's standards or expectations	○	○	○	○
q. Worked with instructors on activities other than coursework	○	○	○	○
r. Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	○	○	○	○
s. Had serious conversations with students of a different race or ethnicity other than your own	○	○	○	○
t. Had serious conversations with students who differ from you in terms of their religious beliefs, political opinions, or personal values	○	○	○	○
u. Skipped class	○	○	○	○

5. During the current school year, how much has your coursework at this college emphasized the following mental activities?	Very much	Quite a bit	Some	Very little
a. Memorizing facts, ideas, or methods from your courses and readings so you can repeat them in pretty much the same form	○	○	○	○
b. Analyzing the basic elements of an idea, experience, or theory	○	○	○	○
c. Synthesizing and organizing ideas, information, or experiences in new ways	○	○	○	○
d. Making judgments about the value or soundness of information, arguments, or methods	○	○	○	○
e. Applying theories or concepts to practical problems or in new situations	○	○	○	○
f. Using information you have read or heard to perform a new skill	○	○	○	○

PLEASE DO NOT MARK IN THIS AREA

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6. During the current school year, about how much reading and writing have you done at this college?

	None	1 to 4	5 to 10	11 to 20	More than 20
a. Number of assigned textbooks, manuals, books, or book-length packs of course readings	○	○	○	○	○
b. Number of books read on your own (not assigned) for personal enjoyment or academic enrichment	○	○	○	○	○
c. Number of written papers or reports of any length	○	○	○	○	○

7. Mark the response that best represents the extent to which your examinations during the current school year have challenged you to do your best work at this college.

Extremely challenging ⑦ ⑥ ⑤ ④ ③ ② ① Extremely easy

8. Which of the following have you done, are you doing, or do you plan to do while attending this college?

	I have done	I plan to do	I have not done nor plan to do
a. Internship, field experience, co-op experience, or clinical assignment	○	○	○
b. English as a second language course	○	○	○
c. Developmental/remedial reading course	○	○	○
d. Developmental/remedial writing course	○	○	○
e. Developmental/remedial math course	○	○	○
f. Study skills course	○	○	○
g. Honors course	○	○	○
h. College orientation program or course	○	○	○
i. Organized learning communities (linked courses/study groups led by faculty or counselors)	○	○	○

9. How much does this college emphasize each of the following?

	Very much	Quite a bit	Some	Very little
a. Encouraging you to spend significant amounts of time studying	○	○	○	○
b. Providing the support you need to help you succeed at this college	○	○	○	○
c. Encouraging contact among students from different economic, social, and racial or ethnic backgrounds	○	○	○	○
d. Helping you cope with your non-academic responsibilities (work, family, etc.)	○	○	○	○
e. Providing the support you need to thrive socially	○	○	○	○
f. Providing the financial support you need to afford your education	○	○	○	○
g. Using computers in academic work	○	○	○	○

10. About how many hours do you spend in a typical 7-day week doing each of the following?

	None	1 – 5	6 - 10	11 - 20	21 - 30	More than 30
a. Preparing for class (studying, reading, writing, rehearsing, doing homework, or other activities related to your program)	○	○	○	○	○	○
b. Working for pay	○	○	○	○	○	○
c. Participating in college-sponsored activities (organizations, campus publications, student government, intercollegiate or intramural sports, etc.)	○	○	○	○	○	○
d. Providing care for dependents living with you (parents, children, spouse, etc.)	○	○	○	○	○	○
e. Commuting to and from classes	○	○	○	○	○	○

11. Mark the number that best represents the quality of your relationships with people at this college.

Your relationship with:

a. Other Students

Friendly, supportive, sense of belonging ⑦ ⑥ ⑤ ④ ③ ② ① Unfriendly, unsupportive, sense of alienation

b. Instructors

Available, helpful, sympathetic ⑦ ⑥ ⑤ ④ ③ ② ① Unavailable, unhelpful, unsympathetic

c. Administrative Personnel & Offices

Helpful, considerate, flexible ⑦ ⑥ ⑤ ④ ③ ② ① Unhelpful, inconsiderate, rigid

12. How much has YOUR EXPERIENCE AT THIS COLLEGE contributed to your knowledge, skills, and personal development in the following areas?

	Very much	Quite a bit	Some	Very little
a. Acquiring a broad general education	○	○	○	○
b. Acquiring job or work-related knowledge and skills	○	○	○	○
c. Writing clearly and effectively	○	○	○	○
d. Speaking clearly and effectively	○	○	○	○
e. Thinking critically and analytically	○	○	○	○
f. Solving numerical problems	○	○	○	○
g. Using computing and information technology	○	○	○	○
h. Working effectively with others	○	○	○	○
i. Learning effectively on your own	○	○	○	○
j. Understanding yourself	○	○	○	○
k. Understanding people of other racial and ethnic backgrounds	○	○	○	○
l. Developing a personal code of values and ethics	○	○	○	○
m. Contributing to the welfare of your community	○	○	○	○
n. Developing clearer career goals	○	○	○	○
o. Gaining information about career opportunities	○	○	○	○

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13. This section has three parts. Please answer all three sections, indicating (1) HOW OFTEN you use the following services, (2) HOW SATISFIED you are with the services, and (3) HOW IMPORTANT the services are to you AT THIS COLLEGE.

	(1) Frequency of Use				(2) Satisfaction				(3) Importance		
	Often	Some-times	Rarely/ Never	Don't know/ N.A.	Very	Some-what	Not at all	N.A.	Very	Some-what	Not at all
a. Academic advising/planning	○	○	○	○	○	○	○	○	○	○	○
b. Career counseling	○	○	○	○	○	○	○	○	○	○	○
c. Job placement assistance	○	○	○	○	○	○	○	○	○	○	○
d. Peer or other tutoring	○	○	○	○	○	○	○	○	○	○	○
e. Skill labs (writing, math, etc.)	○	○	○	○	○	○	○	○	○	○	○
f. Child care	○	○	○	○	○	○	○	○	○	○	○
g. Financial aid advising	○	○	○	○	○	○	○	○	○	○	○
h. Computer lab	○	○	○	○	○	○	○	○	○	○	○
i. Student organizations	○	○	○	○	○	○	○	○	○	○	○
j. Transfer credit assistance	○	○	○	○	○	○	○	○	○	○	○
k. Services to students with disabilities	○	○	○	○	○	○	○	○	○	○	○

14. How likely is it that the following issues would cause you to withdraw from class or from this college? *(Please respond to each item)*

	Very likely	Likely	Some-what likely	Not likely
a. Working full-time	○	○	○	○
b. Caring for dependents	○	○	○	○
c. Academically unprepared	○	○	○	○
d. Lack of finances	○	○	○	○
e. Transfer to a 4-year college or university	○	○	○	○

15. How supportive are your friends of your attending this college?

○ Extremely ○ Somewhat ○ Quite a bit ○ Not very

16. How supportive is your immediate family of your attending this college?

○ Extremely ○ Somewhat ○ Quite a bit ○ Not very

17. Indicate which of the following are your reasons/goals for attending this college. *(Please respond to each item)*

	Primary goal	Secondary goal	Not a goal
a. Complete a certificate program	○	○	○
b. Obtain an associate degree	○	○	○
c. Transfer to a 4-year college or university	○	○	○
d. Obtain or update job-related skills	○	○	○
e. Self-improvement/personal enjoyment	○	○	○
f. Change careers	○	○	○

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18. Indicate which of the following are sources you use to pay your tuition at this college? *(Please respond to each item)*

	Major source	Minor source	Not a source
a. My own income/savings	○	○	○
b. Parent or spouse/significant other's income/savings	○	○	○
c. Employer contributions	○	○	○
d. Grants and scholarships	○	○	○
e. Student loans (bank, etc.)	○	○	○
f. Public assistance	○	○	○

19. Since high school, which of the following types of schools have you attended other than the one you are now attending? *(Please mark all that apply)*

- ○ Proprietary (private) school or training program
- ○ Public vocational-technical school
- ○ Another community or technical college
- ○ 4-year college or university
- ○ None

20. When do you plan to take classes at this college again?

- ○ I will accomplish my goal(s) during this term and will not be returning
- ○ I have no current plan to return
- ○ Within the next 12 months
- ○ Uncertain

21. At this college, in what range is your overall college grade average?

- ○ A
- ○ A- to B+
- ○ B
- ○ B- to C+
- ○ C
- ○ C- or lower
- ○ Do not have a GPA at this school
- ○ Pass/fail classes only

22. When do you most frequently take classes at this college? *(Mark one only)*

- ○ Day classes (morning or afternoon)
- ○ Evening classes
- ○ Weekend classes

23. How many TOTAL credit hours have you earned at this college, not counting the courses you are currently taking this term?

- ○ None
- ○ 1-14 credits
- ○ 15-29 credits
- ○ 30-44 credits
- ○ 45-60 credits
- ○ Over 60 credits

24. At what other types of institutions are you taking classes this term? *(Please mark all that apply)*

- ○ None
- ○ High school
- ○ Vocational/technical school
- ○ Another community or technical college
- ○ 4-year college/university
- ○ Other

25. How many classes are you *presently* taking at OTHER institutions?

- ○ None
- ○ 1 class
- ○ 2 classes
- ○ 3 classes
- ○ 4 classes or more

26. Would you recommend this college to a friend or family member?

○ Yes ○ No

27. How would you evaluate your entire educational experience at this college?

- ○ Excellent
- ○ Good
- ○ Fair
- ○ Poor

28. Do you have children who live with you?

○ Yes ○ No

29. Mark your age group.

- ○ Under 18
- ○ 18 to 19
- ○ 20 to 21
- ○ 22 to 24
- ○ 25 to 29
- ○ 30 to 39
- ○ 40 to 49
- ○ 50 to 64
- ○ 65+

30. Your sex:

○ Male ○ Female

31. Are you married?

○ Yes ○ No

32. Is English your native (first) language?

○ Yes ○ No

33. Are you an international student or foreign national?

○ Yes ○ No

34. What is your racial identification? *(Mark **only one**)*

- ○ American Indian or other Native American
- ○ Asian, Asian American or Pacific Islander
- ○ Native Hawaiian
- ○ Black or African American, Non-Hispanic
- ○ White, Non-Hispanic
- ○ Hispanic, Latino, Spanish
- ○ Other

35. What is the highest academic credential you have earned?

- ○ None
- ○ High school diploma or GED
- ○ Vocational/technical certificate
- ○ Associate degree
- ○ Bachelor's degree
- ○ Master's/doctoral/professional degree

36. What is the highest level of education obtained by your:

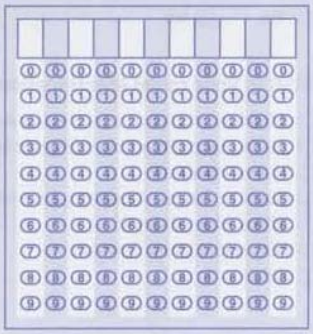
	Father	Mother
a. Not a high school graduate	○	○
b. High school diploma or GED	○	○
c. Some college, did not complete degree	○	○
d. Associate degree	○	○
e. Bachelor's degree	○	○
f. Master's degree/1st professional	○	○
g. Doctorate degree	○	○
h. Unknown	○	○

37. Using the list provided, please fill in the bubbles that correspond to the code indicating your program or major. Using the first column, indicate the first number in the program code, using the second column, indicate the second number in the program code.



38. Please provide your student identification number by filling in the corresponding bubbles. For example, in the first column, indicate the first number in your student ID number, and so forth. (OPTIONAL)

(Please begin here)



Additional Items (Please respond to these items if requested)

1. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
2. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
3. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
4. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
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18. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
19. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
20. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Your responses will remain confidential and individual responses will not be reported.

Thank you for sharing your views.

Mark Reflex® forms by Pearson NCS MM252416-1 654321 ED99 Printed in U.S.A.

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Appendix C

ANOVA Results

1. The dependent variable is the Student Effort benchmark and the independent variable is immediate family support, which yielded a significant effect: [F (3,238) = 2.739; p< .05]. Follow-up with Fisher's LSD Post Hoc test revealed that the mean for the respondents who indicated that immediate family was "not very" supportive of attending college had a significantly higher student effort score than the other three response categories. This indicates a higher level of quality of effort invested in using opportunities and facilities provided by the institution. Note that the N's are unequal and this result may be an artifact of the small sample size. Further analysis would be needed with a larger group.

Analysis of Variance for Support of Family for Attending College

Benchmark – Dependent Variable	Source	Sum of Squares	*df*	Mean Square	*F*
Student Effort	Between groups	.148	3	.049	2.739*
	Within groups	4.292	238	.018	
	Total	4.440	241		

*p< .05

Average Student Effort Scores by Respective Category

Response Category	N	Mean	Standard Deviation
Not Very	9	.6022	.11658
Somewhat	23	.4928	.12379
Quite a bit	27	.4597	.12298
Extremely	183	.5100	.13773

Total	242	.5061	.13250

Fisher LSD Post Hoc

Item Response		Mean Difference	Standard Error
Not Very	Somewhat	.10946*	.05280
	Quite a bit	.14255*	.51169
	Extremely	.09228*	.04585

* $p < .05$

2. The dependent variable is the Student Effort benchmark and the independent variable is full-time or part-time status, which yielded a significant effect: [F (1,243) = 4.442; $p <$ .05]. The subjects who indicated they attend full-time had the highest mean, which would signify a higher level of quality of effort invested in using opportunities and facilities provided by the institution.

The independent variable, full-time or less than full-time also yielded a significant effect for a second dependent variable, the Academic Challenge benchmark: [F (1,243) = 4.696; $p <$ .05]. The subjects who indicated they attend full-time had the higher mean, which would signify that the amount of work they were assigned, the complexity of cognitive tasks and the standards faculty members used to evaluate student performance was at a higher level.

Analysis of Variance for enrollment full-time or less than full-time

Benchmark – Dependent Variable	Source	Sum of Squares	*df*	Mean Square	*F*
Student Effort	Between groups	.80	1	.80	4.442*
	Within groups	4.376	243	.18	
	Total	4.456	244		
Academic Challenge	Between groups	.081	1	.081	4.696*
	Within groups	4.195	243	.017	
	Total	4.276	244		

*$p < .05$

Average Student Effort Scores by Respective Category

Response Category	N	Mean	Standard Deviation
Less than full-time	94	.4838	.13114
Full-time	151	.5210	.13604
Total	245	.5067	.13513

Average Academic Challenge Scores by Respective Category

Response Category	N	Mean	Standard Deviation
Less than full-time	94	.6353	.13236
Full-time	151	.6727	.13077
Total	245	.6583	.13237

3. The dependent variable is the Active and Collaborative Learning benchmark and the independent variable is total credit hours earned at the college, which yielded a

significant effect: [F (5,234) = 2.547; p< .05]. Follow-up with Fisher's LSD Post Hoc test revealed that the mean for the respondents who indicated that they have earned between 45-60 credits had a significantly higher active and collaborative learning score than the other response categories. As the subjects increase in earned credit hours their mean on this benchmark increases (with the exception of those who have earned over 60 credits). This would indicate for these individuals a higher level of active involvement in their education and an increased level of collaboration with others to solve problems and master challenging content.

The dependent variable is the Student Effort benchmark and the independent variable is the total number of credit hours earned at the college, which yielded a significant effect: [F (5,235) = 2.255; p< .05]. Follow-up with Fisher's LSD Post Hoc test revealed that the mean for the respondents who indicated that they have earned no credits had a significantly lower Student Effort score than the other response categories (with the exception of those who indicated they have earned over 60 credits). This would also indicate for these individuals a higher level of active involvement in their education and an increased level of collaboration with others to solve problems and master challenging content.

Analysis of Variance for Total Credit Hours earned at this college

Benchmark – Dependent Variable	Source	Sum of Squares	*df*	Mean Square	*F*
Active and Collaborative Learning	Between groups	.200	5	.040	2.547*
	Within groups	3.668	234	.016	
	Total	3.867	239		
Student Effort	Between groups	.205	5	.41	2.255
	Within groups	4.274	235	.018	
	Total	4.479	240		

*$p < .05$

Average Active and Collaborative Learning Scores by Respective Category

Response Category	N	Mean	Standard Deviation
None	35	.4943	.11435
1-14 credit hours	86	.5106	.11880
15-29 credit hours	58	.5154	.11531
30-44 credit hours	31	.5603	.12796
45-60 credit hours	17	.6012	.15254
Over 60 credit hours	13	.5522	.18305
Total	240	.5250	.12721

Average Student Effort Scores by Respective Category

Response Category	N	Mean	Standard Deviation
None	36	.4465	.17455
1-14 credit hours	86	.5106	.11485
15-29 credit hours	58	.5227	.11735
30-44 credit hours	31	.5193	,11938
45-60 credit hours	17	.5619	.16749
Over 60 credit hours	13	.4946	.18822
Total	241	.5078	.13661

Fisher LSD Post Hoc – Active and Collaborative Learning

Item Response		Mean Difference	Standard Error
None	30-44	-.06599*	.03088
	45-60	-.10689*	.03701
1-14	45-60	-.08911*	.03323
15-29	45-60	-.08580*	.03453

*p< .05

Fisher LSD Post Hoc – Student Effort

Item Response		Mean Difference	Standard Error
None	1-14	-.06415*	.02677
	15-29	-.07621*	.02861
	30-44	-.07282*	.03304
	45-60	-.11542*	.03969

*p< .05

4. The dependent variable is Academic Challenge and the independent variable is gender, which yielded a significant effect: [F (1, 243) = 6.933; $p < .05$]. The females had the higher mean, which would signify that the amount of work they were assigned, the complexity of cognitive tasks and the standards faculty members used to evaluate student performance was at a higher level.

The dependent variable is Support for Learners and the independent variable is gender, which yielded a significant effect: [F (1, 241) = 10.318; $p < .05$]. Females had the higher mean, which would specify that these subjects use key academic and support services at a higher level. In addition, the higher female subject mean denotes that they ascribe a greater level of importance to services that may affect learning and retention.

Analysis of Variance for Gender

Benchmark – Dependent Variable	Source	Sum of Squares	*df*	Mean Square	*F*
Academic Challenge	Between groups	.119	1	.119	6.933*
	Within groups	4.156	243	.017	
	Total	4.274	244		
Support for Learners	Between groups	.302	1	.302	10.318*
	Within groups	7.064	241	.029	
	Total	7.366	242		

*$p < .05$

Average Academic Challenge Scores by Respective Category

Response Category	N	Mean	Standard Deviation
Male	99	.6318	.14197

Female	146	.6766	.12262
Total	245	.6585	.13235

Average Support for Learners Scores by Respective Category

Response Category	N	Mean	Standard Deviation
Male	98	.5129	.16278
Female	145	.5848	.17665
Total	243	.5558	.17447

5. The dependent variable is the Active and Collaborative Learning benchmark and the independent variable is English as the Native Language, which yielded a significant effect: [F 1, 242) = 4.043; p< .05]. Follow-up with Fisher's LSD Post Hoc test revealed that the mean for the respondents who indicated that English is their native language had a significantly higher Active and Collaborative Learning score, which would a higher level of active involvement in their education and an increased level of collaboration with others to solve problems and master challenging content.

Analysis of Variance for English as the Native Language

Benchmark – Dependent Variable	Source	Sum of Squares	*df*	Mean Square	*F*
Active and Collaborative Learning	Between groups	.065	1	.065	4.043*
	Within groups	3.898	242	.016	
	Total	3.963	243		

*$p < .05$

Average Active and Collaborative Learning Scores by Respective Category

Response Category	N	Mean	Standard Deviation
Yes	168	.5359	.13509
No	76	.5006	.10649
Total	244	.5249	.12771

6. The dependent variable is the Academic Challenge benchmark and the independent variable is the highest academic credential earned, which yielded a significant effect: [$F(5,238) = 3.383$; $p < .05$]. Follow-up with Fisher's LSD Post Hoc test revealed that the mean for the respondents who indicated that those respondents who have no academic credential had a significantly lower Academic Challenge score than three of the other response categories (high school/GED, voc/tec certificate and associate degree). This would indicate that for those who had no academic credential, the amount of work they were assigned, the complexity of cognitive tasks and the standards faculty members used to evaluate student performance was at a significantly lower level than the three of the response categories.

7.

Analysis of Variance for Highest Academic Credential Earned

Benchmark – Dependent Variable	Source	Sum of Squares	*df*	Mean Square	*F*
Academic Challenge	Between groups	.278	5	.056	3.383*
	Within groups	3.905	238	.016	
	Total	4.182	243		

*$p < .05$

Average Academic Challenge Scores by Respective Category

Response Category	N	Mean	Standard Deviation
None	10	.5158	.16829
High school diploma or GED	185	.6608	.11912
Vocational/technical certificate	29	.6810	.15062
Associate Degree	16	.6890	.14804
Bachelor's degree	3	.5781	.19373

Fisher LSD Post Hoc – Academic Challenge

Item Response		Mean Difference	Standard Error
None	High school/GED	-.14494*	.04158
	Voc/Tech Certificate	-.16521*	.04697
	Associate degree	-.17320*	.05163

*$p < .05$