

THE INFLUENCE OF STUDENT DEMOGRAPHICS AND INTERNAL CHARACTERISTICS  
ON GPA, PERSISTENCE, AND ACADEMIC SUCCESS OF FIRST-TIME COLLEGE  
STUDENTS

A Dissertation

by

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THE INFLUENCE OF STUDENT DEMOGRAPHICS AND INTERNAL  
CHARACTERISTICS ON GPA, PERSISTENCE, AND ACADEMIC SUCCESS OF  
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Texas A&M University-Corpus Christi and is hereby approved

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## ABSTRACT

The purpose of this non-experimental, ex-post facto study was to examine the relationship of student demographic information and internal characteristics identified from the Learning and Study Strategies Inventory (L.A.S.S.I.) to student persistence, grade point average, and academic success. Participants in the study were selected from a non-random sample of entering First Time in College (FTIC) students enrolled in a Student Development class at a large, urban, South Texas community college (N=964). Cognitive Learning Theory (CLT), which focuses on the internal processes that take place in the mind as learning occurs, provided the theoretical framework for the study.

Data were analyzed by utilizing descriptive analysis, a one-way ANOVA, *t*-test, Pearson's product-moment correlation, and chi-square test of independence to examine the relationship of student demographic data and student internal characteristics to student persistence, grade point average, and student academic success.

Results of this study suggested that among demographics, ethnicity and academic major influenced student persistence. Gender had an influence on GPA and type of first semester enrollment (full-time/part-time) influenced completion of a degree or certificate program. Among internal characteristics, a statistically significant correlation was found between motivation and time management and student GPA.

Implications and decisions that can be made based on the results are discussed and recommendations with respect to future research in the field are considered.

## DEDICATION

This work is dedicated to my parents, Edelmira and Guadalupe Rodriguez who worked hard and made many sacrifices to provide all of their children with the opportunity to realize our dreams. Muchas Gracias.

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## **Chapter I**

### **Background and Setting**

Recent enrollment data indicate that enrollment is on the rise at all levels of undergraduate education. In the Fall of 2010, total college undergraduate enrollment topped 20 million for the first time ever. This upward trend in enrollment is expected to continue through 2019, and it is estimated that during the next decade college enrollment will increase by as much as 14% (NCES, 2011). Although enrollment is up, there is a growing concern about graduation rates. A 2007 report by the Lumina Foundation for Education warns that unless the United States is able to increase its production of postsecondary degrees and reduce the achievement gap among racial and socio-economic groups, it will not be able to meet future workforce needs, maintain international economic competitiveness, and improve the quality of life for all Americans (Riendl, 2007). It is predicted that if current population trends continue and if states do not improve the education of all socio-economic, racial, and ethnic groups, the education level of the workforce will decline over the next two decades, resulting in lower personal incomes and a diminished tax base (Kelley & Prescott, 2007).

Part of the increase in undergraduate enrollment may be attributed to the current economic recession that began in 2007. Historically, economic downturns and a depressed job market have led to an increase in college enrollment. Many in this higher education enrollment boom have chosen to begin their academic careers at the community college level. Many people faced with unemployment turn to the community college for skills upgrades, certifications, degree completion, and/or transfer to a four-year institution to increase their options for employment and to improve their odds of successful re-entry into the workforce. Between Fall 2007 and Fall 2008, community colleges experienced a 5% increase in enrollment. Community

college enrollment in Fall 2008 approached seven million, accounting for 34% of total post-secondary enrollment (Borden, 2009).

### **The Community College Option**

Socio-economic, academic, and cultural factors make the community college an attractive choice for those embarking on an academic journey. In general, tuition at community colleges is lower than tuition at four-year institutions. Degree programs and course offerings at the community college are often designed to accommodate the non-traditional student. Community colleges have an open entry policy, providing access to the academically underprepared student. Many community colleges are located in urban centers and near residential areas, making it convenient for the student to live and work off-campus and easily commute to school. Finally, many community colleges have established articulation agreements with four-year institutions, making it easier for a student to complete their freshman and sophomore level work at the community college before transferring to a four-year institution to complete a bachelor's degree. Community colleges serve as a point of entry to higher education for many non-traditional students, providing access and opportunity to many who would otherwise be denied (Cohen & Brawer, 2003).

Community colleges enroll close to half of the nation's first-time-in-college (FTIC) students every fall semester (Cohen & Brawer, 2003). Community colleges service approximately 10 million students per year, with an equal division between credit and non-credit courses and programs (Vaughn, 2000). The transfer mission of the community college is a key component to higher education access, providing students the opportunity to complete lower division coursework in preparation for transfer to a four-year institution. Community colleges provide a point of entry into higher education for those students who cannot gain entry into four-

year institutions due to socio-economic and/or academic reasons. The transfer mission of the community college is often described as the “democratization” mission and refers to the community college’s role in providing, sustaining, and expanding educational opportunities in society (Cohen & Brawer, 2003). Open enrollment policies have positioned the community college as the point of entry to higher education for many students who would otherwise be denied access. The democratization of higher education has long been a cornerstone of the community college mission. There are those in academia who argue that while open enrollment policies have made higher education more accessible, this increase in accessibility has not necessarily resulted in an increase in educational attainment (Alfonso, 2006).

### **The Community College Student**

Cohen and Brawer (2003) used the words “number” and “variety” to describe the diverse backgrounds, purposes, and outcomes of community college students. The first-time-in-college (FTIC) community college student differs from the FTIC university student in age, academic preparedness, socio-economic status, and ethnicity. Data gathered by the American Association of Community Colleges quantify this diversity. Using enrollment data from 2008, the average age of the community college student is found to be 28 years old. Of these students, 45% are between the ages of 22-39 and 15% are over the age of 40. Females make up the majority of community college students at 58%. Minority students make up 45% of the 2008 enrollment figures. African-Americans account for 13% of the enrollment, and Latinos account for 16%. The community college’s role as a higher education point of entry for minority students is reflected in the fact that 44% of all African-American undergraduates and 52% of all Latino undergraduates are enrolled in community colleges (American Association of Community Colleges, 2010).

The high school that a FTIC student attends plays a significant role in the student's success at the post-secondary level (Lee & Frank, 1990). Students from low-performing high schools often arrive at college academically underprepared and lacking in the strategies and skills necessary to succeed in college level course work. The majority of FTIC students require some remedial course work prior to enrolling in college level courses. At the community college, up to 90% of FTIC students require remediation in one or more academic areas (Hagerdon, 2007). As a result, many of these academically underprepared students run out of time and money and are not retained (Gandara & Contreras, 2009).

Community college FTIC students, especially those from low performing high schools, often decide late in the process to enroll in college. Not only do these students arrive academically underprepared, they are also underprepared for the expectations of college and lack the basic information needed to successfully navigate the enrollment and matriculation process (Venenzia, 2003).

Many students enrolled in community college are the first in their families to continue their education beyond high school. Forty-two percent of community college students are described as first-generation college students. This term is applied to students whose parents did not graduate from a college or university. Forty percent of community college students are enrolled full-time, and 60% are enrolled part-time. Whether by necessity or by choice, many community college students maintain either full-time or part-time employment. NCES (2011) data report that 21% of full-time students were employed full-time, and 59% were employed part-time. Among part-time students, 40% were employed full-time, and 47% were employed part-time. Forty-six percent of community college students receive some form of financial aid assistance from the federal government, the state, or the college they attend.

Of the 1136 public and independent community colleges in these United States, only 254 offer on-campus housing, thus the majority of community college students must commute to and from campus. This reduces the opportunity for student engagement and campus involvement for these students. This is significant because researchers including Tinto (1993) and Pascarella and Terenzini (2005) have linked student engagement, campus involvement, and integration to persistence and academic success.

As a result of open enrollment policies, many FTIC students arrive at the community college doorstep academically underprepared. More than 50% of community college students enroll in at least one developmental course on the road to degree attainment (Baily, Jeong, & Cho, 2009). Community colleges bear the burden of remediating underprepared students' basic skills up to the college level. Academically underprepared students are required to enroll in developmental education courses or other forms of intervention strategies prior to enrolling in college credit courses. This additional course work inflates the cost of and increases the time to degree completion.

The community college FTIC, when compared to the university FTIC, is more likely to be older, a minority, and the first in their family to attend college. The FTIC community college student is likely to arrive academically underprepared, requiring remediation in one or more academic areas. The FTIC community college student typically lives off-campus and is more likely to be enrolled part-time while working at least part-time. The diversity and complexity of the FTIC community college student presents challenges and obstacles as they struggle to find and maintain a balance between family, work, and school while striving for academic success.

## **From Access to Attainment**

While enrollment trends are on the rise at the community college, the same cannot be said for educational attainment or degree completion. Community colleges have provided access to higher education by unlocking the front doors, however for many, this has become a revolving door. Nationally, the graduation rate of FTIC, full-time, degree-seeking community college students is an anemic 27%. In Texas, this number drops to 11% (NCES, 2011). These statistics do not include part-time students, the majority of community college students, who statistically graduate at lower rates than their full-time counterparts.

In 2004, the Lumina Foundation for Education rolled out Achieving the Dream, an ambitious initiative to improve the retention and graduation rates of community college students. By implementing data driven strategies designed to improve student outcomes, Achieving the Dream hopes to establish a “culture of evidence” by using data to track student performance and to identify barriers to educational attainment (Rutschow et al., 2011). A recent study conducted seven years into Achieving the Dream found that while participating colleges have changed many practices, student outcome statistics remain relatively unchanged.

## **Statement of the Problem**

Postsecondary enrollment figures continue to trend upward. Open enrollment, affordable tuition, convenient locations, and a variety of program offerings and delivery methods make the community college an attractive option for those entering or re-entering higher education. Unfortunately, graduation and persistence rates at community colleges remain alarmingly low. The reasons for low graduation and persistence rates are as varied and diverse as are community college students. Many students enter community college with academic and non-academic factors that may hinder the attainment of their educational goals. Community colleges have

concentrated their efforts and resources on making higher education accessible to those who have been traditionally underserved. Recent community college enrollment numbers suggest that those efforts have been successful. Community colleges must now focus on delivering successful educational outcomes.

Not all students enter community college with the intent of attaining an associate's degree. Some students enroll in classes at a community college for skills upgrades or self-enrichment. Many students enter a community college with the intent to transfer to a four-year institution at which they can earn a bachelor's degree. Research on post-transfer performance (Alfonso, 2006; Cohen & Brawer, 2003; Pascarella & Terrenzini, 1991) has found that community college attendance has a negative impact on the transfer student. More specifically, this research has discovered that community college transfer students have lower G.P.A.s, higher attrition rates, and lower rates of baccalaureate attainment when compared to native university students.

Research on student retention and persistence (Bean, 1980; Tinto, 1993) has identified factors such as the level of the student's interactions with the institution and the student's academic intentions as predictors of student persistence. The focus of this research has been primarily on the traditional student, not the academically underprepared college student. Similarly, research on the community college transfer student (Alfonso, 2006; Flaga, 2002) has focused on the traditional student. Further research focusing on the academic performance of academically underprepared community college students will enrich the field.

This research examines the relationship of student demographic information and internal characteristics identified from the Learning and Study Strategies Inventory (LASSI) to student

persistence, grade point average, and academic success of academically underprepared FTIC students at a community college.

### **Theoretical Framework**

The study will be theoretically grounded within the sphere of Cognitive Learning Theory (CLT), specifically a framework developed in the mid-1980s, by educational psychologist Wilbert J. McKeachie. Historically rooted in the work of Piaget, CLT focuses on the internal processes that take place in the mind as learning occurs. CLT seeks to understand how the individual organizes, processes, understands, and recalls information.

#### **Cognitive Learning Theory**

Cognitive Learning Theory views learning as a construction of knowledge as opposed to simple input and absorption of knowledge. The learner's immediate environment or context plays an important role in the processing of information. CLT assumes that learners organize information as they learn, and learning is facilitated when new information is presented in an organized manner. Learning is also facilitated when the learner can associate new information with previously acquired knowledge (Ormond, 1999).

CLT builds on the fundamental principle that people have an innate desire to understand their experiences. A learner's motivation is fueled by this innate desire to reach a cognitive equilibrium (Bransford, Brown, & Cocking, 2000). CLT focuses on the internal structures and processes of the mind. These internal structures and processes are termed "schema." As new information is acquired, it is compared to existing schema. Schema may be combined, extended, or altered to accommodate new information (Good & Brophy, 1990).

The main components of CLT are information acquisition, information processing, information storage, and information retrieval. Learning occurs as information progresses

through a series of stages. As information progresses through these stages, it is manipulated, interpreted, transformed, and stored. The stages of learning or skill acquisition are the Cognitive Stage, the Associative Stage, and the Autonomous Stage.

In the Cognitive Stage, new information is introduced in a declarative form. In this primary stage information is acquired as a series of facts and procedures related to a specific skill. Information processing at this stage is conscious, deliberate, slow, and requires the full attention of the learner.

During the Associative Stage, information compilation occurs when declarative information acquired in the Cognitive Stage is interpreted, analyzed, and converted into a unified understanding. The goal of the Associative Stage is the efficient retrieval and application of information.

In the Autonomous Stage, further refinement of the understanding and application of the newly acquired skill or knowledge occurs. During this stage information retrieval becomes more automated and rapid. Three learning processes occur in the Autonomous Stage: generalization, discrimination, and strengthening.

In generalization, the new information is compared to previously acquired knowledge and commonalities are examined. Generalization produces broader applications of the newly acquired knowledge. Discrimination narrows the application of the newly acquired knowledge. Discrimination identifies circumstances unique to the newly acquired knowledge. Through the process of strengthening, the learner becomes more proficient in retrieving the appropriate information for a particular circumstance.

Atkinson and Shrifin (1968) developed a stage model of information processing consisting of three stages where information is acquired, interpreted and stored. The first stage is

termed sensory register. In the sensory register stage, new information is briefly stored until it can be transferred to the next stage. Sensory registers can only hold on to new information for a brief amount of time and it is assumed that information in the sensory registers is lost unless it is transferred to the second stage, which is short-term memory.

In short-term memory, information can be manipulated, interpreted, and transformed. Once the information has been processed in short-term memory, it may then be transferred to the third stage, called long-term memory. Long-term memory is thought to be a relatively unlimited and permanent depot for information storage. Information in long-term memory is stored until needed for later use. CLT views learning as the acquisition or reorganization of the cognitive structures used to process and store information (Good & Brophy, 1990).

Metacognition is one's own awareness of one's cognitive states, or how one thinks. Through metacognition, the learner can understand and enhance the learning process. Metacognition is loosely defined as thinking about thinking, and is a central component of strategic learning. Weinstein and Palmer (2002) identified will, skill, and self-regulation as the three main categories of strategic learning used in the learning process. Within these categories are various sub-categories that facilitate and enhance the learning process. These categories, or components of strategic learning are acquired and developed through both formal education and the student's social environment. Development of these components is critical to the student's academic success.

Albert Bandura (1997) identified three processes that have significant impact on goal attainment: self-efficacy beliefs, outcome expectations, and self-regulated learning. Self-efficacy beliefs speak to the confidence the learner has in engaging in activities that lead to goal attainment (Bandura, 1997). Self-efficacy beliefs can be predictive of behaviors that lead to goal

completion (Pajares, 1996). The higher the self-efficacy beliefs, or the more confident the learner is in their ability to accomplish a task, the more likely the learner is to engage in activities that have a positive impact on goal attainment.

Outcome expectations are the results expected from engaging in chosen behaviors. Outcome expectations together with self-efficacy beliefs make up the major motivational beliefs that lead to goal attainment. Learners will engage in specific behavior when they believe that the behavior will produce the desired outcome and when they have the confidence that they can perform the behavior (Bandura, 1997).

An assumption that cognitive learning theorists make is that the learner takes an active role in the learning process by exerting control on the learning strategies utilized, as well as the learning environment. Self-regulated learning occurs when the learner proactively chooses behaviors and strategies to achieve their goals (Cleary & Zimmerman, 2004). Self-regulated learning involves a planning phase, an action or performance phase, and a self-reflection or evaluation phase (Zimmerman, 2001).

Self-regulated learning is a cyclical process where the learner sets a goal or learning outcome, develops and implements strategies to achieve the desired outcome, monitors progress, and modifies strategies to maximize effect. Another important factor in self-regulated learning is motivation. Self-regulated learning is a deliberate approach to learning requiring goals, strategic planning, and self-monitoring. The extent to which a learner self-regulates is dependent on motivational factors such as commitment to goals, beliefs about likely results and outcomes, and personal beliefs about one's capability to perform at expected levels and achieve the desired outcome. Self-regulated learners are meta-cognitively, motivationally, and behaviorally active participants in their own learning processes (Zimmerman 2001).

Winnie and Hadwin (2004) identified four phases of self-regulated learning. In the first phase, the learner identifies and defines the task at hand. In the second phase, the learner sets goals and plans strategies to achieve the goals. These strategies are implemented in the third phase. Utilizing a process of self-evaluation, the learner monitors and, if needed, modifies the strategies in the fourth phase.

Cognitive information processing occurs within each phase of the learning process. Information processing utilizes the learner's existing knowledge to search, monitor, assemble, rehearse, and translate information. The acronym SMART is used to characterize these processes. Outcomes from the SMART processes are evaluated against standards (progress toward goal) and these evaluations are then used to modify learning strategies. Each phase influences the next, and the phases are cyclical. Information gathered from the self-reflection phase can be used in the next planning phase, which will influence the actions selected for the performance phase (Erlich & Russ-Eft, 2011).

Over half of the FTIC community college students begin their higher education journey academically deficient in one or more subject areas (Bailey, Jeong, & Cho, 2009). Students deficient in the skills component of strategic learning often have difficulty with information processing, selecting the main idea, and test strategies. These characteristics of the skills component, as measured by the Learning and Study Strategies Inventory (LASSI), focus on the student's skills, strategies, and thought processes used in identifying and understanding new information, ideas, and procedures. Also measured is how the student prepares to demonstrate the newly acquired knowledge on tests or other evaluative measures (Weinstein & Palmer, 2002).

The will component of strategic learning examines the student's drive and determination to succeed. The degree to which a student learns is affected by the level of interest, effort, persistence, and discipline that the student possesses. These characteristics of the will component are measured by the LASSI scales of attitude, motivation, and anxiety (Weinstein & Palmer, 2002).

In addition to skill and will, the student must also take the steps necessary to ensure that they comprehend and retain the newly acquired knowledge. The self-regulation component of strategic learning consists of concentration, time management, use of study aids, and self-testing. These characteristics of the self-regulation component of strategic learning, as measured by LASSI, examine how a student manages the learning process and learning environment (Weinstein & Palmer, 2002).

### **General Research Question**

As the nation moves through the second decade of the 21st century, changing demographics, the need for an educated workforce, and the current economic climate have led to an increase in the enrollment at all levels of postsecondary education. For many FTIC students, the community college serves as a point of entry into higher education. Current research indicates that many of these FTIC students enter community college academically underprepared, as well as burdened by other socio-economic and personal characteristics that place them in jeopardy of not succeeding academically. Despite efforts at the local, state, and national level, persistence and graduation rates of academically underprepared, FTIC community college students remain anemic.

The complex interactions of a student's academic preparedness and internal characteristics, such as attitude and motivation, have an impact on academic success. Weinstein

and Palmer (2002) referred to the interaction of skill (academic preparedness,) will (motivation,) and self-regulation (concentration and time management) when discussing strategic learning and academic success.

In order to fulfill their mission of providing access to education to those traditionally underrepresented, and in order to meet the demands for an educated workforce, it is imperative that community colleges improve student success rates. Making this task more challenging for community colleges is the fact that many FTIC community college students begin their higher education journey academically underprepared. This study examines the topic from the perspective of the following general research question: What is the relationship of students' internal characteristics, as measured by the Learning and Study Strategies Inventory (LASSI), to persistence, grade point average, and academic success?

### **Purpose of the Study**

This study will focus on academically underprepared FTIC students attending a large, urban, South Texas community college. The purpose of the study is to examine the relationship of student demographic information and internal characteristics identified from the Learning and Study Strategies Inventory (LASSI) to student persistence, grade point average, and academic success. The independent variables in the study are: (a) student demographic information and (b) student internal characteristics. The student demographic information that the study will examine are academic major, gender, ethnicity, and type of first semester enrollment (full-time or part-time). The three dependent variables in the study are: (a) persistence (b) grade point average and (c) academic success. Persistence is measured by continuous enrollment. Grade point average (GPA) is measured on a 4.0 scale. Academic success is measured by graduation from an academic or technical program with an associate's degree or a certificate of completion.

## **Research Questions**

The following research questions will guide this study:

Research Question 1 (RQ1): How do student demographics relate to persistence of continuous enrollment?

- 1.1 How does gender relate to persistence of continuous enrollment?
- 1.2 How does ethnicity relate to persistence of continuous enrollment?
- 1.3 How does academic major relate to persistence of continuous enrollment?
- 1.4 How does type of first semester enrollment (full-time or part-time) relate to persistence of enrollment?

Research Question 2 (RQ2): How do student demographics relate to GPA?

- 2.1 How does gender relate to student GPA?
- 2.2 How does ethnicity relate to student GPA?
- 2.3 How does academic major relate to student GPA?
- 2.4 How does type of first semester enrollment (full-time or part-time) relate to student GPA?

Research Question 3 (RQ3): How do student demographics relate to academic success as measured by graduation from an academic or technical program with an associate's degree or certificate of completion?

- 3.1 How does gender relate to academic success?
- 3.2 How does ethnicity relate to academic success?
- 3.3 How does academic major relate to academic success?

3.4 How does type of first semester enrollment (full-time or part-time) relate to academic success?

Research Question 4 (RQ4): How do internal characteristics relate to persistence of continuous enrollment?

4.1 How does attitude relate to persistence of continuous enrollment?

4.2 How does motivation relate to persistence of continuous enrollment?

4.3 How does time management relate to persistence of continuous enrollment?

4.4 How does anxiety relate to persistence of continuous enrollment?

4.5 How does concentration relate to persistence of continuous enrollment?

4.6 How does information processing relate to persistence of continuous enrollment?

4.7 How does selection of main idea relate to persistence of continuous enrollment?

4.8 How does use of study aids relate to persistence of continuous enrollment?

4.9 How does self-testing relate to persistence of continuous enrollment?

4.10 How do test strategies relate to persistence of continuous enrollment?

Research Question 5 (RQ5): How do internal characteristics relate to GPA?

5.1 How does attitude relate to GPA?

5.2 How does motivation relate to GPA?

5.3 How does time management relate to GPA?

5.4 How does anxiety relate to GPA?

5.5 How does concentration relate to GPA?

5.6 How does information processing relate to GPA?

5.7 How does selection of main idea relate to GPA?

5.8 How does use of study aids relate to GPA?

5.9 How does self-testing relate to GPA?

5.10 How do test strategies relate to GPA?

Research Question 6 (RQ6): How do internal characteristics relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.1 How does attitude relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.2 How does motivation relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.3 How does time management relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.4 How does anxiety relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.5 How does concentration relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.6 How does information processing relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.7 How does selection of main idea relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.8 How does use of study aids relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.9 How does self-testing relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.10 How do test strategies relate to academic success in graduation from a program with an associate's degree or certificate of completion?

### **Definition of Terms**

Existing data from a large, urban, South Texas community college will be used to measure the educational attainment of a cohort of academically underprepared FTIC students.

The following operational definitions will be used:

#### **General**

**First-Time-in-College Student (FTIC):** A student with fewer than 15 college credit hours earned at a postsecondary institution. These credits may be either earned at the home institution or transferred in from another accredited institution.

**Academically underprepared:** An FTIC student requiring remediation, as determined by placement testing in Math, English, and/or Reading. Students' college readiness is assessed using scores from the Accuplacer (greater than 80 in Sentence Skills to determine college readiness in English, greater than 78 in Reading Skills to determine college reading level, greater than 109 in Elementary Algebra Skills to determine college readiness in Math), Asset (greater than 44 in Writing Skills to determine college readiness in English, greater than 43 in Reading Skills to determine college reading level, greater than 50 in Intermediate Algebra Skills to determine college readiness in Math), Enhanced ACT (greater than 17 in English to determine college readiness, composite score greater than 21 to determine college readiness in Reading, greater than 24 to determine college readiness in Math), and SAT (greater than 430 in Verbal to determine college readiness in English, total score greater than 970 to determine college

readiness in Reading, greater than 500 in Math to determine college readiness) placement tests. Students who score below the college readiness cut off scores are placed in remediation.

### **Independent Variables**

There are two independent variables for the study: (a) demographic data and (b) internal characteristics. Demographic data describe the characteristics of the population being studied. Demographics for this study include gender, ethnicity, academic major, and enrollment status. Internal characteristics relate to the LASSI scale.

**Demographics.** Gender: Gender is defined as a construct as male or female. It is operationally defined as students select a category of male or female as part of matriculation data collected by the college.

Ethnicity: Ethnicity is defined as a construct as White, Hispanic, African American, or Other. These categories are consistent with the U.S. Department of Education's federal designations. It is operationally defined as one category selected by students as part of matriculation data collected by the college.

Academic Major: This is defined as a construct that relates to a course of study leading to a degree or certificate of completion. It is operationally defined as students select a major as part of matriculation data collected by the college from one of the follow options: American Sign Language, Anthropology, Architecture, Art, Business Administration, Criminal Justice, Drama, English, Geographic Information Systems, History, International Studies, Journalism, Liberal Arts, Photography, Political Science, Psychology, Radio-Television-Broadcasting, Social Work, Sociology, Speech, Biology, Engineering, Environmental Science, General Science, Mathematics, Nutrition, A+ Marketable Skills Award, Accounting Computer Applications, Marketable Skills Certificate, Accounting Technology, Administrative Assistant, Administrative

Design Management, Administrative System Technician, Architectural Computer-Aided Drafting, Architectural Interior Design, Banking and Financial Support Services, Banking and Financial Management, Budgeting in the Public Sector, Business Communications, Business Management, C++ Programming, CADD Civil Design, Captioning Court Reporting, Child Development, Computer Aided Drafting, Computer Assistant, Computer Database Specialist, Computer Desktop Support Technician, Computer Help Desk Specialist, Computer Network Administrator, Computer Programming, Computer Security Administration, Customer Service, Data Entry Technician, Dental Assisting, Dental Laboratory Technology, Digital Design, Drug/Alcohol Abuse Counseling, Early Childhood Studies, Emergency Management, Emergency Medical Technician, Engineering Technology, Entrepreneurship, Finance and Financial Services, Fire and Arson Investigation, Fire Science, Firefighter, Funeral Director, Gerontological Services, Homeland Security Administration, Human Resources Management, Human Services, Information Technology, International Business, Java Programming, Labor Studies, Legal Administrative Assistant/Secretary, Linux Administrator, Marketing Management, Medical Assisting, Medical Transcription, Microsoft Office Specialist, Mortuary Science, Music Business, Nursing, Oracle Database, Paralegal Studies, Public Administration, Real Estate Management, Records Management, Routers Administration, Server Administration, Software Specialist, SQL Database Administration, SQL Database Programming Skills, SQL Server Database, Surveying Technology, Teacher Assistant, Teaching, Trilingual Interpreter, Visual Basic NET Programming, or Web Programming.

**Enrollment Status:** Enrollment Status is defined as a construct as full-time or part-time. It is operationally defined by the number of credit hours attempted by the student during their

first semester of enrollment. Full-time is defined as twelve or more credit hours. Part-time is defined as less than twelve credit hours.

**LASSI.** Internal Characteristics as defined by the ten subscales of LASSI. The LASSI assesses students' awareness about and use of learning strategies related to the skill, will, and self-regulation components of strategic learning (Weinstein & Palmer, 2002). The LASSI is used as both a diagnostic and prescriptive tool. Participants in this study completed the LASSI as part of their Student Development course. FTIC students complete the LASSI during the first two weeks of the semester. An explanation of learning strategies as well as the internal characteristics measured by LASSI is then presented by the instructor and discussed in class. In addition to the classroom instruction, students meet individually with the instructor to review their specific LASSI results. The student and the instructor, to develop an individualized plan for success, use information from the LASSI, along with other academic and demographic information.

**Attitude:** As a construct, the attitude scale assesses students' attitudes and interest in college and academic success. It is operationally defined by how facilitative or debilitating their approach to college and academics is for helping them get their work done and succeed in college (sample item: I feel confused and undecided as to what my educational goals should be). The characteristic is measured on a five-point Likert scale: 1 = “not at all typical of me” to 5 = “very much typical of me.” Students who score low on this scale may not believe college is relevant or important to them, and may need to develop a better understanding of how college and their academic performance relate to their future life goals. The score can then be compared to norms provided, local norms, or cut-off scores established by the institution or program (Weinstein & Palmer, 2002).

**Motivation:** As a construct, the motivation scale assesses students' diligence and self-discipline. It is operationally defined by the students' willingness to exert the effort necessary to successfully complete academic requirements (sample item: When work is difficult I either give up or study only the easy parts). Students who score low on this scale need to accept more responsibility for their academic outcomes and learn how to set and use goals to help accomplish specific tasks. The characteristic is measured on a five-point Likert scale: 1 = "not at all typical of me" to 5 = "very much typical of me". The score can then be compared to norms provided, local norms, or cut-off scores established by the institution or program (Weinstein & Palmer, 2002).

**Time Management:** As a construct, the time management scale assesses students' ability to prioritize and manage time. It is operationally defined by the students' application of time management principles to academic situations (sample item: I only study when there is the pressure of a test). Students who score low on this scale may need to develop effective scheduling and monitoring techniques in order to assure timely completion of academic tasks and to avoid procrastination while realistically including non-academic activities in their schedule. The characteristic is measured on a five-point Likert scale: 1 = "not at all typical of me" to 5 = "very much typical of me". The score can then be compared to norms provided, local norms, or cut-off scores established by the institution or program (Weinstein & Palmer, 2002).

**Anxiety:** As a construct, the anxiety scale assesses the degree to which students worry about school and their academic performance. It is operationally defined by the effect students' thought processes, beliefs, and emotions have on academic performance (sample item: I feel very panicky when I take an important test). Students who score low on this scale are

experiencing high levels of anxiety associated with school (note that this scale is reverse scored). High levels of anxiety can help direct attention away from completing academic tasks. Students who score low on this scale may need to develop techniques for coping with anxiety and reducing worry so that attention can be focused on the task at hand. The characteristic is measured on a five-point Likert scale: 1 = “not at all typical of me” to 5 = “very much typical of me”. The score can then be compared to norms provided, local norms, or cut-off scores established by the institution or program (Weinstein & Palmer, 2002).

Concentration: As a construct, the concentration scale assesses students' ability to focus their attention on school-related activities. It is operationally defined by the students' ability to direct and maintain attention on academic tasks (sample item: I find that during lectures I think of other things and don't really listen to what is being said). Low scoring students may need to learn to monitor their level of concentration and develop techniques to redirect attention and eliminate interfering thoughts or feelings so that they can be more effective and efficient learners. The characteristic is measured on a five-point Likert scale: 1 = “not at all typical of me” to 5 = “very much typical of me”. The score can then be compared to norms provided, local norms, or cut-off scores established by the institution or program (Weinstein & Palmer, 2002).

Information Processing: As a construct, the information processing scale assesses students' use of elaboration and organization strategies. It is operationally defined by how well students' can use imagery, verbal elaboration, organization strategies, and reasoning skills as learning strategies to help build bridges between what they already know and what they are trying to learn and remember, i.e. knowledge acquisition, retention, and future application (sample item: I translate what I am studying into my own words). Students who score low on

this scale may have difficulty making information meaningful and storing it in memory in a way that will help them recall it in the future. The characteristic is measured on a five-point Likert scale: 1 = “not at all typical of me” to 5 = “very much typical of me”. The score can then be compared to norms provided, local norms, or cut-off scores established by the institution or program (Weinstein & Palmer, 2002).

**Selecting Main Ideas:** As a construct, the selecting main ideas scale assesses students' ability to select the important material for in-depth study. It is operationally defined by students' skill at identifying important information for further study from among less important information and supporting details (sample item: Often when studying I seem to get lost in details and can't see the forest for the trees). Students who score low on this scale may need to develop their skill at separating out critical information on which to focus their attention. Tasks such as reading a textbook can be overwhelming if students focus on every detail presented. The characteristic is measured on a five-point Likert scale: 1 = “not at all typical of me” to 5 = “very much typical of me”. The score can then be compared to norms provided, local norms, or cut-off scores established by the institution or program (Weinstein & Palmer, 2002).

**Study Aids:** As a construct, the study aids scale assesses students' use of supports or resources to help them learn or retain information. It is operationally defined by students' ability to create their own study aids and ability to use those created by others (sample item: I use special helps, such as italics and headings, that are in my textbooks). Students with low scores may need to develop a better understanding of the resources available to them and how to use these resources to help them be more effective and efficient learners. The characteristic is measured on a five-point Likert scale: 1 = “not at all typical of me” to 5 = “very much typical of

me”. The score can then be compared to norms provided, local norms, or cut-off scores established by the institution or program (Weinstein & Palmer, 2002).

**Self-Testing:** As a construct, the self-testing scale assesses students' ability to consolidate knowledge and integrate knowledge across topics. It is operationally defined by students' use of reviewing and comprehension monitoring techniques to determine their level of understanding of the information to be learned (sample item: I stop periodically while reading and mentally go over or review what was said). Low scoring students may need to develop an appreciation for the importance of self-testing, and learn effective techniques for reviewing information and monitoring their level of understanding or ability to apply what they are learning. The characteristic is measured on a five-point Likert scale: 1 = “not at all typical of me” to 5 = “very much typical of me”. The score can then be compared to norms provided, local norms, or cut-off scores established by the institution or program (Weinstein & Palmer, 2002).

**Test Strategies:** As a construct, the test strategies scale assesses students' knowledge of how to prepare for the type of performance that will be required on a test, and how to maximize that performance. It is operationally defined by students' use of test preparation and test taking strategies (sample item: In taking tests, writing themes, etc., I find I have misunderstood what is wanted and lose points because of it). Low scoring students may need to learn more effective techniques for preparing for and taking tests so that they are able to effectively demonstrate their knowledge of the subject matter. The characteristic is measured on a five-point Likert scale: 1 = “not at all typical of me” to 5 = “very much typical of me”. The score can then be compared to norms provided, local norms, or cut-off scores established by the institution or program (Weinstein & Palmer, 2002).

### **Dependent Variables**

Grade Point Average (GPA): The construct definition of GPA is range on a four-point scale. The operational definition is: 0 = F; 1 = D; 2 = C; 3 = B; and 4 = A. It is calculated by number of grade points divided by semester credit hours earned.

Academic Success: The construct definition of academic success is the completion of a program of study resulting in a degree or a certificate of completion (Tinto, 1993). The operational definition of academic success is measured by yes/no, where yes indicates completion of a program of study resulting in an associate's degree or a certificate of completion, and no indicates non-completion. Students' academic success data are obtained from the students' academic record provided by the institution.

Academic Persistence: The construct definition of academic persistence refers to students with a good GPA being retained in college as they work toward attaining a goal, such as a degree, certificate, or transfer to a four-year institution (Goel, 2002; Tinto, 1993). The operational definition of academic persistence is continuous semester-to-semester enrollment. It is measured by yes/no, where yes indicates continuous enrollment with a cumulative GPA greater than or equal to 2.0 on a 4.0 scale, and no indicates non-continuous enrollment with a cumulative GPA greater than or equal to 2.0 on a 4.0 scale.

### **Limitations and Delimitations**

Delimitations and limitations establish the boundaries, exceptions, and concerns that are part of the study. Delimitations are characteristics selected by the researcher to define the focus of the study. Limitations are characteristics that are beyond the control of the researcher. Limitations identify the potential weaknesses of the study (Creswell, 2003).

## **Limitations**

This study utilizes an ex-post facto design with a non-random sample, therefore external validity will be limited, and no claims of generalizability can be made. The findings of this study however, may be applied, with caution, to similar groups at other similar community colleges. The study examines the relationship of student demographic factors and internal characteristics to academic success. No manipulation of participant membership, activities, or intervening variables occurred in this study. A review of the literature fails to provide a universally agreed upon definition of academic success. This lack of definition is especially significant when considering the community college student. Not all FTIC students at community college share the goal of graduation or transfer. In fact, many enter the community college with the intent to upgrade skills in a particular area to better their chances of gainful employment.

The institution used for this study has an open enrollment policy with high school completion being the only requirement for admission. Pre-enrollment variables such as type of high school attended, high school GPA, socio-economic status, or first generation college student status were not considered. The researcher has no control over whether students enroll as part-time or full-time, as well as their selection of academic major. The researcher acknowledges the potential influences that these variables may have on the student success of the participants in this study.

## **Delimitations**

Participation in this study is delimited to first-time-in-college students enrolled in Student Development 0370 in the Fall 2007 semester who completed the Learning and Study Strategies Inventory. FTIC who did not complete the LASSI were excluded from the study. The study is

delimited to the examination of the impact of student demographic information and the internal characteristics measured by the LASSI on student success. The impact of internal characteristics not measured by the LASSI and the life experiences of the participants will not be considered.

### **Assumptions**

FTIC enrollment in community college will continue to trend upward. In the Fall of 2010, total college undergraduate enrollment in the U.S. topped 20 million for the first time ever. This upward trend in enrollment is expected to continue through 2019, and it is estimated that during the next decade, college enrollment will increase by as much as 14% (NCES, 2011). While overall college enrollment has been on the increase for decades, the most recent spikes are seen at the community college (Fry, 2009). The recent economic climate has also contributed to the increase in enrollment figures. Historically, community college enrollment increases as the economy and labor markets worsen (Betts & McFarland, 1995).

Community college FTIC students will continue to arrive academically underprepared. As a result of open enrollment policies, many FTIC students arrive at the community college doorstep academically underprepared. More than 50% of community college students enroll in at least one developmental course on the road to degree attainment (Baily, Jeong, & Cho, 2009).

An educated workforce will be needed to drive a knowledge-based economy. If the United States is not able to increase its production of post-secondary degrees and reduce the achievement gap among racial and socio-economic groups, it will not be able to meet future workforce needs, maintain international economic competitiveness, and improve the quality of life for all Americans (Riendl, 2007). It is predicted that if current population trends continue, and if states do not improve the education of all socio-economic, racial, and ethnic groups, the

education level of the workforce will decline over the next two decades, resulting in lower personal incomes and a diminished tax base (Kelley & Prescott, 2007).

### **Significance of the Study**

The results of this study will add to the body of research in the areas of retention, persistence, and educational attainment of the academically underprepared FTIC community college student. Changing demographics and economic drivers make increasing the education attainment level of academically underprepared students paramount to our nation's economic recovery and stability. Knowledge gained as a result of this study may be used to influence policy, program development, and intervention strategies at the community college level. Most importantly, it is hoped that this study will contribute to the efforts to improve the educational attainment level of the academically underprepared community college student. Community colleges have unlocked the front door to higher education for many who would otherwise be denied, and must now focus efforts on helping those who have entered to achieve their academic goals and to realize their American dreams, for the good of all.

### **Summary**

Postsecondary enrollment figures continue to trend upward, however, graduation and persistence rates remain alarming low, especially at our nation's community colleges. This study will focus on the academically underprepared FTIC community college student and examine the relationship of student demographic information and internal characteristics identified from the Learning and Study Strategies Inventory (LASSI) to student persistence, grade point average, and academic success.

Cognitive Learning Theory, which focuses on the internal processes that take place in the mind as learning occurs, is the theoretical framework on which this study is based. The student

demographic information that the study will examine is academic major, gender, ethnicity, and type of first semester enrollment (full-time or part-time). The three dependent variables in the study are: (a) persistence; (b) grade point average; and (c) academic success. The sample used in this study will be a non-random sample; therefore external validity will be limited, with no claims of generalizability made. However, the findings of this study may be applied, with caution, to similar groups at other similar community colleges. Knowledge gained as a result of this study may be used to influence policy, program development, and intervention strategies at the community college level.

## **Chapter II**

### **Review of the Literature**

The study will focus on academically underprepared FTIC students attending a large, urban, South Texas community college. The purpose of the study is to examine the relationship of student demographic information and internal characteristics identified from the Learning and Study Strategies Inventory (LASSI) to student persistence, grade point average, and academic success. In Chapter II, a review of the literature that serves as the foundation for this study will be presented. The literature review will be presented in three sections. The first section will examine the persistence and retention of FTIC community college students. Included in this section will be a review of the literature pertaining to the academically underprepared FTIC community college student. In the second section, the predictors of educational attainment will be reviewed. Finally, the third section will examine learning strategies in relation to academic achievement.

### **The Community College Student**

In this section the characteristics unique to first time community college students will be discussed. As the enrollment in the nation's community colleges has increased, so too has the diversity of the student population (Cohen & Brawer, 2003). Community college students tend to be older than their counterparts at four-year institutions. Almost half (46%) of community college students are over the age of 25 (Patton & Phillippe, 2000). Older students tend to be encumbered by non-academic barriers to academic success such as full-time employment and family obligations (Gooden & Matus-Grossman, 2002).

Community colleges serve a higher proportion of ethnic minority students than four-year institutions. Nationally, minority enrollment accounts for 30% of the total community college

enrollment (American Association of Community Colleges, 2000). In many urban community colleges, minority enrollment surpasses 50% of the total enrollment (Patton & Phillipe, 2000). Latino student enrollment at community colleges currently outpaces all other ethnic minority groups (Santos, 2004).

The majority of community college students are classified as low income. Cunningham (2002) found that 65% of community college students come from families making less than \$20,000 a year. Drilling deeper, King (2003) reported that 20% of community college students come from families with incomes at or below the poverty level. Financing their education presents a significant challenge for these students. Presely and Clery (2001) found that 21% of community college students receive some form of federal financial aid, and, according to the National Center for Education Statistics (2002), 80% of community college students work at least part-time during the academic year.

Community college students are often academically underprepared and more likely to require remediation than their counterparts attending four-year institutions (Shaw, 2001). More than 36% of entering community college students require remediation in Math, Reading, and Writing (Shults, 2001).

Lamkin (2004) identified delayed enrollment after high school graduation, lack of a high school diploma, part-time enrollment, full-time work, financial independence from parents, dependents other than a spouse, and single parenthood as characteristics shown to decrease a student's chances of successfully completing a college program. Alarming, the majority of FTIC students in community college exhibit at least two of the seven characteristics.

## **Persistence and Retention of FTIC Community College Students**

Denison and Secolsky (2003) examined the relationship of both the initial stated goal for attending community college and the long-term educational attainment goal (highest degree aspired to) of FTIC, full-time community college students to retention outcomes. Results of the study suggest that students without long-term goals are less likely to be retained. Results of the logistic regression analysis revealed that students whose educational attainment goal was a graduate or professional degree, or whose goal was to transfer to a four-year institution after one year at the community college were not retained due to transferring. The researchers concluded that retention is generally predictable from goals.

Goel (2002) used regression techniques to examine which student characteristics are predictors of retention and student outcomes. The study tracked two cohorts of FTIC community college students (one in Texas and one in Illinois) from 1997 to 2001. Goel hypothesized that the student's educational objectives are critical in predicting community college retention. Students in the study whose initial educational attainment goal was to earn a degree or transfer to a four-year institution were more likely to be retained after three years. Other findings from the study were consistent with those of other researchers in the field. More than half of FTIC community college students are not retained after the first year (Fike & Fike, 2008; Horn & Nevill, 2006; Tinto, 1993). First semester academic performance, as measured by GPA and placement test status, was also found to be a significant predictor of retention (Clagitt, 1996; Crisp & Nora, 2009; Fike & Fike, 2008; Hoyt, 1999; Romano, 1995; Voorhees, 1987; Webb, 1988).

Crisp and Nora (2009) studied the impact of theoretically derived predictor variables on the persistence of Hispanic community college students. Logistic regression analysis was used

to examine how demographic, pre-college, socio-cultural capital, environmental pull factors, and academic experiences influenced whether Hispanic community college students persisted and transferred to a four-year institution and/or earned an associate's degree after their second year of college. The researchers found that enrolling in higher-level math in high school, having parents with higher levels of educational attainment, and receiving financial aid had a positive impact on Hispanic student persistence. Delayed enrollment in college and the number of hours worked while enrolled were found to have a negative impact on Hispanic student persistence. Crisp and Nora also found that the odds of persisting after two years of college were 2.75 times greater for students enrolled full-time, and 1.61 times greater for students enrolled in one or more developmental education courses.

Hoyt (1999) used logistic regression to ascertain which variables have the strongest direct impact on student attrition. Fall freshmen cohort students from 1993 to 1995 attending an urban community college were tracked to determine the level of educational attainment achieved by 1998. Student attrition rates for these cohorts ranged from 54% to 64%. Analysis of the data revealed a correlation between the number of areas of remediation required by a student and the rate of attrition. Almost three quarters of the students requiring remediation in three areas failed to be successfully retained, leading Hoyt to conclude that high remediation rates have a negative impact on student retention. An examination of first-term GPA of the cohorts found that as the number of remedial areas increased, the student's first-term GPA decreased. The average first-term GPA of non-remedial students in the cohort was 2.8, compared to 2.54 for students in one area of remediation, 2.47 for students requiring two areas of remediation, and 2.30 for students requiring three areas of remediation. Hoyt (1999) concluded that lack of academic preparation for college significantly reduces a student's chance of academic success by decreasing their

ability to perform academically during their first term of enrollment. First term academic performance was found to be the best predictor of success for both remedial and non-remedial students. Other factors that Hoyt found to have a significant impact on retention were minority status, number of hours employed, and other outside commitments.

Fike and Fike (2008) tracked the academic performance for four years of almost 10,000 FTIC students who first enrolled in a community college. Predictors of retention were found to be successful completion of remedial coursework, enrollment in online courses, participation in a Student Support Services retention program, receipt of financial aid, parents' level of educational attainment, the number of hours enrolled during the first fall semester, and the number of hours dropped during the first fall semester.

Utilizing binary logistic regression analysis on institutional data from a large urban community college, Goldstein and Perin (2008) set out to identify predictors of performance in a course with a high literacy demand. Academically underprepared students successfully completing developmental English passed the high literacy demand course at the same rate as students who entered with college-skill level in English. The student's initial literacy level upon enrollment in college was found to not be predictive of academic achievement in a course with a high literacy demand once the student's current literacy level was taken into consideration. The study suggested that successful completion of remedial coursework for the academically underprepared student may have a positive effect on their achievement in college level courses.

Wells (2008) examined the influence of social and cultural capital on persistence of students in two-year and four-year institutions. Results from the study suggested that high levels of social and cultural capital positively impacted student persistence. The impact of social and

cultural capital was more pronounced for students attending a four-year institution than it is for community college students.

Wofle (2012) examined the interaction of age, ethnicity, and developmental status on the Fall-to-Fall persistence and academic success of community college students enrolled in developmental mathematics. The study found that neither the interaction of developmental status and age, nor the interaction of developmental status and ethnicity were significant predictors of success in the first college level math course or persistence to a second year. Developmental students who subsequently enrolled in college level math had success rates comparable to students who did not require remediation. Older white students succeeded at higher rates in their first college level math course than traditional age non-white students. No significant differences based on age, ethnicity, or developmental status on persistence to a second year of enrollment were found.

### **Predictors of Educational Attainment**

In a synthesis of the research on the educational attainment of college students, Pascarella and Terenzini (2005) noted that the bulk of the research was concentrated in the following categories: academic performance, specific academically related experiences, financial aid, interaction with faculty members, interaction with peers, residence, learning communities, academic major, general academic and social integration, and intercollegiate athletics.

Academic performance (i.e. grades and GPA) has been found to be the most consistent and maybe the best overall predictor of academic persistence and degree completion (Pascarella & Terenzini, 2005). In a study on the impact of academic preparation, psycho-social, demographic, situational, and institutional factors on student outcomes, Porchea, Allen, Robbins, and Phelps (2010) found that the probability of community college students obtaining a degree

and then transferring increases with each standard deviation increase in high school GPA and standardized achievement score. Students with greater motivation were more likely to complete a degree at the community college and transfer to a four-year institution. The student's GPA after the first semester, and the student's educational objectives were found to be significant predictors of student persistence (Goel, 2002). Crisp and Nora (2009) studied the impact of demographics, pre-college factors, socio-cultural capital, environmental pull factors, and academic experiences on Hispanic community college students' persistence and educational attainment. Among pre-college factors, Crisp and Nora found that enrolling in higher level math courses in high school, and having parents with higher levels of educational attainment increased the odds of success for these students. Fike and Fike (2008) analyzed predictors of Fall-to-Spring and Fall-to-Fall retention for FTIC students enrolled in community college. The study highlighted the importance of developmental education in student retention. According to the study, successful completion of a developmental reading course was found to be the strongest predictor of student retention. Goldstein and Perin (2008) found that underprepared students who successfully completed developmental English passed a high literacy content course (psychology) at the same rate as students who entered college with college-level English skills.

Parental educational attainment level was found to have a positive effect on fall-to-spring retention. For fall-to-fall retention, a parent having some college education was found to be a predictor of student retention. For fall-to-spring retention, the father having some college education was found to be a positive predictor of retention, however, the mother having some college education was found to be a negative predictor (Fike & Fike, 2008).

Sorey and Duggan (2008) examined the differential predictors of persistence between traditional-aged and adult community college students. For traditional-aged students,

encouragement and support, academic integration, and first-semester GPA were found to be significant predictors of persistence. For the adult community college students, social integration, institutional commitment, degree utility, and encouragement and support were found to be significant predictors of persistence.

Rather than focus on retention until graduation for community college students, Denison and Secolsky (2003) examined the relationships between both the students' stated goals for attending community college and their long-term educational attainment goals, and four-semester retention outcomes. An inverse relationship between the students' long-term educational attainment goals and their retention at the community college was found. The higher the long-term educational goal, the less likely the student was to be retained at the community college. Students whose stated goal was to transfer to a four-year institution after one year, or transfer before graduating were less likely to be retained at the community college than students whose stated goal was to obtain an associate's degree or transfer to a four-year institution after graduating. Denison and Secolsky concluded that retention is generally predictable from stated goals.

### **Student Development**

Community colleges have served as a point of entry into higher education for many students. Open enrollment policies, relatively low cost of attendance, convenience of location and scheduling options, variety of program offerings, and changes in the economic and workforce landscape have resulted in increased enrollment at community colleges. Ease of access addresses one of the community college's missions by providing opportunities to many students who might not otherwise pursue post-secondary education.

Many first-time in college (FTIC) students enter community colleges academically underprepared. The Community College Survey of Student Engagement (CCSSE) reported that almost 50% of FTIC students enter our community colleges academically underprepared in either math, English, or reading and require remediation to bring their skills to college level (CCSSE, 2004).

Academic performance during the FTIC student's first year of enrollment is a significant predictor of student retention and academic success (Barefoot et al., 2005; Tinto, 1993). Many institutions have developed first year experience (FYE) programs designed to meet the needs of the FTIC student. These FYE programs help to ease the FTIC student's transition from high school to college by teaching the student how to navigate through their new environment, understand the complexities of higher education, and integrate into the campus culture (Dwyer, 1989). Upcraft and Gardner (1989) argued that the experiences of FTIC student's first year in college are fundamental to student success. In a survey of 386 public two-year community colleges in the U.S., 79% offer a pre-enrollment orientation for new students, 43% offer either credit or non-credit FYE seminars for FTIC students (Lotkowski, Robbins, & Noeth, 2004). Topics covered in FYE courses typically include study skills and strategies, metacognition, time management, career and academic planning, student roles and responsibilities, and critical thinking. Respondents to The National Survey of First Year Seminars indicate a 58.9% increase in persistence to the sophomore year, a 51.2% increase in utilization of campus services, and a 26.7% increase in GPA.

Participation and completion of an FYE course has been shown to have a positive impact on academic performance and retention on FTIC students. Rodriguez (2003) compared the retention, number of hours completed, and GPA of FYE completers, to non-completers attending

a mid-sized community college. Results indicate that FYE completers were retained at a higher rate (80.6%) than non-completers (69.4%). A study of pre-entry and post-enrollment factors associated with student persistence, conducted at a rural community college concluded that students who participated in an FYE course were retained at a higher rate than students who did not enroll in the course (Etheridge, 2000). Robles (2002) found a positive correlation between completion of an FYE course and academic performance and the retention of new community college students. Other researchers investigating the impact of FYE courses on student retention have consistently found higher retention rates for FYE completers when compared to non-completers (Weisgerber 2005; Harroun, 2005; Hall, 2007). Following a meta-analysis of FYE programs, Pascarella and Terenzini (2005) found that participation in some type of FYE program was positively correlated to increased retention, academic performance, and levels of academic and social integration.

### **Advising the FTIC student**

Community colleges have shifted focus from access to success and researchers have worked to develop a better understanding of the community college students' experiences after admission to the institution (Myran, 2009). Vaughn (2000) asserted that colleges are ethically obligated to ensure that students have a reasonable chance of achieving academic success. Students are most at risk of withdrawing from an institution during their first year of enrollment (Barefoot et al., 2005; Herzog, 2005; Tinto, 1987). Obstacles to academic success include situational barriers, institutional barriers, and dispositional barriers (Spellman, 2007). Situational barriers stem from the students' life circumstances, and include such factors as work, family, and financial obligations. Institutional barriers include institutional policies and practices that

impede student success such as scheduling options, student services, and financial assistance. Dispositional barriers include student attributes such as attitude, motivation, and self-esteem.

Student engagement and interaction with a significant faculty or staff member plays a critical role in student retention (Tinto, 1993). Academic advising, together with instruction in academic skills, and comprehensive support programs have been identified as the interventions with the most positive impact on student success (Pascarella & Terinzini, 1991). A successful first year experience has been shown to have a positive impact on the retention and success of the academically underprepared student. Academic advising is a key component of a successful first year experience, especially for the academically underprepared student (Earl, 1987). The institution used in this study requires that all FTIC students meet with an academic advisor as part of the admissions process.

In an effort to improve the success rates of Texas college students, the Texas legislature enacted the Texas Success Initiative (TSI) in 2003. TSI requires that all entering students be assessed to determine college readiness in math, English, and reading prior to enrolling in college level coursework. TSI allows for flexibility in the tools used for the assessment of college readiness. The institution used in this study utilizes scores from the SAT, ACT, TAKS, and/or the Accuplacer placement tests. The institution provides developmental course work in the subject areas of math, English, and reading for students who do not meet college readiness. The academic advisor interprets placement test scores and places the student in the appropriate developmental and/or college level courses. The institution requires that all FTIC students be enrolled in a Student Development course. FTIC students who demonstrate college readiness in at least two of the three subject areas assessed are enrolled in a one credit-hour course, SDEV 0170. Students who require developmental coursework in two or more subject areas assessed are

required to enroll in a three credit-hour course, SDEV 0370. In addition to placement in appropriate levels of coursework, advisors work with FTIC students to develop an Individual Success Plan (ISP). Development of the ISP involves career exploration, selection of a major or course of study, a needs assessment, and identification of campus and community resources.

Academic advising provides an opportunity for engagement between student and advisor. Beyond degree planning and course scheduling, academic advising provides a venue where students can explore academic and career goals and address non-academic obstacles that may impede academic success. There is agreement among researchers that continuous student engagement with faculty or staff, clearly defined goals, and a plan of action to achieve the goals are critical to student retention and success (Astin, 1993; Pascarella & Terenzini, 1991; Tinto, 1993).

The three most commonly used models of advising are prescriptive advising, developmental advising, and intrusive advising (Fowler & Boylan, 2010). McCabe (2003) described prescriptive advising as a clerical function. In prescriptive advising, the advisor assumes an authoritative role. The advisor makes decisions for the student based on institutional policy or a prescribed set of requirements. Prescriptive advising does not promote independent thinking or problem solving skills (Vander Schee, 2007). Another critique of prescriptive advising is that the student may not accept ownership and responsibility for the decisions made by the advisor (Kramer, 2000).

Developmental academic advising, as the name implies, focuses on the growth and development of the student with the main focus being the student's ultimate goals (Vander Schee 2007). In developmental advising, the role of the advisor is that of a resource that the student can use in the decision-making and problem-solving processes. Emphasis is placed on the

development and awareness of the relationship between education and life, the setting of realistic goals and a plan to achieve them, and the development of a vision of life beyond college (Kramer, 2000).

Glennen and Baxley (1985) described intrusive advising as an advising model where the advisor takes a proactive interest in the student's academic success. It is characterized by early warning alert systems and structured interventions that allow for immediate response to specific academic problems (Escovedo, 2007). Intrusive advising provides early detection and identification of potential obstacles to academic success, as well as the opportunity to develop a plan to overcome the obstacles. Through intervention strategies incorporated into intrusive advising, the advisor becomes an active part of the FTIC student's first year experience. This relationship can help to maintain student motivation and promote student engagement (Cruise, 2002; Heisserer & Parette, 2002).

Academic advising is contextual by nature. The role of the advisor changes as the student develops and matures (Creamer, 2000). The choice of model used and level of intrusiveness should be based on the particular situation and the student's specific needs, and it is not uncommon for the advisor to combine models of advising to meet the needs of the individual student and the specific situation (Fowler & Boylan 2010).

Bahr (2008) examined the effect of academic advising on the academic success of FTIC community college students. The effects of advising across variations in student level of academic preparedness, race, minority representation in the college, and the representation of academically underprepared students in the college were analyzed. The study concluded that in all variations examined, academic advising was found to be actively beneficial to students' academic success.

## **Learning Strategies**

The Learning and Study Strategies Inventory (LASSI) is a 10-scale 80-item assessment of students' awareness about and use of learning and study strategies related to the skill, will, and self-regulation components of strategic learning (Weinstein & Palmer, 2002). LASSI grew out of the Cognitive Learning Strategies Project at the University of Texas in the 1980s. The assessment was developed to address the increasing number of academically underprepared students entering post-secondary education. The LASSI is diagnostic and prescriptive and focuses on both overt and covert thoughts, behaviors, attitudes, motivations, and beliefs that relate to successful learning at the post-secondary level. The LASSI is designed to measure the extent to which individuals use cognitive processing skills while learning, as well as the likelihood of an individual using a particular method or strategy while engaged in the learning process. Weinstein and Palmer (2002) defined learning strategies as behaviors or thoughts in which a learner engages, and which are intended to influence the learning process. The LASSI focuses on those learning strategies that can be introduced, taught, and developed in workshop and classroom settings.

The LASSI is designed as a self-report questionnaire that can be taken either online or on paper. The assessment measures three components of strategic learning: the skill component (Test Strategies, Information Processing, Selecting Main Idea,) the will component (Level of Anxiety, Attitude, and Motivation,) and the self-regulation component (Concentration, Self-Testing, Use of Study Aids, and Time Management). These three components interact and complement each other to foster student learning. Students who score above the 75<sup>th</sup> percentile are considered to practice good learning strategies. Students scoring below the 50<sup>th</sup> percentile are considered to practice poor learning strategies, and students scoring between the 50<sup>th</sup> and the

75<sup>th</sup> percentile can work to improve in weak areas to optimize their academic performance (Weinstein & Palmer, 2002).

Researchers have studied the relationship between LASSI scores and academic performance. Prus, Hatcher, Hope, and Gabriel (1995) studied the ability of LASSI to predict freshmen year GPA. Inclusion of LASSI scores marginally improved predictions of academic performance beyond the use of traditional measures such as high school GPA, high school class rank, and SAT scores. The addition of LASSI scores increased the amount of variance explained by 5%. The study found the LASSI sub-scale Motivation to be the most significant predictor of academic performance.

Everson (2003) examined the use of the LASSI as a predictor of academic performance among college students. Results of the study concluded that the addition of LASSI scores improved predictions of academic performance beyond GPA and PSAT scores alone. LASSI was used in a study to compare the differences in study skills between academically struggling students and academically successful students. In comparison to the academically successful students, struggling students' LASSI scores indicated significant weaknesses in the sub-scales of Anxiety, Concentration, Motivation, Selecting the Main Idea, and Test-taking Strategies (Proctor, Prevatt, Adams, Hurst & Pretscher, 2006).

Marrs et al. (2009) utilized LASSI to investigate the relationship between student study strategies and academic performance in a freshman level Introductory Psychology course. Using discriminant analysis, the researchers concluded that the LASSI sub-scale Motivation was the most significant predictor of academic performance

In a South African study, Seabi (2011) examined the relationship between learning strategies and academic achievement among first-year engineering students. The LASSI was

administered to 111 engineering students with the students' final exam grade used as the measure of academic achievement. Three sub-scales of the LASSI (Attitude, Low level of Anxiety, and Test Strategies) were found to be significant predictors of academic achievement.

Yip (2007) studied the differences between high and low academic achieving Hong Kong University students in terms of learning strategies. Results of the study revealed that high academic achieving students were significantly different than low academically achieving students in terms of their learning strategies. Drilling down to the individual sub-scales of the LASSI, Yip found that the high academic achieving students' mean scores were higher than the low academic achieving students' mean scores in Attitude (25.6 vs. 19.3) Concentration (20.4 vs. 14.2) Information Processing (21.3 vs. 18.1) Motivation (24.9 vs. 18.9) Selecting the Main Idea (19.7 vs. 17.4) Self Testing (20.1 vs. 18.1) Study Aids (17.1 vs. 15.5) and Test Strategies (21.3 vs. 18.5). A stepwise discriminant analysis was then conducted to determine the most significant factor or factors distinguishing the high academic achievers from the low academic achievers. The results indicated that Attitude and Motivation were the significant discriminant factors.

Yip (2009) followed up the 2007 study, this time using a cohort of Hong Kong University students who were taking coursework online. The results of the study confirmed that significant differences exist between the learning strategies of high academic achieving students and low academic achieving students. These differences remain whether the delivery method is via the traditional classroom or via the virtual classroom. The most significant factors were, once again, found to be Attitude and Motivation. The results of the study suggest that the better a student is able to utilize learning strategies, the higher the level of academic attainment the student is likely to achieve. Whether the delivery method is traditional or online, high LASSI scores in the subscales of Motivation and Attitude are positively related to high academic achievement (Yip

2009). Finally Yip concludes that developing a disciplined, self-motivated attitude towards learning is a vital ingredient for academic success.

Participants in this study completed the LASSI as part of their Student Development course. The LASSI was administered during the first two weeks of the semester. An explanation of learning strategies as well as the internal characteristics measured by LASSI was presented by the instructor and discussed in class. In addition to the classroom instruction, students met individually with the instructor to review their specific LASSI results. To develop an individualized plan for success, the student and the instructor used information from the LASSI along with other academic and demographic information.

### **Summary**

Researchers have identified several factors, such as the students' educational objectives, performance on placement tests, and first semester academic performance that are predictors of persistence and retention. Student demographics, pre-college factors, socio-cultural capital, environmental pull factors, receipt of financial aid, and the parents' educational attainment level also influence persistence and retention. Among student characteristics, attitude, motivation, low levels of anxiety, and the use of test strategies were found to be positively related to high academic achievement. Students with these characteristics appear more likely to achieve higher levels of academic attainment.

## **Chapter III**

### **Method of Procedure**

#### **Introduction**

This study will examine the relationship of student demographic information and internal characteristics identified from the Learning and Study Strategies Inventory (L.A.S.S.I.) to student persistence, grade point average, and academic success. Chapter three presents a review of the research questions, outlines the procedures and methods used to gather data, and describes the statistical operations and data analysis used in the study.

#### **Research Questions**

A total of six research questions were developed to address the purpose of the study. The study examined the relationship of student demographic information and internal characteristics to student persistence, grade point average, and academic success. The independent variables used in the study were: (a) student demographic information; and (b) student internal characteristics. The dependent variables used in the study were: (a) persistence; (b) grade point average; and (c) academic success. The analysis examined the impact of student demographics of gender, ethnicity, academic major, and type of first semester enrollment (full-time or part-time) and student internal characteristics (as measured by the Learning and Study Strategies Inventory) on student persistence, grade point average, and academic success.

Research Question 1 (RQ1): How do student demographics relate to persistence of continuous enrollment?

1.1 How does gender relate to persistence of continuous enrollment?

1.2 How does ethnicity relate to persistence of continuous enrollment?

1.3 How does academic major relate to persistence of continuous enrollment?

- 1.4 How does type of first semester enrollment (full-time or part-time) relate to persistence of enrollment?

Research Question 2 (RQ2): How do student demographics relate to GPA?

- 2.1 How does gender relate to student GPA?
- 2.2 How does ethnicity relate to student GPA?
- 2.3 How does academic major relate to student GPA?
- 2.4 How does type of first semester enrollment (full-time or part-time) relate to student GPA?

Research Question 3 (RQ3): How do student demographics relate to academic success as measured by graduation from an academic or technical program with an associate's degree or certificate of completion?

- 3.1 How does gender relate to academic success?
- 3.2 How does ethnicity relate to academic success?
- 3.3 How does academic major relate to academic success?
- 3.4 How does type of first semester enrollment (full-time or part-time) relate to academic success?

Research Question 4 (RQ4): How do internal characteristics relate to persistence of continuous enrollment?

- 4.1 How does attitude relate to persistence of continuous enrollment?
- 4.2 How does motivation relate to persistence of continuous enrollment?
- 4.3 How does time management relate to persistence of continuous enrollment?
- 4.4 How does anxiety relate to persistence of continuous enrollment?
- 4.5 How does concentration relate to persistence of continuous enrollment?

- 4.6 How does information processing relate to persistence of continuous enrollment?
- 4.7 How does selection of main idea relate to persistence of continuous enrollment?
- 4.8 How does use of study aids relate to persistence of continuous enrollment?
- 4.9 How does self –testing relate to persistence of continuous enrollment?
- 4.10 How do test strategies relate to persistence of continuous enrollment?

Research Question 5 (RQ5): How do internal characteristics relate to GPA?

- 5.1 How does attitude relate to GPA?
- 5.2 How does motivation relate to GPA?
- 5.3 How does time management relate to GPA?
- 5.4 How does anxiety relate to GPA?
- 5.5 How does concentration relate to GPA?
- 5.6 How does information processing relate to GPA?
- 5.7 How does selection of main idea relate to GPA?
- 5.8 How does use of study aids relate to GPA?
- 5.9 How does self-testing relate to GPA?
- 5.10 How do test strategies relate to GPA?

Research Question 6 (RQ6): How do internal characteristics relate to academic success in graduation from a program with an associate’s degree or certificate of completion?

- 6.1 How does attitude relate to academic success in graduation from a program with an associate’s degree or certificate of completion?

6.2 How does motivation relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.3 How does time management relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.4 How does anxiety relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.5 How does concentration relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.6 How does information processing relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.7 How does selection of main idea relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.8 How does use of study aids relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.9 How does self-testing relate to academic success in graduation from a program with an associate's degree or certificate of completion?

6.10 How do test strategies relate to academic success in graduation from a program with an associate's degree or certificate of completion?

### **Design**

The study utilized a non-experimental, ex-post facto design with two variables. The independent variables were: (a) student demographic information; and (b) student internal characteristics. The three dependent variables in the study were: (a) persistence; (b) grade point average; and (c) academic success. The study examined the relationship of student demographic

information and student internal characteristics to student persistence, student grade point average, and student academic success.

### **Participant Selection**

Participants in the study were selected from a cohort of 964 first-time-in-college students enrolled in a freshman student development course at a South Texas community college during the Fall 2007 semester. Participants completed the Learning and Study Strategies Inventory as part of the course requirement during their first semester of enrollment. Participant selection was made using nonprobability purposive sampling. A purposive sample is a non-representative subset of a larger population selected to serve a very specific purpose.

### **Data Collection**

Data for the study were collected from a large community college located in South Texas. Permission was obtained from the college administration to access the data for the purpose of the study. Data included student characteristics obtained from LASSI, student demographic information, enrollment information, and academic performance information. Data were obtained from the participants' academic record. Participants completed the LASSI during their first semester of enrollment at the community college.

### **Instrumentation**

The Learning and Study Strategies Inventory (LASSI) is a 10-scale, 80-item assessment tool measuring the students' awareness about and use of learning and study strategies related to the three components of strategic learning; skill, will, and self –regulation (Weinstein & Palmer, 2002). Both standardized scores and national norms are provided for the 10 scales. The LASSI is both diagnostic and prescriptive. Students' strengths and weaknesses in the 10 scales are compared to other college students, and feedback is provided in those areas in which the student

may be weak. The first five items on the scale (Attitude, Motivation, Time Management, Anxiety, and Concentration) make up the affective component of LASSI and the last five items (Information Processing, Selecting the Main Idea, Study Aids, Self-Testing, and Test Strategies) make up the cognitive component of LASSI (Mealy 1988). Items on the LASSI are measured on a five-point Likert scale: Not at all typical of me; Not very typical of me; Somewhat typical of me; Fairly typical of me; Very typical of me. Reliability measures for the LASSI include coefficient alphas in the range of 0.68 to 0.86, and test-retest correlations from 0.72 – 0.85 (Weinstein, 1988).

Student data were obtained using institutional records. Admission applications were used to obtain student demographic data. Academic data including academic major, G.P.A., enrollment type, and academic persistence were collected from the students' academic records.

### **Data Analysis**

Data were obtained from the college and entered into SPSS (Statistical Package for the Social Sciences) for analysis. Several analyses were initiated with data. Initially, data are analyzed for descriptive statistics to summarize results. Descriptive results portray data in meaningful and convenient ways (Coladarci, Cobb, Minium, & Clark, 2008). Frequency distributions displayed results according to how data were associated (Coladarci, Cobb, Minium, & Clark, 2008). Additional analyses were completed utilizing chi-square test of independence, *t*-test, and ANOVA, and Pearson product-moment correlation statistics. All analyses were performed at the  $p < .05$  level of significance.

### **Assumptions**

Statistical analyses are associated with assumptions. Assumptions are conditions to be met to help ensure accuracy of results (Glass & Hopkins, 2008). Independence of observations

was the first assumption. In other words, each participant did not collaborate or work with each other to complete the survey but worked independently. Normality is the second assumption and relates to the evaluation of histograms, skewness, and kurtosis. A normal distribution of scores was expected. Variables with scaled scores were examined closely for positive and negative skewness and kurtosis. A third assumption related to homogeneity of variance. It concerned equality of scores around a mean score. Levene's statistic examined equality. If there were unequal groups, results were examined according to Levene's unequal pairing.

Research Question 1 (RQ1): How do student demographics relate to persistence of continuous enrollment? Research question one was analyzed according to chi-square of independence tests nonparametric variables on two dimensions (Salkind 2007) with a significance level of  $p < .05$ . It analyzed whether demographics (gender, ethnicity, academic major, and full-time/part-time status) are independent of academic persistence of continuous enrollment (yes/no).

Research Question 2 (RQ2): How do student demographics relate to GPA? Research question two was analyzed according to  $t$ -test and ANOVA with a significance level of  $p < .05$ . The  $t$ -test looks at whether various demographics in two categories (gender- male/female and enrollment status - full-time/part-time) differed in relation to GPA. ANOVA analyzed demographics on more than two categories (academic major and ethnicity have several categories).

Research Question 3 (RQ3): How do student demographics relate to academic success as measured by graduation from an academic or technical program with an associate's degree or certificate of completion? Research question three was analyzed according to chi-square of independence tests nonparametric variables on two dimensions (Salkind 2007) with a

significance level of  $p < .05$ . It analyzed whether demographics (gender, ethnicity, academic major, and full-time/part-time status) are independent of completion of program (yes/no).

Research Question 4 (RQ4): How do internal characteristics relate to persistence of continuous enrollment? Research question four was analyzed according to  $t$ -test with a significance level of  $p < .05$ . It analyzed whether continuous enrollment differed among internal characteristics.

Research Question 5 (RQ5): How do internal characteristics relate to GPA? Research question five was analyzed according to Pearson's product-moment correlation with a significance level of  $p < .05$ . It was analyzed as a two-tailed test and no causal relationship is inferred. The Pearson correlation reflects direction of a relationship as well as magnitude (Coladarci, Cobb, Minium, & Clarke, 2008). The research question examined whether internal characteristics (attitude, motivation, time management, anxiety, concentration, information processing, selection of a main idea, study aids, self-testing, and test strategies) correlate to G.P.A.

Research Question 6 (RQ6): How do internal characteristics relate to academic success in graduation from a program with an associate's degree or certificate of completion? Research question two was analyzed according to  $t$ -test with a significance level of  $p < .05$ . It analyzed whether completion of a degree or certificate differed among internal characteristics.

### **Summary**

The study utilized a non-experimental, ex-post facto design with two variables. The independent variables were: (a) student demographic information; and (b) student internal characteristics. The three dependent variables in the study were: (a) persistence; (b) grade point average; and (c) academic success. Participants in the study were selected from a cohort of 964

first-time-in-college students enrolled in a freshman student development course at a South Texas community college during the Fall 2007 semester. Data, including student characteristics obtained from LASSI, student demographic information, enrollment information, and academic performance information were collected. In addition to descriptive analysis, data were analyzed by utilizing chi-square test of independence, *t*-test, ANOVA, and Pearson product-moment correlation statistics. All analyses were performed at the  $p < .05$  level of significance.

## **Chapter IV**

### **Results**

The purpose of the study is to examine the relationship of student demographic information and internal characteristics identified from the Learning and Study Strategies Inventory (LASSI) to student persistence, grade point average, and academic success. The study relied on academic performance data, student demographic data, and student internal characteristics as identified from the LASSI.

### **Statistical Assumptions**

There were a few assumptions associated with the statistical analysis. Assumptions address the conditions that must be met in order to help ensure the accuracy of results (Glass & Hopkins, 2008). Independence of observations was the first assumption made. The LASSI was administered to the participants in a classroom setting. The participants were informed that the LASSI is an assessment tool and the results would not impact their final course grade. Independence was assumed for the results as the classroom testing environment did not allow for collaboration and, because the LASSI results did not impact the students' final grade, there was nothing to be gained through collaboration. The second assumption is associated with normality. Statistical analysis characterizes the location and variability of a data set. Skewness is a measure of the symmetry as indicated, if graphed, looks the same to the left and right of a center point. Kurtosis is a measure of whether the data, if graphed, would appear peaked or flat relative to a normal distribution (NIST/SEMATECH, 2012). Evaluations of histograms to investigate both skewness and kurtosis revealed this assumption was met, and the expectation was that the scores were normally distributed. SPSS was used to evaluate skewness and kurtosis for each of the dependent variables. The z-score value for each dependent variable was considered to be within

an acceptable range for the sample size. Generally, a z-score value  $\pm 2$  standard deviations from the mean is considered the accepted standard for normality. Homogeneity of variance was the third assumption associated with the analysis. Homogeneity of variance addresses the spread of data around the mean (Gravetter & Wallnau, 2008). If the assumption is met, then the variance of each of the samples used in the analysis is statistically equal. Homogeneity of variance was assessed using Levene's statistic for all tests where this *assumption* is expected to be met. Levene's statistic calculated equality if  $p > .10$ . If the groups were determined to be unequal, results were interpreted according to Levene's unequal pairing. Based on the descriptive results, frequencies, and assumptions, the data were considered appropriate for further analysis.

### **Descriptive Statistical Results**

Data were collected from first time in college (FTIC) students enrolled in Student Development in the Fall of 2007 at a large South Texas community college. The LASSI is administered to all FTIC students as part of the Student Development curriculum. The initial cohort consisted of 964 potential participants. After a review, the researcher eliminated potential participants who did not meet the definition of an FTIC student, failed to complete the LASSI, or provided incomplete or incorrect student identification information. A total of 184 FTIC students participated in the study. Multiple analyses for each of the six research questions were based on the measures for each of the dependent variables. Descriptive statistics were calculated for all variables. The independent variables in the study were (a) student demographic information and (b) student internal characteristics. The dependent variables in the study were (a) persistence, (b) grade point average, and (c) academic success. Frequency distributions, crosstabs, means, and standard errors, when appropriate, were obtained using SPSS software.

The SPSS package has the analytical capabilities to examine the effectiveness of the independent variables in relation to student characteristics. The researcher used a one-way ANOVA, *t*-test, Pearson's product-moment correlation, and chi-square test of independence to examine the relationship of student demographic data and student internal characteristics to student persistence, grade point average, and student academic success. Descriptive statistics are provided in the tables below.

Data were collected on the class of 2007 FTIC students attending a large South Texas community college and characterized with gender being identified. The results are presented in Table 1.

Table 1

*Gender, N = 184*

	Gender	Frequency	Percent
Valid	female	115	62.5
	male	69	37.5

Data were collected on the class of 2007 FTIC students attending a large South Texas community college and characterized with ethnicity being identified. The results are presented in Table 2. Initially there were more ethnic groups included in the ethnicity category. After initial analysis it was determined that some of the ethnic groups included lacked sufficient sample size for statistical analysis. The researcher recoded the groups with a small sample size into the category coded as Other.

Table 2

*Ethnicity, N = 184*

	Ethnicity	Frequency	Percent
Valid	Hispanic	117	63.6
	White	45	24.5
	Other	22	12.0

Data were collected on the class of 2007 FTIC students attending a large South Texas community college and characterized with academic major being identified. The results are presented in Table 3. Initially there were more academic majors included in this category. After initial analysis it was determined that some of the majors included lacked sufficient sample size for statistical analysis. The researcher recoded the majors with a small sample size into the categories that represented the major disciplines in the college.

Table 3

*Academic major, N = 184*

	Academic major	Frequency	Percent
Valid	Business	23	12.5
	Liberal Arts	137	74.5
	Science Technology Math	24	13.0

Data were collected on the class of 2007 FTIC students attending a large South Texas community college and characterized with type of first semester enrollment status being identified. The results are presented in Table 4.

Table 4

*Enrollment status, N = 184*

	Enrollment status	Frequency	Percent
Valid	Full-Time	154	83.7
	Part-Time	30	16.3
	Total	184	100.0

Data were collected on the class of 2007 FTIC students attending a large South Texas community college and characterized with GPA being identified. The results are presented in Table 5.

Table 5

*GPA, N = 184*

Range	Min.	Max	Mean	Std.Dev	Variance	Skewness	Std Error	Kurtosis	Std Error
3.39	.14	3.53	2.39	.55	.30	.71	.18	1.2	.36

Data were collected on the class of 2007 FTIC students attending a large South Texas community college and characterized with persistence in continuous enrollment being identified. The results are presented in Table 6.

Table 6

*Persistence in Continuous Enrollment, N=184*

	N	Percent
Non-Continuous Enrollment	94	51.1
Continuous Enrollment	90	48.9

## Statistical Analyses

Data were initially analyzed for descriptive statistics to summarize results. Descriptive results portray data in meaningful and convenient ways (Coladarci, Cobb, Minium, & Clark, 2008). Frequency distributions displayed results according to how data were associated (Coladarci, Cobb, Minium, & Clark, 2008). Additional analyses were completed utilizing chi-square test of independence, *t*-test, ANOVA, and Pearson product-moment correlation statistics. All analyses were performed at the  $p < .05$  level of significance. After the descriptive results were reviewed, it was determined that the demographic categories of ethnicity and academic major did not have enough cases to analyze statistically. The researcher combined student ethnicity creating three categories; (a) Hispanic, (b) White, and (c) Other. Academic major was also combined to create three disciplines; (a) Liberal Arts, (b) STEM, and (c) Business.

Research question one examined how student demographics relate to persistence of continuous enrollment. RQ 1.1 examined how student gender relates to persistence of continuous enrollment. Results of the chi-square analysis are statistically significant:  $\chi^2(90, 1) = 1.03, p < .05$  (Males,  $N = 32$ ; Females,  $N = 58$ ). Of the 184 students in the sample size, 90 persisted with continuous enrollment. Of the 90 students who persisted with continuous enrollment, males and females were not independent with regard to both continuous and non-continuous enrollment. Statistically, the gender of the student did not influence persistence of continuous enrollment.

RQ 1.2 examined how student ethnicity relates to persistence of continuous enrollment. Results of the chi-square analysis are not statistically significant. Ethnicity is independent to both continuous and non-continuous enrollment:  $\chi^2(184, 2) = 3.44, p = .18$ . The results indicate that student ethnicity does influence persistence. Of the 184 students in the sample size, 90

persisted with continuous enrollment (Hispanic = 62, White = 21, Other = 7). Hispanics persisted at a rate of 53%, Whites persisted at a rate of 47%, and students in the Other category persisted at a rate of 32%. Independence is found where there is the largest gap within ethnic groups according to persistence categories. The chi-square analyses showed ethnic groups were independent of each other with regard to persistence with Hispanics showing the largest gap followed by Whites and then Other. Table 7 provides an overview.

Table 7

*Persistence in Continuous Enrollment According to Ethnicity, N=184*

	N	Percent Within Category
Hispanic	117	
Non-Continuous Enrollment		58.5
Continuous Enrollment		68.9
Difference		+10.4
White	45	
Non-Continuous Enrollment		25.5
Continuous Enrollment		23.3
Difference		-2.2
Other	22	
Non-Continuous Enrollment		16.0
Continuous Enrollment		7.8
Difference		-8.2

RQ 1.3 examined how academic major relates to persistence of continuous enrollment. Results of the chi-square analysis are not statistically significant that academic major is not independent with regard to both continuous and non-continuous enrollment:  $\chi^2(184, 2) = .981, p = .61$ . The results indicate that a student's academic major does influence persistence. Of the 184 students in the sample size, 90 persisted with continuous enrollment. Of the 90 who persisted with continuous enrollment (Liberal Arts, N = 65; Science, Technology, Engineering, and Mathematics, N = 14; Business, N = 11). Liberal Arts majors persisted at a rate of 48%, STEM majors persisted at a rate of 58%, and Business majors persisted at a rate of 48%. Independence is found where there is the largest gap within academic discipline groups according to persistence categories. The chi-square analyses showed academic major groups were independent of each other with regard to persistence with STEM showing the largest gap followed by liberal arts and then business. Table 8 provides an overview.

Table 8

*Persistence in Continuous Enrollment According to Academic Major, N=184*

	N	Percent within Category
STEM	24	
Non-Continuous Enrollment		10.6
Continuous Enrollment		15.6
Difference		+5
Liberal Arts	117	
Non-Continuous Enrollment		76.6
Continuous Enrollment		72.2
Difference		-4.4
Business	23	
Non-Continuous Enrollment		12.8
Continuous Enrollment		12.2
Difference		-.6

RQ 1.4 examined how type of first semester enrollment (full-time, part-time) relates to persistence of continuous enrollment. Results of the chi-square analysis are statistically significant:  $\chi^2(184,1) = 5.13$ ,  $p < .05$ . Students enrolled full-time during their first semester and students enrolled part-time during their first semester were not independent with regard to both continuous and non-continuous enrollment. Statistically, the type of first semester enrollment

did not influence persistence of continuous enrollment (full-time, non-continuous,  $N = 73$ ; full-time, continuous,  $N = 81$ ; part-time, non-continuous,  $N = 21$ ; part-time, continuous,  $N = 9$ ).

Research Question 2 examined how student demographics relate to GPA. RQ 2.1 examined how student gender relates to GPA. Levene's test for equality was not violated ( $p = .41$ ). The results of the  $t$ -test were statistically significant:  $t(182) = -1.98, p < .05$ . The results indicate that gender does make a statistical difference according to GPA. Female GPA ( $M = 2.45$ ) is higher than male GPA ( $M = 2.29$ ). RQ 2.2 examined how student ethnicity relates to GPA. The results of the ANOVA were not statistically significant:  $F(2, 181) = 1.76, p = .18$ . There was no statistically significant difference among ethnic groups as related to GPA. (Hispanics,  $M = 2.38$ ; Whites,  $M = 2.50$ ; and Other,  $M = 2.23$ ). RQ 2.3 examined how academic major relates to GPA. The results of the ANOVA were not statistically significant:  $F(2, 181) = 33, p = .72$ . There was no statistically significant difference among academic discipline groups as related to GPA (Liberal Arts,  $M = 2.37$ ; STEM,  $M = 2.45$ ; and Business,  $M = 2.45$ ).

RQ 2.4 examined how the type of first semester enrollment (full-time, part-time) relates to GPA. Results of equal variances not assumed were reported since Levene's test for equality was violated ( $p = .06$ ). The results of the  $t$ -test were not statistically significant:  $t(182) = 40.44, p = .95$ . The results indicate that there is no statistical difference with regards to GPA between students whose first semester enrollment status was full-time ( $M = 2.39$ ), and students whose first semester enrollment status was part-time ( $M = 2.40$ ).

Research Question 3 examined how student demographics relate to academic success as measured by graduation from an academic or technical program with an associate's degree or certificate of completion. RQ 3.1 examined how student gender relates to academic success. Results of chi-square analysis are statistically significant:  $\chi^2(184,1) = 4.33, p < .05$ . Males and

females were not independent with regard to both completion and non-completion of a certificate or degree. Statistically, the gender of the student did not influence academic success, male, non-completion,  $N = 57$ ; male, completion,  $N = 12$ ; female, non-completion,  $N = 79$ ; female, completion,  $N = 36$ .

RQ 3.2 examined how student ethnicity relates to academic success. Results of the chi-square analysis are not statistically significant that ethnicity is independent to both completion and non-completion of a degree or certificate:  $\chi^2(184,2) = 3.75, p = .15$ . Results indicate that student ethnicity influences academic success. Of the 184 students in the sample size, 48 succeeded in earning an associate's degree or a certificate of completion (Hispanics,  $N = 33$ ; Whites,  $N = 13$ ; Other,  $N = 2$ ). Hispanics completed at a rate of 28%, Whites completed at a rate of 29%, and Other completed at a rate of 9%. Independence is found where there is the largest gap within ethnic groups according to completion of a degree categories. The chi-square analyses showed ethnicity groups were independent of each other with regard to completion with Hispanics showing the largest gap followed by Whites and then Other. Table 9 provides an overview.

Table 9

*Completion of Degree or Certificate (Academic Success) by Ethnicity, N=184*

	N	Percent Within Category
Hispanic	117	
No-Completion		61.8
Completion		68.8
Difference		+7
White	45	
No-Completion		23.5
Completion		27.1
Difference		+4.4
Other	22	
No-Completion		14.7
Completion		12.0
Difference		-2.7

RQ 3.3 examined how academic major relates to academic success. Results of the chi-square analysis are not statistically significant that academic major is independent to both completion and non-completion of a degree or certificate:  $\chi^2(184,2) = 1.16, p = .56$ . Results indicate that academic major influences academic success. Of the 184 students in the sample size, 48 succeeded in earning an associate's degree or a certificate of completion (Liberal Arts, N = 33; STEM, N = 8; Business, N = 8). Liberal Arts majors completed at a rate of 24%, STEM

majors completed at a rate of 33%, and Business majors completed at a rate of 30%.

Independence is found where there is the largest gap within academic major groups according to completion of a degree categories. The chi-square analyses showed academic major groups were independent of each other with regard to completion with liberal arts showing the largest gap followed by business and then STEM. Table 10 provides an overview.

Table 10  
*Completion of Degree or Certificate (Academic Success) According to Academic Major, N=184*

	N	Percent Within Category
Liberal Arts	137	
No-Completion		76.5
Completion		68.8
Difference		-7.7
Business	23	
No-Completion		11.8
Completion		14.6
Difference		+2.8
STEM	22	
No-Completion		14.7
Completion		12.0
Difference		-2.7

RQ 3.4 examined how student first semester enrollment status (full-time, part-time) relates to academic success. Results of the chi-square analysis are not statistically significant that type of first semester enrollment status is independent to both completion and non-completion of a degree or certificate:  $\chi^2(184,1) = 1.65, p = .20$ . Results indicate that type of first semester enrollment (full-time, part-time) influences academic success. Of the 184 students in the sample size, 48 succeeded in earning an associate's degree or a certificate of completion (Full-time,  $N = 43$ ; Part-time,  $N = 5$ ). Independence is found where there is the largest gap within enrollment status groups according to completion of a degree categories. The chi-square analyses showed enrollment status groups were independent of each other with regard to completion. Although the percentages were the same, there were no statistical differences. The difference is that full-time students had a positive completion rate whereas part-time students did not. Table 11 provides an overview.

Table 11

*Completion of Degree or Certificate (Academic Success) According to Enrollment Status*  
*N = 184*

	N	Percent Within Category
Full-Time	154	
No-Completion		81.6
Completion		89.6
Difference		+8.0
Part-Time	30	
No-Completion		18.4
Completion		10.4
Difference		-8.0

Research Question 4 examined how student internal characteristics relate to persistence of continuous enrollment. There is no significant difference between continuous enrollment and non-continuous enrollment as it relates to student internal characteristics measured by LASSI.

- RQ 4.1 continuous enrollment and non-continuous enrollment and attitude  $t(182) = -.13$ ,  $p = .89$ ;
- RQ 4.2 continuous enrollment and non-continuous enrollment and motivation  $t(182) = -.04$ ,  $p = .97$ ;
- RQ 4.3 continuous enrollment and non-continuous enrollment and time management  $t(182) = 1.3$ ,  $p = .22$ ;

- RQ 4.4 continuous enrollment and non-continuous enrollment and anxiety  $t(182) = .04, p = .97$ ;
- RQ 4.5 continuous enrollment and non-continuous enrollment and concentration  $t(182) = .35, p = .73$ ;
- RQ 4.6 continuous enrollment and non-continuous enrollment and information processing  $t(182) = -.43, p = .67$ ;
- RQ 4.7 continuous enrollment and non-continuous enrollment and selection of main idea  $t(182) = .06, p = .95$ ;
- RQ 4.8 continuous enrolment and non-continuous enrollment and use of study aids  $t(182) = .73, p = .47$ ;
- RQ 4.9 continuous enrollment and non-continuous enrollment and self-testing  $t(182) = -.23, p = .82$ ;
- RQ 4.10 continuous enrollment and non-continuous enrollment and test strategies  $t(182) = 1.0, p = .32$ ;

Table 12

*t-tests: Comparison of continuous and non-continuous enrollment for internal characteristics*

Variable	N	Mean	SD	<i>t</i>	<i>p</i>
Attitude					
• Non-Continuous enrollment	94	4.2	.60	-.13	.89
• Continuous enrollment	90	4.2	.52		

#### Motivation

• Non-Continuous enrollment	94	4.0	.68	-.04	.97
• Continuous enrollment	90	4.0	.69		

#### Time Management

• Non-Continuous enrollment	94	3.4	.70	1.3	.22
• Continuous enrollment	90	3.3	.75		

#### Anxiety

• Non-continuous enrollment	94	3.1	.92	.04	.97
• Continuous Enrollment	90	3.1	.91		

#### Concentration

• Non-Continuous enrollment	94	3.4	.74	.35	.73
• Continuous enrollment	90	3.4	.83		

#### Information Processing

• Non-Continuous enrollment	94	3.5	.78	-.43	.67
• Continuous enrollment	90	3.5	.76		

#### Selection of Main Idea

- Non-continuous enrollment

• Continuous enrollment	94	3.5	.79	.06	.95
	90	3.5	.83		

#### Study Aids

• Non-Continuous enrollment	94	3.2	.79	.73	.47
• Continuous enrollment	90	3.1	.75		

#### Self-testing

• Non-Continuous enrollment	94	3.3	.82	-.23	.82
• Continuous enrollment	90	3.3	.71		

#### Test Strategies

• Non-Continuous enrollment	94	3.6	.60	1.0	
• Continuous enrollment	90	3.5	.70	.32	

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Research Question 5 examined how student internal characteristics, as measured by LASSI, relate to GPA. The operational definition of GPA is: 0 = F; 1 = D; 2 = C; 3 = B; and 4 = A. It is calculated by number of grade points divided by semester credit hours earned. Correlation coefficients are considered to be weak ( $r = .22$ ), moderate ( $r = .52$ ), or strong ( $r = .82$ ) Frankfort-Nachmais (1999). Descriptive statistics for G.P.A. are summarized in table (13).

Table 13

<i>GPA and Internal Characteristics</i>	<i>N = 184</i>	
	Mean	SD
GPA	2.393	.5492
Anxiety	3.090	.9107
Attitude	4.153	.5565
Concentration	3.401	.7789
Info Processing	3.485	.7690
Motivation	3.957	.6439
SelfTesting	3.330	.7685
SelectingMainIdea	3.506	.8040
StudyAides	3.133	.7682
TimeManagement	3.352	.7233
TestStrategies	3.537	.6504

Statistically significant correlations occurred between GPA and motivation ( $r = .20, p < .05$ ), and GPA and time management ( $r = .20, p < .01$ ). While statistically significant, a correlation coefficient of ( $r = .20$ ) indicates weak correlations between GPA ( $M = 2.4$ ) and motivation ( $M = 4.0$ ) and GPA ( $M = 2.4$ ) and time management ( $M = 3.4$ ). No other statistically significant correlations occurred between GPA and the remaining internal characteristics; anxiety ( $r = .074, p = .38$ ), attitude ( $r = .047, p = .52$ ), concentration ( $r = .098, p = .19$ ), information processing ( $r = .14, p = .06$ ), self testing ( $r = .13, p = .08$ ), selection of main idea ( $r = .10, p = .17$ ), study aids ( $r = .12, p = .11$ ), and test strategies ( $r = .06, p = .44$ ).

Table 14

*Correlations: Grade and LASSI Characteristics, N=184*

	Grade ( <i>r</i> )
Anxiety	.74
Attitude	.05
Concentration	.10
Information Process	.14
Motivation	.20**
Self-Testing	.13
Select Main Idea	.10
Use Study Aids	.12
Time Management	.18*
Test Strategies	.06

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

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

Research Question 6 examined how student internal characteristics relate to academic success as measured by graduation from a program with an associate's degree or a certificate of completion. There is no significant difference between completion and non-completion as it relates to student internal characteristics measured by LASSI.

- RQ 6.1 completion and non-completion of an associate's degree or certificate and attitude  $t(182) = .98, p = .33$ ;
- RQ 6.2 completion and non-completion of an associate's degree or certificate and motivation  $t(182) = -.12, p = .91$ ;
- RQ 6.3 completion and non-completion of an associate's degree or certificate and time management  $t(182) = .09, p = .93$ ;
- RQ 6.4 completion and non-completion of an associate's degree or certificate and anxiety  $t(182) = -.87, p = .39$ ;

- RQ 6.5 completion and non-completion of an associate's degree or certificate and concentration  $t(182) = -.89, p = .38$ ;
- RQ 6.6 completion and non-completion of an associate's degree or certificate and information processing  $t(182) = .44, p = .66$ ;
- RQ 6.7 completion and non-completion of an associate's degree or certificate and selection of main idea  $t(182) = -1.1, p = .27$ ;
- RQ 6.8 completion and non-completion of an associate's degree or certificate and study aids  $t(182) = .04, p = .97$ ;
- RQ 6.9 completion and non-completion of an associate's degree or certificate and self testing  $t(182) = -.08, p = .94$ ;
- RQ 6.10 completion and non-completion of an associate's degree or certificate and test strategies  $t(182) = -.47, p = .64$ ;

Table 15

*t-test: comparison of degree/certificate completion and non-completion for internal characteristics*

Variable	N	Mean	SD	<i>t</i>	<i>p</i>
Attitude	136	4.2	.57	.98	.33
• Non-Completion	48	4.1	.53		
• Completion					
Motivation	136	4.0	.67	-.12	.91
• Non-Completion	48	4.0	.57		
• Completion					

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Time Management	136	3.4	.77	.09	.93
• Non-Completion	48	3.3	.77		
• Completion					
Anxiety	136	3.1	.92	-.87	.39
• Non-Completion	48	3.2	.90		
• Completion					
Concentration	136	3.2	.79	-.89	.38
• Non-Completion	48	3.5	.76		
• Completion					
Information Processing	136	3.5	.78	.44	.66
• Non-Completion	48	3.4	.73		
• Completion					
Selection of Main Idea	136	3.5	.82	-1.1	.27
• Non-Completion	48	3.6	.74		
• Completion					
Study Aids	136	3.1	.77	.04	.97
• Non-Completion	48	3.1	.77		
• Completion					
Self-testing	136	3.3	.79	-.08	.94
• Non-Completion					

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• Completion	48	3.3	.72		
Test Strategies	136	3.5	.66	-.47	.64
• Non-Completion	48	3.6	.63		
• Completion					

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### Summary

Results of the statistical analyses examining the influence of student demographics and internal characteristics on persistence and academic success were presented in chapter four. The study's purpose was to examine the relationship of student demographic information and internal characteristics identified from the Learning and Study Strategies Inventory (LASSI) to student persistence, grade point average, and academic success. Student demographic information included gender, ethnicity, academic major, and type of first semester enrollment (full-time or part-time). The LASSI was utilized to measure student internal characteristics of (a) attitude, (b) anxiety, (c) motivation, (d) information processing, (e) selection of main idea, (f) time management, (g) concentration, (h) use of study aids, (i) self-testing, and (j) test strategies.

Persistence was indicated by continuous semester to semester enrollment. For the study, the operational definition of GPA was (a) F = 0 (b) D = 1 (c) C = 2 (d) B = 3 and (e) A = 4. Academic success was indicated by completion of an associate's degree or certificate of completion.

The study employed SPSS software to conduct multiple analyses of the data. Frequency distributions, crosstabs, means, and standard errors, when appropriate, were obtained. The SPSS package has the analytical capabilities to examine the effectiveness of the independent variables in relation to student characteristics. The researcher used a one-way ANOVA, *t*-test, Pearson's

product-moment correlation, and chi-square test of independence to examine the relationship of student demographic data and student internal characteristics to student persistence, grade point average, and student academic success. Research question one examined how student demographics relate to persistence of continuous enrollment. Chi-square analysis and *t*-test were used to analyze the data. The results of the analysis suggest that student ethnicity, and academic major influence student persistence. Research question two examined how student demographics relate to G.P.A. The researcher utilized *t*-test and one way ANOVA to analyze the data. The results of the analyses indicate that gender makes a statistically significant difference according to GPA. Student ethnicity, academic major, and type of first semester enrollment did not significantly influence GPA.

Research question three examined how student demographics relate to academic success. Chi-square analysis was used to address this question. Results of the analyses indicate that student ethnicity, academic major, and type of first semester enrollment significantly influence academic success. Research question four examined how student internal characteristics relate to persistence of continuous enrollment. Data were analyzed using *t*-tests, results indicated that there is no significant difference between continuous and non-continuous enrollment as it relates to student internal characteristics. Research question five examined how student internal characteristics relate to GPA. Pearson's product-moment correlation was used to analyze the data. Statistically significant correlations occurred between GPA and motivation ( $r = .20, p < .05$ ), and GPA and time management ( $r = .20, p < .01$ ). While statistically significant, a correlation coefficient of ( $r = .20$ ) indicates weak correlations between GPA ( $M = 2.4$ ) and motivation ( $M = 4.0$ ) and GPA ( $M = 2.4$ ) and time management ( $M = 3.4$ ). No other statistically significant correlations occurred between GPA and the remaining internal characteristics.

Research question six examined how student internal characteristics relate to academic success. Data were analyzed using *t*-tests. Results indicate that there is no significant difference between completion and non-completion as it relates to student internal characteristics.

## **Chapter V**

### **Conclusions, Implications, and Recommendations**

#### **Introduction**

Chapter Five presents a summary of the introduction to the study, statement of the problem, research questions, literature review, methodology, and results. Conclusions, discussions, implications and recommendations are also presented in this chapter. The introductory section provides an overview and summary of chapters One, Two, Three, and Four. Conclusions are presented after the introductory section. Conclusions are drawn from the findings and results of data analyses, and are framed within the context of the research questions that guided this study. In the discussion section, the results are interpreted in light of the theoretical framework and the relevant research literature. Decisions that can be made based on the results are considered and presented in the implication section. Recommendations with respect to future research in the area are also made in this section. The final section will present a summary of Chapter Five.

Open enrollment, affordable tuition, convenient locations, and a variety of program offerings and delivery methods make the community college an attractive option for those entering or re-entering higher education (Cohen & Brawer, 2003). However, while postsecondary enrollment figures continue to trend upward, graduation and persistence rates remain alarming low, especially at our nation's community colleges (NCES, 2011; Rutschow et al., 2011). The reasons for low graduation and persistence rates are as varied and diverse as are community college students and include both academic and non-academic issues (Lamkin, 2004). This research examined the relationship of student demographic information and internal characteristics identified from the Learning and Study Strategies Inventory (LASSI) to student

persistence, grade point average (GPA), and academic success of academically underprepared FTIC students at a community college. The theoretical framework for the study was Cognitive Learning Theory (CLT) (Ormond, 1999). CLT focuses on the internal processes that take place in the mind as learning occurs. CLT seeks to understand how the individual organizes, processes, understands, and recalls information. An assumption made by CLT is that the learner takes an active role in the learning process by exerting control over the learning strategies utilized as well as the learning environment. This self-regulated learning occurs when the learner proactively chooses behaviors and strategies to achieve their goals, and involves a planning phase, an action or performance phase, and a self-reflection or evaluation phase. The extent to which a learner self-regulates is dependent on motivational factors such as commitment to goals, beliefs about likely results and outcomes, and personal beliefs about one's capability to perform at expected levels and achieve the desired outcome. Self-regulated learners are metacognitively, motivationally, and behaviorally active participants in their own learning process (Zimmerman 2001).

Chapter Two presents a review of the relevant research literature. Researchers have identified several factors such as the students' educational objectives, performance on placement tests, and first semester academic performance that are predictors of persistence and retention (Clagitt, 1996; Denison & Secolsky, 2003; Goel, 2002; Hoyt, 1999; Romano, 1995; Voorhees, 1997; Webb, 1988). Student demographics, pre-college factors, socio-cultural capital, environmental pull factors, receipt of financial aid, and the parents' educational attainment level have also been found to influence persistence and retention (Crisp & Nora, 2009). Among student characteristics, attitude, motivation, low levels of anxiety, and the use of test strategies

were found to be positively related to high academic achievement (Marrs et al, 2009; Proctor et al, 2006; Seabi, 2011).

Chapter Three explains that the study utilized a non-experimental, ex-post facto design with two variables. The independent variables were: (a) student demographic information; and (b) student internal characteristics. The three dependent variables in the study were: (a) persistence; (b) grade point average; and (c) academic success. The participants were selected from a group of first time in college students enrolled in a freshman student development course at a South Texas community college during the Fall 2007 semester. Collected data included student characteristics obtained from LASSI, student demographic information, enrollment information, and academic performance information. In addition to descriptive analysis, data were analyzed by utilizing chi-square of independence, *t*-test, and ANOVA, and Pearson product-moment correlation statistics. All analyses were performed at the  $p < .05$  level of significance.

Chapter Four presents the statistical analysis regarding the relationship of student demographic information and internal characteristics to student persistence and academic success. Student demographic information included gender, ethnicity, academic major, type of first semester enrollment (full-time or part-time), and G.P.A. Student internal characteristics included attitude, anxiety, concentration, motivation, information processing, selection of main idea, time management, use of study aides, self-testing, and test strategies. The Learning and Study Strategies Inventory was used to measure students' internal characteristics. After initial examination of the descriptive statistics, it was decided that the number of cases of certain ethnic groups were insufficient to conduct statistical analyses. The researcher created three categories for ethnicity (Hispanic, White, Other), and three disciplines for academic major (Liberal Arts,

Science, Technology, Engineering, and Math [STEM], and Business). As a result, an adequate number of cases were created to continue with further statistical analyses.

### **Conclusions**

This section presents the conclusions drawn from the results of the data analyses. The conclusions interpret the specific results from Chapter Four within the framework of Cognitive Learning Theory. Initially, descriptive statistics were calculated for all variables. The independent variables in the study were (a) student demographic information and (b) student internal characteristics. The dependent variables in the study were (a) persistence, (b) grade point average, and (c) academic success. Frequency distributions, crosstabs, means, and standard errors, when appropriate, were obtained using SPSS software. The SPSS package has the analytical capabilities to examine the effectiveness of the independent variables in relation to student characteristics. The researcher used a one-way ANOVA, *t*-test, Pearson's product-moment correlation, and chi-square test of independence to examine the relationship of student demographic data and student internal characteristics to student persistence, grade point average, and student academic success. After the descriptive results were reviewed it was determined that the demographic categories of ethnicity and academic major did not have enough cases to analyze statistically. The researcher combined student ethnicity creating three categories (a) Hispanic (b) White and (c) Other. Academic major was also combined to create three disciplines (a) Liberal Arts (b) STEM and (c) Business. The recoding of the ethnicity and academic major categories yielded sufficient sample size to continue with the statistical analyses.

Research question one examined how student demographics relate to persistence of continuous enrollment. Results of the analyses indicated that student ethnicity and student academic major both influenced student persistence. Groups within ethnicity and academic

major were independent of each other. Independence is found where there is the largest gap within ethnic groups according to persistence categories. The chi-square analyses showed ethnic groups were independent of each other with regard to persistence with Hispanics showing the largest gap followed by Whites and then Other. Hispanics persisted at a rate of 10.4%; Whites at -2.2% and Other at -8.2%. When academic major was considered, STEM persisted at 5%; Liberal Arts at -4.4%; and Business at -6%. Student gender and the type of first semester enrollment (full-time, part-time) were found to not have a statistically significant influence on persistence. Of the 184 students in the sample size, 90 persisted with continuous enrollment. Of the 90 students who persisted with continuous enrollment, males and females were not independent with regard to both continuous and non-continuous enrollment. Student gender did not influence persistence. Both males and females persisted at the same rate. When type of first semester enrollment was considered, students enrolled full-time during their first semester and students enrolled part-time during their first semester were not independent with regard to both continuous and non-continuous enrollment, full-time, non-continuous,  $N = 73$ ; full-time, continuous,  $N = 81$ ; part-time, non-continuous,  $N = 21$ ; part-time, continuous,  $N = 9$ . Interpretation of the results in light of the broader field of the literature will be addressed in the discussion section of this chapter.

Research question two examined how student demographics relate to GPA. Results of the analyses indicated that only gender had a statistically significant influence on GPA. Female GPA ( $M = 2.45$ ) was higher than male GPA ( $M = 2.29$ ). There was no statistically significant difference among ethnic groups as related to GPA (Hispanics,  $M = 2.38$ ; Whites,  $M = 2.50$ ; and Other,  $M = 2.23$ ). There was no statistically significant difference among academic discipline groups as related to GPA (Liberal Arts,  $M = 2.37$ ; STEM,  $M = 2.45$ ; and Business,  $M = 2.45$ ).

The type of first semester enrollment was found to not be statistically significant with regards to student GPA. Results of the analyses indicated that there was no statistical difference between students enrolled full-time during their first semester ( $M = 2.39$ ) and students enrolled part-time during their first semester ( $M = 2.40$ ). Interpretation of the results in light of the broader field of the literature will be addressed in the discussion section of this chapter.

Research question three examined how student demographics relate to academic success as measured by graduation from an academic or technical program with an associate's degree or certificate of completion. Results of the analyses indicated that student ethnicity, student academic major, and the type of first semester enrollment were independent of academic success. Independence is found where there is the largest gap within ethnic groups according to completion of a degree categories. Of the 184 students in the sample size, 48 succeeded in earning an associate's degree or a certificate of completion. Hispanics completed at a rate of 7%; Whites at 4.4%; and Other at -2.7%. When academic major is considered, Business majors completed at 2.8%; STEM at -2.7%; and Liberal Arts at -7.7%. When type of first semester enrollment is considered, full-time students appear to have a higher rate of success at 8%, than part-time students at -8%. Student gender were not independent of each other with regard to both completion and non-completion of a degree or certificate, male, non-completion,  $N = 57$ ; male, completion,  $N = 12$ ; female, non-completion,  $N = 79$ ; female, completion,  $N = 36$ . Interpretation of the results in light of the broader field of the literature will be addressed in the discussion section of this chapter.

Research question four examined how student internal characteristics relate to persistence of continuous enrollment. There was no significant difference between continuous and non-continuous enrollment as it relates to the student internal characteristics measured by LASSI.

Continuous enrollment,  $N = 90$ , non-continuous enrollment,  $N = 94$ . These results indicate that student internal characteristics measured by LASSI do not significantly influence student persistence. Interpretation of the results in light of the broader field of the literature will be addressed in the discussion section of this chapter.

Research question five examined how student internal characteristics, as measured by LASSI, relate to GPA. Statistically significant correlations occurred between GPA and motivation ( $r = .20, p < .05$ ), and G.P.A. and time management ( $r = .20, p < .01$ ). While statistically significant, a correlation coefficient of ( $r = .20$ ) indicates weak correlations between GPA ( $M = 2.4$ ) and motivation ( $M = 4.0$ ) and GPA ( $M = 2.4$ ) and time management ( $M = 3.4$ ). No other statistically significant correlations occurred between GPA and the remaining internal characteristics. Interpretation of the results in light of the broader field of the literature will be addressed in the discussion section of this chapter.

Research question six examined how student internal characteristics relate to academic success as measured by graduation from a program with an associate's degree or a certificate of completion. There is no significant relationship between completion and non-completion as it relates to student internal characteristics measured by LASSI; completion,  $N = 48$ , non-completion,  $N = 136$ . These results indicate that student internal characteristics as measured by LASSI do not significantly influence student academic success. Interpretation of the results in light of the broader field of the literature will be addressed in the discussion section of this chapter.

## **Discussion**

Research on student retention and persistence (Bean, 1980; Tinto, 1993) has identified factors such as the level of the student's interactions with the institution and the student's

academic intentions as predictors of student success in college. The focus of this research has been primarily on the traditional student attending four-year institutions. This study seeks to add to the larger body of research by examining how student demographics and internal characteristics may influence the retention, persistence, and academic success of academically underprepared, FTIC, community college students.

Cognitive Learning Theory views learning as the deliberate construction of knowledge to create and understanding, as opposed to the simple absorption of information (Ormond, 1999). Within this framework of strategic learning, the learner's immediate environment and context play an important role. CLT builds on the principle that the individual's motivation to learn is fueled by an innate desire to reach a cognitive equilibrium (Bransford, Brown, & Cocking, 2000). Through an awareness of one's own cognitive state the learner can understand and enhance the learning process. This cognitive self-awareness or metacognition is a central component of strategic learning. Weinstein and Palmer (2002) identified the three main components of strategic learning as will, skill, and self-regulation. The LASSI measures the will component with the anxiety, attitude, and motivation scales of the LASSI. The skill component is measured with the test strategies, information processing, and selecting main idea scales of the LASSI. Finally, the LASSI measures the self-regulation component with the concentration, self-testing, use of study aids, and time management scales of the LASSI. Weinstein defined learning strategies as behaviors or thoughts in which a learner engages, and which are intended to influence the learning process (Weinstein & Palmer, 2002). The LASSI focuses on those learning strategies that can be introduced, taught, and developed in workshop and classroom settings.

Open enrollment policies have positioned the community college as the point of entry to higher education for many students who would otherwise be denied access (Cohen & Brawer, 2003). As a result of open enrollment policies, many FTIC students arrive at the community college doorstep academically underprepared. More than 50% of community college students enroll in at least one developmental course on the road to degree attainment (Baily, Jeong, & Cho, 2009). This suggests that these students need assistance with the construction of knowledge. This study examined how the LASSI might help FTIC students with study skills in order to construct knowledge and become more successful toward completing a degree or certificate than other students. It also looked at other indicators, which included demographics, GPA, and type of enrollment status.

The data analyses provided interesting results. The literature suggests that ethnicity often plays a role in student success (Arellano & Padilla, 1996; Fischer, 2007; Gloria et al., 2005; Pascarella & Terenzini, 2005). Hispanic students have trailed most other ethnic groups in the areas of postsecondary enrollment, persistence, and completion (Carey, 2005). Data analysis found Hispanic students participating in this study persisted at a higher rate (53%) than White students (47%), and students coded in the Other category (32%). Data analysis also revealed that Hispanic students succeeded in earning an associate's degree or a certificate of completion at a rate (28%) almost identical to White students (29%), and higher than students coded in the Other category (9%). Myers and Caruso (1992) used the term critical mass to describe a level of representation that brings comfort and familiarity within the educational environment. They hypothesized that critical mass creates an environment that is supportive and more conducive to academic persistence and completion for students aligned with the dominant campus culture. They contended that if a critical mass of minority students and faculty are not present in an

institution, a lack of sensitivity and understanding may result. An absence of critical mass in an institution may lead to feelings of isolation and marginalization for underrepresented groups (Laden & Hagedorn, 2000). The institution where this study was conducted is a Hispanic Serving Institution (HSI) where Hispanic students are in the majority (48%). Hispanic representation among full-time faculty members is at 24.4% and Hispanics make up 36.4% of the administration. The concept of critical mass has been found to be an important predictor for student success in urban, Hispanic community college students (Hagedorn, Chi, Cepeda, & McLain, 2007). This supportive environment, created by the critical mass, may foster the Hispanic students' self-efficacy beliefs that speak to the confidence that the student has in engaging in activities that lead to goal attainment (Bandura, 1997). Pajares (1996) found self-efficacy beliefs to be predictive of behaviors that lead to goal attainment. The higher the self-efficacy beliefs, the more likely the student is to engage in behaviors that have a positive impact on goal attainment. Hagedorn, Chi, Cepeda, & McLain, (2007) found that the level of representation of Hispanic faculty on campus had a positive impact on Hispanic student. The availability of Hispanic role models fostered the social integration of Hispanic students. Hispanic students attending institutions with higher levels of Hispanic students and faculty experienced greater academic success.

Upon initial examination, academic major appears to have influenced both persistence and completion. Business majors persisted and earned degrees or certificates at a higher rate than STEM and Liberal Arts majors. The literature suggests that commitment to goals is a strong predictor of persistence and academic success (Denison & Secolsky 2003, Goel 2002). Institutional commitment and commitment to educational goals has been found to be a better predictor of persistence and academic success than commitment to a specific major or career

path (Granuke, Woosley & Helms, 2006). A study that examined full-time FTIC community college students' long-term educational attainment goals (highest degree aspired to) and community college retention found that students whose educational attainment goal was a graduate or professional degree, or whose goal was to transfer to a four-year institution after one year at the community college were not retained due to transferring (Denison and Secolsky 2003). Further research is needed in this area to determine if it was the chosen academic major, a lack of commitment to educational goals, or a strong commitment to an educational attainment goal that goes beyond the community college that influenced these initial persistence and completion rates.

Full-time enrollment status during the first semester has been found to be a positive correlate of student retention (Fike & Fike, 2008). Results of this study suggest that the type of first semester enrollment did not influence students when measuring persistence. Students enrolled full-time and students enrolled part-time persisted at the same rate. The type of first semester enrollment status did however influence the academic success as measured by completion of a degree or certificate. Students enrolled full-time during their first semester earned degrees or certificates of completion at a higher rate than students enrolled part-time during their first semester. The literature suggests that motivation is a significant predictor of academic achievement (Marrs et al., 2009; Prus et al., 1995; Seabi, 2011). CLT contends that individuals are motivated to learn by an innate desire to understand their environment and reach a cognitive equilibrium (Bransford, Brown, & Cocking, 2000). FTIC students who attend part-time often do so as a result of their socio-economic reality rather than by choice. The fact that these students persist, even if only enrolled part-time, speaks highly of their motivation to

achieve their academic goals. It stands to reason that students attending part-time will take longer to complete their degree or certificate program than their counterparts attending full-time.

Analysis of the LASSI scores revealed a significant, albeit weak, correlation between motivation, time management, and GPA. There were no other significant correlations found. The LASSI focuses on those learning strategies that can be introduced, taught, and developed in a workshop or classroom setting (Weinstein & Palmer, 2002). The subjects of this study were administered the LASSI during the first week of their first semester as part of a Student Development course designed to teach learning strategies. The scores represented a baseline of the internal characteristics possessed by the student at the time of entry to the college. Scores taken from the student at the time of completion or departure from the institution may reveal how these internal characteristics developed and influenced student outcomes. Pascarella and Terinzini (1991) identified academic advising, together with instruction in academic skills, and comprehensive support programs as the interventions with the most significant impact on student success. A key to a successful first year experience, for the academically underprepared, FTIC student, is academic advising (Earl, 1987). Intrusive or proactive advising is an action-oriented advising mode that involves reaching out to students and motivating them to seek help when needed and before it is too late. In intrusive advising, the advisor deliberately creates proactive interactions with the student. Academic early alert programs, progress reports, mandatory advising sessions are all types of intrusive advising. The intent is to establish a positive relationship with the student before situations that may impact their academic success occur. With intrusive advising, the advisor can help the student identify areas that may hinder academic success. The advisor can help the student identify resources available to provide assistance. Upcraft and Kramer (1995) described intrusive advising as an active concern for the student's

academic preparation and a willingness to assist the student in exploring services available to improve academic skills, motivation, and ultimately academic success. Results of this study suggested that a pro-active and intrusive advising program for FTIC students during the first year of enrollment may provide the support needed to retain these students as they develop their learning strategies and academic acumen.

### **Implications**

Researchers have documented the benefits of higher education to an individual's income, community involvement, and quality of life (Cohen & Brawer, 2003; Tinto, 2012). A well-educated workforce is imperative for our nation to remain competitive in the global economy of the 21<sup>st</sup> century (Fry, 2009). Community colleges have long been a point of access for those traditionally underrepresented in higher education. Unfortunately, the success rates of the community college students continue to lag behind the gains made in access to higher education. As community college administrators, faculty, and staff search for new and innovative ways to increase successful completion rates, results from this and other like studies may provide valuable insight.

While the LASSI provides a snapshot of a student's internal characteristics such as attitude, motivation, and strategic learning skills, the results of the LASSI alone cannot be used as an indicator of a student's academic success. It becomes apparent that a student's academic success is impacted by the interaction of multiple factors. Academic advising, the ethnic and gender make up of faculty compared to students, as well as a student's full or part-time enrollment status can all influence a student's academic success. (Fowler & Boylan, 2010; Hagedorn, Chi, Cepeda, & McLain, 2007; Myers & Caruso, 1992; Pascarella & Terinzini, 1991).

An academic advisor or a Student Development instructor can use results from the LASSI to address an individual student's areas of weakness. Student Development courses or First Year Experience seminars should develop assignments and workshops designed to improve and enhance the students' strategic learning skills, attitude, and motivation. Institutions can incorporate a more proactive or intrusive advising model by making academic advising as well as a Student Development course mandatory for all FTIC students. Institutions should also develop an early alert system that identifies at risk students early in the semester and connects them with the appropriate resources.

Many community college students contend with responsibilities outside of academics such as work, family obligations, economic, and transportation issues (Calcagno et al, 2008; Coley, 2000). As a result, many students find it difficult to enroll full-time in a semester. Institutions should offer courses in a variety of formats such as online, off-campus, weekend, accelerated, and open entry/open exit to accommodate the varied scheduling needs of the students.

FTIC community college students present issues that are far too varied and complex to be addressed by a single theory. Whereas Cognitive Learning Theory can help explain how students think about their studies, it only describes one aspect of college life. Critical mass describes a level of representation that brings comfort and familiarity within the educational environment and creates an environment that is supportive and more conducive to academic persistence and completion (Myers & Caruso, 1992). Community colleges should embrace the diversity of the student population and strive to attain critical mass by actively recruiting faculty, staff, and administrators that are representative of the diverse student population.

From this study, it is clearer that the LASSI on its own cannot be used as an indicator of academic success. Indeed there are multiple factors that must be taken in to consideration. Academic success is the responsibility of the student, faculty, and the institution. The LASSI has value as part of a holistic package or one piece of the complex puzzle that creates student success. The LASSI can be used diagnostically to identify an individual student's strengths and weaknesses as they apply to strategic learning. As part of a holistic student success initiative, faculty and student success professionals can use this information to prescribe an individual plan for success for each student. Proactive academic advising, tutoring, study skills development, and career counseling should all be part of the holistic package.

### **Future Research**

The results of this study suggested that, on its own, the LASSI is not an indicator of academic success. Other factors such as academic advising, enrollment status, and critical mass appear to contribute to some degree to a student's academic success. Future research should focus on how and to what degree these other factors influence academic success. The LASSI does provide insight to the internal characteristics and study strategies possessed by the student at the time of the assessment. Another area of future research should focus on how the information collected from LASSI can be used to enhance student success.

This study focused on LASSI results obtained from FTIC students during the first weeks of the Fall semester. The scores represented a baseline of internal characteristics possessed by the student at the time of entry to the institution. Future research should examine LASSI results obtained at the time of exit (both successful and unsuccessful) from the institution. Researchers can examine time of entry LASSI results and time of exit LASSI results to determine the

influence of internal characteristics and study strategies on successful and unsuccessful completion.

The LASSI focuses on those learning strategies that can be introduced, taught, and developed in workshop and classroom settings (Weinstein & Palmer, 2000). Future research should examine whether the development of learning strategies enhances student success. Researchers can use a pre-test LASSI prior to a student development course or seminar designed to improve learning strategies. At the conclusion of the course a post-test LASSI can be administered. Researchers can compare pre-test and post-test results and determine if the student development course or seminar improved learning strategies and if this improvement had an impact on student success.

Academic advising appeared to be one of the factors influencing student success. Future research should focus on the different advising models and their influence on student success. Researchers should also study the correlation between the quality of advising, as perceived by the student, and academic success. Comparisons should examine the effectiveness of different advising approaches among various populations, such as FTIC, first generation college students, part-time and full-time students, and non-traditional students. This approach could help isolate specific advising needs among a variety of student characteristics.

Cognitive Learning Theory suggests that there is an innate desire to understand ones environment. Critical Mass suggests that students perform better in an environment where they feel comfortable and accepted. Myers and Caruso (1992) hypothesized that critical mass fosters an environment of comfort and familiarity that, in turn, promotes persistence and retention. When critical mass is not achieved, feelings of marginalization and isolation often result among the minority population (Etzkowits et al., 1994; Laden & Hagedorn, 2000). Future researchers

can utilize an instrument such as the Community College Survey of Student Engagement (CCSSE) or the Survey of Entering Students (SENSE) to examine the influence of campus climate, as perceived by the student, on student success.

The concept of critical mass also suggests that the ethnic and gender composition of faculty, staff, and administration in relation to that of the student population may influence student success. Students from traditionally underrepresented groups may perceive the campus climate as more welcoming and supportive when the ethnic and gender composition of the faculty, administration, and staff members better reflects that of the student population (Hegedorn et. al., 2007; Meyers & Caruso, 1992). Future research should examine in more depth the nature of this relationship and its impact on student persistence and academic success.

The transition from high school to college can be particularly difficult for first-generation FTIC students placing them at a higher risk of attrition (Ishitani, 2006; Pike & Kuh, 2008). Collaborations between high schools and colleges can help smooth this transition for the student (Karp & Hughes, 2008). Future research should seek to understand the students' perceptions on the differences between the high schools' expectations of students and the colleges' expectation of students.

Mentoring is an intervention that researchers have found enhances student success (Campbell & Campbell, 1997; Kahveci, Southerland, & Gilmer, 2006; Sorrentino, 2007). Mentoring, both formal and informal, has been found to positively influence a student's GPA and persistence (Pagan & Edwards-Wilson, 2003; Salintiri, 2005). Future research should examine the influence of faculty mentoring on the academic success of FTIC community college students.

Factors such as campus climate, student engagement with faculty, and the level of the students' social and institutional integration have been found to influence persistence and retention on first-time university students (Bean, 1980; Pascarella & Terenzini, 2005; Tinto, 1993). The impact of these factors on the FTIC community college student is another area in need of closer examination. Future research could correlate data from the LASSI to data obtained from the CCSSE to examine the influence of the students' perception of the campus climate and level of student engagement on student internal characteristics such as attitude and motivation.

Hirschy, Bremer, and Castellano (2011), identified demographic differences between community college students pursuing academic degrees and community college students pursuing technical degrees. Future research can utilize the LASSI to identify and examine the differences in internal characteristics between these two similar populations. As in this study, the influences of student demographic data and student internal characteristics on the academic success of these two populations can be examined and compared.

### **Summary**

The purpose of the study was to examine the relationship of student demographic information and internal characteristics identified from the Learning and Study Strategies Inventory (LASSI) to student persistence, grade point average, and academic success. Demographic information and LASSI results were obtained from a cohort of FTIC students beginning the Fall semester at a large, urban, Hispanic serving community college in South Texas. Results of this study suggested that on its own, LASSI is not an indicator of academic success. Other factors such as academic advising, enrollment status, and critical mass appear to contribute to some degree to a student's academic success.

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