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Investigating the Effects of Student Engagement on Latina/o Community College Students

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INVESTIGATING THE EFFECTS OF STUDENT ENGAGEMENT ON LATINA/O

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ABSTRACT

As the growth of the largest ethnic minority group, Latina/os, continues to grow there is an increasing concern that the current educational system is not effectively meeting the academic needs of this group of students. The community college sector has gained greater recognition for its potential to meet the needs of a much broader scope of students, particularly low-income and students of color. This study aims to contribute to the understanding of the Latina/o experience and the factors that contribute to college success among community college students. Specifically, this study used hierarchical multiple regression and logistic regression analysis to investigate the role of student engagement factors on various college success outcomes: semester grade point average, semester-to-semester retention, and degree or certificate completion. This researcher set out to test the theoretical framework that student engagement factors contribute to college success above and beyond pre-college factors. Findings emerging from the study demonstrated that student engagement factors (as a group) are not excellent predictors for college success. However, depending on the outcome used to describe success (semester GPA, retention, or degree completion) several factors such as active learning, collaborative learning, and support for students made unique and significant contributions to the variance of college success.

CHAPTER ONE

INTRODUCTION

Higher education continues to be at the forefront of state and federal policy debate, particularly implementing policies that may promote greater degree completion, college affordability, and institutional accountability. At the center of this discussion is the role of community colleges. The Obama administration reported an aggressive goal to have the most college graduates in the world by 2020 (https://obamawhitehouse.archive.gov/video/EVR022409). Specifically, it has targeted community colleges as one of the most important vehicles to educate the new generation of students; in fact, in January 2015 it unveiled a proposal to make community college tuition free (https://obamawhitehouse.archives.gov/the-press-office/2015/01/09/fact-sheet-white-house-unveils-america-s-college-promise-proposal-tuitio). Community colleges meet various needs for students, but the three major student groups they serve are (1) transfer students who intend to obtain a 4-year degree, (2) career technical students who plan to obtain a certificate or associates degree that leads to employment, (3) self-development or self-improvement (i.e. renew or update skills, English as a Second Language). Furthermore, for transfer students, "two-year colleges are shown to play an important role as intermediaries between the completion of high school and attendance at a four-year college" (Surette, 1997, p. 3).

Enrollment rates at community colleges have slowly increased in the last decade, between 2008 and 2010 community college enrollment increased by over one million students

and in 2013 it was estimated that 7.4 million undergraduate students enrolled in community

colleges (AACC, 2015b). Approximately half of all undergraduate students attend community

colleges, and of the students enrolled for credit in 2015, 21 % were Latino, 50% White, 14%

Black, and 6% Asian (AACC, 2015b). Approximately half of Latino/a high school graduates

choose to attend public community college (AACC, 2015a). Since Latinos will constitute

approximately thirty percent of the country's population by 2040, it is wise to expect enrollment

of Latinos at community colleges to continue slowly rising (Vasquez Urias, 2012).

Statement of Problem

In general, much of the literature shows that students who begin at a community college

are less likely to complete a Bachelor's degree. When students aspire to complete a bachelor's

degree and begin their educational pursuits at a community college they are less likely to do so

(i.e., 8% are successful), in comparison to those who begin enrollment at a four-year institution

(i.e., 57% are successful) (Pascarella & Terenzini, 2005). College enrollment has steadily

increased for Latino/a students, but in 2010 only 13% of Hispanic 25-29 year olds had completed

at least a bachelor's degree, in comparison to 53% Asian, 39% of White, and 19% of Black

among this same age group (Fry, 2011). The outcomes at the community college level regarding

Associates Degree and certificates (career-technical) are not much better. Among first time, full-

time degree- seeking students, only 20% graduate with a degree within three years and fewer

than half, 45%, meet their goals of obtaining a degree or certificate within six years after

beginning college (Baum & Payea, 2004; McClenney, 2012). Over 80% of first- time students in

community colleges indicate their intent to transfer to a 4-year institution but only 25% actually

transfer, 9 to 13% of Latinos transfer (Swail, Cabrera, Lee & Williams, 2005; Bailey, Jenkins &

Leinbach, 2005; Shapiro, et al. 2013) and of those Latino students who transfer approximately

4.7% obtain a bachelors degree (Swail et al., 2004). In addition, attrition of Latina/o students from community colleges is the highest of all major population groups (Swail et al., 2004; Bailey et al., 2005). Some have called the current state of college graduation rates of Latina/o students a state of crisis (Gandara & Contreras, 2009). As the fastest demographic group in the United States there are social, political, and economic implications that among other things can determine how effectively we compete in the global economy.

While the literature has been replete with theories, strategies, and recommendations to improve success outcomes for students attending college (Pascarella & Terenzini, 2005), it is only recently that researchers have begun to include community college samples in the larger picture of higher education research, thus the amount of studies with this specific group of students is still sorely limited. Pascarella (1997) reported that of the 2600 studies that were reviewed to publish the comprehensive text, *How College Affects Students* (Pascarella & Terenzini, 1991), approximately 5% of the studies focused on community college students. In 2004, Townsend, Donaldson, and Wilson conducted a review of the literature in five major higher education journals between 1990 and 2003, covering approximately 2300 articles, and found that only 8% mentioned community colleges. There is even a greater paucity of research directly focusing on Latina/o community college students. Crisp, Taggart, and Nora (2014) conducted a literature review of studies that include undergraduate Latina/o students and found that among 190 studies, only 63 studies predicted student success outcomes for Latina/o students. Among the 63 studies, 27% utilized community college samples. Therefore, the current study attempts to narrow the research gap among this important group of students by investigating the effects of student engagement factors on student success outcomes for community college Latino students.

Because community college students are so underrepresented in the literature and Latina/o students' low rate of persistence and completion continue to be concerning, researchers have begun to explore if student engagement factors, such as collaborative learning, active learning, academic challenge, support for learners and student effort are important predictors of success. Some researchers have begun to document the various demographic or pre-college factors that continue to challenge the success rate of this population (Crisp et al., 2014). Important pre-college factors such as socio-economic status, first generations status, delayed enrollment, high school GPA, enrollment status (part time vs full time), employment status (amount of hours), developmental course (placement and enrollment), and English as a second language status have been found to impact attrition among community college students (Bailey & Jaggars, 2016; Crisp & Nora, 2010; Crisp et al, 2014; Hodara, 2015; Nora & Crisp, 2012; Yu, 2015). It is important for research to examine if student engagement factors have the ability to buffer the effects of pre-college risk factors.

Pre-College Factors

This researcher focused on pre-college factors in three categories: performance (i.e. high school GPA, developmental education), demographic (i.e. SES, race or ethnicity), and environmental (i.e. delayed enrollment, employment status). Previous literature has also examined the pre-college factor of psychosocial influences (i.e. motivation, self-efficacy, encouragement from family), but this information was not available for the current study. With regards to performance markers as predictors for student success high school GPA and completion of high school math and science sequence have shown to correlate with successful academic achievement (Adelman, 2006; CCSSE, 2005; Kuh, Kinzie, Buckley, Bridges, & Hayes, 2007). In addition, developmental placement and enrollment has demonstrated mixed

results, as some studies have reported developmental education correlated with success (i.e. higher grades in college level courses, persistence) and others point to a "cooling off" effect that negatively impacts course completion (Adelman, 2004; CCSSE, 2005; Crisp, Taggart, & Nora, 2014). The current study will investigate the impact of predictors on high school GPA and developmental education, but not math and science sequence due to a lack of available data.

With regards to demographic variables, this study will use socio-economic status, first generation, and English as a Second Language (ESL). Many studies using both community college and university students in their sample have documented the effects of socio-economic status and first generation status on persistence, degree completion, and grade point average (Adelman, 2006; Astin, 1993; Baum & Payea, 2004; CCSSE, 2005; Crisp, Taggart, & Nora, 2014; Kuh, Kinzie, Buckley, Bridges, & Hayes, 2007; Pascarella & Terenzini, 2005; Swail, Cabrera, Lee, & Williams, 2005). English as a Second Language (ESL) refers to the instruction that is provided to students who's native (first) language is not English and are seeking skills development in writing, reading, and comprehension of the English language. Approximately, 25 % of community college students come from an immigrant background and there are some estimates showing that by 2030 one in five members of the workforce will be an immigrant (http://cccie.org/publications/accelerating-the-success-of-low-literacy-adult-esl-learners/). Therefore, this segment of the population will have an influential role in shaping the social and economic strength of this society. Creating programs and policies that welcome and encourage integration and education will be essential towards this goal. Community colleges and ESL programs in particular have an existing model that can meet the educational demands of this population. It is important to distinguish the role of institutional efforts to engage students and encourage their persistence and college credit completion.

Finally, this study will include a number of environmental variables, such as delayed enrollment, enrollment status, and employment status to identify the extent to which these variables negatively impacts student success. Some studies have found that the more students delay their transition to college the lower the likelihood for them to accomplish their academic goals (Berkner, Cuccaro-Alamin, & McCormick, 1996; CCSSE, 2005). In addition, both higher working load and lessor enrollment (credits enrolled) patterns have been correlated with attrition and GPA (Adelman, 2004, 2006; Berkner, Cuccaro-Alamin, & McCormick, 1996; CCSSE, 2005; Cejda & Hoover, 2010).

Student Engagement Factors

The student engagement variables of interest in this study are active learning, collaborative learning, academic challenge, support for learners, and student effort. Active learning was operationalized to reflect the extent to which students are academically engaged in distinct tasks (i.e. writing papers, projects, reading). Collaborative learning captures the extent to which students participated in discussions, activities, or projects with others (i.e. worked with other students on projects during class, participated in community base projects, talked about career plans with an instructor or advisor). Academic challenge asks students to reflect on their coursework and to what extent it emphasized various mental activities (i.e. analyzing information, synthesizing ideas, applying theories). Support for learners assessed student's perception of the college emphasis on various support items (i.e. encouraging contact among students from different economic, social, and racial or ethnic backgrounds, helping you cope with your non-academic responsibilities, providing financial support you need to afford your education). Student effort was operationalized on behavioral elements; specifically the extent to

which a student utilizes college services (i.e. tutoring, skills labs, computer lab, academic advising, and career counseling).

Conceptual Framework

The current study is investigating the impact of student engagement variables on success indicators among Latina/o community college students. Similar to the conceptual framework proposed by Crisp and Nora (2010) this researcher believes that pre-college factors have an important role in explaining the experience of Latina/o community college students, but beyond pre-college factors student engagement factors may help buffer the effects of pre-college factors. Figure 1 shows a general presentation of this conceptual framework. Demographic variables are important to consider since age and gender has been documented to have an effect on transferring for Latina/o students, specifically female students have indicated a positive correlation with transfer and older students transfer at lower rates (Nuñez, Crisp, & Elizondo, 2012). Total credits earned is also an important variable to consider since it describes the experience and familiarity with the current academic environment. To some extent it's also an indicator of success since students were able to successfully earn college credit, perhaps, the more college credits they have earned the more familiar they are with the necessary knowledge and resources to be successful. Therefore, these variables, in the current study, have been treated as control variables to distinguish the impact of pre-college and student engagement variables.

Conceptually, after controlling for these demographic variables the predictive capacity of pre-college variables can be investigated. As noted above, many of the pre-college variables (i.e. developmental, delayed enrollment) have demonstrated negative relationships with success outcomes. Student engagement variables are included in this framework to explore the potential effect student engagement variables have on college success outcomes above and beyond that of

precollege variables. Figure 1 presents what may look like as a direct path to success outcomes, but this researcher is aware that some demographic, pre-college, and student engagement variables may take different paths among Latina/o community college students. Figure 1 should be considered a general theoretical picture of what the current study will be investigating.

Demographics		Pre-college		Student Engagement		Success Indicators
• Gender • Age • Total credits earned	→	• Socioeconomic status • Highschool GPA • First generation • Delayed enrollment • Enrollment Status • Employment status • Developmental • English as a Second Language	→	• Collaborative Learning • Active Learning • Academic Challenge • Support for Learners • Student Effort	→	• Spring semester GPA • Retention to fall 2012 • Degree completion

Figure 1. Conceptual framework of pre-college variables, student engagement factors, and success indicators on community college Latina/o students

Research Questions

In this study, this researcher tested a hypothesis that student engagement factors predicted the success of Latino community college students above and beyond pre-college variables. The specific questions that are addressed by this study are as follows:

Question 1. Do pre-college student factors have a significant effect on student success outcomes for Latina/o community college students?

Research Hypothesis 1.a. Pre-college student factors (i.e. first generation, socio-economic status, developmental coursework enrollment) would explain significant variance of the student success outcome variable of semester GPA.

Research Hypothesis 1.b. Pre-college student factors would explain significant variance of the student success outcome variable of persistence (semester-to-semester).

Research Hypothesis 1.c. Pre-college student factors would explain significant variance of the student success outcome variable of college completion or transfer.

Question 2. Do student engagement factors predict student success above and beyond pre-college student factors for Latino community college students?

Research Hypothesis 2.a. Student engagement factors would explain significant variance of the student success outcome variable of semester GPA, after controlling for pre-college student factors.

Research Hypothesis 2.b. Student engagement factors would explain significant variance of the student success outcome variable of semester-to-semester persistence, after controlling for pre-college student factors.

Research Hypothesis 2.c. Student engagement factors would explain significant variance of the student success outcome variable of college completion or transfer, after controlling for pre-college student factors.

CHAPTER TWO

REVIEW OF LITERATURE

The literature review will present a theoretical understanding of engagement, specifically

describing related concepts such as involvement and integration. Then, the next section of this

chapter will present the various models and studies that indicate a relationship among student

engagement and student success outcomes (GPA, persistence, and degree completion). Finally, a

discussion of the various pre-college factors will be presented.

Student Engagement Theory

Community colleges face greater scrutiny and accountability for increasing success levels

among their students. The Commission on the Future of Higher Education in 2006 focused

attention on the connection and importance of student engagement as an indicator of student

performance (Spellings & Oldham, 2006). Multiple studies utilizing mostly 4-year university

samples have demonstrated predictive evidence between student engagement and student success

outcomes; as students demonstrate more student engagement their grades tend to improve and

higher degree completion follows (Gordon, Ludlum, Hoey, 2008; Kuh, 2001; Kuh, 2003; Kuh,

Cruce, Shoup, Kinzie, and Gonyea, 2008; Kuh, Kinzie, Buckly, Bridges, Hayek, 2006; Kuh,

Kinzie, Cruce Shoup and Gonyea, 2006b).

Student engagement is a concept that has evolved from other theoretical concepts, such as

involvement and integration. Astin (1984) defined involvement as "the amount of physical and

psychological energy that the student devotes to the academic experience" (p. 36). The theory of

involvement highlights the importance of both academic and social involvement where the highly involved student will generate better learning outcomes. Many higher education institutions that adopted this concept implemented changes that would encourage participation in extracurricular activities. Much of the research today that utilizes involvement theory measures time on task (behavior) more than it does the amount of physical and psychological energy (Wolf-Wendel, Ward, Kinzie, 2009). Academic involvement seems to be most closely associated to student success outcomes (higher GPA's and persistence) (Astin, 1993).

Integration, as a separate concept than involvement, was introduced by Tinto (1986) to represent the extent to which students come to share the attitudes and beliefs of their peers and faculty and the extent to which students adhere to the structural rules and requirements of the institution (Pasarella & Terenzini, 1991). According to Tinto's original theory individual characteristics, such as family background, individual attributes and pre-college schooling experiences contribute and influence initial commitment to the institution and to graduation goals. Initial commitment then influences the extent of integration into the academic and social systems of the college or university. Academic and social integration, then, affects subsequent goal and institutional commitment, which later results in a level of persistence (Tinto, 1993). This theory has been cited extensively, but many elements that make this theory strong have not obtained empirical support (Hurtado & Carter, 1997; Braxton, Hirschy, McClendon, 2004). Moreover, part of the theory fails to accurately represent the community college environment and particularly the Latina/o student experience (i.e. viewing social and academic systems as distinct; supporting the pre-requisite of disassociating from home community). The assumption is that students must integrate into the college by abandoning their history, heritage, and outside

interests (Wolf-Wendel, Ward, Kinzie, 2009). However, it contributes to the understanding and development of the concept of engagement particularly, the interactive component that emphasizes the dynamic interaction of both the person and the institution.

Engagement presents a distinct concept to both involvement and integration, but the student development literature sometimes uses these terms interchangeably. To some extent it's understandable since the distinctions can be evasive. Engagement involves two parts, the first involves individual responsibility (time and effort students dedicate toward their studies) and the second involves institutional accountability (Wolf-Wendel, Ward, & Kinzie, 2009). Kuh (2009b) stated, "… engagement is a two-way street, much like the interactive nature of integration. Both institutions and students have roles to play in creating the conditions for engagement and for taking advantage of engagement opportunities" (p. 697). In an interview, Kuh stated that "from a measurement point of view I don't think it makes any difference if you are talking about involvement or engagement and quality of effort (Wolf-Wendel, Ward, Kinzie, 2009, p. 417)" which invokes Pace's (1984) proposition related to quality of effort. Pace (1984) reported a dynamic interaction between the opportunities that an institution offers and the extent to which student makes use of those opportunities in their academic learning experiences.

In addition, Chickering and Gamson (1987) offered Seven Principles for Good Practices in Undergraduate Education, where they present different aspects of student engagement: (1) Student and faculty contact, (2) Collaborative learning practices, (3) Active learning, (4) Providing prompt feedback, (5) Time on task, (6) High expectations, and (7) Appreciation and acknowledgement of diverse learning styles. Many of these principles can be observed in the development of the National Survey of Student Engagement (NSSE) (Kuh, 2001) and later the

Community College Survey of Student Engagement (CCSSE). The NSSE synthesized the theoretical knowledge into a comprehensive national survey to further document institutional effectiveness in engaging students. The CCSSE is the 2-year college version of the NSSE, but theoretically share the same approach. The CCSSE is managed by the Leadership Program at the University of Texas at Austin and several community colleges around the nation participate in this survey every year. The CCSSE is organized into five benchmarks (student engagement factors) that help capture critical pieces of the student experience: (a) Frequency of active and collaborative learning, (b) Level of student effort applied to educational pursuits, (c) Degree of academic challenge, (d) Amount of student-faculty interaction, and (e) Support for learners through institutional practice and college services (McClenney, 2007).

As a distinct or supplementary perspective there are other researchers that have conceptually framed engagement differently. For example, Smedley, Myers, and Harrell (1993) presented a stress-coping model to describe the adjustment process, they reported that "social-cultural and contextual stresses play a significant role in the adaptation of minority freshman to a predominantly White college" (446). More relevant, the authors indicated that the status of being minority emerged as a heightened concern over academic ability/capacity and legitimacy, perceptions of negative expectations from White peers and from faculty, and the lack of understanding of the demands of attending the university (Smedley, Myers, and Harrell, 1993). Hurtado, Carter, and Spuler (1996) discussed the concept of college adjustment of minority students as "the resolution of psychological distress or transitional trauma" (p. 151). The authors describe the experience of Latina/o students as potentially more conflicting in a predominantly White university, specifically reporting that "Latino students tend to have more negative

perceptions of the campus climate than White students...[and] are more likely to perceive racial/ethnic tensions in environments where they do not feel valued by the faculty and administration" (Hurtado, Carter, and Spuler, 1996, p. 138). Rodriguez, Myers, Morris and Cardoza (2000) studied the impact of minority status stresses and acculturative stresses on psychological maladjustment of Latino students. They found that Latino students must contend with demands (or stress) directly related to being Latina/o.

These studies, although touching on distinct constructs than student engagement, may contribute to the understanding the experience of Latina/o students, especially in the context of environments that may be perceived as unwelcoming or hostile. As discussed previously the construct of engagement was founded on principles of involvement and integration, but some elements that may influence the extent to which a student engages may be related to the climate in which that students is attempting to engage, the perceived quality of interactions with the people (peers and faculty) in the environment, and the level of stress or distress experienced by the student as a result of these interactions.

Student Engagement and Student Success

The Commission on the Future of Higher Education focused attention on the connection and importance of student engagement as an indicator of student performance (Spellings & Oldhams, 2006). Multiple studies utilizing mostly 4-year university samples have demonstrated predictive evidence between student engagement and student success outcomes; as students demonstrate more student engagement their grades tend to improve and higher degree completion follows (Angell, 2009; Gordon, Ludlum, Hoey, 2008; Kuh, 2001; Kuh, 2003; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Marti, 2009; McClenney and Marti, 2006; McClenney,

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2007). For instance, in a study conducted by Gordon, Ludlum, and Hoey (2008) the researchers

set out to test the relationship between student engagement and student success outcomes. The

success indicators were cumulative GPA, first year retention, and job attainment upon

graduation. The sample consisted of 1244 first year students and 629 seniors at Georgia Tech

University. Approximately, 72% of first year students and 73% of seniors were White and the

gender split was approximately 35% male and 65% female. Among first year students only 3.7%

were Latina/o and among the seniors 2.4%. Student engagement was measured using the

National Survey of Student Engagement (NSSE) which has the following five benchmarks of

engagement: (1) level of academic challenge, (2) Active and Collaborative Learning, (3)

Student-faculty interaction, (4) Enriching Educational Experiences, and (5) Supportive campus

environment. The researchers found that student engagement factors generated "fairly stable"

results in explaining freshman GPA, but was not as effective in predicting freshman retention or

senior GPA (Gordon, Ludlum, & Hoey, 2008, p. 38).

In another study, Pike, Smart, and Ethington (2012) utilized a university sample of

20,000 seniors who completed the NSSE in 2008. The researchers in this study were interested in

examining the mediating effects of student engagement in the relationship between academic

majors (using Holland's person-environment theory as means to describe characteristics of the

major) and student learning (Holland, 1959). The learning outcomes were measured by skills

acquired representative of a Hollands type, such as investigative was explained by critical

thinking and quantitative skills, where as understanding self and others, understanding diverse

people and cultures, and contributing to the welfare of the community was represented by social

type. The major findings they reported were that the investigative types were associated with

higher levels of course effort and students in enterprising were higher in collaborative learning.

Many researchers have attempted to answer the complex question of what factors effectively and

reliably measure student success for community college students. After approximately two

decades of studies, we indeed do have a better understanding of specific factors that generally

predict success. To what extent these factors specifically predict the success of Latino students,

however, is still elusive.

Some researchers such as Pascarella and Terenzini (2005) have taken a comprehensive

approach of seeking to understand the factors that impact the success of college students. In their

multiple published editions they review a wide range of factors, from institutional, structural, and

systemic factors (i.e. state policies, institutional types) to more individual/personal and

psychosocial factors (i.e. attitudes, values, moral development). In a similar yet more succinct

model, Swail, Cabrera, Lee, Williams (2005) introduced the "Swail's Integrated Model of

Student Success" which included three major components of success: cognitive (i.e. academic

preparation, college knowledge), social (i.e. family encouragement, aspiration), and

institutional/systemic (i.e. financial aid, climate and diversity). Swail's model suggests that

when one area/side of the triangle is weak or limited in some way, it changes the character of the

entire interaction and potentially diminishes the strength of the entire structure. Therefore, like in

Tinto's (1993) integration and Kuh's (2001) engagement theory, this model highlights the

importance of the interaction among the various segments of the student's experience. Swail,

Cabrera, Lee & Williams found that socioeconomic status, parental expectations, planning,

course taking patterns (developmental course enrollment) and student postsecondary behaviors

significantly impact the probability of obtaining a four-year degree. Specifically, they found that

the 24% gap between Latino and White students was substantially reduced when all factors were

held constant.
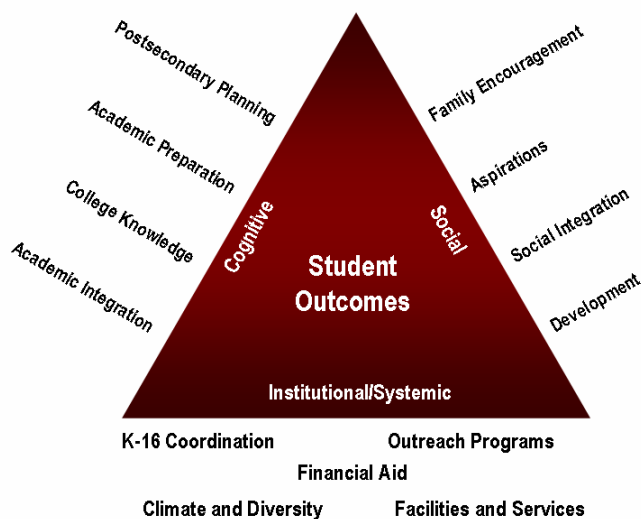
Figure 2. Swail's Integrated Model of Student Success (Swail, Cabrera, Lee, & Williams, 2005)

The model that stands as most relevant for the current study is Crisp and Nora's (2010)

theoretical model of persistence and transfer among Hispanic community college students. The

authors posit that decisions to persist and transfer depend on multiple factors, demographic

variables (i.e. gender, English as primary language), pre-college variables (i.e. high school GPA,

delayed enrollment), socio-cultural variables (i.e. parental education), environmental pull factors

(i.e. financial aid, employment), and academic experiences (i.e. time with faculty, enrollment in

developmental coursework). Crisp and Nora (2010) defined this concept behaviorally:

"frequency of spending time with a faculty member outside of class, time spent with an academic

advisor, GPA in the first year, and whether the student enrolled in a developmental course" (p.

182). In a study that used a Hispanic Community College sample to investigate the two and three

year success, Crisp & Nora (2010) found that pre-college variables such as high school math

enrollment, delayed enrollment, and parental education were strongly associated with degree completion.

Student Engagement and Pre-College Factors

Student engagement studies have consistently demonstrated a positive correlation with student success outcomes (McClenney, 2007; McClenney and Marti, 2006; Marti, 2009; Angell, 2009). However, Latinos typically score high on some student engagement factors, but continue to demonstrate significant gaps in performance variables and degree completion (Marti, 2009; McClenney & Marti, 2006). For instance, in one of the validation studies conducted by McClenney and Marti (2006), their sample was compromised of 27% (total sample of 3540) of Latina/os completed the Community College Survey of Student Engagement (CCSSE) and they found a significant difference in student engagement scores between Latina/os and non-Latina/o. Specifically, Latina/os reported greater levels of student effort and support for learners and "slightly less" for student-faculty interaction (p. 53). In the same study, but using a different sample of students, researchers found that Latina/os scored higher in student effort than White students, and they conclude that "the effects were as expected: black and/or Hispanic students were less likely to have a successful outcome [retention] and white students were more likely to have successful outcome" (p. 49). This reveals a more complex story for Latina/o students, indicating there are student factors that may interact with student engagement factors to impact college success.

Some researchers have investigated the role of student factors (pre-college) on community college success and found various performance, demographic, environmental, and psychosocial factors that influence persistence and degree completion. The pre-college factors

that have empirical support and will be considered in the current study are: (1) First generation status (Baum & Payea, 2004; CCSSE, 2005; Crisp, Taggart, & Nora, 2014; Pascarella & Terenzini, 2005); (2) Socio-economic status (Adelman, 2006; Astin, 1993; Kuh, Kinzie, Buckley, Bridges, & Hayes, 2007; Swail, Cabrera, Lee, & Williams, 2005); (3) Delayed enrollment (Berkner, Cuccaro-Alamin, & McCormick, 1996; CCSSE, 2005); (4) High school GPA (Adelman, 2006; CCSSE, 2005; Kuh, Kinzie, Buckley, Bridges, & Hayes, 2007); (5) Enrollment status (Adelman, 2004, 2006; Berkner, Cuccaro-Alamin, & McCormick, 1996; CCSSE, 2005); (6) Full-time employment status (Berkner, Cuccaro-Alamin, & McCormick, 1996; CCSSE, 2005; Cejda & Hoover, 2010); (7) Developmental course enrollment (Adelman, 2004; CCSSE, 2005; Crisp, Taggart, & Nora, 2014); and (8) ESL (Blumenthal, 2002; Chavez, 2015; Hodara, 2015;Teisberg, 2015).

Researchers have found that pre-college factors relate to academic outcomes in predictable ways. For example, being a first-generation, from a low-SES background who works full-time results in poorer academic outcomes than students who are second generation, middle-SES and does not have to work (Arana, Castañeda-Sound, Blanchard, & Aguilar, 2011; Nuñez, Crisp, & Elizondo, 2012). In addition, students who perform well in high school (high GPA) and do not enroll in developmental education show greater levels of persistence and graduation. Nora's (2004) Student/Institution Engagement Model proposed a set of "pull" factors that impact a student's academic commitment, such as working off-campus, financial concerns, attending campus part-time. These factors have been found to predict persistence, transfer, and degree completion (Crisp & Nora, 2010). In summary, there is substantial evidence showing that pre-

college factors matters in the success of Latina/o students, and the combination of these factors

contribute to a greater risk of college completion.

Summary

The concept of engagement surfaced after considerable research on involvement and

integration. All of these concepts and later research constructs were developed to better

understand the factors that impact student's college- going experience, specifically as it relates to

attrition and degree completion. The distinction among these terms may be subtle, but a major

conclusion that can be drawn is that engagement is a broader term that emphasizes the role of the

institution in accommodating the students who enter it. While trying to explain the difference

between involvement and engagement Kuh offered "you have to shape the shoe to fit the foot or

provide sandals and find ways people can slide a foot into the institution without having their

toes cramp" (Wolf-Wendel, Ward, Kinzie, 2009, p. 417).

The development of the NSSE was widely accepted in the higher education sector as a

means to not only assess the "engagement" of their students, but more importantly, to evaluate

the role of the institution in providing an environment and climate for such engagement to

happen. The NSSE, according to Kuh (2003), "is a window into student and institutional

performance at the national, sector, and institutional levels" (p. 26). An emergent focus, then,

became institutional comparison through "benchmarking." Kuh (2003) described the current

state of engagement concluding that smaller enrollment schools are engaging their students more

effectively than larger schools, more notably schools with larger than 8,000 students particularly

facing greater challenges. In addition, the "engaged" typology, describing those students who

were more engaged, that Kuh (2003) offered were female, full-time students, students living on

campus, native students, learning community-involved students, international students, and students with diversity experiences. Higher education as a sector became more data-driven and this form of data provided a useful and helpful reflection of an institutions' performance. However, underrepresented student populations and particularly community college students were left out of the majority of initial studies.

The CCSSE was developed as a means to fill this gap and better understand the experience of community college students. Similar benchmarks were developed for this survey: active and collaborative learning, student effort, academic challenge, student-faculty interaction, and support for learners. By 2005, over 250 community colleges had signed up to administer this survey (CCSSE, 2005). There are several studies and summaries presenting institutional performance on the various student engagement benchmarks that have used this tool. This type of information has provided administrators and policy makers a picture of quality and institutional effectiveness. What was particularly challenging to find in the literature was the association of student engagement factors and college success outcomes, specifically as it relates to Latina/o students in community colleges.

Community colleges have gained greater scrutiny in the past decade regarding their level of effectiveness in graduating students. Particularly, community colleges are challenged to demonstrate the extent to which they are providing the necessary environment and/or climate to facilitate the success of Latinos entering its doors. As we learn more about student engagement, researchers have begun to ask more complex and nuanced questions, especially questions related to the "at-risk" nature of this population. There are significant differences among community college students and those students who enter the four-year institution. For instance, there are a

substantial number of students who enroll in developmental courses (something not offered in the university environment) and a large percentage of college goers are first generation and work more than 30 hours a week. Researchers concerned with Latina/o educational success have begun to untangle the web of multiple factors that interact in the student's college going experience. The hope of this current study is to contribute to such understanding.

CHAPTER THREE

METHODOLOGY

This chapter will be divided into four subsections. First, this researcher will present a description of the participants. Second, the psychometric properties of the Community College Student Report will be described, which is the instrument used to develop the Community College Survey of Student Engagement (CCSSE). Third, the procedures conducted to collect data by the host institution will be described.

Participants

The population of interest in this study was Latino community college students. The sample was obtained from enrolled students during the spring 2012 semesters at a Midwestern community college that completed the Community College Survey of Student Engagement (CCSSE). The current sample consisted of 142 self-identified Latino students, 40.8% male and 59.2% female. Most students can be categorized as traditional age college students, between the ages of 18 and 24 (76.5%). High school graduation year had a wide range, one from 1958, two from 1980's, five from 1990's, but most indicating high school graduation year from 2008 or earlier (70%). Among this sample 104 indicated being first generation students (73.2%) and 86 (60%) indicated planning on or had taken developmental courses (math, reading, or English). A power analysis was conducted using G*Power (3.1) to determine the sample size needed to detect relations among student success outcomes and three categories of predictor variables. This researcher included the following parameters: 13 predictor variables (8 pre-college variables and

5 student engagement variables), power level of .80, effect size f^2 of .15 (medium), and α err

probability .05, which resulted in recommended sample size of 78. The sample for this study

consisted of 142 Latino students.

Measures

The CCSSE is a national survey administered by the University of Texas at Austin's

Center for Community College Student Engagement. The survey targets two-year institutions

and is administered each spring semester (www.ccsse.org). CCSSE was developed in 2001 as a

project of the Community College Leadership Program at The University of Texas at Austin.

The CCSSE is made up of 37 items, which focus on student engagement as the construct of

interest. Student engagement is a function of both institutional accountability and student

responsibility. Specifically, CCSSE operationalize student engagement into five benchmarks

(student engagement factors): (a) Frequency of active and collaborative learning, (b) Level of

student effort applied to educational pursuits, (c) Degree of academic challenge, (d) Amount of

student-faculty interaction, and (e) Support for learners through institutional practice and college

services (McClenney, 2007).

The CCSSE developed the Community College Student Report (CCSR) to measure both

institutional practices and student behaviors that lead to higher levels of learning and educational

attainment. Confirmatory Factor Analysis (CFA) was conducted based on a large sample of over

274,000 American two-year college students who completed the CCSR in 2003, 2004, and 2005.

A panel of survey research experts assigned items to benchmarks based on factor analysis,

reliability tests, and expert judgment and concluded a five-factor structure with good model fit

(RMSEA = .060, SRMR = .062) (Marti, 2009). The psychometric properties of this survey has

come under scrutiny and some argue that it's factor structure and reliability measures are inadequate (Angell, 2009; Dowd, Sawatzky, & Korn, 2011; Nora, Crisp, & Matthews, 2011). However, there are a number of studies using the National Survey of Student Engagement (the parent survey of which the CCSR was derived from) that have provided valid psychometric results (Gordon, Ludlum, & Hoey, 2008; McClenney, 2007). There are some studies that utilized CCSSE that have included Latino students in their sample, but few of these have disaggregated the data by exploring the level of engagement for Latino students.

The CCSSE's original facture structure consisted of (1) Academic and collaborative learning (α = .66), (2) Student effort (α = .56), (3) Academic challenge (α = .80), (4) Student-faculty interaction (α = .67), and (5) Support for learners (α = .76). These factors represent the model of effective educational practices (Marti, 2009). Nora, Crisp, Matthews (2011) offered a "reconceptualization" of the CCSSE's factors of student engagement. The authors conducted another validation study utilizing 3,800 community college students taking credit-bearing courses. The goal was to test the predictive validity of the five-factor structure. What they concluded was that factor analysis showed that active and collaborative learning was actually two separate factors: (1) active learning and (2) collaborative learning. In addition, they found the factor loadings for faculty-student interaction loaded on collaborative learning. Finally, the five factor structure they concluded were: (1) collaborative learning (α= .697), (2) active learning (α= .652), (3) academic challenge (α= .729), (4) support for learners (α= .805), and (5) student effort (α= .691) (see Apendix A for item description).

Pre-college Variables Defined

Total Credits

Total credits in this study is used to control for number of credits students are self-reporting prior to spring 2012. Students were asked "how many total credit hours have you earned at this college, not counting the courses you are currently taking this term?" Theoretically, the more credits students have earned the more familiar they are with the educational system (i.e. academic expectations, supportive resources) and more persistent. From this current sample it appears that approximately 57% of students have earned between 1 and 29 credits, which means that they have been enrolled at the college for at least one semester, but potentially two or more semesters (if enrolled part time). Approximately 30% of students have earned more than 30 credits, which in many ways have successfully persisted. Among this group 41% of Latino males indicated completed more than 30 credit hours compared to 29% of Latinas. According to institutional data at the midwestern community college, students who complete 20 credit hours during their first academic year are five times more likely to complete their degree or certificate.

Age and Gender

Students were asked to self-report their age by choosing one of eight age groups: 1= under 18, 2= 18-19, 3= 20-21, 4= 22-24, 5= 25-29, 6= 30-39, 7= 40-49, 8= 50 to 64, and 9= 65+. Among the Latina/o sample, 30% indicated category two and 30% indicated category three identifying this sample as mostly (60%) 18 to 21 year olds. Another 15% indicated the third age group, 22-14, and the rest (23%) reported 25 and older. Concerning gender, students were asked

to report their sex from two categories, 1=Male, 2=Female. Among Latina/os 40% identified as males and 59% identified as females.

Developmental

Developmental students have been identified in this study as students who have completed developmental coursework or plan to in any of the three subjects: Reading, Writing, and Math. Approximately 37% of Latina/o students indicated they had done or plan to do developmental coursework in Reading, compared to 19% of White students, 50% indicated they had done or plan to do developmental coursework in Writing, compared to 26% of White student, and 52% indicated they had done or plan to do developmental coursework in Math, compared to 39% of White students. A new variable was created to describe developmental students versus non-developmental students, Table 1 shows that 60% of the current Latina/o sample indicated taking or planning to take developmental coursework in one of the subjects (Reading, Writing, Math). Among this group, 66% of Latinas (females) versus 51% of Latinos (males) indicated taking or planning to take developmental coursework compared to 46% of White females and 42% of White males.

English as a Second Language (ESL)

Students were asked if they had done or were planning to do an ESL course. ESL coursework is offered to students who need English language skill development. At this college students can decide to take ESL course work part-time or full-time (intensive). Instruction primarily concentrates on three basic skills: listening, reading, and writing. Students who indicated neither having done nor planning to do so were categorized as non ESL (66%) and

Table 1. Frequency Distribution Among Age Group and Gender

Age group	Gender	n	Percent
18-19	Male	17	39
	Female	26	60
20-21	Male	17	39
	Female	26	60
22-24	Male	9	40
	Female	13	59
25-29	Male	9	64
	Female	5	35
30-39	Male	3	25
	Female	9	75
40-49	Male	3	50
	Female	3	50
65+	Male	-	
	Female	1	100

Note. Category one (under 18) and eight (50-64) had no participants.

students who indicated taking or planning to take ESL coursework were categorized as ESL

(33%).

Employment Status (Hours Spent Working)

Students were asked to indicate, "About how many hours do you spend in a typical 7-

day week working for pay?" (See table 1 for categories of hours). Approximately 19% of

Latina/o students indicated spending no hours at work compared to 18% of White students.

About 44% of Latina/o students indicated working between 1 to 30 hours and 35% indicated

working more than 30 hours compared to 54% and 24% of White students respectively. Latina/o

males work at higher rates than any other racial group, 43% work more than 30 hours compared

to Whites (24%), Blacks (10%), Asian (18%). Among females, Latinas work at higher rates too,

29% work more than 30 hours compared to 25% of White students, 17% of Blacks, and 17% of

Asian.

First Generation

First generation was derived from two variables asking students about their parent's

highest education level, "What is the highest level of education obtained by your

Mother/Father?" The categories provided to students were: 1= Not a high school graduate, 2=

High school diploma or GED, 3= Some college, did not complete degree, 4= Associate degree,

5= Bachelor's degree, 6= Master's degree/1st professional, 7= Doctorate degree, 8= Unknown.

A new variable was created to indicate non-first generation to first generation students, where as

non-first generation students at least one parent was indicated to have education levels 3 to 7.

Students who indicated that both parents were at level 1 or 2 (or 8 as unknown) were categorized

as first generation (no college). Among the current sample, 62% of Latina/o students were

categorized as first generation compared to 20% White, 33% Black, and 31% Asian students.

Enrollment Status (Part-Time Versus Full-Time)

Enrollment status distinguishes whether or not a student is enrolled in less than 12 credit

hours (part-time) or 12 credit hours or more (full-time) for the spring 2012 semester. Among the

current sample, 46% of Latina/os were categorized as part-time students and 53% as full-time

students. In comparison, 40% of White students were categorized as part-time and 59% as full-time, 48% and 51% of Black students respectively and 37% and 62% of Asian students respectively. Latinas (females) attended full-time in higher rates than Latinos (males), 58% versus 46%. Across other races it appears to be the opposite, where males are attending full-time in greater numbers, 62% White male students attended full-time in comparison to 56% of White females, 60% of Black males attended full-time in comparison to 47% of Black females, and 72% of Asian males attend full-time in comparison to 52% of Asian females.

Delayed Enrollment

The college looked at high school graduation dates and first enrollment at the college to distinguish students who attend college within two years following their high school graduation. Some missing values were found and had to addressed during the multiple imputation process. Prior to multiple imputation (32 missing cases) 8% Latina/os were categorized as delayed enrollment and after multiple imputation (no missing cases) 12% of Latina/os were categorized as delaying their college education. In comparison, 24% of White, 55% of Black, and 28% of Asian students delayed their enrollment to college.

High School Grade Point Average (GPA)

High School GPA was gathered from institutional data, specifically information collected during the admissions process. Students bring high school transcripts and ACT and/or SAT scores, and other relevant information when they schedule their orientation date. Some students who do not have this document (34 in the current sample) are directed to take placement tests. Among the current sample of Latina/os the mean high school GPA was 2.86, compared to 3.18 of White, ($n = 252$), 2.65 of Black ($n = 12$), and 2.97 of Asian ($n = 28$). Latino males,

similar to most other races (except Blacks), had high school GPA lower than females, for Latino males the mean GPA was 2.76 and for females it was 2.91. Among White students, males mean GPA was 3.07 and females was 3.27, for Black students males mean GPA was 2.70 and females was 2.63, and among Asian students, males mean GPA was 2.84 and females was 3.09.

<div align="center">Outcome Variables</div>

Spring 2012 Grade Point Average (GPA)

The student's GPA was gathered from institutional academic data, according to a 4 point scale. Among the current sample of Latina/os the mean GPA was 2.39 ($n = 142$), compared to 2.90 ($n = 330$) of Whites, 2.66 ($n = 27$) of Blacks, and 2.73 ($n = 45$) of Asian students. When comparing the amount of credits completed prior to spring 2012 Latina/os, like most racial groups, appear to have the lowest GPA if they are new to the college (between 0 to 14 credits) (see table 4). If gender is considered, among Latina/os females had a higher mean GPA than males, 2.22 and 2.02 respectively. Among White students a very similar case is evident (females= 2.73; males=2.54), but among Blacks and Asians the picture is different, 2.15 Black females compared to 3.00 for Black males, and similarly 2.53 for Asian females compared to 2.72 Asian males.

Retention to Fall 2012 Semester

Student retention was measured from tenth day enrollment data of fall 2012 semester. Controlling for Latina/o students who graduated or transferred in the spring 2012 semester ($n = 20$) data was gathered from students who were enrolled by tenth day in the fall 2012 semester ($n = 122$). If students were still enrolled by the tenth day of the fall semester they were included as retained ($n = 95$; 77%) and if they did not enroll they were categorized as no for this item

Table 2. Descriptive Comparison of Mean for Spring 2012 GPA Between Total Credits and Racial Groups

Category	Latina/os	Whites	Blacks	Asians
None	1.92 ($n = 9$)	2.30 ($n = 13$)	-	2.48 ($n = 3$)
1-14	1.60 ($n = 36$)	2.43 ($n = 44$)	2.14 ($n = 8$)	1.91 ($n = 10$)
15-29	2.55 ($n = 25$)	2.67 ($n = 42$)	2.51 ($n = 6$)	3.41 ($n = 8$)
30-44	2.80 ($n = 14$)	2.88 ($n = 22$)	2.86 ($n = 4$)	3.07 ($n = 4$)
45-60	2.58 ($n = 6$)	2.76 ($n = 33$)	2.68 ($n = 2$)	2.92 ($n = 4$)
Over 60	3.24 ($n = 7$)	2.89 ($n = 24$)	-	2.11 ($n = 4$)

($n = 27$; 22%). The retention rates for the same semester (fall 2012) of other racial groups were as follows: Whites 73%, Blacks 61%, and Asians 84%.

Degree and/or Certificate Completion

Degree completion was measured by accessing institutional data that indicates whether a student (1) earned a certificate, (2) earned an associates degree, and/or (3) transferred to a university within a three-year period (spring 2015). The data that was provided to this research was not disaggregated by category, students who completed one or more of the criteria above was indicated as yes (successfully completed) and those who did not have any of the three were classified as no (not completed). Among Latina/o students 39 (27%) earned a certificate, degree, or transferred within the three-year period. In comparison, 44% of White, 25% of Black, and 24% of Asian students completed a degree/certificate or transferred.

Procedures

Request to conduct research was submitted to the Institutional Review Boards (IRB) of

Loyola University Chicago and the partnering midwestern community college, respectively.

Permission was granted to utilize the student data collected during the spring 2012 semester at a

midwestern community college. The institution followed data collection protocol outlined by the

Community College Leadership Program at The University of Texas at Austin. This procedure

includes requesting volunteers from various multi-disciplinary departments who offer gateway

courses, such as introductory Math, English, Psychology, and Biology. This is followed with

randomly selecting classrooms varying in time of day (i.e. morning, afternoon, and evening). On

the day of administration, personnel from the department of institutional research provide

instructions to students then hand out the surveys to be completed with pen or pencil.

CHAPTER FOUR

RESULTS

The research variables in this study included pre-college: (1) Socio-economic status (SES), (2) First Generation, (3) Delayed Enrollment, (4) High School GPA, (5) Enrollment Status, (6) Employment status, (7) Developmental course enrollment, (8) English as a Second Language (ESL), student engagement: (9) Collaborative learning, (10) Active learning, (11) Academic challenge, (12) Support for learners, and (13) Student effort. Table 3 presents frequency distribution information for ordinal variables.

Table 3. Frequency Distribution of Age, Gender, Total Credits, Developmental, ESL, Employment, First Generation, Enrollment Intensity, and Delayed Enrollment

Variables	n	Groups	Frequency	Percent
		20-21	43	30.3
		22-24	22	15.5
		25-29	14	9.9
		30-39	12	8.5
		40-49	6	4.2
		50-64	0	-
		65+	1	.7
Gender	142	Male	58	40.8
		Female	84	59.2

34

Table 3 (continued)

Variables	*n*	Groups	Frequency	Percent
Total credits	136	None	12	8.5
		1-14 credits	49	34.5
		15-29 credits	33	23.2
		30-44 credits	19	13.4
		45-60 credits	11	7.7
		Over 60 credits	12	8.5
Developmental	137	Non Developmental	51	35.9
		Developmental	86	60.6
ESL	142	Non ESL	94	66.2
		ESL	48	33.8
Employment status	141	None	27	19
		1-5 hours	10	7
		6-10 hours	9	6.3
		11-20 hours	17	12
		21-30 hours	28	19.7
		More than 30 hours	50	35.2
First generation	142	Non- First generation	53	37.3
		First generation	89	62.7
Enrollment status	142	Part-Time	66	46.5
		Full-Time	76	53.5
Delayed enrollment	142	No	125	88
		Yes	17	11.9

Data Analytic Plan

Prior to analysis, variables were examined to screen for accuracy of data entry, missing values, and extreme values. This examination resulted in finding variables that had substantial missing values. Particularly four variables of interest were modified to replace missing data, (1) household income (38% missing), (2) delayed enrollment (22.5% missing), (3) Mothers Education (12% missing), and (4) Father's Education (9.2% missing). This researcher chose to apply the multiple imputation (MI) strategy to replace missing data. An option that was considered to deal with missing data was to trim cases that have missing values, but this option would decrease the sample size such that it would affect power. Therefore, to maintain sample size, MI has been found to be a superior method, over listwise deletion or mean series replacement because MI data produces smaller standard errors and less biased estimates (Manly & Wells, 2015). The role of MI is to produce valid statistical inferences, "the missing values for each participant are predicted from his or her own observed values, with random noise added to preserve a correct amount of variability in the imputed data" (Schafer & Graham, 2002, p. 167).

Using the analyze patterns tab in SPSS (v21), it was concluded that the missing values were random. The next step was to indicate the settings for random number generator (SPSS, v21), type of algorithm to be used to create statistical inferences. This researcher chose the mersenne twister because its one of the most widely used pseudorandom number generators and has passed stringent statistical randomness tests (Matsumoto and Nishimura, 1998). The variables included in the imputation model were: Delayed enrollment, Employment status, Mothers Education level, Fathers Education level, income sources (own, parents, employer, student loans) and household income. These variables were selected based on having few

missing values and having some relationship/association to the missing values because this will result in an improved imputation model where bias is reduced (Rose and Fraser, 2008).

After multiple imputation strategy was performed, this researcher created a variable to represent socio-economic status (SES). This researcher used three variables; mother's and father's education and house hold income, then standardized each variable and computed an average of all three variables. Table 3 shows a comparison of the means and standard deviations prior to and after multiple imputations. The mothers and fathers education variable was obtained from a self reported items added to the CCSSE upon administration. The item asked participants to select the highest level of education obtained by each parent and the following categories were provided: 1= not a high school graduate, 2= high school diploma or GED, 3= some college, did not complete degree, 4= Associate degree, 5= Bachelors degree, 6= Masters degree/1st professional, and 7= Doctorate degree. Approximately 63% of Latina/o Mothers and 66% Latina/o Fathers highest education level was high school or GED compared to 31% and 35% of White parents, 29% and 44% of Black parents, and 32% and 28% of Asian parents.

Table 4. Comparison of Means and Standard Deviation Prior to and After Multiple Imputation for Mothers and Fathers Education and Household Income

Variable		*n*	Mean	SD
Mothers Education	Prior to MI	125	2.43	2.14
	After MI	142	2.56	2.25
Fathers Education	Prior to MI	129	2.32	2.12
	After MI	142	2.39	2.14
Household Income	Prior to MI	88	$42661	$29618
	After MI	142	$45382	$32898

Correlations

Intercorrelations among some predictor variables (SES, HS GPA, five student engagement factors) and one outcome variable (spring semester GPA) was conducted and presented in table 6. Some relationships that are notable from this table are academic challenge and spring 2012 GPA and support for learners and high school GPA. Academic challenge appears to have a positive correlation with student's semester GPA (academic performance indicator). Academic challenge items represent the frequency of various academic tasks that students indicated during their academic schoolwork, such as analyzing the basic elements of an idea, applying theories or concepts to practical problems, etc. Therefore, students who indicated more engagement in such tasks had higher semester GPA. The other notable relationship was the negative correlation between the pre-college high school GPA variable and support for learners. Support for learners assessed student's perception of the college emphasis on various support items (i.e. encouraging contact among students from different economic, social, and racial or ethnic backgrounds, helping you cope with your non-academic responsibilities, providing financial support you need to afford your education). Students with higher high school GPA assessed support as less visible or emphasized, which may be related to their overall preparation and/or their ability to navigate college responsibilities independently.

Hierarchical Multiple Regression on Spring 2012 GPA Outcome

A hierarchical multiple linear regression analysis was conducted using spring 2012 GPA as the criterion variable. In the first step of the equation total credits, age, and gender were entered. The pre-college variables were entered in the second step of the regression equation

(SES, Developmental, Employment, First Generation, High School GPA, Enrollment Status,

Delayed Enrollment, and ESL). Finally, in the third and final step of the equation student

Table 5. Intercorrelations Among Spring 2012 GPA, SES, High School GPA, and Five
Student Engagement Factors

Variable	1	2	3	4	5	6	7	n	M	SD
Sp2012 GPA	__							142	2.39	1.27
SES	-.117	__						128	.00	.72
HS GPA	.160	.096	__					108	2.86	.75
CL	-.011	-.009	-.147	__				142	1.79	.47
AL	.179*	.033	.077	.204*	__			142	2.89	.69
AC	.111	-.078	.046	.353**	.286**	__		142	2.68	.58
SL	-.101	-.017	-.213*	.295**	.142	.289**	__	142	2.64	.75
SE	.035	-.099	-.046	.176*	.143	.168*	.163	139	1.64	.59

Note: Sp2012= Spring 2012, SES= Socio-economic status, HS GPA= High school grade point average, CL=
Collaborative Learning, AL= Active Learning, AC= Academic Challenge, SL= Support for Learners, SE=
Student Effort
*Correlation is significant at the .05 level
**Correlation is significant at the .01 level

engagement variables were entered (Collaborative learning, Active learning, Academic

challenge, Support for learners, and Student effort). Table 6 provides a summary of the

hierarchical regression analysis for variables predicting spring 2012 GPA.

Total credits, age, and gender (step 1) contributed significant variance to spring 2012

GPA, $F (3, 85) = 5.185$, $p < .01$; $R^2 = .15$ (adjusted $R^2 = .12$). In the next step, pre-college

variables contribute significant variance to spring 2012 GPA above and beyond that of total

credits R^2 change = .16, $F (8, 77)$ change = 2.32, $p < .05$, $R^2 = .31$ (adjusted $R^2 = .22$). In the

following step, student engagement variables did not contribute additional variance above and

beyond step 2, R^2 change = .05, $F (5, 72) = 1.24$, $p > .05$, $R^2 = .37$ (adjusted $R^2 = .23$). These

results do not support the hypothesis, that student engagement factors contribute significant

variance above and beyond pre-college variables. However, several variables account for unique

contributions to the model. The amount of credits students have earned significantly impact

student's GPA outcome. As total credits increase by one unit, semester GPA increases by almost

a quarter point (.24). Employment level (intensity) was also a significant factor in the model; it

Table 6. Hierarchical Regression of Total Credits, Age and Gender, Pre-College Variables, and
Student Engagement on Spring 2012 GPA

Variable	B	SE B	β	R^2	Adj R^2	ΔR^2	ΔF
Step 1				.155	.125	.155	5.185**
Total credits	.239	.094	.316*				
Age	.098	.144	.083				
Gender	.312	.243	.136				
Step 2				.319	.222	.165	2.326*
SES	.113	.230	.073				
Developmental	-.488	.256	-.206*				
Employment	-.145	.070	-.224*				
First Generation	.729	.341	.320				
HS GPA	-.029	.165	-.018				
PT/FT status	.116	.249	.052				
Delayed Enroll	.059	.470	.013				
ESL	.048	.261	.019				
Step 3				.374	.234	.054	1.248
Collab Learning	-.350	.266	-.144				
Active Learning	.367	.181	.215*				
Acad Challenge	-.021	.219	-.011				
Support Learners	.183	.162	.127				
Student Effort	.178	.196	.098				

** $p < .01$, * $p < .06$
$N = 165$, Adj. = Adjusted, $\Delta R^2 = R^2$ change; $\Delta F = F$ Change

showed that one unit change (more work) in work level is associated with a .14 decrease in GPA.

First generation status contributed a unique and significant contribution to the model, for those

who identified as first generation compared those who did not can be predicted to have a .72

increase in their GPA. Developmental status contributed a unique contribution to this model as

well. However, the opposite can be observed from this variable, when developmental status

changes from non-developmental to developmental (taken or plan to take) GPA can be predicted

to decrease by almost a half a point (.48). Finally, the one student engagement variable that

uniquely helps explain semester GPA is active learning (intensity or frequency of academic tasks). One unit change in active learning is predicted to result in a .36 increase in semester GPA.

Logistical Regression Analysis on Retention and Degree Completion Outcomes

A logistic regression analysis was conducted on two dichotomous outcomes, (1) persistence to fall 2012 semester and (2) degree completion and/or transfer. Variables were entered in different blocks remaining consistent with theoretical proposal, that is, in block 1 total credits, age and gender were entered, then pre-college variables were entered in block 2 and finally student engagement were entered in the final block. With regards to the first outcome (persistence) the first block of the model resulted in a significant fit, yielding a chi-square of

Table 7. Logistic Regression Predicting Semester Retention From Pre-College Variables and Student Engagement Variables

Variable	B	SE	Wald	Exp(B)	Chi-Square	df	Sig.
					5.58	5	.349
No credits vs 15-29 credits	4.50	1.95	1.43*	90.44			
Age 18-19 vs 20-21	-2.71	1.40	3.73*	.06			
Males vs Females	-.017	.870	.000	.984			
Socioeconomic Status	-1.28	1.25	1.04	.278			
Developmental vs Non-developmental	-.013	.846	.000	.987			
Over 30 hours of work vs 1-5 hours per week	-3.461	1.89	3.33	.031			
First generation vs Non-First generation	-1.95	1.60	1.47	.142			
High School GPA	-.183	.673	.074	.833			
Part time vs full time enrollment status	.107	1.04	.011	1.11			
Non-Delayed vs Delayed Enrollment	-4.018	1.57	6.51*	.018			
ESL vs Non-ESL	-1.41	1.04	1.85	.242			
Collaborative Learning	-2.15	1.02	4.39*	.116			
Active Learning	-.833	.728	1.30	.253			
Academic Challenge	.472	.851	.308	1.60			
Support Learners	1.25	.692	3.31*	3.52			
Student Effort	.600	.748	.643	1.82			

** $p < .01$, * $p < .05$

25.23, $p < .01$, in the second block, adding the pre-college variables, the model was also

significant, a chi-square of 35.62, $p < .05$. However, the change from block 1 to block two is

non-significant, $\chi^2 (2) = 10.39$, $p = .187$. Finally, in the final model (block 3) including the

student engagement factors, the model is significant, chi-square of 41.20, $p < .05$, but the change

chi-square was not significant, $\chi^2 (3) = 5.58$, $p = .349$. Variables in the equation that significantly

contribute to the model were total credits, age, delayed enrollment, collaborative learning and

support for learners. Table 8 describes the variables b-values, Wald statistic and

Table 8. Logistic Regression Predicting Degree Completion From Pre-College Variables and Student Engagement Variables

Variable	B	SE	Wald	Exp(B)	Chi-Square	df	Sig.
					33.40	27	.184
Block 1					13.25	10	.544
No credits vs 15-29 credits	.597	1.54	.149	1.817			
Age 18-19 vs 20-21	-1.06	1.28	.690	.344			
Males vs Females	.104	.856	.015	1.11			
Block 2					7.02	12	.856
Socioeconomic Status	.115	.804	1.04	.278			
Developmental vs Non-developmental	-.013	.846	.021	1.12			
Over 30 hours of work vs 1-5 hours per week	2.86	1.51	3.58*	17.47			
First generation vs Non-First generation	.048	1.39	.001	1.05			
High School GPA	.886	.641	1.90	.167			
Part time vs full time enrollment status	-.142	.991	.020	.886			
Non-Delayed vs Delayed Enrollment	.777	2.01	.149	2.17			
ESL vs Non-ESL	.623	1.14	.296	.586			
Block 3					14.46	5	.013
Collaborative Learning	2.20	1.15	3.65*	9.08			
Active Learning	-.784	.716	1.19	.457			
Academic Challenge	1.08	.819	1.75	.186			
Support Learners	.793	.693	1.31	.252			
Student Effort	-1.28	.762	2.82	.278			

** $p < .01$, * $p < .05$

odds ratio. Total credits variable revealed that students who have earned 15 to 29 credits (in comparison to no credits) are ninety times more likely to persist to the fall 2012 semester. Among different age groups, students who are ages 20-21 (compared to 18-19) are less likely to persist to the fall 2012 semester. Similarly, students who delayed their enrollment are less likely to persist to fall 2012. Among student engagement variables, collaborative learning and support for learners indicate that as each variable increases, the odds of persisting to fall 2012 decrease.

Concerning the second outcome (degree completion) the model showed a non-significant fit of the data because the model chi-square is non-significant, χ^2 (3) = 33.40, p = .184.

Hypothesis

Hypothesis 1 (a, b, c) predicted that pre-college student factors would contribute significant variance of student success outcomes (spring 2012 GPA, persistence, and degree completion). This hypothesis was partially supported, when controlling for total credits earned pre-college variables add 13% additional variance above and beyond that of total credits. However, when testing pre-college variables on different success outcomes, persistence and degree completion, no statistical significant contribution to the prediction model was found. Hypothesis 2 (a, b, c) predicted that student engagement factors would contribute significant variance of student success outcome (semester GPA, persistence, degree completion) above and beyond pre-college student factors. This researcher found that as a group, student engagement factors did not contribute statistically significant variance to the model for any of the student success outcome, above and beyond that of pre-college variables.

Post hoc Analysis

After correlations among all predictor variables were observed, two student engagement variables appeared to correlate with persistence were support for learners and student effort. This researcher conducted a new logistic regression model using only support for learners and student effort as the predictor variables on persistence. This model showed a significant fit of the data because the model chi-square is significant, χ^2 (1) = 9.43, p = .009. The current model correctly predicted 71% of the sample. The odds of a student persisting (to the fall 2012 semester) increase, by 1.78 times, for every unit change in support and by almost two times (1.92) for every unit change in student effort

Table 9. Post-hoc Logistic Regression Predicting Semester Persistence From Support for Learners and Student Effort

Variable	B	SE	Wald	Odds ratio	Chi-Square	df	Sig.
					9.43	2	.009
Support Learners	.580	.282	4.23*	1.78			
Student Effort	.657	.348	3.55*	1.92			

** $p < .01$, * $p < .05$

CHAPTER FIVE

DISCUSSION

This chapter will discuss the implications of the results presented in Chapter 4. One of the

major goals of this study was to test a theory of student success of Latina/o community college

students. First, a discussion of correlational findings will be presented. Second, findings of the

main analysis used to test the theory will be discussed. Third, a discussion of the post hoc

analysis will be presented. Next, implications for practice and research will be discussed. Finally,

limitations of the study will be reviewed and suggestions for future directions will be presented.

Significant Correlations

Two significant correlational relationships were found among student engagement factors

and spring 2012 GPA: academic challenge and support for learners. Academic challenge was

found to have a positive correlation with semester GPA, as students indicate more engagement in

academic intensive tasks they earn higher semester GPAs. This supports the theoretical

proposition by Kuh, Kinzie, Schuh, and Whitt (2010) that the amount of effort student expends

on academic rigorous tasks is related to academic engagement and indirectly to higher success

outcome (semester GPA). This finding is also consistent with what Pascarella and Terenzini

(2005) found with regards to involvement and integration on student persistence, "that the level

of student involvement and integration in any of the components of an institution's academic and

social systems can be a critical factor in student's persistence decisions" (p. 426). Among

Latina/o students, academic rigorous preparation appears to be a significant predictor of student persistence and transfer (Crisp, Taggart, Nora, 2014; Suarez, 2003).

Support for learners was found to have a negative correlation with high school GPA. Students with higher high school GPA assessed support as less visible or emphasized. Some researchers have found a link among high school GPA and college success (persistence and degree completion) (Adelman, 2006; CCSSE, 2005; Kuh, Kinzie, Buckley, Bridges, & Hayes, 2007). Perhaps, high school GPA captures a set of psycho-social, academic, and cultural values that provide a stronger ability to navigate the college resources independently. Therefore, students that come with this type of preparation to college may not perceive the support of the college as strongly, however this may not be a reflection of the quality of support services offered, it may simply indicate that students did not need to seek out such services. Furthermore, support for learners may not have the predictive capacity without controlling for high school GPA.

Main Analysis

One of the major objectives of this study was to test a theory of student engagement on community college Latina/o students. Specifically, student engagement factors predicted the success of Latino community college students above and beyond pre-college variables. In order to test this theory, the first step was to test the predictive capacity of pre-college variables. It was found that when controlling for total credits earned, age, and gender and when the outcome (criterion) was spring 2012 GPA pre-college variables mattered. Particularly, they help explain 16.5% of the variance on spring 2012 GPA. This finding is not surprising if we consider the literature on pre-college variables. This finding is consistent with the literature on factors that

contribute to student success (persistence and transfer), pre-college student variables, such as high-school GPA, first generation, developmental explain, partially, the success of students on their GPA outcome (Crisp, Taggart, Nora, 2014; Nuñez, Crisp & Elizondo, 2012). Therefore, pre-college variables impacts the extent in which students can succeed when measured on academic performance (GPA).

However, other success outcomes, semester persistence and degree completion, did not appear to be explained by the pre-college factors. When considering other research on factors that contribute to or act as barriers to transfer for Latina/o community college students, this finding is surprising and not consistent. For example, if we consider the white paper by Nuñez, Crisp, Elizondo (2012) various pre-college factors were documented as significant to transfer students in a Hispanic Serving Institution, such as gender, age, English as a second language status, first generation (parental education), work commitment, and enrollment type (full time versus part time). Theoretically speaking persistence and degree completion is much more dynamic than the list of variables utilized in this study. Perhaps the exclusion of psycho-social factors appear to have greater influence in persistence and degree completion. Similarly, institutional factors may determine psycho-social and behavioral outcomes that lead to decisions of persistence and commitment to complete a degree. Another helpful explanation may be that for these outcomes, both persistence and degree completion, requires a larger sample size to detect effects.

At the next stage of the model it was predicted that student engagement factors would contribute significant variance of student success outcomes (semester GPA, persistence, degree completion) above and beyond pre-college student factors. This researcher found that as a group,

student engagement factors, did not contribute statistically significant variance to the model for any of the student success outcome, above and beyond that of pre-college variables. Beyond theoretical testing, there were student engagement variables that contributed significant variance on the various success indicators. Active learning was found to significantly contribute to the predictive model on semester GPA, collaborative learning and support for learners were found to be important factors explaining retention, and collaborative learning was also found to be an important predictor of degree completion.

Active learning was a four-item scale that measured the frequency of various academic tasks (i.e. preparing two or more drafts of a paper, number of assigned textbook, manuals, books). The hierarchical multiple regression models showed that academic learning was a significant predictor of semester GPA. This is consistent with the transfer literature for Latina/o students (Crisp, Taggart, Nora, 2014; Nuñez, Crisp & Elizondo, 2012) and with the comprehensive work of Pascarella and Terenzini (2005) indicating that when students are involved and integrated in any of the institutions academic and social systems they are more likely to experience positive educational outcomes. Active learning among Latina/o students may be capturing the "involvement" component that was introduced by Astin (1984) where he clarified that academic involvement represents the physical and psychological energy that the student spends on academic tasks. This indicates that the quality and rigor of their in-class experience may have greater impact than the extracurricular involvement on their academic performance as measured by GPA. It is important to note that this is one of the scales that was re-fitted from the CCSSE scale of collaborative and active learning to an independent active learning scale (Crisp & Nora, 2010).

The two items that were found to be specifically significant in predicting retention to fall 2012 semester were collaborative learning and support for learners. Collaborative learning was a refitted scale to seven items that measure the extent to which students worked with other students and talked to instructors and/or advisors (faculty-student interactions). This is consistent with what Nuñez, Crisp, and Elizondo (2012) found in their study, having informal or social contact with faculty about academic matters outside of class improves the likelihood of transferring. Support for learners assessed student's perception of the college emphasis on various support items (i.e. encouraging contact among students from different economic, social, and racial or ethnic backgrounds, helping you cope wit your non-academic responsibilities, providing financial support you need to afford your education). Crisp, Taggart, and Nora (2014) discussed the importance of supportive individuals in the lives of Latina/os (i.e. role models, mentors, parents, peers, and Latina/o communities on campus), likewise Suarez (2003) found that Latina/o student's interaction with their academic advisors leads to a higher likelihood of transfer. What these variables have in common are the social contact with professors, peers, and supportive staff suggesting that among Latina/o students the quality of relationships, contact, and/or support matters when measured by persistence. Perhaps, this is related to the concept of integration that Tinto (1986) introduced; the extent to which students come to share the attitudes and beliefs of their peers and faculty.

It was surprising to find that not all the student engagement factors, as a group, contributed significant variance to the model on the various student success outcomes. An explanation for such results is perhaps what has been documented in the introduction, most research related to student engagement and success outcomes have been conducted at the

university level. Therefore the myriad of social, cultural, environmental issues that differ from the university to the community college may not have adequately captured this population. In addition, much of the previous research, particularly that of NSSE and CCSSE has been particularly focused on developing "benchmarks" or institutional markers of effectiveness, on this note Wolf-Wendel, Ward, and Kinzie (2009) warned that "NSSE results are aggregated to the institution level to encourage institutional research and examination of institutional practice and effectiveness" (p. 426).

There is evidence that methodological issues may also be a determining factor in such results. Nora, Crisp, & Matthews (2011) documented that the few available research with community college populations comes directly for the author of the NSSE or staff who work for NSSE or CCSSE. McClenney, Marti, and Adkins (2006) claimed, "Results from three studies validate CCSSE's use of student engagement as a proxy for student academic achievement and persistence. CCSSE benchmarks consistently exhibited a positive relationship with outcome measures" (p. 5). Perhaps, further research is needed to substantiate or reject this type of claim.

In summary, the student engagement factors that appeared to have greater importance among Latina/o community college students were active learning, collaborative learning, and support for learners. Active learning appeared to be significant for this group of students. The current sample of Latina/os had earned credits previously to taking the CCSSE in spring 2012. Given that a large percentage of students identified as developmental and ESL, 60% and 33% respectively, it can be assumed that students spent at least one semester enrolled at the college prior to taking credit-bearing courses. Therefore, this group of students could have been at the college for two or more semesters prior to taking the CCSSE survey. We may conclude that they

had an opportunity to become familiar with the culture, aware and possibly access support systems. Active learning may be particularly relevant for students who have previously enrolled in courses and had an opportunity to gain familiarity with the academic environment.

Collaborative learning and support of learners represent elements of student experiences that happen outside of the classroom where the climate, environment, and culture of the institution have the potential to influence the experience of students. This reinforces what Crisp, Taggart, and Nora (2014) proposed, that Latina/o students can benefits from developing supportive relationships with peers, faculty, and staff. Moreover, "culture affects Latina/o student success not only abstractly or indirectly through family/home experiences but also in very concrete ways through interactions with faculty and students and preferred participation patterns in the classroom" (Crisp, Taggart, and Nora, 2014, p. 16).

Post-hoc Analysis

In the current study, post-hoc analysis provided evidence of student engagement factors contributing positive effects on persistence. Specifically, when not controlling for pre-college factors, support for learners and student effort appear to work together to explain persistence. As previously stated, support for learners assessed student's perceptions of the extent to which the college emphasized various support items (i.e. Encouraging contact among students from different economic, social, and racial or ethnic backgrounds, helping you cope wit your non-academic responsibilities, providing financial support you need to afford your education) and student effort measured to what extent students utilized various support services (i.e. tutoring, computer lab). Therefore, when students rated high the college's emphasis on support (institutional) and they also reported high utilization of supportive resources students are more

likely to persist to their next semester. For Latina/o students this may be the critical juncture of engagement.

Implications for Practice and Future Research

Student engagement appears to be in its early stages concerning research and practice with community college populations. This study introduced a meaningful pattern of engagement for Latina/o students in community colleges: active learning, collaborative learning, and support for students. Course pedagogy and classroom interactions have profound effect on student success outcomes (Acevedo-Gil, Santos, Alonso, & Solorzano, 2015). The findings here suggest that Latina/o students welcome and desire academically rigorous tasks (i.e. worked on a paper or project that required integrating ideas or information from various sources, numbers of assigned readings), but equally important are the opportunities to collaborate with both faculty and peers. Faculty who continue to engage in a lecture-based style of teaching where the faculty maintains authority and attention and the interaction level is low may not effectively engage students. Although this style of teaching offers some advantages, such as delivery of large amounts of information, control of pace and content, and accommodates large numbers of students it does not encourage collaboration, participation, or interaction.

Moreover, some professors may be engaging in what Acevedo-Gil, Santos, Alonso and Solorzano (2015) called "deficit and demeaning pedagogical practices" that result in an invalidation of the student. When students are invalidated they experience greater difficulties with academic performance, persistence and degree completion (Acevedo-Gil, Santos, Alonso and Solorzano, 2015). Rendon (1994) discussed six elements that are part of the theory of validation: (1) the responsibility of initiating contact with students is on institutional agents (i.e.

faculty, advisers, coaches), (2) validation increases sense of self-worth and capacity to learn, (3) validation is a pre-requisite for student-development (increase in academic self-confidence), (4) validation can occur in and out of class, (5) validation should not be viewed as an end, but as a developmental process and (6) validation is most critical when administered early in the college experience. In a community college environment, it is not uncommon for students to juggle multiple responsibilities, including working more than 30 hours per week and family obligations. This pattern places a greater emphasis on in-class experiences for engagement and validation.

Perhaps, faculty should consider a student-centered style of teaching that encourages student ownership of knowledge, provides real life connections, promotes active learning, fosters critical thinking, and allows for various assessment strategies. The Association of American Colleges & Universities provide a list of practices, "high-impact" practices, including collaborative assignments and projects, service learning, community-based learning, and common intellectual experiences that have been shown to benefit historically underserved students (www.aacu.org/resources/high-impact-practices). Rendon (1994) stated that academic validation occurs when professors assist students to "trust their innate capacity to learn and to acquire confidence in being a college student" (p. 40). Rendon-Linares and Muñoz (2011) suggested ways in which faculty could validate students, such as inviting guest speakers and exposing students to individuals who come from similar backgrounds, developing close relationships with students, and learning about student's stories.

Nora, Crisp, and Matthews (2011) proposed a new engagement model that begins exploring behavioral components in classroom and outside of class (climate), they also propose that these behavioral components interact with non-behavioral components: student beliefs,

attitudes, and perceptions (which may capture there sense of belonging). The combination of these factors, together, result in student engagement, the authors stated "actions and behaviors do not occur in a vacuum, independent of the impact on students' thoughts, commitments, and viewpoints" (p.125). In their proposed model student engagement then creates a path to academic and social integration which is explained each as latent constructs that are made up of multiple observable items, such as feeling satisfied with the instructional techniques utilized in the classroom, feeling validated in the classroom.

There is a body of research that proposes that students may face a "mismatch" or "disconnection" between student's home culture and dominant school/classroom that has been linked to academic difficulties (Baldwin, Chambliss, & Towler, 2003; Guiffrida, 2003; Hurtado, 1994; Hurtado, Carter, & Spuller, 1996; Reynolds, Sneva, & Beehler, 2010; Smedley, Myers, & Harrell, 1993; Wolf-Wendel, Ward, & Kinzie, 2009). Similarly, some researchers argue that minority students are more likely to perceive their campus environment less favorably and negative perceptions have been associated with aversive outcomes, such as poor academic performance and persistence attitudes (Banks, 2010; Castillo, Conoley, Choi-Pearson, Archuleta, Phoummarath, & Landingham, 2006; Reid & Radhakrishnan, 2003). This line of research points the importance of belonging that, in the community college context, largely depends on positive interactions with faculty members. Contributing to sense of belonging may be experiences of racism, microaggressions, bias, discrimination, race-related stress (minority stress), and acculturation (from home culture to dominant school/classroom norms) (Cokley, 2002; Johnson & Arbona, 2006; Rodriguez, Myers, Morris & Cardoza, 2000; Smedley, Myers, and Harell, 1993). Reynolds, Sneva, Beehler (2010) stated that "their perception of the negative effect of

institutional policies and practices, possibly from their college or university, on them as students

of color may influence their need to disengage academically or socially to cope" (p. 144).

Therefore, future research on community college student engagement of Latina/o students may

benefit from including belongingness and campus culture as a determinant or factor of student

engagement.

A different area of concern for future research is the attention to student's goals;

specifically distinguishing students who are seeking certificate or vocational programs versus

associates or transfer programs. In the current study, the data could not distinguish between

certificate and associate degree seeking students however certificate seeking students are more

likely to enroll part-time since the number of courses required are less and most of the course

offerings are designed with working adults in mind. In the current sample 46% of students

identified as part-time. What the literature shows is that students who enroll at a part-time basis

are less likely to be retained (Nuñez, Crisp, and Elizondo (2012) and students who attend

exclusively part time had a 25% completion rate compared to 49% for those who attended

exclusively full time

(http://www.aacc.nche.edu/Publications/Reports/Documents/Trends_CC_Enrollment_Final2016.

pdf). Therefore, the level and type of engagement of students who are predominantly part-time

and certificate-seeking students will presumably be different than those who are full-time and

associates degree seekers. Future research should distinguish these groups of students to

ascertain a clearer and more accurate picture of student engagement of Latina/o students.

Limitations

There were a number of limitations, including sample size, instrumentation, procedural, and methodological. The sample size for this study was 142 students, which was an adequate size for some of the analysis, but when working with as many variables (14), as in this study, large samples have more power to detect effects. The instrument used in this study was another limitation, as we found from the reliability (alpha) scores of three sub-scales (collaborative learning, active learning and student effort) had acceptable scores, but not excellent, .69, .65, and .69 respectively. Since reliability data relates to the consistency of the measure over time the findings obtained in this current study could have been limited to the reliability of the actual instrument. In addition, the validity of this survey has come under scrutiny, specifically as it relates to construct validity. The founders of this measures have long argued that the sub-scales of this measure were not intended as true factors and therefore were not tested stringently as such. Moreover, they provide a cautionary statement, particularly working with minority groups:

> It is important to note that this study represents one of many steps that must be taken in order to understand better the relationship between student engagement and educational outcomes for students in community colleges, particularly in regard to identification of the educational practices that matter most to enhancing the success of African American, Hispanic, and other students who have been underserved and underrepresented in higher education historically (Greene, Marti, & McClenney, 2008, p. 534)

Procedural and methodological limitations were also present. The data collection procedures included volunteer participation of credit bearing, general education, "gateway" courses such as introduction to psychology, college level English, and college level math courses. These courses offer an opportunity to capture a wide array of students, it may skew the sample representativeness for Latinos. Specifically, two variables of interest that may have been skewed are developmental and generation 1.5. Among the current sample, 60% identified as

developmental students (have taken developmental courses or is planning to take) and 72.5%

identified as generation 1.5 (first language not English and/or ESL background). Therefore, this

sample is probably capturing a select, more accomplished group of students. In the case of

developmental students, if enrolled in college level courses they have successfully managed to

complete the developmental sequence of such subject (Math and/or English). What are missing

from the current student engagement exploration are those students who are currently enrolled in

a developmental course. Similarly, generation 1.5 students captured in this study are those who

have managed the hurdles of college transitions and were currently enrolled college level

courses; in fact, 75% of the current sample identified as both generation 1.5 and developmental.

With regards to methodological issues in the current study, two variables that were

created and perhaps lack the comprehensive nature of the specific factor were SES and

Generation 1.5. Socio-economic status is mostly a sociological construct that provides a person's

or group's hierarchy in a societal strata. The higher in this hierarchy a person is the more access

they have to material goods, power, healthcare, leisure time, educational opportunities, etc. To

capture SES in one variable or marker is very difficult and some researchers have attempted to

measure this construct with a proxy variable such as household income or occupational title. The

current study made an attempt to develop a composite variable that incorporated household

income and parental education. The limitation here is that household income was gathered from

financial aid application or when not available census neighborhood median income information.

In the case of financial aid applications there are persons who did not or could not apply (i.e.

undocumented students, international students) for financial aid. In the case of census

neighborhood median, this provides an average of the neighborhood income where the student lives, rather than an accurate representation of his or her own home (current circumstances).

The English as a Second Language item asked students if they had previously enrolled (taken) ESL courses or were planning to take. However, the information regarded when they enrolled in ESL was unknown which may influence how students respond to other student engagement items, for example the college experience of a student who took ESL in grade school or high school maybe different from those students who recently completed ESL or are still planning to take part of this sequence. Some studies have described the pedagogical and institutional challenges ESL students face, such as teachers who conflate the linguistic abilities to general cognitive and social aptitude and the process of evaluation and placement of English proficiency (Harklau, 2000; Hansen, 2010) which may be more relevant for those students currently enrolled, recently enrolled or planning to enroll. Future research should make an effort to disaggregate this group of students and inquire about when students completed ESL, their level of satisfaction with the curriculum, and their own perception of readiness for monolingual-English courses.

Conclusion

As a final summary, CCSSE has provided significant contributions to understanding the experience of community college students, particularly as it relates to effective practices both inside and outside of the classroom. CCSSE's major purpose was to use benchmarking as a means to measure institutional efforts that can support student engagement. Higher education boards and administrators were eager to have data to guide policy and practice. The amount of schools that have contributed to the dissemination of this survey indicates a great interest in

benchmarking or comparisons among similar institutions. It appears that in large part, this survey and the original survey before this one (NSSE) has offered a great amount of information and guidance in the realm of institutional effectiveness on the basis of the benchmarks. However, there is evidence that perhaps these benchmarks do not fully explain student engagement, particularly as it relates to Latina/o students.

Future research would benefit from challenging the current construct of student engagement as presented in CCSSE and redirect its efforts in helping institutions develop a greater understanding of the dynamic interactions among pre-college factors (social-cultural), environment/climate, student behavior (social and academic integration), and belongingness. Beyond student engagement there appears to be a hesitance to challenge the dominant ethos of higher education. Community colleges were founded on the premise of serving its community and workforce needs, the continued challenge is being responsive to the changing social-cultural make up of the community and simultaneously being proactive of the ever evolving economic conditions and governmental forces. Studies like this one and many others can offer the necessary support and guidance to community college leaders, administrators, faculty, and policy makers alike to address the systemic and structural problems that continue to impede progress of students of color.

APPENDIX A

STUDENT ENGAGEMENT FACTORS AND ITEMS

Student Engagement Factors and Items

Variable	Items
Collaborative Learning	Worked with other student on projects during class
	Worked with classmates outside of class to prepare class assignments
	Tutored or taught other students
	Participated in a community-based project as a part of a regular course
	Talked about career plans with an instructor or advisor
	Discussed ideas from your readings or classes with instructors outside of class
	Worked with instructors on activities other than coursework
Active Learning	Prepared two or more drafts of a paper or assignment before turning it in
	Worked on a paper or project that required integrating ideas or information from various sources
	Number of assigned textbook, manuals, books, or book-length packs of course readings
	Number of written papers or report of any length
Academic Challenge	Analyzing the basic elements of an idea
	Synthesizing and organizing ideas, information, or experiences in new ways
	Making judgments about the value or soundness of information
	Applying theories or concepts to practical problems or in new situations
	Using information you have read or heard to perform a new skill
Support for Learners	Providing the support you need

Variable	Items
	Helping you cope with your non-academic responsibilities
	Providing the support you need to thrive socially
	Providing the financial support you need
	Encouraging contact among students from different economic, social, and racial or ethnic backgrounds
Student Effort	Frequency: peer or other tutoring
	Frequency: skill labs (writing, math, etc)
	Frequency: computer lab
	Frequency: Academic advising/planning
	Frequency: Career counseling

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