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Redesign Program for Community College Developmental Education Students: Learning through the Sense of Belonging

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ABSTRACT

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This is a case study of students and instructors at a diverse suburban community college enrolled in a Developmental Education Redesign Program for fall of 2013. A new English curriculum consisted of combination classes of developmental English and a general college composition course. An intervention included classroom strategies to develop a sense of belonging delivered through affective learning techniques. The purpose of the study was to determine if a student's sense of belonging could be measured. Quasi-experimental features were applied to find the best way to analyze the study. A sense of belonging scale was developed for both students and their instructors, and a student demographics scale defined characteristics that indentified predictors for at-risk students. Instructor's sense of belonging was also assessed and classroom observations were conducted. A number of statistical equations were run, including factor analyses, ANOVA, linear and multiple regression. Results were analyzed to see if various outcomes made a difference in classroom climates and if these impacted student performance. The sense of belonging measurement increased between Week 9 (T^1) and Week 14 (T^2), indicating good reliability and a positive change in scores. Some results that were noted: concentration on peer interaction, influence of college services and the approachability and outreach by the instructor. Specific student demographic predictors

identified at risk students, particularly in lack of use of additional support services, time spent at college, and those who worked full time were affected by lower sense of belonging scores. More research is needed for challenges that could better report on improved academics and retention. Implications state that this type of sense of belonging measurement could be beneficial in recognizing an early report of at-risk students engaged in similar programs of change. A conscious implementation of institutional support services and monitoring instructor engagement can produce favorable outcomes as needs increase for success of similar curriculum redesign programs.

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CHAPTER I

INTRODUCTION

Developmental Education and Community Colleges

Developmental education within a community college and in higher learning academics has maintained an important and unique role in the college arena, but it now faces a monumental challenge. In the not so distant past, those who were struggling in basic academic skills were placed in remedial courses. This was common in the public school system for many years, and continued into higher education practices (Colorado Department of Education [CDE], 2014). There were two types of students attending community colleges, vocational or technical students and academic preparatory students.

The traditional understanding that community colleges filled a niche, particularly for vocational and technical workers, is common knowledge (Arapahoe Community College Catalog, [ACC] 1977). It meant that many of these individuals had not been geared toward or ever held interest in the academic track of education. Because of this practice, a large number of these students were low achievers in reading, writing or math but still had a need for these skills in actual job situations in order to comprehend and carry out instructions. In addition, a certain amount of academic knowledge is fundamental in most vocational technical jobs, e.g., a basic understanding of mathematics for those interested in business services or construction (ACC Catalog, 1977, pp.104-5). Also, vocational technical students had to be able to read, comprehend and carry out

instructions. Therefore, not only were math skills necessary, but basic skills in reading and writing needed to be addressed and implemented at the community college level as well. Many times, with indications of job promise and improvement, the impetus to do better in these academic areas was what it would take to set goals of success for such students; with this newfound motivation, many students were able to succeed at math, reading and writing (*Colorado Department of Higher Education Data & Reports*, 2012).

The other type of student that traditionally attend community college are those who have some desire to pursue the academic track, but for one reason or another have not gained entry into a higher level institution, and these students want to eventually transfer to a 4-year institution. The community colleges now serve about 40% of beginning college students (Crisp & Mina, 2012, p. 147). Along with the face of change of vocational or technical positions, 2013 CCCS statistics state that 90% of developmental students are now hopeful transfer students--they want to continue their learning to a college or university (Stilwell, 2013). For these students, a community college experience allows them to improve not only academics, but skills that would be imperative for student success in a 4-year institution such as study skills, self-discipline and goal setting, to name a few (Clark, 2005). Nevertheless, 2-year institutions are failing. To date, only about 25% of these developmental education students are reaching the doors of 4-year institutions (Stilwell, 2013). This is one more reason why the investments in curricula review, particularly in the basic academic areas reading, writing and math are taking place. It is needed if the community college transfer student is going to survive his or her community college education and move toward another degree of higher learning.

By the 1990s, the term for teaching and learning this level of college student became more inclusive--instead of the traditional word, *remedial*, that had been associated with public school lower level academics; developmental studies gave way to *developmental education*. Developmental education seemed to give an accurate description of college students gaining in academic skills without compromising their success with the out-of-date term of "remedial" to name their courses. For a number of years, these students were given a great deal of support to succeed at their chosen professions, but with the deep changes in the economy at the turn of this century, a review of this type of support and how to improve it became one of the challenges of the community college curricula. By the first decade of 2000, the switch to use *developmental education* to describe remedial classes was common practice, and it is the term that is found on the CCCS website to name these courses (CCCS, 2013).

The efforts to prepare developmental education students in most community colleges, which had been previously described as one of the strengths of 2-year colleges, is no longer seen as such, but these efforts instead are perceived as weaknesses. During tight economic times, an alternative for displaced workers to find new skills has been to apply to the community college system. When society suffers from high unemployment rates, the unemployed turn to a place where they may be able to gain new skills or a new career with community college credit (Simpson, 2009; Torres, 2014). Currently, along with an improved national economy, displaced workers are fewer in number and jobs are more plentiful than in recent years. Hence, enrollment rates at the community college level have dropped and continue to do so, and less demand for community colleges means less money allotted to these institutions. Slowly shrinking government cuts and

reduced state and federal funding have forced many community colleges to reevaluate the effectiveness of these preparatory systems of the past (Simpson; Torres). Administrative influence has been needed to promote a paradigm shift that will satisfy budget cuts, along with support of faculty and college staff, to develop new and better curricula that will positively affect these changes.

Amidst this struggling educational economy and with state coffers under similar constraints, the community college track still remains an important resource for improving lives of moderate and lower income individuals, as more and more of the post secondary student population turns to economical ways to gain a higher education (Simpson, 2009). In light of these financial issues, how will community colleges be sure that its faculty and administration are meeting the needs of a large population of developmental education students? This question needs to be answered, and it has resulted in a shift of importance and beliefs about the spectrum of learning at 2 and 4-year institutions.

For the last two decades, the faces of community colleges have slowly changed to increase academic expectations of 2-year college students, with state community college systems rising to this academic demand to pursue a higher level of learning. There are a number of important concerns that have resulted in the implementation of this current study -- currently from the beginnings of a strong community college system in the mid-1950s and over the course of the years throughout the last century, reorganization has been needed to reflect a large change in outlook by and for the communities in which these colleges are located; along with occupational and vocational classes, community

colleges offered refresher courses in reading, writing and math when a potential academic student was in need of improvement (ACC Catalog, 1977).

Accreditation for colleges, both 2-year and 4-year institutions, put forth by the Higher Learning Commission has become more stringent, particularly over the last decade (Table Top Community College, 2012; Colorado Community College System, 2014). Community colleges have become more than the only choice or a compromised choice for individuals with desire to gain an academic degree. These institutions have become a smart choice with transfer courses being accepted by the Colorado Department of Education (CDE). For example, the Colorado Community College System has created articulation agreements with both state and private institutions of secondary learning that accept equivalent coursework in reading, writing and math, many times placing a successful AA graduate as a junior in these 4-year institutions (Table Top Community College, 2012), which allows for community college students to gain needed college credit at an economical price. If, for two years, a student is willing to forego the additional advantages and services available at most 4-year colleges or universities (CCCS, 2014).

Developmental education has held a long-standing place in the community college system, but because of the federal cuts describe above, a department strongly dependent upon old remedial practices will not be sustainable. The continued practices in developmental education are no longer to be promoted, but a new avenue has been needed to reach a higher order of curriculum for developmental education students. More 2-year college programs are gearing up to meet similar or equivalent standards as the

larger colleges and universities. This new attitude was needed when the assessment for a redesign of developmental education courses by the CCCS Development Education Task Force was put into place in 2012.

Rationale for Study

Now that the problems of collegiate academics versus attrition, academic achievement versus poor outcomes, and time versus money have been placed upon the developmental education table, solutions to these problems need to be reviewed. One such solution is a redesign of curricula that will increase the knowledge base of the developmental student in a shorter amount of time. For instance, a 2-year college investing in improved, more accelerated programs can do this for its more adult population (Tracy & Rose, 1992). By combining a developmental course with the necessary skills of a college transfer course and developmental skill acquisition, and by doubling the availability of credit hours required per semester, a student could achieve the same amount of success in a shorter amount of time: i.e., one semester instead of two. This study is an evaluation of such courses at a community college in the CCCS. By the actual implementation and evaluation of a study within an academic school year, the potential benefits and possible shortcomings of a trial redesign program will be documented.

In the present study, a new curriculum in consideration of affective learning, as in the definition of Bloom's Taxonomy (Bloom, Englelhart, Furst, Hill, & Krathwohl, 1956; Anderson & Krathwohl, 2001), and a specific method of how to employ the affective domain were integrated as an intervention. An instructional pilot team was given training in the importance of the sense of belonging in the classroom. Based on Maslow's

hierarchy of needs (Maslow, 1943; 1968), the sense of belonging was introduced through a number of teaching strategies that could be used to develop this important tool (Clark, 2005). By introducing the theory behind the sense of belonging to the instructional pilot team, each instructor was able to choose to what extent their interpretation of the theoretical concept would be used.

Observations of the instructors during the semester were conducted to determine which instructors had embraced the theory and if there were observed indicators that the sense of belonging was being promoted in the classroom (see Appendix A). Another important factor considered was academic achievement determined by final grades and actual completion rates of the courses in fall, 2013, and spring 2014.

Historical Background of Community Colleges

In order to comprehend the changing expectations in community colleges, understanding the history and purpose of community colleges in the United States will be an important foundational piece for this study. The roots of this type of educational system can be traced as far back in US culture to the land grants of 1862 and 1890 (Shearon & Tollefson, 1989). Known as the Morrill Acts, this set of legislation was created to benefit the children of the working-class in the US. Applied, basic and practical subjects were taught to promote the ideal of egalitarianism for the public; therefore these institutions were known as "the people's colleges" (Shearon & Tollefson, 1989, p. 317). Because of the political aspects of these institutions, (many were often segregated and developed to educate the African-American and Native American populations), the idea that these land grant colleges could educate people of other races was slow to catch on to the general public, as the basic sentiment was that these colleges

were available to advance the betterment of the downtrodden and poor (Delany, Delany, & Heath, 1993). During the addition of the land grants and until the early 1890s, American children were considered adults at adolescence (Feldman, 2014), and most schooling did not continue for the general masses after 8th grade when children were around the age of 13. It took a number of social movements related to the outcome of the American Industrial Revolution to eradicate this idea and promote continuing education for all in America (Stubblefield & Keane, 1989).

One of the great outcomes from the victory of World War II was that the US became more invested in education, promoted by the Truman Commission on Higher Education in 1946 (Crookson & Hooks, 2012, p. 1). In part, the commission was created to reward soldiers returning from that war and also to fulfill a need for newer, more idealistic values that were embedded as national opinion. After WW II, America had been declared the greatest country in the world, and it needed a more educated nation to invest in that belief (Crookson & Hooks, 2012, pp. 2-3). The transition of soldier to working man returned the post-war nation to a new normal; the GI Bill included educational benefits. To attend college was not always an easy progression for these men with jobs and families, so the choice to attend 2-year institutions became more popular. Along with this increase in education came the increase in population--children born between 1946- 1964, known as the baby boomer generation. This combination of educational and physical growth within the US added capital, and ventures in schools were a priority throughout the 1950s and 60s. This sustained investment in education, schools and students continued after Truman with the 1957 Eisenhower Administration's Committee on Education beyond the High School (Crookson & Hooks, 2012, p. 2). In

natural progression for the time, the addition of the Higher Education Act (*Higher Education Act of 1965,* 1965/2014). The increased reality of educational institutions at every level, and the investment in 2-year "junior colleges," became one of many options to fulfill the educational needs of the post high school population; these were highly supported throughout the 1960s and 70s. Plenty of government funding on the federal, state and county level was available, and urban, suburban and rural areas began to put this advantage to good use. At the peak of 2-year college growth from 1960-1980, 253 colleges of this type were built in rural or semi-rural counties nationwide (Crookson & Hooks, 2012, p. 8).

In part, this population of junior college students became a compliment to traditional 4-year populations; instead of a high academic focus, much of the concentration for these institutions was on vocational and technical skills training to respond to community business and industrial needs. Junior colleges promoted a more flexible schedule with night and weekend courses, catering to an already working public. A big advantage of junior colleges was the policy of open enrollment--there was no need for a potential student to gain entry with the rigorous combination of ACT/SAT scores and/or acceptable high school GPA scores. Everyone was welcome to apply and attend for the price of tuition (ACC Catalog, 1977, p. 8). In fact, a junior college was a viable option for students who had not fared well in high school or on standardized tests. Junior college was considered a stepping stone for freshly academic-minded students to improve their grades and scores and then transfer to a college or university that had more stringent application requirements. Since these 2-year commuter colleges were local by nature, there was no need to include a daily cafeteria plan or housing needs for students.

Therefore, a college of this type was able to fulfill the needs of its student population without the huge liability risk of student room and board. There was no budgeting for high stakes athletics either, and the 2-year college athletic program concentrated on basic gyms, swimming pools and intramural sports for the surrounding public neighborhoods. Many times trending sports (tennis, martial arts, jogging), were included to cater to the local public to fill classes, thereby off-setting athletic fees (ACC Catalog, 1977).

Over time, it became obvious that investment in a community's local college was valuable for promoting the overall human capital within these communities (Crookson & Hooks, 2012). Since one of the goals of a local community college was to enhance needs and promote quality education for the neighboring economic base, a regional trend encouraged the name change from "junior college" to "community college" during its golden age throughout the 1970s (Crookson & Hooks, 2012). In Colorado, the CCCS was established in 1970 by Colorado voters (ACC Catalog, 1977, p. 6).

Changing Roles of Community Colleges

The change in the community college population has differed steadily since the post-WWII conception of the 2-year junior college, as educating students who were not necessarily academically minded or prepared, nor financially able to attend a full 4-year college or university. In many cases, this student population was not academic in nature; as previously mentioned, community college was a great place to gain knowledge in occupational and technical vocations. Over the last few decades, community colleges have been able to grow and to fulfill a niche for under prepared students in reading, writing and math by offering preparatory courses. For some, the results have been positive; extra concentration on basic academics and learning skills in these core subjects

have enabled successful students to move into college-level curricula with little difficulty. But for many, achievement in developmental courses has remained elusive (*Colorado Department of Higher Education Data & Reports*, 2012), as even those with further academics in mind are only reaching 4-year institutions at an approximate rate of 24% (Stilwell, 2013).

The causes of this low rate of developmental students reaching admission into 4-year institutions remain somewhat ambiguous. When questioned through exit surveys, community college students report that their attrition is rarely related to academics; many students who dropout do so because of other reasons. Because of the alternative nature of these college students, these reasons can be numerous--job issues, unpredictable financial debt, family difficulties, commuting problems or medical issues (Bethea, 2014). Tinto (1987; 2007) does state that departure can be commonly based on these points, but also on other personal reasons specific to that individual, and that every case can be unique (Tucker, 1999/2000, p. 173).

One area where both 2-year and 4-year colleges have been concentrating is the building of academic skills of beginning college students. More than 40% of America's community college students are in need of developmental education (*Table Top Community College Success Rates (Remedial)*, 2013), and these students are at high risk for attrition. On the national level, over 60% of all high school students who enter college environments need one or more developmental courses in order to function at the college academic level, "whether in reading writing or math" (Gonzalez, 2012, p. 2); this statistic also holds true for the state of Colorado. The total amount of students who entered Colorado community colleges in need of additional academic assistance was 60%

during the 2011 -12 academic year (*Colorado Department of Higher Education Data & Reports*, 2012).

Many 4-year colleges are now requiring at-risk students (those who fall into the remedial range) to be identified early through admission information and encouraged to sign up for added support classes and skills. Some colleges and universities have invested in the First Year Experience (FYE) by selecting students to attend seminars and workshops to promote student skills in note-taking, study habits, time management; goal-setting and actual study partners and groups. Chosen first year courses uphold this additional network to teach valuable student techniques that will promote success (Schroeder, 2003, p. 3 Adams, 2008, p. 16).

Along with funding to community colleges quickly decreasing over the past two years on the state and federal levels (Vuong, 2012), the length of time a remedial student completes the developmental track can be up to two years in the math curricula and an average of one year for students who need assistance in reading and/or writing (*Colorado Department of Higher Education Data & Reports*, 2012). Lower retention rates are common with those most in need of developmental assistance; persistence at this subordinate level can be intensive, and can eat up valuable financial aid funding before a student even reaches college level courses. Developmental education students have not improved sufficiently, and funding for these programs have taken a large bite out of each student's personal college federal financial aid allotment, resulting in reduced future options and creating an even greater negative cycle of attrition (*Table Top Community College Success Rates (Remedial)*, 2013). This financial burden may be one reason why many remedial students have failed to continue toward their academic goals. The

demand for raising expectations of this student population must be met in different ways than leaning on the old developmental education programs of the past; these programs are no longer acceptable with the economic strain that the US economy faces today.

Based on current reporting (*Table Top Community College Success Rates [Remedial]*, 2013), it is clear that programs dedicated to developmental reading, writing and math have yielded unfavorable outcomes. Better results require an overhaul that includes acceleration of higher level coursework and a focus on the improvement of critical skills for students. The system needs more strength in strategies, goals and curricula to help potential new students successfully complete college certificates or academic degrees in a shorter period of time. How then, will the community colleges succeed in producing a paradigm shift that will meet student need, federal/state recommendations, and the financial demands currently being placed into governmental systems?

Redesign of Colorado Community College Developmental Education

The CCCS administration had reviewed the idea of redesign in developmental education for two years before the latest curricula change, and worked toward being a model for other community college systems nationwide (CCCS, 2013). Anticipating the need for restructure in the community college system by 2014, the CCCS administrators and faculty members of various 2-year colleges looked at redesign possibilities in the spring of 2012. Implemented by an initiative from the Colorado Department of Higher Education and adopted by the State Board of Community Colleges (CCCS, 2013) those in that administration reassessed the current programs and created a team of 35 educators to form the Developmental Education Task Force, which began to research options that

would conform to the changing financial aid stipulations and truly help students achieve math and English backgrounds required for college level success. Three community colleges with a previous investment in developmental education, Front Range, Aurora, and Denver (CCD) worked on developing and implementing successful accelerated models (CCCS, 2013), and were able to initiate new curricula into place in 2013. With this initiative, the other 10 CCCS colleges have followed suit, including the institution that was the location for this study.

Theoretical Background

Maslow's Hierarchy of Needs and the Sense of Belonging

Many can agree that within Maslow's hierarchy of needs theory that the sense of belonging is a state of being, but defining depth or breath of that state of being has not been an easy task. This will be attempted in the upcoming Review of Literature. However, the term has become common place in contemporary society since Maslow's inception in1943 of "A Theory of Motivation." In his words, "The present paper is an attempt to formulate…a theory of motivation . . . [with] known facts, clinical and observational as well as experimental. The present theory then must be considered to be a suggested program or framework for future research . . ." With these words, Maslow set precedence, or a challenge to commit certain behaviors, attitudes and ideas to a hierarchy of needs, which placed human needs in an upward model, or pyramid, of satiated needs in order to improve motivation (see Figure 1). One area that Maslow left unexplored was the static possibility of each of the tiers and one's ability to move among these tiers. The arrow interpretation on the pyramid indicates that the motivation to reach the pinnacle depends greatly on facets of an individual's growth or possible impediments.

As one progresses through life, tiers may not remain stable, either inhibiting or influencing the ability to advance.

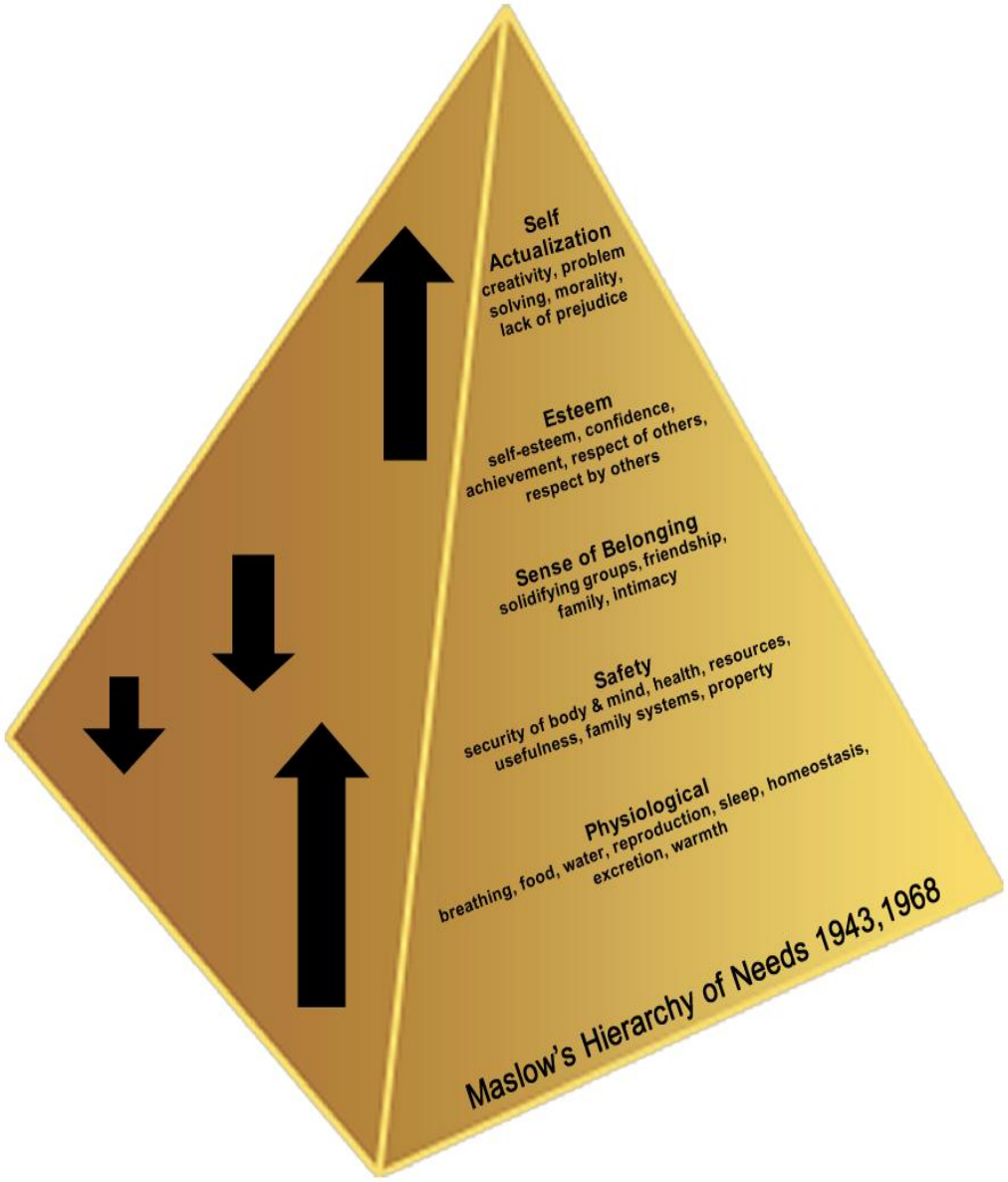

Figure 1. Maslow's Hierarchy of Needs (James, 2010).

Tinto's Model for Attrition

Attrition rates are considered high for developmental education students (*Colorado Department of Higher Education Data & Reports*, 2012), In this study, the factors that affect student success will be viewed through the lens of Tinto's (1975) Student Integration Model, which originally stated that there were mitigating factors that caused dropout, and not necessarily academic failure. Tinto formulated in his research that assimilation into the college setting seemed to be the deciding factor which included academic, social and institutional integration. The more investment a student had in the institution, and if the student felt investment from his or her institution, the less likely that student would be headed for attrition (Tinto, 1975). Tinto's theory is used in the present analysis of the curriculum redesign because he was able to expose some of the top reasons why students withdrawal from college (1975; 1987; 1993). Tinto stated that students needed to have a purpose for persistence beyond academic achievement. These have been related to informal college systems such as student and staff interactions and extracurricular activities (Adams, 2008). In addition, work from Pascerella and Terenzini (1991) added to Tinto's research and used quantitative constructs for their studies; that is, student investment, institution attention and peer support that point to Tinto's theory with in-depth quantitative research that included path analysis and theoretical and conceptual models of research (Pascarella & Terenzini, 1991). Further, with Tinto's current work on the development of learning communities, his theory on student retention still fits. Strategically, the TTCC redesign program became its own learning community, an arena where Tinto's model excels (Barnes & Piland, 2013).

Affective Learning

Curriculum building has been a large piece of thriving educational systems since the boon of the 1950s (Crookson & Hooks, 2012). During this same time, Benjamin Bloom gathered a team of educators to set up standards based on specific outcomes (Bloom et al.,1956; Anderson & Krathwohl, 2001), and this is traditionally referred to as Bloom's Taxonomy. Bloom's team discussed three domains and how these related to learning--cognitive, affective and psychomotor--and proposed that it was important to help teachers specify learning objectives to balance these three domains for a complete teaching and learning process. For decades now, lesson planning and lesson curricula have been developed with Bloom's theory in mind, and it remains the standard when balancing lessons for a session, a day or a unit (Goodlad, 2004, pp. 286-7). The benefits of knowing the taxonomy provides a comprehensive method to apply a desired set of objectives, strategies and actual tasks for lesson planning; that it allows for teachers to follow designated standards of instruction which is widely practiced and commonly used.

While the cognitive and psychomotor domains relates to the actual type of learning, the affective domain is related to the emotional side of learning. What did a student achieve by the lesson beyond cognitive learning? What skill was learned or obtained that can be repeated or applied other than the original cognitive and psychomotor training? The affective domain of learning is related to growth in a student's maturity and attitude, which can then be continually referenced for optimal cohesiveness in the learning experience. Instruction specifies questioning where growth in feelings and emotions is encouraged, in relationship to and including developing new attitudes around what has been learned (Bloom et al., 1956). In the affective view of the

teaching/learning process, an awareness of a working commitment by both the instructor and the student will produce new behaviors, and the student grows further in the development of his or her own personal values of educational ideals. These values can be redefined within the lesson of a particular subject, but Bloom states that an actual shift in learning occurs, and the student becomes more inter- and intra- related to others in pursuit of academic ideals (Bloom et al., 1956). Ultimately, the affective domain allows the student to develop socially and to engage with others, his or her instructors, and the environment to deepen knowledge, comprehension and understanding in both the affective and cognitive domains (Reeves, 1990). It is this comparison to Tinto's model that makes Affective Learning an ideal concept to apply, along with, and in possible relationship to, Maslow's sense of belonging.

Purpose of Study

A Case Study of Program Redesign

This study consists of data collection at Table Top Community College (TTCC; a pseudonym), a chosen community college in a suburban area during the 2013-14 academic year. The idea of a redesign of curricula was put in place by CCCS in 2012, and members of the English department started to initiate the process of this redesign in the spring of 2013. A curricula redesign had also been an initiative for this institution's mathematics department; those efforts were separate from this area of chosen research. However, it was beneficial to have a positive, working model of redesign curriculum that had recently been put into practice at this same institution.

At the beginning of 2013, members of the TTCC English department picked a team of five full time instructors to research a number of colleges in the nation and those

already in a redesign process in the nearby metropolitan communities. Through beginning workshops, innovative approaches were determined by the department's lead team for implementation in the fall semester of 2013 that would help the future of course redirection for the English department's redesign model. These approaches will be defined in the following paragraphs.

In turn, these courses gave rise to a fall 2013 schedule with a number of options, (i.e., six different combinations of classes as described subsequently) to observe, study and review. The large number of choices were planned to determine which classes were effective in implementing the permanent curriculum shift. It was necessary for the new program to be rigorously evaluated, as the research for this study was conducted to help determine the best course of action for this college and its future English Department curricula. Because there is deep need for redesign in community colleges throughout the nation, this study was intended to be useful to other suburban commuter community colleges for modeling and for replication of research throughout the US (Cotton, 2014).

The study was conducted from the aspect of affective learning, expressed in the theory of Abraham Maslow as the sense of belonging (Maslow, 1943; 1968). Affective learning, as one of the domains of Bloom's Taxonomy (Bloom et al.,1956), gave research credibility to the outcomes related to student attitudes. This approach allowed for concrete behaviors to be noted during learning processes and provided the basic aspects of the survey used in the study. By naming independent variables related to the sense of belonging and defined through Tinto's (1993) Student Retention Model, the research focused on how retention could be maintained in this higher learning environment. The research measured student, instructor and institutional behaviors.

These variables were: student and institutional investment, peer interactions, relationship of student and instructor, and finally, academic achievement. It was predicted that those, both instructors and students, who were encouraged to invest in affective learning through the application of sense of belonging principles, would achieve a higher rate of academic success. This study was designed to examine the sense of belonging, to see which instructors embraced this theory and to learn whether to do so would enhance greater academic success with their students.

A Particular Population

The populations used as samples were based upon a generalized idea that the vast majority of students who attend community colleges are characterized as non-traditional students. The demographics of these students show differences in age, interests, background and goals than those of traditional college students (*Colorado Department of Higher Education Data & Reports*, 2012). With a struggling national economy in recent years, a new definition of limited funding and other non-traditional student factors have contributed to student success or failure. And there may be other factors, such as the price of commuting and higher cost of living expenses along with possible familial and job obligations. The usual 2-year college student will report these as important reasons for attending community college rather than as a student enrolled in a 4-year institution (Shearon & Tollefson, 1989). For example, community colleges do not usually support collegiate athletics and have little or no need for dormitories. Within these 2-year college institutions there is a basic understanding that the 2-year college student will have an important life full of responsibilities beyond his or her college environment. In turn, the availability for a community college student to feel a part of their college institution of

choice is limited compared to those that attend a more conventional college environment (Pascarella & Terenzini, 1991; Tinto, 1993). According to Tinto (1975; 1987), this could be another reason why community college students feel a lack of investment, both on their part and on the part of the 2-year institution.

The English curricula redesign was structured to include an intervention based on Maslow's sense of belonging as an expression of affective learning. In light of Tinto's model, this study was designed to be an examination that may reveal a positive outcome for the redesign effort. Eventually, if the outcome is favorable, future curricula will entail strategies, lessons and exercises based on promoting the sense of belonging (SoB) in the classroom, thereby encouraging college retention in this non-traditional college population. The redesign team at this particular 2-year college chose to invest in a positive outcome that was somewhat novel to the system. The research investigated whether including the sense of belonging as the dominant viewpoint, if the redesign transition became a smoother and easier process to help embrace the new curricula, despite the externally mandated necessity for change.

Research Questions

Q1 To what degree did the survey developed for this study show content validity as a measure of SoB for both students and teachers?

Q2 What demographic characteristics predicted SoB scores at the Week 9 baseline, as well as change in SoB scores from Week 9 to Week 14 in students?

Q3 To what degree did the SoB scores for Week 9 and Week 14, as well as change between Week 9 and Week14, predict final grades and retention in students for fall 2013 semester, and in the following spring semester 2014?

Q4 What were the similarities and differences between SoB and classroom climate for students whose instructors were invested in SoB training and those who were not?

Definitions of Terms

ACC. Arapahoe Community College

ACT/SAT. The two most common tests used for US high school students in order to assess placement at college.

Bloom's Taxonomy. The most common and basic reference to assist teachers and instructors of all levels to develop and create lesson plans. Bloom et al. used a formulaic model, (written in 1956, updated in 2001) to standardize lesson plans and large level curricula. Bloom prescribed to three domains: Cognitive, Affective and Psychomotor to balance educational strategies for teaching. The Affective Learning Domain forms one of the main theoretical concepts in the research of this paper.

CCCS. Colorado Community College System, largest college system in the state which controls 13 separate 2- year colleges throughout the state.

CCD. Community College of Denver

CDE. Colorado Department of Education, housed in Denver, CO, CDE oversees the public school systems within the state of Colorado.

CPZ. Acronym for the College Prep Zone, an area where specifically designated tutors are staffed to provide tutoring services and computer availability to developmental education students.

FYE. First Year Experience programs which assist freshmen college students by addressing non-academic needs in proactive methods. These programs teach expectations related to study skills, time management, and coping strategies that help the new college student with social and academic involvement (Adams, 2008).

Redesign. Chosen terminology used to name the reorganization process of curriculum delivery for the Developmental Education courses taught in the CCCD system.

Remedial. Previous terminology used to name the type of education method to provide extra assistance to those who test low in reading, writing and mathematics.

SAS. Statistical Analysis Software used for qualitative and quantitative analyses for this study.

S Numbers. An eight digit number supplied to both students and instructors as numerical identifiers for each person in the CCCS system.

SoB. The acronym used for the sense of belonging in reference to the research questions and data presented throughout this dissertation.

TTCC. Table Top Community College, the acronym named for the actual suburban community college where the study was conducted.

CHAPTER II

REVIEW OF LITERATURE

This is a study that includes theory from both psychology and education. The use of an intervention that promotes improved academic achievement is commonplace in the educational field. For the purpose of this study, there are two major theories that contributed to the intervention that was developed; one based in psychology and the other in education. The psychological theory is Maslow's hierarchy of needs, and more specifically, the sense of belonging (Maslow, 1943). This theory has set a standard in the field of psychology for almost 75 years. Over the past decade, "sense of belonging" has become a familiar term of vocabulary--most people comprehend this, whether stated in a formal sense, per Maslow, or in casual conversation as a social understanding of how a person fits into their society, community and/or environment to which he or she belongs (Astin, 1984; Locks, Hurtado, Bowman, & Oseguera, 2006; Tinto, 2012). For many years, educators, psychologists and sociologists have been studying this term and similar terms that relate to how people function together, either as individuals or with others in group situations.

Educators are, of course, interested in knowing how students socialize within the perimeters of a classroom, a school, or in the context of an educational institution as a whole. This gives direction to a second theory that has also held a high level of impetus in its field--Tinto's Model of Student Integration (Tinto, 1975; 1987). His theory was based on research which had its beginnings in the 1960s and has continued to grow and

evolve in the decades since. Basically, Tinto states that students have a combination of reasons for remaining or leaving their educational institution; many times unrelated to academic success or failure, but lead to a path of a combination of academic and social constructs that can be very different when discussing academic withdrawal rather than academic failure (Tinto, 1975, p. 90)

Since this is an archival evaluation of a redesign program, the following describes a number of models and/or theories that relate to the interpretation of this process. The sense of belonging is one term for a state of being or a developing sense of self (Maslow, 1943; 1968) in different schools of thought it may be referred to by another term, but with the same general inference to how people communicate and build relationships with one another. Tinto's work concentrates on a level of integration and inclusion of the self with others (see Figure 2) and the behaviors that are deemed necessary to achieve this. Many others have contributed and expanded Tinto's original theory and will be discussed here.

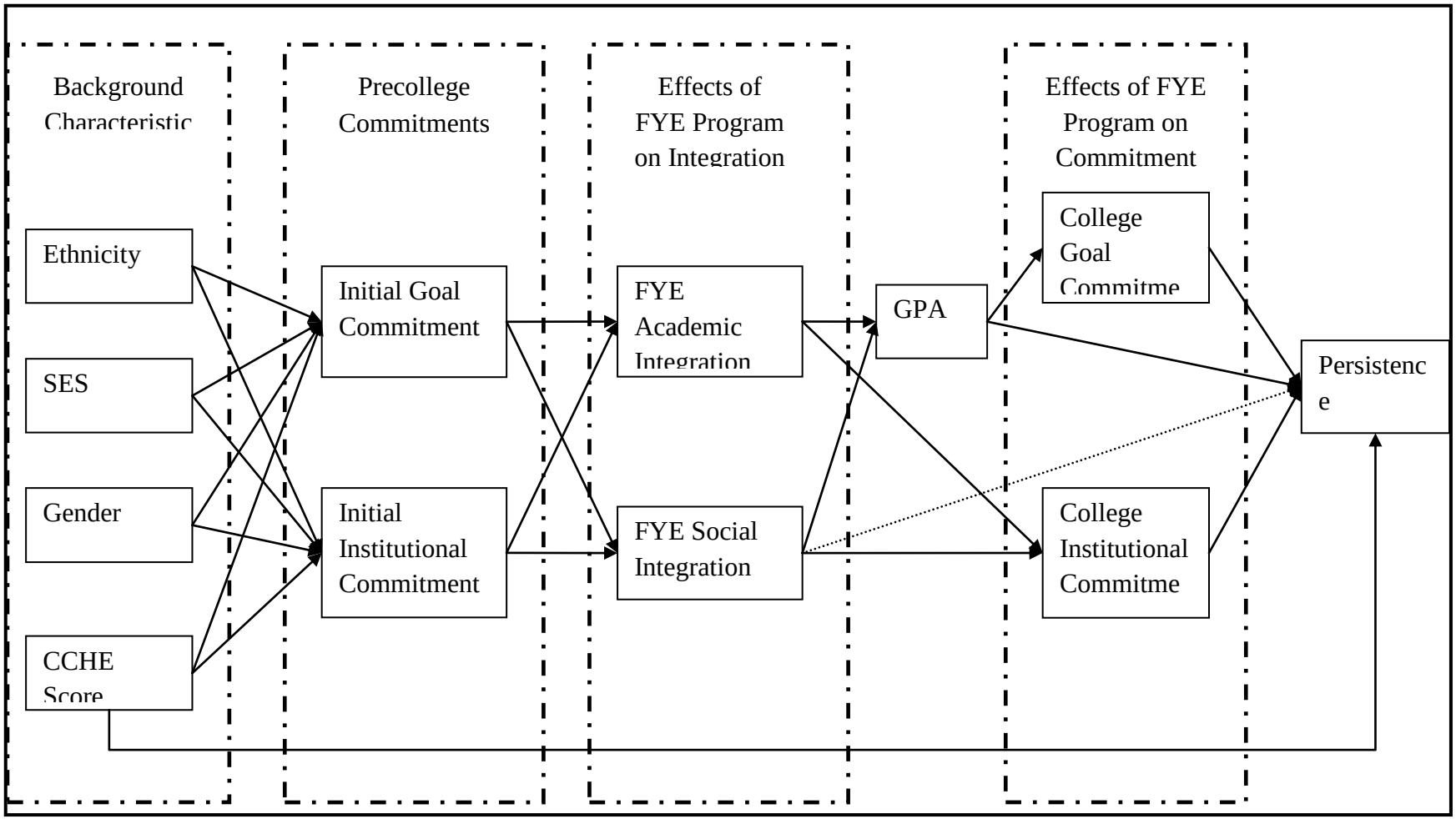

Figure 2. Student Integration Model (Tinto, 1987, p. 115)

Additionally, because this study involved major curricula change, Bloom's Taxonomy, the educational theory, also played a part in the development and approach to this study. Bloom's Affective Domain focuses on students questioning and integrating feelings of their processes of learning. This can be done with questioning methods during the actual learning event or by review of the lesson at the end, a process that Bloom called "synthesis" (Bloom et al.,1956). There has been further development with Anderson and Krathwohl's Bloom's 2001 update. Through the years other examples of curriculum building models have been introduced; however, most educators are familiar with Bloom's constructs and so it remains popular among those who teach; this is why his model was chosen over others for this study.

Humanistic Psychology's Contribution to Education

The Sense of Belonging

Belongingness is a common human process, as stated in the pyramid of Maslow's hierarchy of needs (see Figure 1), placed above safety and below self-esteem (Maslow, 1943). This original image has been displayed for many years as a pyramid with a wide base with five distinct tiers. The first tier expresses the most basic needs of survival and underlies the second tier, safety. Belongingness takes position on the third tier and after food, shelter, reproduction, safety, and before the forth tier, esteem. The fifth and final tier, and the pinnacle of the pyramid, is self-actualization (Maslow). He stated that a sense of belonging is necessary for a human being to progress toward higher levels of motivation. With feelings of personal comfort, one can be motivated and advance in skill, maturity and productivity. Within the hierarchy of needs, and without this necessity of belongingness, a being will be hindered; therefore, he or she is unable to master

complete ability or abilities achieved by others who are more fulfilled as human beings (Maslow).

Maslow (1943) placed belongingness in the mid-range of the pyramid. The needs below are survival through food and warmth, then safety as in relative freedom from outside threat. Theoretically, he describes all human need to be first physiological (physical comfort), and then psychological (emotional comfort), in motivation toward the completion of goals. If the human tensions of basic survival and comfort are met, awareness toward more personal satisfaction could create a sense of well being, or happiness (Diener & Lucas, 2009). In adherence to Maslow's order, the importance of safety needs would thwart the need for belonging, and the desire for belonging would impede attainment for higher goals. The focus would be to gain more safety, "whether it is protection, consistency, or freedom from harm" (Maslow, 1943, p. 378). If safety was established and a sense of belonging had been achieved through positive social interaction, the next set of needs would be related to the affirmation of personal esteem. Nancy Eisenberg (2006), in *How Children Develop* describes esteem as an overall evaluation of the self. The feelings associated with that personal evaluation, include "a sense of feeling good about one's self and being hopeful" (Siegler, DeLoache, & Eisenberg, 2006, p. 443).

Not only is the sense of belonging a state of being but also a phenomenon that changes over a period of time (Crotty, 1998). Maslow believed in his theory as a process which included the desire to motivate and intonated as such in many of his writings (Maslow, 1943; 1968; 1970). Maslow also reported that an individual, due to the circumstance of his or her needs, may be able to integrate all aspects of a sense of

belonging or may express parts of it at certain times and in certain situations. In this way, the development of person's or a group's sense of belonging can be viewed as a phenomenon, not only a change in attitude and behavior, but basic emotional growth to be gained as a part of the normal human experience.

This ideal of the sense of belonging in Maslow's hierarchy theory in the classroom leads to improved social and psychological dynamics where eventual integration of the class occurs (Goodlad, 2004). Young children learn in group situations as they progress through their school years; socialization and the sense of belonging that takes place in the school setting is a major piece of human growth and development (Goodlad, 2004). Many objectives are reached through socio-educational practices, from standing quietly in a line with others to major collaborative projects in the upper grades of secondary learning (Bruner, 1996; Ellis, 2011). When the classroom dynamics reveal that basic needs are met and surroundings are safe and comfortable, optimal learning situations are created (Feldman, 2014). Because of these general social structures of classrooms, schools, administrations and institutions, certain expectations of how individuals learn have become common and expected (Bruner, 1996; Goodlad, 2004). By the time an individual reaches post secondary educational situations, the patterns of learning within a classroom and the use of classroom dynamics have been well-established. Students have been consistently influenced by the behaviors of one another within the context of the classroom for the entire length of their school careers.

Beyond elementary school, most learning situations are in a constant flux throughout one's experience in education. Therefore, an individual can fluctuate in levels (tiers) of belonging (see Figure1); e.g., at the start of every semester when students enter

a classroom and may not know anyone in these early college situations. This is definitely the norm in college freshman and sophomore courses where many individuals are undeclared in a course of study (Adams, 2008). During transitional periods such as these, students tend to express a level of unease, and where a sense of belonging may be strong in other personal areas, transition can cause the status quo that had once been achieved to ebb and flow (Clark, 2005; Karp, Hughes, & O'Gara, 2011, p. 75). It takes time to break into even the most subtle of social barriers, and there are college classroom situations where only a low level of collaborative or communal learning takes place, such as in a large lecture hall or in computer science classes where interaction may be limited. The concentration may be placed on psychomotor learning by working with technology or equipment and not other students, making the establishment of a sense of belonging more difficult than in interactive classrooms (Schroeder, 2003).

In this way, the sense of belonging can be used as a strategy for instruction and learning. In this study, the influence of teaching lessons that promoted and encouraged the sense of belonging in the classroom was included in the pilot team training. That training gave instructors ideas on how to manage a normal classroom environment that had the lower tiers of Maslow's hierarchy already in place. Maslow believed that students and instructors had basic physiological needs that already had been met in the general sense (Frick, 1971). Through years of familiarity, the school and classroom promoted a comfortable place to learn, and that there was an investment in safety projected by the instructor and the institution; therefore, the instructor would have confidence in the learning strategies that took place in his or her classroom.

If one's basic needs are met, the ability to move up the hierarchy is perceived as a natural progression, continuous movement upward represents completion of goals and greater human satisfaction. Belonging, or the experience of personal involvement in a system or environment so that a person feels him/herself to be an integral part of that system or environment, is a movement toward further communication and integration with others (Hoffman, Richmond, Morrow, & Solomone, 2003, p. 257). It helps to define a basic concept of humanity: that people need each other to complete their individual psyches. One is reaching toward fulfillment and well-being if integrated with others through social connection, and that the upward growth of a person has a great deal to do with how he or she does or does not interact with others (Maslow, 1943).

Maslow's hierarchy of needs and, more specifically, the sense of belonging is one area that can affect whether a student connects to a place of higher learning for a long-term investment. Attrition, the loss of college students between enrollment and completion, has been known to be near 50% in many state colleges and universities nationwide (Karp et al., 2011, p. 71). Those who have followed Tinto's framework to integration and retention understood the beginning research to state that institutions concentrated on less effective areas to improve this issue, such as remediation and enrollment requirements. Academic success consists of much more on the post-secondary level than only grades and student participation. The personal and psychological investment that students have in their attending institution has a great deal to do with successful student graduation rates (Tinto, 1975, 1987, 1993, 2007; Pascarella & Terenzini, 1991; Tucker, 1999; Gonzalez, 2012; Karp et al.,2011, p. 74). Looking

beyond academics and interpreting the need for belonging to help increase retention and improve academic achievement is one purpose of this study.

Criticisms of Maslow's Hierarchy of Needs

Critics of Maslow's needs hierarchy claimed that human needs are not always a basic, stable pyramid, and that to simplify it as such was too pat, to smug, too coarse or basic to cover the complexities of a total human being (Rogers & Freiberg, 1994; Skinner, 1976). With the embrace of psychology as a growing and gaining field of interest and importance, philosophy and psychology clashed. Maslow's term, Humanistic Psychology was becoming a force to be reckoned with, if not to argue against.

Frankl (1984) argued that one's personal needs could be ignored for a greater desire to take action, such as heroism or extreme selflessness. In Frankl's view, the lack of safety wasn't necessarily prioritized, even in the face of starvation or the imminent fear of death; suffering could become a rare choice. Clearly, this was in direct opposition to a hierarchy such as the one that Maslow proposed within a more normal lifestyle. Frankl, with his first hand experience as a survivor of the Holocaust, had become a strong force in the Existential Movement, the philosophical and cultural answer for many of those in the aftermath of war-torn Europe in the 40s and 50s (DeBeauvoir, 2001). However, Frankl discussed the camaraderie that developed among the prisoners at the Nazi work camp where he survived, and this could be interpreted as a similar psychological construct along the same lines as belongingness.

Carl Rogers (1961) was a noted clinical psychologist and contemporary of Maslow. Instead of the hierarchy of needs, Rogers concentrated on the clinical

psychology of the person, viewing self-actualization as something that could be given from one individual to another in order to propel a person toward discovering it for him or herself. He called this method of recognition "unconditional positive regard." Rogers claimed that an individual would still progress along a basic hierarchy, but some of the needs may never be met, because of the affected psyche or schema of a person. Yet, the individual may very well transcend to do significant accomplishments or impact others in a positive way (Rogers, 1961, pp. 283-4). In Rogers' view, basic needs may have been accomplished, but perhaps they had not. Rogers does deserve special attention; furthermore, his greatest notoriety came as a champion of children and advocating the reorganization movement of public school education (Rogers, 1994). In fact, without the educational freedom of Rogers, students might still be sitting quietly in rows of desks, eyes forward and not interacting with each other inside the classroom!

B. F. Skinner, the foremost Behaviorist at this similar time, debated with Maslow on numerous occasions, but Skinner was also in disagreement with other Humanists, such as Rogers (Skinner, 1971). In part, this oppositional argument was related to interpretation of research in regard to development of Maslow's theory and stood in the way of acknowledging Humanistic Psychology as separate psychological movement. (International Study Project, 1972; Skinner, 1971). Skinner proclaimed that Maslow lacked insufficient empirical evidence that he felt was misinterpreted. Skinner further claimed that years of prior research in a multitude of areas could not qualify as theoretical discovery. Where was the factual empirical research with methods and outcomes? Skinner had little, if nothing good to say about Humanistic Psychology as the "third

force," and paraded constantly to oppose it (International Study Project, 1972; Skinner, 1971, 1976).

Also, there have been criticisms based on the fact that Maslow's original research studies were conducted predominately with high-achieving white males. This was the accepted and consistent practice of the times and of other important theorists during that period of psychological research; for example, Erik Erikson has been subjected to this same criticism (Boland, 2005). Maslow reported in *A Theory of Human Motivation* (1943) that his studies were empirical, but whether more current psychological practices believed to be consistent with the empirical limitations of the 1930s and 40s were adequate or inadequate has been continually debated.

The phenomenon of the sense of belonging is first and foremost related to Maslow's theory of development toward a maturing of humanness, and he claimed this within the context of basic driving forces that described levels of motivation. Belongingness is a concept that can define a person's overall relationships to family, community, society and the world. Over six decades, Maslow's hierarchy of needs theory has held firm through newer or more advanced developments in Humanistic Psychology; the tiers of Maslow's hierarchy remain stable and consistent. Points of the theory have stood the test of time, through numerous areas of research in psychology, sociology and health and wellness, and the most accepted piece of that theory appears to be this idea of belongingness or the sense of belonging, as in previous demonstration of many other theorists and their similar claims. The search engine of University of Northern Colorado's Library system, *Summon*, revealed 946,252 references to the term in July, 2014.

Another area that has been challenged is the idea of stasis, that is, if one achieves a sense of belonging, does an individual maintain it? If it is lost due to circumstance, e.g., the rise or fall of employment, financial concerns, relationships, or other malleable factors will the sense of belonging return? If so, does it transcend across all other areas of a person's life? Comparable studies of the sense of belonging from the 1990s, show results that clearly indicate that one's sense of belonging does contribute to persistence and retention throughout one's years in college (Tovar & Simon, 2010). These questions are addressed in the area of this study pertaining to Time¹ and Time² (T^1 and T^2) scores. Does the sense of belonging reestablish itself after a transition, and can it be changed? This research concentrates on the influence of the theory's stasis or stability on an academic community, and how it relates to schooling, learning and teaching of the community college developmental education student. The framework reviews findings that are noted in this learning population at the post-secondary level both in 2-year and in 4-year college environments. While introducing the research about these populations, it is hoped that the establishment of a the positive sense of belonging will coincide with higher learning abilities, concentrating on the tools given during the training intervention, building of student esteem, and, in turn, higher academic scores.

There are perspectives that have lead to similar outcomes of actualization as viewed as humanistic psychology of others, as well as the humanistic followers of Maslow. This study discusses how the development of social skills, increased awareness, individual attitudes, and positive communication contributes to the development of a sense of belonging. The early stages can be seen in the work of Carl Rogers' theory of unconditional personal regard (1946); Bandura's Theory of Social Learning, (1963, as

cited in Ormrod, 2012), and Pintrich's (1990) more contemporary research on motivation and academic achievement.

Current Research on the Sense of Belonging

Several of those who have performed college integration studies made the same connection to the sense of belonging as was made in this study (Hoffman et al., 2003; Locks et al., 2006, p. 260). There seems to be a bridge of resemblance that spans between integration and belongingness. For many of those students whom are considered alternative in the college environment, belongingness can be a hard challenge. Developmental students are in the minority, whether at 2-year or 4 year institutions, and many times, are also persons of color (Tinto, 1975; 2007; Locks et al., 2006; (Nunez, 2009). Also there can be comparisons made to other distinct campus populations. For example, in minority studies, Hoffman and colleagues (2002) used the sense of belonging as one of five factors in a qualitative study; both whites and students of color revealed that peer support was a strong influence in feeling a sense of belonging (Hoffman, Richmond, Morrow, & Salomone, 2002; 2003). In a study of the comparison of interrelationship for Caucasian students and African American students, peer support highly influenced African American students as a measured variable over a period of time (Hausmann, Ye, Schofield, & Woods, 2009).

Another study, (Nunez, 2009) assessed predictors of developing a sense of belonging in Latino students and was conducted under a structural model. Variables in that study were as follows: comfort with knowing his or her way around the campus, a feeling of obligation to give back to the college community, a perception that a faculty member had taken a personal interest, frequency of positive race relations, and feelings of

hostile race relations. Outcomes for this study showed positive effects toward the sense of belonging in all measures except feelings of hostile race relations. Nunez also concluded that integration into a community that developed a sense of belonging could also expose these Latino students to situations that may bring up the possibility for more racial tension (Nunez, 2009).

Locks et al. (2006) discussed a contextual understanding of diverse peers while in the first year transition of the college climate. This study was particularly interesting, as it hypothesized that both white students and students of color who had been willing to make friendships of diversity promoted other persistent behaviors later. This study was longitudinal, so it enabled researchers to look at the development of a higher sense of belonging in the second year, with a noted impact on reduced racial tensions for those that had developed diverse relationships in the first year. In other words, diverse friendships contributed to the reduction of race as a factor and strengthened persistence to remain in college. This concentration on the sense of belonging coordinates well with the Tinto theoretical model of college retention.

Tinto's Research--Student Integration Model

Tinto's research on student retention has occurred throughout numerous decades now; his Student Integration Model has persevered through many years of academic rigor (Tinto, 1975, 1987, 1993, 2007). Tinto originally reported that the major constructs included a balance of social and academic integration. His 1975 report, *Dropout from Higher Education: A Theoretical Synthesis of Recent Research* was an in-depth look at the limited research at that time where students were thought to dropout from college predominately because of negative academic or social behaviors. Over time, the Student

Integration Model established a solid theoretical framework for student attrition, and Tinto came to the premise that each student's level of academic/social investment can be distinct but based on a strict set of certain constructs (see Figure 2). Entwined with goal and institutional commitment, a clear understanding of how to maneuver through the academic and social system of any college is imperative. These constructs are invaluable to understand what may influence a student's level of comfort in a college setting.

Along with positive goals and academic performance, creating good faculty and staff relationships could be key to integrating belongingness (Clark, 2005; Adams, 2008). The ability to develop these strong bonds demonstrates that other common factors related to belonging will affect a student's motivational desire to succeed in that academic situation. Social life at college is also important, including extracurricular interests and peer groups outside strict academic endeavors. With both academic and social integration, it is easier for a student to carry through with intentions, goals and commitments related to college. Without this type of directional trajectory, some students may find success at college survival much more difficult.

In this study, factor analyses were performed to predict results with the sense of belonging surveys used in the classroom. As the dependent variable, the sense of belonging was measured against peer/student relationships, instructional/student interactions and institutional support to predict academic success (Figure 2). For the purpose of this study, persistence will be measured by the completion of the redesigned course. Tinto's model served as a significant marker in this study for understanding the importance of institution investment and contact with college staff on campus, social bonding with peers and a feeling of investment from instructional faculty. With noted

success in these areas, a student's academic achievement should be more likely, and may influence continued persistence for greater academic achievement in later coursework and future post-secondary studies.

Research of Student Integration Model

Areas of resistance to Tinto's model have been common as in any other prominent theory. One of Tinto's biggest claims was that institutions of higher learning should look where they might have contributed to lack of student persistence (Tinto, 1975). However, the shift in energy toward proactive investment in students, other than traditional practices, (e.g. dorm life, fraternities, sororities, student union gatherings) was not easily embraced in the beginning years of the 1960s and 70s while his theory was in early development. To suggest that an entire college system could use improvement on taking the lead in college attrition was a foreign idea, but one that fit hand in hand with Humanistic Psychology (Rogers & Freiberg, 1994).

Tinto reports that a number of 2 and 4-year colleges responded to the call, and did expand on some of his ideas for an approach of "differing institutions to lead research that would apply meaningful comparative analyses of institutional impacts" upon non-persistent behaviors (Tinto, 1975, p. 120). Longitudinal studies were conducted to follow cohort students throughout their college career, partly to identify other factors that Tinto did not initially put into his path analysis (Deil-Amen, 2011; Karp et al., 2011).

Many at 2-year colleges did not recognize a fit between Tinto's social integration research and its relation to college life (Karp et al., 2011, p. 69). However, Karp (2011) and her research team did find that community college students developed engagement with their institutions, but perhaps in different ways than integration predicted by Tinto.

Although lacking the advantage of being socially involved with a rich college life, community college students have the opportunity to work together in situations that still lead to social and academic integration. These opportunities include extra services given to developmental education students (see Learning Support Systems in Chapter III), or in study groups that can be highly promoted by specified departments within a community college (Karp et al., 2011, p. 72).

Criticisms of the Model

Criticisms of Tinto's model have been founded on the idea that it is based in negativity, and that his framework was too "narrow" in vision (Tucker, 1999, p. 164). True, the model is boxed into a tight package (see Figure 2), but a foundation was desperately needed where previously there had been none. Few scholars had addressed the attrition issue, even with some institutions reporting common attritions rates at nearly 50% (Tinto, 2007; Karp et al., 2011; Tierney & Sablan, 2014, p. 280). Other research related to a lack of beneficial research on minorities, as mentioned in Tinto's early work, has been carried by research in further studies. Areas of note are differentiation in goal setting, goal attainment and levels of student integration for foreign students, people of color and/or lower income students (Locks, Hurtado, Bowman, & Oseguera, 2006; Hausmann, Ye, Schofield, & Woods, 2009; Karp et al., 2011).

Despite controversy around Tinto's model, his ability to develop a framework from which others could draw conclusion or continue in different areas remains classic (Tierney & Sablan, 2014, p. 280). Because of his pioneering efforts, variations of Tinto's constructs have been put to practice as a driving force in retention research, e.g.,

"ethnicity, gender, and academic preparedness" (Adams, 2008, p. 24). Therefore, it is a reasonable and viable model for the purpose of this study.

Bloom's Taxonomy

The three domains in Bloom's Taxonomy were first laid out by a team of dedicated educators in the teaching of curricula led by Benjamin Bloom in the early 1950s; the textbook or handbook was named as a resource for curriculum building, and the tools used for the process became known as Bloom's Taxonomy (Bloom et al.,1956). The text was updated in 2001, again by colleagues of Bloom, Anderson and Krathwohl. The text remains relatively similar to the original in philosophy, with the exception of different verbs replacing the old nouns used as a main shift toward more student-focused accountability in learning (see Figure 3). Today, the newer terminology is more closely related to the active learning that take place in modern classrooms, according to O'Donnell, Reeve and Smith (2005, p. 288). These terms are compared as follows:

Bloom	Anderson & Krathwohl
Knowledge	Remembering
Comprehension	Understanding
Application	Applying
Analysis	Analyzing
Evaluation	Evaluating
Synthesis	Creating

Figure 3. Updated Terms of Bloom's Taxonomy (O'Donnell, Reeve, & Smith, 2005).

Bloom's Reputation

This study allows for Maslow's hierarchy of needs theory and Tinto's model to flow more cohesively into the classroom. Particularly when working with developmental education students, a basic, familiar approach can be the best way to solidify foundational knowledge of reading and writing. The *ACCULACER* test that placed these students in these classrooms is based on assessing past high school knowledge. The potential use of developmental courses are for those students who may either be rusty due to lack of formal language use, have gaps in learning, or never fully mastered necessary skills while in public school. Understanding the value of curriculum development and lesson planning is imperative to create a successful teaching and learning dynamic for these at-risk students.

Bloom's Taxonomy works well for the following three reasons. The first is that a great many college instructors, and in particular community college instructors, while proficient in a chosen field may have not had formal teacher training. This taxonomy can teach the instructor along with the student how to most effectively approach the teaching/learning dynamic. Secondly, Bloom's Taxonomy is broken down into three domains of learning--cognitive for mental acquisitions, affective for attitudes and feelings related to learning and psychomotor which includes manual or other physical skills to learn. Thirdly, this is the most common and well-known method of curricula development among the majority of educators. For the purpose of this study, it is a simple assumption that the Affective Domain of Bloom's Taxonomy fits well with the emotional nature of feelings of belonging.

Integration of Theories

This study makes a direct connection to affective learning and the feelings involved with belongingness and involvement, such as the acknowledgement that students do better and are more engaged when they feel as if they have a respect for the teacher and other students within the classroom (Smith & Tyler, 2002, p. 80). Further, the goal of affective learning goes far beyond the actual task. Teaching includes introduction to new ideas, values and attitudes. Teaching requires that students are exposed to opportunities that may not otherwise occur, with the hopeful idea that there comes a moment when an objective of learning clicks, and a new-found appreciation for that specific objective is now planted. Responsibility may belong to students to cultivate their learning, but if this awareness is given greater attention, there is a good possibility that most students will do so, just for the gain of more knowledge (Smith & Tyler, 2002). In this way, learning has been fostered on a deeper personal level and has increased the value that states learning a specific objective can actually become fun for that individual (Roper, 2014).

Other Influential Theories

Tinto's research, along with other institutional researchers such as Alexander Astin (1984) who is a well-known scholar in this and similar issues, show that belongingness is an aspect that may very well determine if a college student stays or goes to complete his or her coursework to the final destination of graduation (Tinto, 1993). Astin, a long term post-secondary education researcher from UCLA, proposes a student involvement theory that states that the more involved a student is with his or her institution the greater the chance for retention. He recommends ways that institutions can

reach students through other levels of opportunity; most importantly, promoting to put the student first, which is also one of the main tenants of Tinto's research. These practices will contribute to a student feeling more connected to their higher learning; and therefore, extend a greater commitment to persist in completing his or her academic goals.

Over the past decade, research has indicated that teacher-led education is being exchanged for more student-led or learner-centered approaches and curriculum (Goodlad, 2004; Vacca, Vacca, & Mraz, 2010). This shift has expanded from elementary education throughout the post secondary curricula. Curriculum based on this type of learning takes into consideration that the student is not only present to learn but that his or her actions can facilitate further and farther levels of that learning. This change in the dynamics of educating others has slowly been incorporated in the public school system in more recent years; i.e., the theories of Vygotsky and Montessori of communal and collaborative learning has finally taken a definitive hold in the American education system (Berger, 2011; Feldman, 2014). Vygotsky studied the learner as a cognitive being, developing and learning alongside peers, and proposed that learning occurs at a more rapid rate when engaged with other individuals studying and learning similar concepts (Berger, 2011; Feldman, 2011). This particular theory of Vygotsky's is in line with the learning community with which this study is engulfed, and the faculty and the developmental educational students who are involved in the redesign (Tierney & Sablan, 2014; Tinto, 2012).

A number of theorists also involved in the humanistic movement have precedence in defining interactions and interpersonal communications among learners. First, while

discussing modeling behaviors, Albert Bandura's (2006) research on social learning theory also belonged to the psychological movement that has leaned more toward humanistic theory. In addition, Bandura and Maslow both challenged rigid forms of Skinner's theory within the world of behaviorism. In fact, in the early 1960s Bandura was radical enough to claim that people, children in particular, could learn just by observation. They did not need to partake in behaviors that were based in reinforcement, one could learn from watching others' learning processes (Ormrod, 2012, p. 112). This related to research on classroom interactions by modeling and introduced a different stance towards how students thought, acted and most importantly, learned (Feldman, 2014). One did not have to be an active participant to observe and acquire knowledge; this was a construct that was totally foreign and heavily questioned by the behavioral movement (Skinner, 1976).

In an ideal learning community, Maslow's theory states that students need to feel comfortable as they learn. Many times this will be portrayed as an observer at first. Building confidence in such a way contributes to a sense of being (Maslow, 1968) and which Bandura called "self-efficacy," most often expressed when a student was able to complete a cycle of learning that showed competence (Bandura, 2006, p. 165; Ormrod, 2012). In this way, modeling in classroom situations can be and has been demonstrated to be highly beneficial. Students can and do model for each other not only consciously, but unconsciously while working together in the classroom (Ormrod).

Also, modeling is relevant to the present study because of the modeling that occurred by design, that is, both students and instructors were being assessed for sense of belonging. Because this was an educational study where the intervention was taught to

the instructors, promoting sense of belonging behaviors and other aspects of affective learning would come in natural progression. For some instructors involved in the study, this would not make much of a difference, but for others, knowing that they were participants made for more enthusiastic behavior. This was noted by and large to be the case with most of the instructors who were rated positively as those invested in the sense of belonging during the observation factor of the study.

Other ideologies for this study come from theorists such as Carl Rogers, along with Maslow, as another forerunner in Humanistic Psychology. A clinical psychologist who also did research on schools and students, Rogers developed the idea that the most actualized individual was one who had freedom to learn (Rogers & Freiberg, 1994). This included empirical evidence from his clinical studies, and his ideology was well viewed at the educational level (Rogers, 1961). Many of his ideals tied into Maslow's, in that the most effective learning environments were ones that contained the least amount of threat (Rogers & Freiberg, 1994).

Rogers reported the best learning occurred by fostering respect among teachers and students (Rogers & Freiberg, 1994). It is Rogers' terms of positive regard and client-centered learning that greatly influenced educators toward the practice of student-centered learning and contributed to the paradigm shift from teacher-led to student-led education (Rogers 1961). He stated that a teacher can only facilitate a student's learning but not control or demand it; the student must engage and participate in his or her own learning in order for it to remain as lasting evidence of knowledge. This is in line with his view that personal change occurs through favorable learning experiences, and that the best form of learning comes from unconditional positive regard. That is regardless of

ability, it is adhering to a student's level of educational well-being that creates the highest form of learning (Rogers 1961; Rogers & Freiberg, 1994).

In terms of educational theory, other advances in the field of higher education also come to mind, such as Schlossberg's work on transitioning students with her development of the Mattering Scales (Schlossberg, 1990; Rayle & Chung, 2008). These scales allow students to rate responses toward their institutions in the following categories: administration, advising, interaction with peers, multiple roles and interaction with faculty. The objective of the scales is to indicate student empowerment and an increased a desire for entitlement toward an education (Schlossberg, 1989). Through these surveys, administrators of an institution can become aware of how their college meets the needs of learners, and areas can be pointed out for opportunities of improvement.

In this current study, topics in the Mattering Scales were reviewed for similar reference with the words, "mattering" and "belonging," as in sharing a central idea, particularly in reference to institutional investment. Along with the development of the sense of belonging survey questions, and according to Tinto's theory, students were asked about select aspects of commonality in the subjects that influenced the developed surveys, particularly in institutional involvement. In other words student opinion was respected, along with his or her involvement with others that defined intent of how much a student feels that he or she matters to the learning community or the classroom; thereby contributing to his or her personal sense of belonging. The students involved in the redesign were in transition, (Schlossberg's expertise of study), as were the instructors and

the administration. These aspects tie nicely into the present study that is based around the theory of Maslow's hierarchy.

Paul Pintrich's (1990) work on motivation of students is also related, and a review of his questionnaire showed that he kept the same humanistic values in mind. Do students feel as if they have real empowerment over their education, and if so, to what extent (Pintrich & DeGroot, 1990)? By learning through direct experiences, knowledge can feel more of an ownership than something vicariously acquired with another, as Pintrich modeled by using his *Motivated Strategies for Learning Questionnaire*, the MSLQ (Pintrich & DeGroot, 1990). The questionnaire focuses on student orientations of various learning strategies, values and goals, and has proven to be a viable tool to assess students' views in academic-based motivation. The questions of Pintrich's instrument were reviewed, and in that way, the MSLQ was used as another model for the surveys that were developed for this study (Pintrich & DeGroot, 1990).

Also, the contributions of other humanistic theories, and more recently, those of Positive Psychology have played a part in finding what is right with continuing development in the pedagogy of educating minds, and not necessarily what is missing or wrong with one's capacity to learn (Huebner, Gilman, Reschly, & Hall, 2009; Schreiner, Hulme, Hetzel, & Lopez, 2009). This refreshing attitude of the teaching and learning dynamic takes into account the cognitive mind of a student and his or her emotional and current physical ability to integrate learning. This occurs throughout a variety of educational situations, including abilities to cope and other factors of resilience (Maslow, 1968).

Accelerated Learning

The focus of teaching to the middle of the road and very possibly non-existent student of a normal public school classroom is long gone, replaced with Department of Education Title I of the 1980s, mainstreaming of the 1990s and the Referral to Intervention (RtI) created by the Bush administration in the first decade of 2000, a result of the No Child Left Behind Act (*No Child Left Behind Act*, 2002). This attention to individual learners not only made a difference for the underserved public school populations, but also allowed focus for gifted and talented learners who excelled in areas beyond their grade but were still confined to that classroom. Strategies for these outliers of learners exploded in the Special Education field.

In that same vein, exceptions were now being made for the gifted and talented (GT), where these children were challenged in such a way that their selective intellectual abilities were allowed to advance. Many different ways to teach these children were developed; one such effective strategy was to accelerate a child's learning. As these students progressed toward a combined curriculum in middle school, they could better focus on their specialized talent for learning. Accelerated programs began as a way to address the needs of GT children, and the idea of accelerated learning curricula was taking hold. Many of today's students have been exposed to critical thinking early on in public school (R. Landis-Eigsti, personal communication, November 4, 2012), and expectations will continue to grow as these young people age. In the same sense, adult learners are now faced with more diverse instructional situations when attending post secondary learning institutions. One perfect arena for this approach can be addressed among the diversity of the community college campus.

Acceleration in the Development
English Redesign Program

In this redesign of English curriculum described in this study, this idea of accelerated courses became a necessity given the fact that now concepts and ideas were being integrated in the redesign that demanded the enmeshment of two college classes converging into one. At TTCC, the developmental ENG060 & ENG090 courses became the "half" of a traditional college-level ENG121 course. But how to do this, exactly? The new curricula could follow models of adult learning and education (Galbraith, 2004). In the first place the college students in question would be aware from the very beginning, by the nature of registration, that they could see the course they had signed up for was a combination class with a distinct advantage--the ability to complete English composition requirements in one course instead of two; therefore, cutting down time, expense and excess energy; this was the attractive side. The possibilities for negative aspects would be the monumental task of curriculum development demanding added work, and the intensity and academic energy required from students to successfully complete a much more intensive course.

Adult learning theories were discussed by the task force when the redesign was first introduced in 2012 (CCCS, 2013). Other 2-year educators who had come to present at the redesign workshops discussed principles of accelerated learning (Seidman, 2012), and the beginning instruction that would include the benefits to the combination course. Most importantly, the affective learning piece would show students that attitudes toward this type of learning could make or break success (Bloom et al.,1956; Anderson & Krathwohl, 2001; Brookfield, 2004)

Accelerated Model for Adult Learners

In development of the redesign model for adult accelerated learning, some fundamentals needed to be addressed first. Organization and structure were paramount when changing a process that has become overly familiar to administration, departments and faculty. Other college personnel needed to be kept informed, as they would also become a part of the change. Any teaching and learning dynamic can be viewed as strong or weak, depending on the approach and perceived stability of a course, a classroom or an instructor. This strategy assumes that every member of a classroom can teach and that every member can also learn (Lewis, 2013, p. 3).

Flexibility was important for adjustment, and those involved, directly or indirectly, were made aware that the processes might not go smoothly. This approach is key to accelerate learning in the college classroom. The instructor is no longer the lone lecturer or director of learning in front of the class. The teaching process includes others in the classroom to promote and participate in learning. As learners, adults can self-promote their own learning processes (Tracy & Rose, 1992).

In order to prepare to stimulate accelerated learning, expansive arrays of materials are available. Computers and computer educational software play a part in the accelerated classroom, as learning can be enhanced by software that is geared for skill building, an area where hands on learning may not be needed (Galbraith, 2004). Online materials, many of which are free, can encourage learning that is perceived as entertaining. Many ideas, theories and applications have become more common through the availability of psychology in pursuing knowledge, and this information gets slowly circulated to the educating public. The premise is this: once learners are equipped with

the personal understanding of how they learn and motivate, a student takes more accountability when and how that learning takes place. An increased amount of information can be conquered as acceleration builds higher expectations of the instructor, the student and cohorts within a classroom. This was the attitude of the model that was presented to the redesign team as the curricula were put into place.

In essence, the literature used as the resources for this study to merge together to create a perspective that combines the psychology of Maslow, the educational passion of Tinto, and a solid foundation of best practices in basic curriculum building--Bloom's Taxonomy. These respective theories gave substance to an educational intervention for developmental educational students. The study was conducted to relate academic persistence and outcomes to the sense of belonging and measured with factors from the Student Integration Model. Successful completion of the redesign course may give encouragement to these students' abilities to achieve in more English courses, along with increased confidence for other college courses that will further navigate a successful future.

CHAPTER III

METHODOLOGY

This is an ethnographical study that was primarily quantitative in a quasi-experimental design that evaluated a community college English Department Redesign Program of new curricula for the academic year of 2013-14. It concentrated on sense of belonging techniques and affective learning strategies for students and their instructors during the fall 2013 semester. The data that was used was from archival, secondary sources to evaluate this redesign program. The study contained triangulation elements: student and instructor demographics, student input and surveys, and a one-time observation during a semester for each classroom involved in the redesign program (Merriam, 1998). In that way, it also included a qualitative component.

The archival information was gathered during the academic school year of 2013 - 2014. In April of 2014, the original project #676164-1 was created for Institutional Review Board (IRB) approval. As the data were organized, more forms were gathered for the information to be submitted through *irbnet.org*. The first completed IRB package was submitted in October, 2014. That submission was returned with a modification needed for IRB approval in November 2014, which was done for #676164-2. The University of Colorado IRB accepted the modified form and granted Exempt status to this research project for dissertation in January, 2015 (see Appendix B).

The redesign was an implemented change that included a system-wide evaluation of the developmental English curricula at the 2-year college level, recognition of the need

for a different approach to curricula used along with training to coordinate the new changes. The workshops commenced, and the curricula change began fall 2013. Main support came from the full-time English faculty, but included communication and coordination with other departments, (e.g. admissions, scheduling, student support systems). The intervention of affective learning and sense of belonging strategies had prepared instructors to teach on a distinctive, more advanced level with the accelerated reading and writing curricula.

The new curriculum was initiated by an administrative course of action. Change was needed in curricula for developmental education students at the 2-year college level; there was this spoken need to raise quality of material taught in the English developmental education program to cover more advanced material in a shorter period of time. There was interest in a research study that needed to be evaluated to see if the redesign reached advanced levels of academic expectation. I had a desire to use the redesign as my dissertation project by developing research methods to evaluate if the new redesign did give developmental education students an improved opportunity to transition through English classes successfully; and also, to see if these students would stay invested in persisting in their college education.

One objective of this study was to examine the sense of belonging as an important factor to contribute in the area of college retention. This was done by using Maslow's hierarchy of needs theory (Maslow, 1943; 1968) where sense of belonging is essential to fulfill the social needs of human beings. The research was triangulated with Tinto's Student Integration Theory (1975), and Bloom's Affective Domain (1956) and then enhanced by the sense of belonging within Maslow's hierarchy of needs theory. The

evaluation of the course could help reveal data for students who persisted and remained in the course and identify early predictors for the students who succeeded in the redesign curricula.

Tinto's (1987) Student Integration Model was used to help determine variables that might show interrelationship between retention factors and the sense of belonging (Tinto, 1987, 1993; Schroeder, 2003). Finally, the other model that was important to the research was Bloom's Taxonomy (Bloom et al.,1956; Anderson & Krathwohl, 2001) and the domain of affective learning where thoughts, feelings and emotions in reference to learning and teaching dominated curriculum development. Survey scores were expected to demonstrate quantitative relationships between the sense of belonging as the dependent variable and chosen independent variables of peer and instructional involvement and institutional support (see Figure 2).

Background

Table Top Community College (TTCC) is a smaller, suburban institution that currently serves approximately 14,000 students of both full-time and part-time learners. This institution's beginnings was influenced by the nationwide surge for secondary higher learning, along with other academic and technical mandates, to meet the demand of the post World War II baby boomer generation that quickly matured and demanded more a more diverse, quality education. This community college was established in 1969, at first a satellite campus of Community College of Denver (CCD). Table Top became its own autonomous campus in 1983 and is a member of the CCCS, the largest system of higher learning in the state. The college maintains two campuses which are located in adjacent towns in the same county.

Like most community colleges, its main focus is to educate learners rather than to maintain a high investment in social interaction. There are some extra-curricular activities available to students, including 18 clubs and organizations, along with some sports and recreation-type activities for students to join. Since the purpose for community college has always been geared to increased earning and learning potential, activities available on campus beyond academic goals could be considered limited.

Curriculum Standards

The redesign for the English department was based on a review of old curriculum requirements of the English developmental courses and an integration of college level English composition. Each course was evaluated to redefine similar objectives, goals and outcomes. Developmental education classes at this community college are determined two ways: the American College Test (ACT), on which the student scored less than 18, or through the use of the nationally accredited test of the College Board Organization *ACCUPLACER*, which is administered to prospective college students to determine placement in college-level courses (*ACCUPLACER Placement Test*, 2013). The test identifies a student's abilities in reading, writing and mathematics. Combined with student interest, the outcome of the ACT or the *ACCUPLACER* scores decides whether a student will benefit from developmental classes. An overwhelming 60% of all Colorado community colleges students place in one developmental area in these particular subjects (*Colorado Department of Higher Education Data & Reports*, 2012), and many times all three areas. It remains imperative that these students still receive the basic services and support that they require as they continue in the college environment. Testing identifies a

student's abilities in reading, writing and mathematics. Combined with student interest, these are the indicators of placement into the community college system.

English Level Courses within the Redesign

Fall semester, 2013. A common number sequence for the English classes is used within all 13 colleges of CCCS; therefore, the college chosen for this study has called the developmental education courses: writing--ENG 030, 060, 090, and reading--REA 030, 060, 075, 090, each scaffolding additional skills that must be achieved for student progression. As ENG 030 addresses remediation for the most basic of writing and reading skills well below secondary education curricula, that course is no longer being supported by the CCCS system (CCCS, 2013). Instead, those students that fell far below scores for basic college learning are referred to local agencies for adult literacy education. For the fall 2013 curricula, six different combinations were chosen to become pilot classes. The most successful course curricula and combinations would be geared for the continued development and scheduling of the new course numbers, CCR092, CCR094 and REA076. These would become the courses for the spring 2014 semester.

Breakdown of courses. The courses are managed by Course Description, and each course that is scheduled is given a Course Registration Number and a section number, if, as in numerable English courses, where there would be the same course taught. The redesigned combination courses included a variety of options, these were as follows: ENG060 and ENG090, offered as back to back classes; ENG060, ENG090 and REA075 offered as three classes, four days per week, with REA075 offered on alternate days; ENG060 and REA060, for a total of four days per week, alternating subjects each class; ENG090 and REA090 offered back to back, with one alternative set of classes

being offered every day at the same time; ENG090/121 combination class; and ENG090/121 with a combination of two different classes, incorporating a smaller number of eight students pulled out between these two classes and then participating in a Studio class for added support and skill review. There were two other courses considered for redesign possibilities: one REA076 which followed guidelines of the new curriculum process, and lastly, an ENG090 hybrid course which meets one day per week with additional coursework online. This last course was not technically part of the redesign; however, there was enough research from other institutions that had started its redesign programs to suggest that a hybrid course that blended reading and writing as in an online course could be another model for combining in the future, so it was included in the overall research design study.

Learning Support Systems

In this particular community college, these learning support systems are gathered in one area of the chosen college known as the Learning Commons. Within this physical area, many of these systems give students the benefit to extended personal student needs such as Veterans Affairs, Financial Aid and International Student offices and also academic and social support systems. Some of these are designed specifically to encourage better student practices, such as the tutoring center and *Connect to Success*, which promotes student study skills and coping skills with seminars and workshops. In the efforts for redesign, the Learning Commons will eventually play an important role to aid those who will be in need with new, accelerated curricula to master.

Institutional support was necessary in this study, and access for students to maintain support services were imperative, including other areas developed and/or

created to specifically meet developmental education needs. At this particular college, the offices that are available to most higher learning institutions are in place, e.g., Advising, Financial Aid, and Veteran's Assistance, an Accessibility office, Job Placement services and tutoring centers. All of the mentioned offices are in close location in the front wing of the school which allows for easier access and positive communication practices. These additional support systems affect some or all of the student population, but two departments concentrate specifically for the developmental education population.

Connect for success. This office is available for all students, a network of support services means a high number of at-risk students, including developmental students, can get free services that sustain non-academic needs and skills other than academics. One main advantage of this office is to offer free seminars and workshops. Some subject areas are study and test taking skills and financial accountability. Programs with same or similar topics are becoming widely available in 4-year colleges and universities, such as First Year Experience (FYE) programs (Tinto, 2006; Adams, 2008).

College prep zone. Additionally, an extra tutor support area of the Learning Commons is the College Prep Zone, called the CPZ. It is fully staffed with 2-3 tutors throughout the day, including developmental education English instructors who hold their available office hour there once per week. In the 2013 -14 academic school year, there were 208 developmental education students who attended for a total of 968 times (*Colorado Department of Higher Education Data & Reports*, 2012). That means many developmental students frequent the CPZ for multiple or repeated visits to get their academic needs met.

Research Development for the Redesign

Methods showed triangulation of demographics, surveys and observations. Statistical methods could be applied for the sense of belonging within two groups of participants: instructors and students who were to participate in a redesign program for developmental English courses. The study included a specific developmental education population predetermined by the before mentioned registration factors which eventually became the sample populations (along with the instructors who taught) for this research study. First, the redesign was determined by governance of CCCS. Evaluation was needed for the two developmental programs, English and mathematics. This study then pointed toward the English department redesign because of the interest of this writer. The study became ethnographical because this researcher became a collaborative participant among the students and instructors involved in the redesign (Merriam, 1998, p. 101).

As the redesign had been established as a necessity by CCCS, consideration of the developmental student population along with training he English department faculty members became a priority. The evaluation was a process that includes areas of success and weakness; also, to suggest improvements that would then be put in place for future semesters (Cotton, 2014). These areas included the curriculum, sense of belonging training for instructors, observations of each participating class, demographics of the students, and the central measure, the sense of belonging surveys to be administered at two different times within the semester (Week 9 and week 14). The assumption was that these redesigning efforts would be put into place as a model that could be used by the

other state community colleges within the CCCS and perhaps other community colleges outside of the system.

Members of the English department trained others involved with new methods and strategies. The team of instructors participated in a series of four workshops per semester to guarantee everyone would use similar approaches to teach the students registered for the redesign, including the theories behind the sense of belonging and Affective Domain. This writer was designated as the evaluator of the redesign program to report findings to college administrators and to the TTCC English department, thereby influencing academic outcomes for developmental English students. Part of that position included time spent as a trainer in the sense of belonging theory which featured Maslow's hierarchy of needs and the motivational aspects of the theory. Also, instructors were shown how to apply techniques that would further the sense of belonging in the classroom and make it easier to define how those techniques had been used.

The Model

In the redesign, support for the new curricula demanded a positive focus--hence, an idea to attach the sense of belonging to the new teaching practices and to help instructors and students participate in the change (Tucker, 1999, p. 164). After all, more demand was placed on both populations as instructors were trained to teach the course in preparation for the students who needed to reach this higher level of achievement. Doubling performance meant twice the work in half the amount of time; first in the planning of the instructors and, most importantly, the students. This focus on the sense of belonging would be a mediator to encourage positive academic achievement.

There were two distinct outcomes for evaluation of the redesign program. The first, the questions on the survey geared toward an understanding of (a) a sense of belonging in the classroom, (b) investment of the institution, (c) peer support, and (d) institutional support. Second, the academic outcomes were reported by the institutional data for students who completed the course and their grades. Figure 4 provides a mapping of the research components. The redesign was the impetus to evaluate and apply research data. Theories and models involved were Maslow's hierarchy of needs--sense of belonging, Tinto's Student Integration Model and Bloom's Taxonomy.

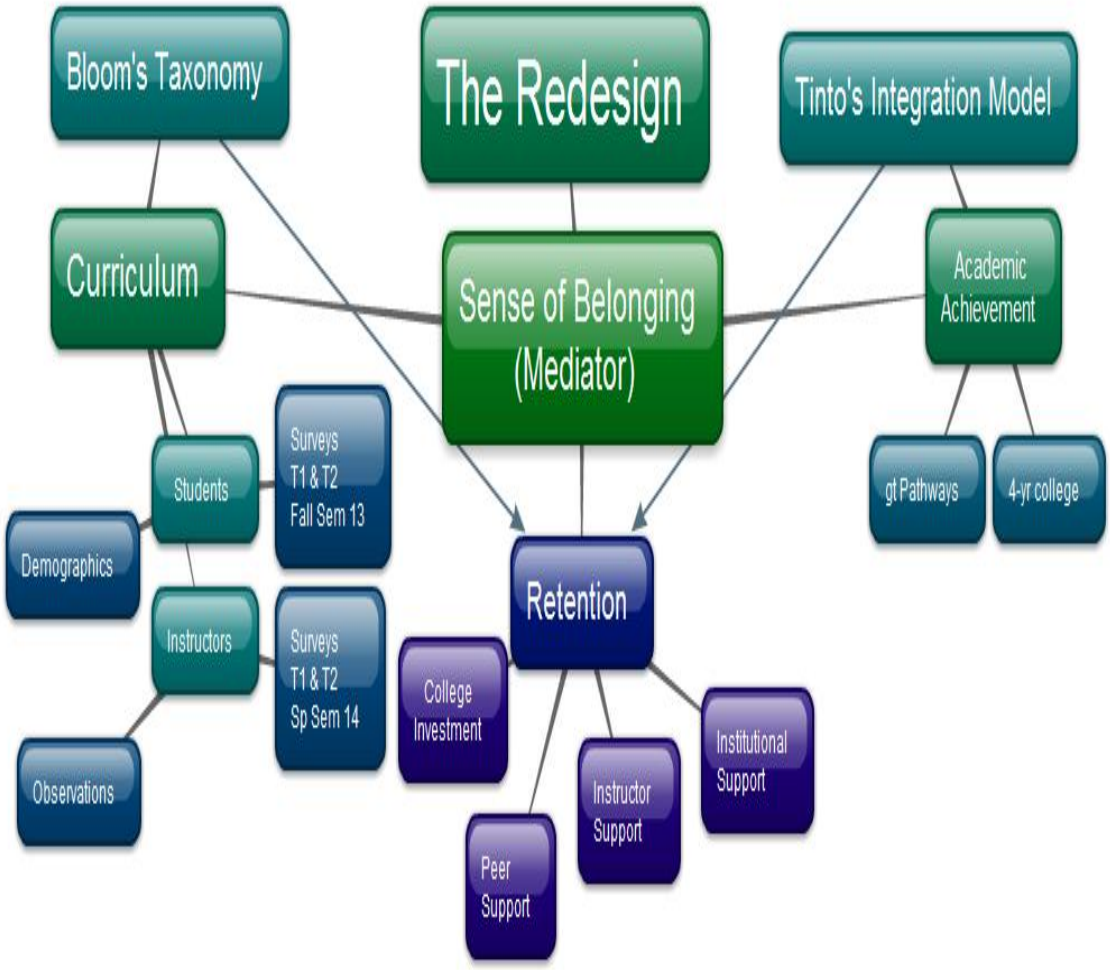

Figure 4. Redesign Model for Developmental Education Students (James, 2013).

Upon review of the concept map above, the sense of belonging is shown as the mediator between Bloom's Taxonomy and Tinto's model. Ultimately, the balance between the other two theories would allow for students to gain academic achievement through retention and continue to set further academic goals. In order to maintain retention, the independent predictor variables would be accessed through quantified data. This was done by changing the curricula through the established training with a concentration of all three theories. The measurements would include the surveys from T^1 to T^2 and data from the observation that was done near the end of the fall semester.

This case study explored two distinct populations--the students who attended the redesign courses (Population A) and the instructors who taught these courses (Population B). The general age medium of the community college student at this particular college is 26 years, but the general mean age of those registered in the redesign courses was 19 years. The sample of the student participants in Population A included 190 participants. The location of the institution was a metro-suburban area of a slightly diverse ethnic background within the range of middle class SES population. Knowing that information (see Chapter I) defined that the population that attend this community college were of the same or similar background as those who live near it. (Crookson & Hooks, 2012).

Population B, the instructors, was first contacted through workshops that occurred in the spring and summer of 2013. They were prepared for teaching the new redesign by an introduction to various types of curricula from other institutions that had developed similar programs. There were guest speakers who came from other CCCS colleges to share their experience of redesign of developmental English courses on their campuses. Included were a series of three short lectures including exercises by this researcher on

Maslow's theory of hierarchy of needs and the emphasis of gaining knowledge of the sense of belonging as a development tool in the classroom. The instructors were aware that they would be given surveys and have an observation by the researcher in their active classrooms, and that these would take place at certain mutually scheduled time periods in the semester.

Participants

The Redesign Pilot Team

In the beginning, the English Department Head of this college attended CCCS meetings to become informed of the impending system-wide changes in the developmental education program. Once informed, she requested a core group of full-time English instructors to implement training. She then recruited adjunct faculty members to commit to the redesign with planned workshops that trained the redesign instructors. Five full time faculty members were designated different core elements that would be put into place, i.e., training on the acceleration process, gathering outside lecturers, classroom set up and implementation, and the technical support for instructors that would be teaching these courses. Eleven part-time instructors were recruited for the remaining instructor slots needed to fill the redesign courses. Initial training for part time instructors was used by the entire pilot team to incorporate new curricula into the redesign classrooms.

The first pilot team consisted of a group of 16 team members in the fall of 2013. Each of these instructors was asked to (a) be part of a team that would teach a redesign course and (b) be willing to partake in a variety of workshops throughout the upcoming academic school year. With this pilot team in place, the fall 2013 schedule developed

20-26 courses to be taught in the 2013-14 academic year. By spring, the number of full redesign courses had dropped significantly. Although the original study was proposed to take place throughout the entire school year, unforeseen complications (see Chapter V) curtailed this study and its findings to the fall semester of 2013.

Four different workshops were held in the spring and summer of 2013, and two more were put into place during the fall semester of the 2013, and two put into place for spring of 2014. These workshops accomplished a number of academic and instructional purposes. First, the full-time instructors acted as facilitators and each facilitator concentrated on teaching distinct areas of the redesign. Second, the facilitators offered activities and skills for new redesign instructors. Third, other full-time instructors from two other community colleges in the CCCS were brought in to share their faculty members' experience when they had initiated an English redesign program in their institution. Fourth, Power Point presentations and activities were given at each of the workshops on the sense of belonging by this writer, and teaching suggestions were offered to help promote ease of transitioning for the student population. Lesson planning, hands-on activities and best practices of what worked well were shared throughout the first semester, along with other applications that were succeeding at other CCCS colleges.

The Student Population

The student population scheduled for the design program was composed of students who scored low *ACCUPLACER* to be approved for entrance into a transferable state college level course. The age of the population of students was typical for a 2-year college environment, ranging from 16 to 50+. In 2012, the average age of the student attending the redesign courses was 19. The demographic survey that was issued to these

students at the beginning of each semester was notably more detailed than the general demographic survey issued by CCCS and accounted for areas such as work hours per week, social life, parenting, and institutional and instructor relationships. The SES status was varied, but in line with a typical suburban community college population of low, moderate and middle income families (Tucker, 1999).

These students were previously given extra services as members of the College Preparatory curriculum and were eligible for added support as they were unable to perform at college level whether these skills were reading, writing or math. As this study reflected the first semester of the redesign, there were no requirements to be admitted into the combined courses; any student who was assessed as needing developmental classes could register.

For the purpose of this study, concentration was placed on those who needed support for reading and writing skills. These students lacked higher reading and writing concepts, including those with learning disabilities, and older students who had not needed reading and writing skills through the job market or their chosen field (*Colorado Department of Higher Education Data & Reports*, 2012). Over half of these students had come to community college to improve their knowledge base by integrating these occupational or technical skills. A high number of the developmental education population had hopes of accomplishing academic requirements and continue to higher education.

Materials

The materials for the redesign data sets were gathered through three surveys and one observation form that was developed for the study. The observation form was used

to record the classroom visit and reflected how instructors and students were observed with both Maslow's and Tinto's concepts. The surveys included an introductory letter explaining the redesign to the students (see Appendix C), along with instructions to fill out the Likert Scale(s). The initial survey, unlike the demographic survey used by the CCCS for tracking entry-level students, (*Colorado Department of Higher Education Data & Reports*, 2012) included questions related to social and academic life (Tinto, 1987). Finally, the sense of belonging surveys concentrated on Maslow's theory related to safety, comfort and communication within the classroom for both students and instructors.

Institutional Data

Further reporting collected by the Colorado Community College System databank for the spring and summer of the 2013-14 academic year contributed with completed data of the academically successful students from these semesters. Also, summer and fall 2014 rosters would be reviewed for successful completion of the next transfer English course, ENG 122, by students that participated in the redesign study. Although successful completion of the original redesign course was an important predictor, it was of further interest to see if redesign students continued in academic achievement as they progressed through the community college system in the next level of required English curricula. Through institutional data collection, tracking and reporting on student activity was possible. Along with demographics, attendance and grades are kept through a large repository system for the CCCS, and individual institutions can gather reports. The office of Planning, Research & Effectiveness at this institution was accountable for providing reports for the research for this study. The members of this team provided

important data that contributed to empirical evidence that lent to a deeper body of research.

The Observation Form

The observation form (Appendix A) was used to assess classroom data for the researcher while attending each redesign classroom; these were done in Week 9 and Week 10, fall 2013. The surveys asked for demographics of the students (Appendix D), and the most important measure, a sense of belonging survey for students and instructors (Appendices E and F). The demographic survey gave further insight into these populations. The sense of belonging survey was used to measure sense of belonging at two different periods of times, T^1 and T^2. Fall 2013 semester investigated the student population, and spring 2014 focused on the instructors in the study.

The observation measurement was developed by researching other observation forms used in all levels of education--elementary, secondary and college observation. The outcome indicated a few set practices as standards found in the best forms. That is, a checklist that could be easily and quickly filled out with 25 questions that regarded levels of engagement within the classroom. In this checklist, questions related to the sense of belonging were broken down into sections of five questions each: organization, climate, participation, student/student interaction, and instructor/student interaction. This particular observation form was customized to define both the sense of belonging and Tinto's Student Integration Model (1987). Questions regarding classroom climate and student comfort were noted by the use of Maslow's hierarchy of needs theory and sense of belonging concepts (see Appendices A and E). In the instructions for the observation form, it noted that the term, "comfortable" could be thought of as a synonym for "safe."

Also, the checklist included concepts to Tinto's research, in two sections of the checklist that supported integration of peer and instructor communication.

The second page of the observation sheet was open-ended, addressing familiar questions related to teaching, e.g., the agenda, level of organization, lesson procedure, classroom activities, and observed student and instructor engagement. For the purpose of this study, there was emphasis placed on the sense of belonging, i.e., the instructor's appearance of comfort in front of the class. In turn, it also asked whether students appeared to feel and/or express comfort in the classroom.

Surveys

Demographic Survey. This included traditional and non-traditional questions based on the sense of belonging and Tinto's Model (see Appendix D)**.** Some of the questions were: (a) related to social life on the college campus, e.g., eating together, including classroom breaks, clubs and athletics; (b) use of student support, i.e., advising or specialized departments in the college for veterans or Office of Assessability Services; parenting pressure, if so, age(s) of children; and (c) a feeling of institutional support. Also, did he or she work outside of the college or college work study? If yes, how many hours per week? In oversight, the survey for the fall 2013 students did not ask if students had learned English as a second language; this was corrected for the spring 2014 demographics. Commuting distance was also ignored, and with the continual rise of gasoline prices within those two years, it very possibly became a financial factor for some students to get to class. Also, long commutes through city traffic are stressful, and at times a reasonable excuse not to attend class due to weather or congestion.

Sense of Belonging Survey. The sense of belonging surveys were designed to reveal the most important element of the study--could a sense of belonging be measured, and specifically, could it stand as a positive intervention in a college classroom for developmental English students? If so, did the intervention of fostering lead to improved academic achievement, especially in this time of transition for students and instructors? To find a scale that might measure this sense of belonging, other research was explored, but no specific "sense of belonging" survey was discovered. The sense of belonging surveys used mirrored questions, but these were altered to address the two different populations of students and instructors. An example of the student survey for Question 3: "I contribute to the class with personal comments," and Question 3 for instructors: "I allow students to contribute to the class with personal comments."

The sample size was dictated by the students who had filled out both two sense of belonging surveys, disseminated Week 9 and Week 14 to create a data set. This meant that students had to have been present when both surveys were distributed. Although the true student population of the redesign was over 230 students, approximately 40-50 of these individuals could not be counted in this research. This was due to inadequate filling out of the surveys, a lack of tagged S numbers, or an unreadable or inaccurate self-reported S numbers. However, a participation rate of 57% of students in the redesign curriculum was reported. An assumption was made because of the workshop training, the instructors would oversee the survey process, but this did not occur with any standard consistency. A few instructors were effective at this facilitation, but many were not.

Observational Data Collection

At Week 9 or Week 10, I visited and observed each classroom involved in the redesign as a member of the redesign team. There was a short question/answer period between the students and myself on the topic of the redesign, the research that was being gathered and the purpose of this research. The students and the instructors were free to address any questions or concerns they may have had. This process was also used to debrief the surveys that students had been asked to complete. The amount of time on this piece took an average of five minutes. Then, students were observed in normal teaching and learning activities that took place in the redesign classroom. The observer noted normal instructing strategies and whether there was a level of ease and comfort with which students viewed and behaved with each other and with their instructor. For purposes of this study, this was to be the indication of a sense of safety and security within the classroom (Maslow, 1943, 1968).

The form for the observation was filled out by the researcher during a scheduled time and served as the reported demonstration of an instructor's method of teaching (see Appendix A). This form became the third piece of data developed to help evaluate other findings in the study related to the sense of belonging (Merriam, 1998, p. 204). It was designed to answer a number of questions related to: (a) student to student and (b) student to instructor involvement on the day of observation. During this designated time, the researcher watched for an instructor's questioning techniques, peer to peer associations, and instructor to student interaction that supported the sense of belonging in the classroom. Some of the specifics were to watch for the SoB evidence, if any, in relation to the style of instruction that was being conducted in the classroom.

All of the instructors who participated in the redesign were observed at least once in the fall 2013 semester. These instructors were given options to schedule the day and time of the observation as to give preference to a time they would most like to have an observation in a classroom session. A request by the observer was to approach a typical class in session, and no special arrangements were made to accommodate the observer. With this type of invitation, instructors did have control over participation time to eliminate a random visit. The researcher for this study was a member of the redesign team and also a collaborative participant (Merriam, 1998, p. 101). In order to reduce bias, another full-time staff member did a separate observation for me and used the same observation form and in a similar time frame that all other instructors had been observed.

Another important factor that related to the qualitative data was the strategy of approachability toward the participating students during the observation for 30-60 minutes. The purpose was to be non-disruptive, thereby reducing any possible threat or negative influence regarding safety. At some point in time during the visit, the researcher informed students with more details about the redesign, the fact that the overall program was under evaluation and that they were welcome to ask any questions. Some students took the opportunity to communicate with the researcher, but more importantly addressing the classroom members was another positive gesture toward establishing and improving communication by demonstrating a clear institutional investment in students. Further information regarding this study can be made available through the University of Northern Colorado IRB process (see Appendix B).

Quantitative Data Collection

Population A, the Students

Unlike the traditional entrance demographic survey that is filled out by students at admission, this researcher developed an objective demographics survey more closely related to the developmental education students who attended the redesign course in the academic year 2013-14. Early in the fall semester of 2013, Population A, the students, was informed by their instructors that they would be participating in a case study that was to be educationally evaluated. At Week 4, students were asked to fill out the demographics survey and given specific research contact information of the Director of Planning, Research & Effectiveness. During that time, students were informed about the redesign and the research that would evaluate it. Students were given the opportunity to opt out of the research; their participation of filling out the demographic survey was the noted agreement to their personal participation. The amount of time reported to fill out this survey was approximately 10 minutes.

The number of students registered in the redesign courses was near 300 students at Week 4 when demographic surveys were filled out, but the number of students had dropped to around 270 by mid-term of the semester. This drop is somewhat normal, and it is not all due to attrition. It can be caused by incorrect registration counts at semester start, where approximately 10% of students either change courses or never attend the course for which they were registered (Table Top Community College, 2014). Also, attendance drops immediately in the first week when students do attend courses, but then make personal choices about their schedules and preferences in which classes they will continue to attend. Then there is a steady attrition rate that takes place in the first half of

the semester, where a drop of 20-25% of many community college classes is common (Clark, 2005; Bethea, 2014), and for some institutions, much higher (Astin, 1984). These numbers were an important statistic of the institutional data. The final sample size for this study was 190 participants.

Population B, the Instructors

The demographics of the instructor population were noted as a general review of the instructors who taught these courses over a period of two semesters. There was no formal demographic survey given. The demographic breakdown for fall 2013 was as follows: 16 instructors, 11 female, 5 male; ages approximately 24 to 64, fourteen were white and 2 were of Hispanic/Latino(a) background who were fluent both in English and Spanish. Number of years teaching spanned from 2 instructors teaching less than five years, to 2 instructors teaching for 30+ years. A recorded version of demographics of the instructors was not taken; this was a fair guesstimate.

Qualitative Data Collection Procedures

Observations

On observation days, the researcher would come to observe a class within a 30 - 60 minute timeframe. Most classes were conducted so observing was done in an unobtrusive manner. Other instructors, or even the students, would express enough comfort to ask the researcher to comment on the coursework or join in the lesson. Because the observation sheet had a checklist component and an open ended comment area (see Appendix A), it usually took a short amount of time to complete the form and the majority of time was used to closely observe for sense of belonging predictors.

Most observations were strictly non-participatory; some observations were semi-participatory because of the standard introduction by the researcher to explain the redesign study which would lead to a short question/answer period. Other times, because of previously set dynamics by the instructor, participation in the classroom was not expected. At a handful of times observations include actual participation by the researcher with the students during recorded observation time. For example, one class was preparing for a debate, and the students were gathering opinions on their topics; the researcher was asked to share personal opinion. Another instance included a trip into the Learning Commons where students were widely spread out at many computer carousels, so the researcher was asked by the instructor to assist with students exploring computer databases. In this way, the researcher was in the role of collaborative observer (Merriam, 1998, p. 101)

Observational Data

In Week 9 or 10, formal observations took place in each classroom. The class was evaluated by the researcher through an original observation form. The length of observations averaged 45 min, with two lasting 30 min, and the longest observation was 75 min. Although the observation was an important piece in order to view the student population, another goal was to note if instructors had integrated the curricula training for improving a sense of belonging in the classroom. Instructors were observed in normal teaching and learning activities, modeling and integration of strategies that promoted these behaviors. Also noted were the ease and comfort of the instructor and students, and if the instructor seemed to promote a sense of belonging between the students within their classroom.

Analyses of the observational data were done by quantitative themes and clusters then coded for observations related to the words and behaviors that adhered to either: a) Maslow's sense of belonging, b) Tinto's stated influence of peer, institutional and instructor support (see Figures 1 and 2), remarks contributed to attitudes and feelings about learning, as in Bloom's Taxonomy and affective learning. These measures were then grouped for analysis.

CHAPTER IV

ANALYSES

Results from Data Collection

The following describes the results of the data analyses conducted to address the research questions. By interpreting and evaluating customized measurement instruments used within a semester of the school year, the potential benefits and possible shortcomings of this trial redesign program will be documented. As previously stated in Chapter III, the surveys were designed to measure the sense of belonging (SoB) as students and instructors participated in the Developmental English Redesign curriculum throughout the 2013 -14 academic year. The data analysis is described for all four questions determined in the design of this research.

In order to answer Research Question 1, survey questions were developed and administered to students who took part in courses of the developmental English redesign curriculum. The purpose of the survey was to gauge each student's sense of belonging as it related to the hypothesized factors of interest: personal sense of belonging, institutional integration, peer and instructional support. The answers to these questions were converted to a Likert scale ranging from 1 (almost always) to 5 (almost never), and a factor analysis was conducted to determine if the items of the survey served as a measure of student's sense of belonging and aligned to the groups mentioned above. The factor analysis identified factors and, with appropriate factor loadings, was able to confirm or

contradict the assumption of the above mentioned categories, and also determined the most important factors as they related to the sense of belonging score.

The answer to Research Question 2 was addressed by multiple regression to determine if demographic characteristics of the students were predictive of the total Week 9 sense of belonging score, and to determine if there was change in scores from Week 9 to Week 14. In addition, correlations of sense of belonging scores were examined between Week 9 and Week 14 for the fall 2013 students, Population A. Regression analysis on the demographics were explored to determine if these predictors had influenced the total Week 9 sense of belonging score, along with the relevant factors redefined in the final factor analysis, and to determine if there had been a change in the Week 14 score. Further, additional demographic data were taken from the community college's admission information questionnaire and matched with the primary S number (as described in Chapter III) and placed into a primary dataset. This allowed for analyses of the individual differences in the sense of belonging based on the demographics of the sample as well as generalized vs. specific SoB demographics prediction of these scores. This combined information contributed to the report of change in scores from Week 9 to Week 14.

Other analyses were used to answer Research Question 3 with regard to whether the sense of belonging scores and the change in the scores between Week 9 and Week 14 and predicted the final grades of the students and their likelihood to complete the course. To understand this relationship with regard to scores, a one-way ANOVA was conducted to determine if there was a significant difference in mean scores or the change in scores by grade. Subsequently, a multiple linear regression was used to determine if the score or

change in score was predictive of a student's final grade in the course. Finally, a logistic regression was used to determine if the total SoB score or change in scores was predictive of a student remaining in the course for the full term. This information can help tailor future curriculum redesign courses; for these students in particular to become more academically successful.

Finally, to answer Research Question 4, a combination of both qualitative and quantitative methods was used. Given small sample sizes for the number of instructors that took the survey, a qualitative approach of an observation was performed to categorize instructors as either invested in sense of belonging or not. Then, the mean scores for student SoB, and change in these scores were analyzed for both groups to examine whether students of these two groups of instructors differed.

The analysis was completed using *MS Excel* and SAS *(Statistical Analysis Software)* with all analyses mentioned above including, but not limited to, factor analysis, correlation analysis, one-way ANOVA, multiple linear regression, and logistic regression.

Analyses of Instruments and Measurements

Research Question 1: Sense of Belonging Surveys

The original expression of values for this sense of belonging scale began with the measurement's first scale related to one's personal sense of belonging as in Maslow's hierarchy of needs theory. Concurrently, along with emphasis on Tinto's integration model led to three additional subscales (Tinto, 1975, 1993). A total of four subscales, with six questions each, defined the variables as these related to the sense of belonging in

academic and social integration. The four subscales were: personal sense of belonging, peer-to- peer involvement, student's investment in the attending institution or feelings of institutional investment in him or her; and student-to-instructor relationship. With six questions in each subscale, the total number of questions in the measurement was 24.

For the fall 2013 semester, there were 333 students registered for the redesigned courses on census day, 10 days after beginning date, noted to be the official number of registered students recorded for that term (Table Top Community College, 2014). Week 9 was designated at the first reporting time (T^1) for that semester. There were a number of reasons for this: First, noted stability of student attendance has been known by instructors to be established by the week right after mid-term. Second, those students who were not doing well academically or whom had little investment would rarely persist with poor mid-term grades, or the idea of catching up with lacking a number of completed assignments. Third, those students who did not attend regularly would have little connection to others in the class, since part of a sense of belonging was related to showing up and participating in the curricula on a regular basis, most of these students dropped the class by mid-term. Prior research of past academic years indicated that the approximate 25% overall attrition rate for this community college occurred, and the remainder of the student population could now be considered stabilized (Table Top Community College, 2014). The second report time (T^2) was Week 14, right before end-of-semester demands became too great for either students or instructors to make time for completing surveys.

The number of students who filled out sense of belonging surveys for both weeks of T^1 and T^2, numbered 237 students. However, 32 students did not fill out surveys for

both weeks, and because both were needed for a complete data set; participants with single surveys could not be used. Another 14 students either marked down an incorrect S number, that number was illegible or that space on the survey was left blank. There were 191 total surveys returned, for both T^1 and T^2, with one deleted from the analyses because that participant did not meet the minimum age requirement (American Educational Research Association, American Psychological Association, National Council on Measurement in Education [AERA], 1999); therefore the number of participants equaled 190. This meant that there was a 57% return rate for the sense of belonging surveys. The items were input into *MS Excel* and labeled. The following values were assigned: 5 = *Almost always*, 4 = *Sometimes*, 3 = *Occasionally*, 2 = *Infrequently*, 1 = *Almost never*. The higher the scores on this scale indicated a higher level of a sense of belonging.

The Mean and Standard Deviation of Sense of Belonging Surveys

As part of the exploratory data analysis, and in order to understand the distribution of data that was returned in the student surveys, the mean and standard deviation for all 24 questions were calculated for the sample for both Week 9 and Week 14 (see Table 1). In order to account for missing data without adversely impacting the results of the analysis, the imputed means method was used as a replacement when a question was not answered by a participant. For example, if question 2 of Week 9, was left blank, the mean value 4.136984 was assigned instead of a missing value or a zero. In general, because there were not significant numbers of missing values per question (see Table 1), there was confidence in using this method without great concern for skewing the distribution of the missing responses.

Table 1

Mean and Standard Deviation for Weeks 9 and 14 Questions

Mean and Standard Deviation							
Variable Week 9	Label	*N*	*N* Miss	*M*	*SD*	Minimum	Maximum
Q1_9	Q1_9	190	0	4.30	0.81	1	5
Q2_9	Q2_9	189	1	4.13	0.94	1	5
Q3_9	Q3_9	183	7	4.02	0.97	1	5
Q4_9	Q4_9	189	1	4.04	1.10	0	5
Q5_9	Q5_9	190	0	3.93	0.99	0	5
Q6_9	Q6_9	188	2	4.38	0.94	0	5
Q7_9	Q7_9	185	5	2.84	1.30	0	5
Q8_9	Q8_9	189	1	2.46	1.42	0	5
Q9_9	Q9_9	190	0	2.44	1.49	0	5
Q10_9	Q10_9	186	4	2.26	1.47	0	5
Q11_9	Q11_9	188	2	2.38	1.52	0	5
Q12_9	Q12_9	187	3	2.68	1.37	0	5
Q13_9	Q13_9	187	3	3.03	1.34	0	5
Q14_9	Q14_9	184	6	2.33	1.43	0	5
Q15_9	Q15_9	189	1	2.77	1.47	0	5
Q16_9	Q16_9	189	1	2.49	1.32	0	5
Q17_9	Q17_9	189	1	2.25	1.40	0	5
Q18_9	Q18_9	190	0	3.64	1.34	0	5
Q19_9	Q19_9	189	1	4.56	0.85	1	5

Table 1 (continued)

Mean and Standard Deviation							
Variable Week 9	Label	*N*	*N* Miss	*M*	*SD*	Minimum	Maximum
Q20_9	Q20_9	187	3	4.65	0.76	1	5
Q21_9	Q21_9	190	0	4.56	0.83	1	5
Q22_9	Q22_9	187	3	3.91	1.29	0	5
Q23_9	Q23_9	189	1	3.42	1.49	0	5
Q24_9	Q24_9	189	1	3.40	1.45	0	5
Q1_14	Q1_14	189	1	4.44	0.82	0	5
Q2_14	Q2_14	189	1	4.35	0.83	0	5
Q3_14	Q3_14	187	3	4.13	0.98	1	5
Q4_14	Q4_14	189	1	4.24	0.98	0	5
Q5_14	Q5_14	188	2	3.89	1.04	0	5
Q6_14	Q6_14	186	4	4.66	0.75	0	5
Q7_14	Q7_14	189	1	2.95	1.47	0	5
Q8_14	Q8_14	189	1	2.44	1.63	0	5
Q9_14	Q9_14	186	4	2.39	1.55	0	5
Q10_14	Q10_14	187	3	2.27	1.55	0	5
Q11_14	Q11_14	187	3	2.39	1.62	0	5
Q12_14	Q12_14	182	8	3.54	1.41	0	5
Q13_14	Q13_14	188	2	3.15	1.41	0	5
Q14_14	Q14_14	187	3	1.97	1.46	0	5
Q15_14	Q15_14	189	1	2.72	1.50	0	5
Q16_14	Q16_14	188	2	2.63	1.42	0	5

Table 1 (continued)

Mean and Standard Deviation							
Variable Week 9	Label	*N*	*N* Miss	*M*	*SD*	Minimum	Maximum
Q17_14	Q17_14	184	6	2.19	1.39	0	5
Q18_14	Q18_14	185	5	3.60	1.41	0	5
Q19_14	Q19_14	188	2	4.75	0.73	0	5
Q20_14	Q20_14	189	1	4.80	0.68	0	5
Q21_14	Q21_14	189	1	4.81	0.59	1	5
Q22_14	Q22_14	188	2	3.73	1.59	0	5
Q23_14	Q23_14	190	0	3.2	1.60	0	5
Q24_14	Q24_14	190	0	3.06	1.68	0	5

Internal Consistency and Reliability

The Cronbach-Alpha is a measure of internal consistency and is used to determine how a developed scale of questions projects the same measure, in this case, the sense of belonging (Ary, Jacobs, Razavieh, & Sorensen, 2006). To further explore the relationships between the questions and determine the reliability of the sense of belonging survey, a correlation analysis was run and a Cronbach-Alpha statistic was calculated for both weeks (see Table 2). Alpha threshold for reliability was exceeded in both Week 9 and Week 14. The raw score for Week 9 was 0.84 and the standardized score was 0.85. In Week 14, the respective raw and standardized scores were 0.86 and 0.87. Not only is this good reliability for the bases of future testing, but the scores rose between Week 9 (T^1) and Week 14 (T^2).

Table 2

Alpha Value Reliability

Cronbach Coefficient Alpha	
Variables	Alpha
Week 9	
Raw	0.84
Standardized	0.85
Week 14	
Raw	0.86
Standardized	0.87

Please see Appendix D for the full correlation matrix of Week 9 and Week 14 questions in order to view the questions associated with Pearson Correlation Coefficient. The correlation analyses helped to determine if there was a relationship between questions, as well as provide guidance on the best rotation method for a Factor Analysis covered in the section below.

Factor Analyses Data

In order to investigate the basic relationships between the questions and to determine if there were any unknown data structures, an exploratory factor analysis was done for both Week 9 and Week 14 (see Tables 3 and 4). Since the initial assumptions of SoB groupings were hypothetical in nature, an exploratory factor analysis was used rather than confirmatory factor analysis so that the analysis was not constrained by any pre-conceived constructs of factors (AERA, 1999). The main focus of the Week 9 analysis was used to determine if the original questions would actually categorize with the four

factors as they originally had been stated, and Week 14 was used to analyze the changes, if any, from Week 9 to Week 14. Also, this was to understand if there had been a positive shift over time in the student's sense of belonging.

Week 9 Factor Analysis

Factor analysis was initially run to determine the appropriate number of factors to extract, and to determine if a rotation would optimize the factor loadings per factor. In essence a factor analysis attempts to minimize the variance within a factor of the most important variables, while that factor also maximizes the variance present between the other factors. The factor analysis for Week 9 was calculated with eigenvalues and the scree plot below clarifies those results (see Figure 5).

Table 3

Week 9 Rotated Factor Loadings

Variable	Label	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Q1_9	Q1_9	-0.01	0.71	0.17	-0.02	0.2
Q2_9	Q2_9	0.07	0.73	0.22	0.08	0.14
Q3_9	Q3_9	-0.07	0.76	0.11	0.13	0.11
Q4_9	Q4_9	0.25	0.64	0.14	0.24	0.08
Q5_9	Q5_9	-0.23	0.24	0.18	-0.08	0.21
Q6_9	Q6_9	0.17	0.46	0.28	0.2	-0.17
Q7_9	Q7_9	0.59	0.02	0.22	0.23	0.12
Q8_9	Q8_9	0.78	0.02	0.06	0.3	-0.05
Q9_9	Q9_9	0.83	0.13	0.05	0.17	-0.01
Q10_9	Q10_9	0.88	0.15	-0.04	0.02	0.05
Q11_9	Q11_9	0.84	0.08	-0.1	0.02	0.12
Q12_9	Q12_9	0.31	0.48	-0.1	0.08	0.02
Q13_9	Q13_9	0.19	0.08	0.3	0.7	0.12
Q14_9	Q14_9	0.13	0.07	-0.18	0.67	0.19
Q15_9	Q15_9	0.21	0.10	0.01	0.77	0.02
Q16_9	Q16_9	0.08	0.12	0.14	0.77	-0.08
Q17_9	Q17_9	0.09	0.12	-0.2	0.43	0.16
Q18_9	Q18_9	-0.07	0.29	0.36	0.28	0.02
Q19_9	Q19_9	0.08	0.25	0.82	0.01	0.08
Q20_9	Q20_9	0.03	0.18	0.88	-0.04	0.03
Q21_9	Q21_9	0.00	0.10	0.82	-0.02	0.2
Q22_9	Q22_9	-0.04	0.21	0.18	0.1	0.65
Q23_9	Q23_9	0.13	0.04	0.06	0.1	0.86
Q24_9	Q24_9	0.11	0.10	0.04	0.11	0.83

Table 4

Week 9 Rotated Factor Loadings--Questions Removed

Variable	Label	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Q1_9	Q1_9	-0.01	0.71	0.17	-0.02	0.2
Q2_9	Q2_9	0.07	0.73	0.22	0.08	0.14
Q3_9	Q3_9	-0.07	0.76	0.11	0.13	0.11
Q4_9	Q4_9	0.25	0.64	0.14	0.24	0.08
Q7_9	Q7_9	0.59	0.02	0.22	0.23	0.12
Q8_9	Q8_9	0.78	0.02	0.06	0.3	-0.05
Q9_9	Q9_9	0.83	0.13	0.05	0.17	-0.01
Q10_9	Q10_9	0.88	0.15	-0.04	0.02	0.05
Q11_9	Q11_9	0.84	0.08	-0.1	0.02	0.12
Q13_9	Q13_9	0.19	0.08	0.3	0.7	0.12
Q14_9	Q14_9	0.13	0.07	-0.18	0.67	0.19
Q15_9	Q15_9	0.21	0.10	0.01	0.77	0.02
Q16_9	Q16_9	0.08	0.12	0.14	0.77	-0.08
Q19_9	Q19_9	0.08	0.25	0.82	0.01	0.08
Q20_9	Q20_9	0.03	0.18	0.88	-0.04	0.03
Q21_9	Q21_9	0.00	0.10	0.82	-0.02	0.2
Q22_9	Q22_9	-0.04	0.21	0.18	0.1	0.65
Q23_9	Q23_9	0.13	0.04	0.06	0.1	0.86
Q24_9	Q24_9	0.11	0.10	0.04	0.11	0.83

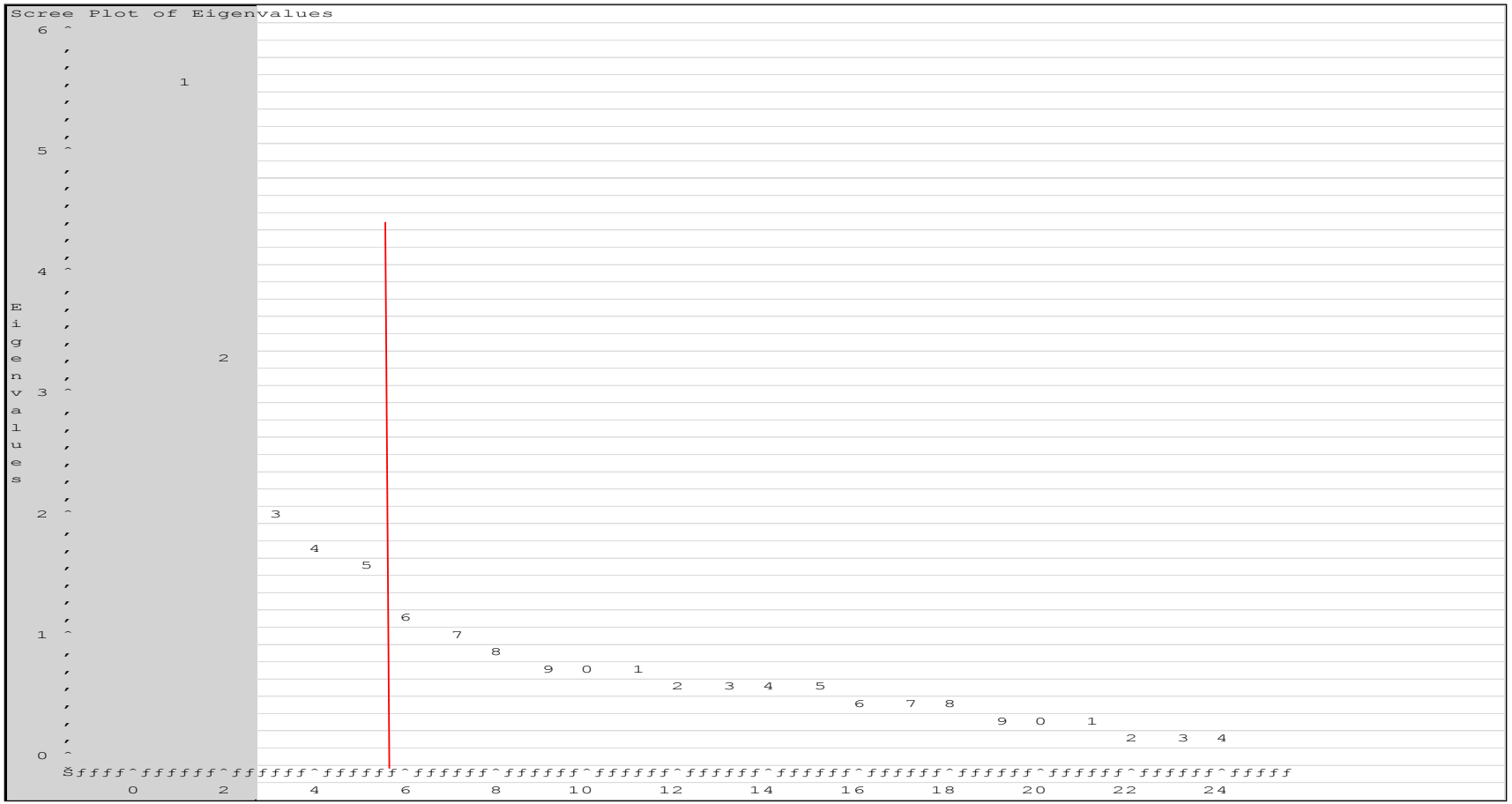

Figure 5. Week 9--Scree Plot of Eigenvalues of Factor Analysis

The plot shows eigenvalues which represents the covariance of the data of all variables and dimensions. This is important, as we are looking for the greatest variance in the least amount of numbers as possible. The first eigenvalue gives us the component that by itself explains the most total variance; the second eigenvalue explains the next highest amount, and so on. The highest eigenvalue provides a guide for deciding how many factors should be extracted for further analysis, and in this case, we see good correlation within the first 5 factors, which produced the tendency toward a new, significant factor (Komos, 2011, p. 86). Note the greatest area of space between the numbers in Figure 5. After reviewing the data, it was decided that any eigenvalues greater than 1.5 would be selected, and so the top coefficients ranged from in a pattern from 1.5 to 5.6. This cut-off was used in this initial factor analysis, and also the subsequent 5-factor varimax rotation (Fabrigar, Wegener, MacCallum & Strahan, 1999).

While conducting exploratory analysis, selecting the right method of rotation eases the interpretation. There was an observable instability (i. e., student fluctuation between many of the items) of the population during data entry; there was concern that there may not have been strong correlation between items in the survey (Fabrigar et al., 1999). That and the fact that the student sample size in the redesign was less than 200, a relatively small size in relation to the total number of English students registered at the college, (Ary et al., 2006, p. 186) led to the use of an orthogonal rotation method. Tables 3 and 4 show the rotation using the 5 factors, with the highlights representing potential common factor loadings:

Effective factor analyses with loadings had an alpha of 0.5 or higher to recommend a question to be included within a factor (Ary et al., 2006). Low loadings on questions 5, 6, 12, 17, and 18, were dropped and the subsequent factor analysis re-ran. Factors below represent the updated rotated factor analysis after removal of these items. Based on new factor loadings, the items were now:

Factor 1:

7. I have many friends in this school.
8. I spend time with peers outside of the classroom.
9. I contact peers for non-academic reasons.
10. I call, text or email other students in this class.
11. Other students have called, texted or emailed me.

Factor 2:

19. I consider my instructor approachable.
20. I know that I can ask my instructor for help.
21. My instructor answers my questions.

Factor 3:

13. I use the extra services provided at this school.
14. I participate in extra-curricular activities.
15. I spend time in other areas of the school.
16. I have been in touch with school personnel for assistance.

Factor 4:

1. I feel confident in an academic setting..
2. I enjoy the subject(s) taught in this class.
3. I contribute to the class with personal comments.
4. I like working with others in class..

Factor 5:

22. I have met individually with my instructor.
23. I have called, texted or emailed my instructor.
24. My instructor has called, texted or emailed me.

Based on the newly grouped items, initial SoB subsets were re-evaluated:

Factor 1: Peer related outreach/interaction
Factor 2: Approachability of instructor/ability to provide help
Factor 3: School Services/interactions outside of the classroom
Factor 4: Classroom setting/environment
Factor 5: Instructor outreach

For Week 9, the results of the factor analyses of the questionnaire appeared to match relatively closely with the original four subscales (see Table 4). Not all questions stayed true to the original subscales, but indicators very similar to the originals did occur. Crossover still evoked an analogous grouping of variables, but appeared to be more reflective toward student interpretation. For example, (a) the classroom setting, (b) peer-to-peer interaction, (c) institutional services outside the classroom, and (d), instructor approachability or outreach were all adjusted groupings based on student perspective, instead of questions developed by the perspective of the researcher. The revised factor structure followed the same eigenvalue procedure for Week 14 (see Tables 5 and 6).

The Week 14 factor loading minimum of 0.5 reported low loadings for items 1, 3, 4, 5, 6, 17, and 18 were dropped, and the factor analysis re-ran. For Week 14, four factors were determined for extraction with the varimax rotation. Tables 5 and 6 show the factor loadings, and again after the rotated factor analysis was completed. Then, an overview in Week 9 and Week 14 was done to clarify the survey results (see Table 7).

Table 5

Week 14 Rotated Factor Loadings

Variable	Label	Factor 1	Factor 2	Factor 3	Factor 4
Q1_14	Q1_14	0.09	0.41	0.23	0.34
Q2_14	Q2_14	-0.03	0.56	0.32	0.28
Q3_14	Q3_14	0.11	0.38	0.14	0.46
Q4_14	Q4_14	0.3	0.32	-0.04	0.43
Q5_14	Q5_14	-0.22	0.39	0.05	0.02
Q6_14	Q6_14	0.00	0.43	0.24	0.16
Q7_14	Q7_14	0.52	0.08	0.43	0.12
Q8_14	Q8_14	0.65	-0.08	0.51	0.09
Q9_14	Q9_14	0.77	-0.04	0.37	0.13
Q10_14	Q10_14	0.83	-0.06	0.21	0.11
Q11_14	Q11_14	0.87	-0.02	0.16	0.11
Q12_14	Q12_14	0.51	0.24	-0.1	0.06
Q13_14	Q13_14	0.01	0.28	0.62	0.2
Q14_14	Q14_14	0.24	-0.04	0.73	-0.15
Q15_14	Q15_14	0.1	0.03	0.81	0.03
Q16_14	Q16_14	0.13	0.06	0.59	0.35
Q17_14	Q17_14	0.12	0.04	0.25	0.35
Q18_14	Q18_14	0.1	0.17	0.37	0.14
Q19_14	Q19_14	0.1	0.84	-0.06	0.1
Q20_14	Q20_14	0.04	0.85	-0.06	0.65
Q21_14	Q21_14	0.09	0.68	0.09	0.07
Q22_14	Q22_14	0.12	0.24	0.32	0.51
Q23_14	Q23_14	0.06	0.09	0.08	0.86
Q24_14	Q24_14	0.05	0.08	-0.01	0.8

Table 6

Week 14 Rotated Factor Loadings—Questions Removed

Variable	Label	Factor 1	Factor 2	Factor 3	Factor 4
Q2_14	Q2_14	-0.03	0.56	0.32	0.28
Q7_14	Q7_14	0.52	0.08	0.43	0.12
Q8_14	Q8_14	0.65	-0.08	0.51	0.09
Q9_14	Q9_14	0.77	-0.04	0.37	0.13
Q10_14	Q10_14	0.83	-0.06	0.21	0.11
Q11_14	Q11_14	0.87	-0.02	0.16	0.11
Q12_14	Q12_14	0.51	0.24	-0.1	0.06
Q13_14	Q13_14	0.01	0.28	0.62	0.2
Q14_14	Q14_14	0.24	-0.04	0.73	-0.15
Q15_14	Q15_14	0.1	0.03	0.81	0.03
Q16_14	Q16_14	0.13	0.06	0.59	0.35
Q19_14	Q19_14	0.1	0.84	-0.06	0.1
Q20_14	Q20_14	0.04	0.85	-0.06	0.65
Q21_14	Q21_14	0.09	0.68	0.09	0.07
Q22_14	Q22_14	0.12	0.24	0.32	0.51
Q23_14	Q23_14	0.06	0.09	0.08	0.86
Q24_14	Q24_14	0.05	0.08	-0.01	0.8

Table 7

Week 9 vs. Week 14 Factor Loadings

Question	Week 9 Factor	Week 14 Factor
1. I feel confident in an academic setting.	4	N/A
2. I enjoy the subject(s) taught in this class.	4	3
3. I contribute to the class with personal comments.	4	N/A
4. I like working with others in class.	4	N/A
5. I like to work individually in the classroom.	N/A	N/A
6. I enjoy hands-on learning.	N/A	N/A
7. I have many friends in this school.	1	1
8. I spend time with peers outside of the classroom.	1	1
9. I contact peers for non-academic reasons.	1	1
10. I call, text or E-mail other students in this class.	1	1
11. Other students have called, texted or E-mailed me.	1	1
12. I know the names of everyone in my class.	N/A	1
13. I use the extra services provided at this school.	3	2
14. I participate in extra-curricular activities.	3	2
15. I spend time in other areas of the school.	3	2
16. I have been in touch with school personnel.	3	2
17. I have been contacted by school personnel.	N/A	N/A
18. When I have any school related issue, I know where to go.	N/A	N/A
19. I consider my instructor approachable.	2	3
20. I know that I can ask my instructor for help	2	3
21. My instructor answers my questions.	2	3
22. I have met individually with my instructor.	5	4
23. I have called, texted or E-mailed my instructor.	5	4
24. My instructor has called, texted or E-mailed me.	5	4

Based on the factor loadings, the items loaded onto the following factors:

Factor 1:

7. 7.I have many friends in this school.
8. I spend time with peers outside of the classroom.
9. I contact peers for non-academic reasons.
10. I call, text or email other students in this class.
11. Other students have called, texted or emailed me.
12. I know the names of everyone in my class.

Factor 2:

13. I use the extra services provided at this school.
14. I participate in extra-curricular activities.
15. I spend time in other areas of the school.
16. I have been in touch with school personnel for assistance.

Factor 3:

2. I enjoy the subject(s) taught in this class.
19. I consider my instructor approachable.
20. I know that I can ask my instructor for help.
21. My instructor answers my questions.

Factor 4:

22. I have met individually with my instructor.
23. I have called, texted or emailed my instructor.
24. My instructor has called, texted or emailed me.

The factors are now grouped according to:

Factor 1: Peer related outreach/interaction
Factor 2: School Services/interactions outside of the classroom
Factor 3: Approachability and clarity of instructor to provide help
Factor 4: Instructor to student outreach

The biggest shift in data was the drop of factor loadings from five factors in Week 9 to four factors for the Week 14 data. The original factor in Week 9 that was phased out was Factor 4, *Classroom setting and environment.* Other factors remained the same: *Peer related outreach and interactions* that in the first factor analyses, answered questions 7 -11; in the second rotation, question 12 was the 6th question in that subscale, but it had not registered with any significance before; "I know the names of everyone in my class." Indeed Week 9, right after mid-term when the first measurement was given, students did not measure a strong reply to that answer. By the end of the semester, however, it rated as significant. By this time, more student interaction had taken place, and the number of students with the exception of a very few were now continuous members of the class. This could indicate that time spent together was more consistent, or it could indicate that learning strategies that took place later in the semester had more peer interaction, and that students did partake in activities that helped them to gain the knowledge of all students' names in their classroom.

Question 2, one of the previous questions in the first factor analyses, "I enjoy the subjects taught in this class," shifted from the classroom setting factor to Factor 3, which fell under *Approachability and clarity of the instructor to provide help.* This may be an indication that the classroom environment, like many environments in which one commonly participates, the classroom of students became habituated and no longer had a significant need to be defined. Also, the shift of Question 2 from the classroom to the instructor may indicate that the instructor's attitudes and values aimed toward students became more about teaching strategies related to subject matter rather than the climate of the classroom. If the instructor was successful in developing a safe, comfortable

environment then the next level on Maslow's hierarchy could have gained another level of importance. That is the motivation to belong, and in turn, increased motivation for further learning (Maslow, 1943; 1968). Maslow stated that within the sense of belonging there is a growing importance of contributing to a group; in this case, the classroom of students along with their instructor. As the people within the group gain mutual respect and value in usefulness toward each other (Maslow, 1968; 1970) these numbers could report the development of a deeper ability to learn from one another.

Also, a greater level of trust was reported (Maslow, 1943) because the basic hierarchal needs had been met and established by instructor responsibility, as seen in Factor 3, *Approachability and clarity of instructor to provide help.* This was further demonstrated by the instructor's ability to reach out to students as in Factor 4, *Instructor outreach,* an establishment of trustworthy behavior had been met by Week 14 by the instructor. This allowed students to feel safe and supported, raising the hierarchy toward the sense of belonging. In the one comment area on the survey, there were remarks alluding to this trust. If this area was filled in, it most often relayed positive comments toward the instructor.

Small class size for the redesign courses could be an influence that was reflected in the students' view of their instructors. By Week 14, a high majority of students (75-90%) indicated that they felt that their instructor was approachable, that the instructor had demonstrated some type of outreach toward them, and that instructor had clarified when help was needed. Smaller class size may or may not be indicative of greater student learning, but it is clearly an advantage for the instructor. With the cap of these combination classes at 20 per roster, and an attrition rate of 15-20% by Week 9 (CCCS,

2013), the opportunity for the instructor to be available to less than 20 students per course would allow for him or her a greater level for outreach. The advantage of grading fewer than 20 papers per assignment could produce better awareness for individual differences and give more time for an instructor to provide higher quality feedback, leading to increased clarity for each student. In fact, the area of the survey that allowed for personal commenting was more often related to positive comments about the instructor of one's class (see Appendix E). This may be another indicator to establishing classroom safety and comfort, the known precursor to Maslow's sense of belonging in the hierarchy of needs theory (Maslow, 1943; 1968).

The other area of note that maintained a high sense of importance was Factor 2, *School Services/interactions outside of the classroom.* This subscale was set up specifically with the Tinto Integration Model in mind (see Table 2 and Figure 2) as it expressed institutional output and input for students. The data for Week 9 and Week 14 maintained consistent importance in this area with questions 13-16 in the Factor Analyses. In Week 9, the reported knowledge of school services was higher, which could indicate that initial services available to the first-year student were used; the majority of students attending these combination courses were categorized as such. These beginning services are typically identified as advising, welcome seminars, workshops for learning the college system e.g., basic computer systems inherent to this institution, online learning systems, school tours and Welcome Night are commonplace for new students. Throughout the semester, the percentages dropped by 10% (.75 to .66) but student response did point toward social integration (Tinto, 1975; 1993). Maintaining an above average score most likely did indicate the use of many of the structured academic

services at the institution such as, the library, tutoring centers for language, writing and communications, Student Success services, the cafeteria or the health clinic. Also, the response to Question 15, "I spend time in other areas of the school," stayed almost static at 77% vs. 79%.

Other areas designated for student use are the recreational areas, the Fitness Center, Game Room, the Theater, and *The Den,* (i.e., non-alcoholic gathering/meeting places) some outside recreation areas such as a running track and sports field, tennis courts, and a volleyball court. Question 14, "I participate in extra-curricular activities" was reported as an increase between Week 9 and Week 14 from .66% to .73%, and a possible indication that the other areas where a student spent more time may have been less academic and a lean toward student social integration. This idea is based on the knowledge that social clubs on campus are limited; for example, out of the 18 clubs available to students, four are computer-based. For a community college with also limited extra-curricular activities, this positively rounded out the research as an enhancement of Tinto's Model and the need for students to participate in more social integration.

Research Question 2:
Demographic Data

In addition to the survey questions, demographic data were also collected on the students that participated in the redesign (see Table 8). The demographic data was also done in *MS Excel* and coded to account for missing answers so that this demographic data could be utilized in regression analysis. Please see Appendix D for the full set of demographic questions that were collected on the students. Included in the demographic survey were age (continuous), gender, marital status, year in college, credits taken the

same semester, Socio-Economic Status (SES), hours of employment (including work study), social life at RRCC, student parental status, use of support services, and hours of instructor: student communication. The tables below provide the distributions of the demographic data with missing data included:

To understand if the demographic data was predictive of the sense of belonging student population at the Week 9 baseline, along with the change from Week 9 to Week 14, regression analysis methodology was used to explore these relationships. Factor scores were calculated based on the initial factor analysis from Week 9, and a total Week 9 SoB score was calculated per student, a linear combination of the factor scores. A higher total SoB score would indicate a stronger sense of belonging, as the factor scores for each item taken into account for the loadings of questions within each factor.

Similarly, factor scores were calculated for Week 14. A total Week 14 SoB score and the difference between Week 9 and Week 14 total SoB score were calculated. The total SoB score became the dependent variable in a multiple regression analysis using the demographic data items as independent variables. Distributions for the Week 9 and Week 14 total SoB scores demonstrated that a higher value would indicate a greater sense of belonging and a lower score would indicate less, or not much, of a sense of belonging.

Table 8

Demographics

Quintile	Estimate	
Age Distributions		
(Max) 100%	50	
99%	50	
95%	43	
90	32	
(Q3) 75%	23	
(Median) 50%	19	
(Q1) 25%	18	
10%	18	
5%	18	
1%	17	
(Min) 0%	17	
	f	%
Gender		
Female	97	51.05
Male	54	28.42
Missing	39	20.53
	f	%
Marital Status		
Committed	20	10.53
Divorced	7	3.68
Married	9	4.74
Single	116	61.05
Missing	38	20.00

Table 8 (continued)

	f	%
Year in College		
Freshman	131	68.95
Sophomore	13	6.84
Sophomore +	6	3.16
Missing	40	21.05
	f	%
Credit Hours This Term		
3	16	8.42
3-6	35	18.42
6-9	34	17.89
9-12	37	19.47
12-15	21	11.05
15+	7	3.68
Missing	40	21.05
	f	%
Hours of Social Time at Table Top Community College		
0	52	27.37
1-2	54	28.42
3-5	29	15.26
6-9	12	6.32
10+	4	2.11
Missing	39	20.53
	f	%
Instruct		
None	25	13.16
1	92	48.42
1-2	11	5.79
2-3	4	2.11
3+	3	1.58
Missing	55	28.95

Table 8 (continued)

	f	%
Support at Table Top Community College		
No	58	30.53
Yes	91	47.89
Missing	41	21.58
	f	%
Hours of Employment		
Not Working	6	3.16
< 10	39	20.53
11-20	31	16.32
21-30	32	16.84
31-40	26	13.68
41-45	12	6.32
46+	4	2.11
Missing	40	21.03
	f	%
Socio-Economic Status		
Exempt	29	15.26
< 18K	73	38.42
18K-24K	19	10.00
25K-30K	10	5.26
30K-50K	8	4.21
50K-60K	4	2.11
60K+	1	0.53
Missing	46	24.21
	f	%
Parental Status		
No	100	52.63
Yes	30	15.79
Missing	60	31.58

Week 9 has a larger range of scores and displayed more variability with the standard deviation = 2.24 compared to a standard deviation of 2.00 for Week 14. As the analyses continued, this was a common theme in the data. In the lead up to Week 9, a student's SoB may likely be shaped by the relevant factors identified in RQ1. The total SoB displayed less variability, or more stability, over the next 5 weeks by Week 14.

Week 9 Baseline Regression

A stepwise multiple linear regression was run to find the direct and indirect effects of these variables, with the total Week 9 SoB score as the dependent variable and the re-coded demographic variables were the independent variables (see Table 9). A significance level of 15% allowed for a sufficient number of variables to come into the model. The final output, along with the parameter estimates, will be discussed later.

Table 9

ANOVA and Parameter Estimates--Week 9

Source	*DF*	*SS*	*MS*	*F*	*pr > F*
Model	5	89.76	17.95	3.86	0.0024
Error	184	855.24	4.65		
Corrected Total	189	945			

Variable	*DF*	Parameter Estimate	*SE*	*T*	*pr > t*
Intercept	1	-0.23	0.19	-1.22	0.2222
Other than Teacher_1	1	1.	0.37	2.69	0.0078
Social Life_4	1	1.13	0.66	1.7	0.0916
Advanced Social Life_5	1	-2.43	1.14	-2.13	0.0347
Other Teacher_5	1	2.35	1.34	1.75	0.0820
Social-Economic Status_2	1	-1.12	0.66	-1.71	0.0894

Description of Final Variables for Week 9 Regression

Other than teacher 1. Have you spent any time with an instructor/ program director/ dean (other than your required class instructor for learning/support)? Answer = None

Social life 4. Social Life at TTCC: Includes breakfast or lunch, clubs, athletics, etc; time spent with any other students, including short class breaks. Answer = 6-8 hours

Advanced social life 5. Social Life at TTCC: Includes breakfast or lunch, clubs, athletics, etc; time spent with any other students, including short class breaks. Answer = 9+ hours

Other instructors 5. Have you spent any time with an instructor/ program director/ dean (other than your required class instructor for learning/support)? Answer = 3+ hours

Employment 6. Employment (including work study) Answer = 40-45 hours

At a *p*-value of 0.0024, the model as a whole was significant with the variables that made it into the final model. The strongest contributor of the variables was *Other than teacher*, along with the survey answers *none*, which indicated that students were not aware of or made the effort to gain institutional support. The least likely *p*-value of variables in the model was .0916 for social time at TTCC which represents that students spent between 6-8 hours of additional time at the school. This time was not further specified as either academic or social integration at school, so these other variables were also weak contributors.

The coefficient of determination in this model is 9.5%, which means that 9.5% of the variability in the total Week 9 SoB scores can be explained by the variables in the

model and the rest of the variability can be due to any other variables that were not measured. It is not uncommon to find R^2 values of less than 50% when working with behavioral data (Ary et al., 2006).

Interpretation of Final Week 9
Regression Coefficients

The following is how the regression coefficients can be interpreted:

Other than teacher 1. A coefficient of 0.00078 would mean that those that do not spend any time with faculty outside of their regular instructor have a SoB score 0.0078 points higher compared to those that do spend time with faculty. This may mean that there are definitely those that do not need extra time or energy given to them by the instructor. Even if they may interpret self-ability incorrectly and could benefit from more time with someone who could assist them with academic needs. The instructor would, in all probability, alert the student to this erroneous thinking and either help them personally or direct them to someone who could, i.e., tutoring services, student support services, etc. In that case, the data would reflect in the other category, *Other Teacher_5*, where help would be provided. Also, this T^1, at Week 9, was just after mid-term. Some students who may have needed extra services before were in an amount of denial to their below average academic needs, and just found out during mid-term grading that academic services would and could benefit them.

Social life 4. Coefficient of 1.13 would mean that those spend 6-8 hours of social time at TTCC have an SoB score 1.13 points higher compared to the other social categories. This could be interpreted as those who spent this amount of time with peers do so with intent of improving their academics. Therefore, time spent with others could mean learning processes as: meeting in the library, working in study groups, meeting in

the Learning Commons for additional services, being involved in a tutoring group, attending 1-hour seminars on English basics, working in one of the computer labs. What is also common, by my personal observations as a part-time faculty member, is that many students (and not necessarily the same ones) can be seen studying together at any time of the day or evening in various communal areas throughout the college, demonstrated by use of the Learning Commons, coffee shop, cafeteria and spaces of open group seating areas.

Advanced social life 5. Coefficient of -2.43 would mean that those spend 9+ hours of social time at RRCC have an SoB score -2.43 points lower compared to the other social categories. This may be a true cut-off between spending quality academic time and spending a large amount of recreation time at the college. As noted above on page 103, there are plenty of places for students to socialize at the college that do not entail academics. Depending on the maturity of the student, 9+ hours of time spent at school with scores may indicate this time spent as non-academic.

Other teacher 5. Coefficient of 2.35 would mean that those that spend 3+ hours with faculty or staff members outside of their regular instructor have a SoB score 2.35 points higher compared to the other outside faculty categories. There are several opportunities for community college students to gain help in their studies. Due to the general population of community colleges, students have shown a need for extra assistance in academics, so the Student Services of any community college would have placed special importance on these needs. The many offices within Support Services and Tutoring Centers are the main areas where a student would go to get help from other

faculty members or staff members such as tutors, computer specialists, or work-study peers trained to facilitate further learning opportunities.

Socio-economic status (employment) 2. Coefficient of -1.12 would mean that those that spend 40-45 hours per week working have an SoB score -1.12 points lower compared to the other employment categories. Although seemingly extreme, there are a number of community college students who do work full-time jobs and pile on the rigors of collegiate studies. For these students, it can very much be a priority to work and, in all probability, a fundamental need to make money exists in tension with the drive to make higher grades.

Week 9 to Week 14 Score Change in Regression

Again, a stepwise multiple linear regression, shown in Table 10, was run using a significance level of 15% for the difference in the sense of belonging scores from Week 9 to Week 14 (Week 14 Total SoB vs. Week 9 Total SoB). At a *p*-value of < .0001, the model as a whole is significant with the variables that are included in the final model. The most likely *p*-value of variables in the model is .153 for SES_2, which represents students that have < $18,000 in annual income.

The coefficient of determination of the model is 17.6%, which means that 17.6% of the variability in difference between Week 14 and Week 9 scores can be explained by the variables in the model and the rest are due to other variables that were not measured.

Table 10

ANOVA and Parameter Estimated Difference in Scores--Week 9 to Week 14

Source	*DF*	*SS*	*MS*	*F*	*pr > F*
Model	5	272.88	54.58	7.88	< .001
Error	184	1273.68	6.92		
Corrected Total	189	154.56			

Variable	*DF*	Parameter Estimate	*SE*	*T*	*pr > t*
Intercept	1	-0.44	0.3046	-1.45	0.1500
Other than Teacher_1	1	1.53	0.400	3.87	0.0002
Social Life_4	1	-1.46	0.45	-3.27	0.0013
Advanced Social Life_5	1	1.60	0.55	2.91	0.0040
Other Teacher_5	1	2.53	1.34	1.89	0.0603
Social-Economic Status_2	1	-0.60	0.42	-1.45	0.1500

Final Variables for Difference in Scores from Week 9 to Week 14 Regression

Support services 1. Do you use college support services? This includes what a student would interpret as other services besides classroom instruction. That is, advising, counseling, tutoring, computer assistance, etc. Answer = Yes

Other teacher 1. Have you spent any time with an instructor/ program director/dean (other than your required class instructor for learning/support)? There may have been some confusion in exactly who would qualify as another instructor, as many instructors were in attendance in the College Prep Zone (CPZ) for tutoring. As reported below, students clearly indicated that they did use support services, they may not have been aware of the title of those who were providing that support. Answer = None

Social life 3. Social Life at TTCC: Includes breakfast or lunch, clubs, athletics, etc; time spent with any other students, including short class breaks. This would classify as peer support, whether as academic or social investment. Answer: 3-5 hours

Advanced social life 5. Social Life at TTCC: Includes breakfast or lunch, clubs, athletics, etc; time spent with any other students, including short class breaks. As mentioned above, there was a distinction between the amount of social life spent on campus, but it was not clear if this included any academic time also. Answer: 9+ hours

Socio-economic status 2. Socio-Economic Status (SES), would be influenced by the amount of money made by students would qualify them as under the poverty line; or more likely, as dependents living at home with a parent, either influence could lead to a lower SoB score. Answer = < $18,000 income per year.

Interpretation of Difference from Week 9 to Week 14 Regression Coefficients

The following is analysis of the regression coefficients:

Other teacher 1. Coefficient of 1.53 would mean that those that use college support services would have an increase in SoB scores from Week 9 to Week 14 compared to those that did not.

Other teacher 5. Coefficient of 2.53 could state that those who spend time with faculty outside of their regular instructor have an increase in scores from Week 9 to Week 14 compared to those that do not spend time with faculty.

Social life 4. Coefficient of -1.46 might mean that those spend 3-5 hours of social time at TTCC have a decrease in SoB scores from Week 9 to Week 14 compared to the other social categories.

Advanced social life 5. Coefficient of 2.53 would mean that those spend 9+ hours of social time at TTCC have an increase of SoB scores from Week 9 to Week 14 compared to the other social categories. This may be due to the fact that students that spent 9+ hours of social time had a lower SoB to begin with or increased social time led to a higher SoB by Week 14.

Socio-economic status 2. Coefficient of -0.60 may mean that those that have an annual income of < $18,000 a decrease in SoB scores from Week 9 to Week 14 of -0.60425 points compared to the other socio- economic categories.

All but one of these categories was addressed in the previous interpretation of regression coefficients. Only SES remains for possible analysis. This data could be open to a plethora of interpretation, most beyond the scope of this study.

Research Question 3: Final Grades and Retention with Sense of Belonging

The relationship between the sense of belonging score and the change between Week 9 and Week 14 was examined relative to the final grades and retention of students (see Table 11). Also, was retention improved during this semester between the redesign implementation and the previous developmental English courses? Were the students registered for the redesign course more or less likely to stay and complete successfully? Analyses were performed on grade success and retention for the fall 2013 semester when the survey was administered, as well as the previous spring 2013 to understand if there was a change in retention rates. The spring 2013 semester had recorded a retention rate for that semester's ENG090 courses at 76% (Table Top Community College, 2014).

Table 11

Fall 2013 Grade Distribution

Final Grade	*f*	%
Dropped	46	24.21
A	63	33.16
B	55	28.95
C	22	11.58
(Uncounted Grades)	[4]	[2.11]
Total	185	97.36

Two different regression techniques were used given the nature of the response variables that were predicted. The fall 2013 final grades of the students were categorical and ordinal, so a multinomial regression model was the most appropriate analyses. Retention is a binomial response (retention = Yes or No), so a logistic regression model was used for that analyses (Ary et al., 2006).

Association of these variables could help improve curriculum related to the importance of sense of belonging strategies in future combination courses. The following data techniques were used to determine if the Week 9 SoB score, or changes in scores from Week 9 to Week 14 could predict a student's final grade if s/he remained in the course. The institutional data for grades were matched to the student's survey by S number, distributions of grades, and retention rate from institutional data for the fall 2013 semester. Clarification is needed for total comprehension of Table 11, *Fall 2013 Grade Distribution*. In developmental education courses through CCCS, students registered for ENG090 course must pass with a grade of C or better. Therefore, there was no need to

record Ds or Fs or Incompletes (I) which were recorded for five participants at 2.64 % of the total grade distribution score.

The total Week 9 SoB scores and difference in total SoB scores from Week 9 to Week 14 were examined with regard to final course grade and retention rate (see Table 12). Then following, as evident in Table 13, there was not a consistent trend in the mean score that would coincide with what was predicted if sense of belonging had an impact on final grades. If the SoB had a main effect, it might be expected that the mean Week 9 SoB score would have been highest for students that received an A, and lowest for those that received a C (see Table 13). Also, there would be an ordinal trend in the grades. This was not the case, as there was not a trend for either the Week 9 total SoB score or the difference between Week 9 and Week 14. As the ENG090 grading scale of A, B, C are the only passing grades, there were non-significant sample sizes for the number of students that received a D, or F, and one Incomplete (I) was re-categorized as a dropped grade.

Table 12

Fall 2013 Grades with Retention Rates

Final Grade	*f*	%
Dropped	46	24.20
Completed	144	75.80
Total	190	100.00

Table 13

Mean and Standard Deviation of Grades

Final Grade	N Obs	Variable	*N*	*M*	*SD*	Minimum	Maximum
A	63	Week 9_SoB	63	0.32	2.13	-4.3	4.76
		diff_scores	63	-0.16	2.54	-8.3	4.63
B	55	Week 9_SoB	55	-0.18	2.58	-10.25	4.38
		diff_scores	55	0.14	3.25	-7.73	9.67
C	22	Week 9_SoB	22	0.14	1.78	-3.32	3.85
		diff_scores	22	-0.27	3.16	-6.68	5.24

Looking through the difference between those that received an A, B, or C, the average Week 9 total SoB score was 0.32 for those that received an A, -0.18 for those that received a B, and 0.14 for those that received a C (see Table 13). These data indicate there is not a significant relationship between SoB score and final grades. The same is evident with the difference in Week 9 and Week 14 scores.

To determine if there was a relationship, a one-way ANOVA was run (see Table 14). This was to determine if the mean week 9 SoB scores and the difference in scores was significant by grades from an empirical perspective, using only the A, B, and C final grades (given the small sample size for those that received a D or F).

Based on the above *p*-value of 0.48, the model as a whole is not significant, meaning that there is not a difference in mean SoB scores for at least one combination of comparisons (grade of A compared to B, grade of A compared to C, and grade of B compared to C). A one-way ANOVA was also run for the mean of difference in SoB scores from Week 9 to Week 14 (see Table 15). The results follow:

Table 14

ANOVA for Week 9 Total SoB Scores and Grades

Source	*DF*	*SS*	*MS*	*F*	*pr > F*
Model	2	7.55	3.78	0.73	0.48
Error	137	707.17	5.16		
Corrected Total	139	714.72			

Table 15

ANOVA for Week 9--Mean of Squares

Source	*DF*	*SS*	*MS*	*F*	*pr > F*
Model	2	3.75	1.87	0.22	0.80
Error	137	1180.11	8.61		
Corrected Total	139	1183.86			

Based on the above *p*-value of 0.80, the model as a whole is not significant, meaning that there is not a difference in mean of differences in SoB scores from Week 9 to Week 14 for at least one combination of comparisons (grade of A compared to B, grade of A compared to C, and grade of B compared to C). In order to verify that there was not a relationship beyond examining only the difference in means from the descriptive data and the above ANOVA, a multinomial regression was run, using the grade of "A" as the base level predicted grade and only keeping final grades of A, B, and C, given the small sample size of grades D and F. Below are the results of the regressions with the total Week 9 SoB score as the independent variable in the first regression, and the difference in Week 9 and Week 14 as the independent variable in the second regression for the Chi-square.

Based on the above data, the model as a whole was not significant with a *p*-value of 0.80. Since neither model was significant, further analyses were not necessary. Based on these results, there is firm confirmation that neither the total of Week 9 SoB scores, nor the differences in scores from Week 9 to Week 14 are predictive of final grades.

The next area of focus was to see if either of these independent variables was predictive of student retention (see Table 16). The means were first examined for final grades; the means of Week 9 scores and difference in scores were examined for students that dropped the course verses those that remained in the course through the end of the term.

Table 16

Mean and Standard Deviation--Student Retention and Withdrawal

Instructor Invested	N Obs	Variable	*N*	*M*	*SD*	Minimum	Maximum
No	46	Week9_SoB	46	-0.20	2.12	-6.13	4.67
		Diff_Scores	46	0.19	2.79	-7.37	0.60
Yes	144	Week9_SoB	144	0.06	2.27	-10.25	4.76
		Diff_Scores	144	-0.06	2.90	-8.30	9.67

Here, there were differences in means for both the Week 9 baseline and the difference in scores from Week 9 to Week 14. The mean Week 9 SoB score for those that withdrew from the course was -0.20, and for those that remained in the course was 0.06. The difference in mean scores for those that dropped was 0.19 and those that remained were -0.06.

These results are counterintuitive as the difference in scores was calculated as a total score from Week 14 minus the total score from Week 9, so a positive number would indicate an increase in scores and a negative number would indicate a decrease in scores

(Ary et al., 2006). Though there was a larger range of scores for those that remained in the course with the minimum difference in scores of -8.30 and a maximum of 9.67.

Research Question 4: Classroom Observations

In addition to the qualitative analysis, a factor analysis for instructors that took one survey in the fall 2013 semester was considered, in order to group instructor survey responses into common factors. The number of instructors for which there were surveys gathered was15, as one instructor had abstained from taking the survey. This very small sample size presented issues for a factor analysis, given that there were only 24 questions on the survey. Based on guiding research for Exploratory Factor Analysis there are a number of considerations when looking at minimum sample size recommended for a successful analysis in order to reduce model error (Fabrigar, Wegener, MacCallum, & Strahan, 1999). General rules include a ratio of subjects: survey questions of 3: 6, or a minimum sample size of 100. In either case, this population did not meet these suggested requirements; as a ratio of 0.6 (N = 12/24 questions). Therefore, based on the minimum sample size recommended for interpretable results to avoid model error and incorrect interpretation, a factor analysis was not run for the instructor data. Instead the observations would indicate possible instructor investment of the sense of belonging in each classroom.

Quantitative analysis was done to further understand the impact of investment of the instructors with their sense of belonging. The instructors also participated in a mirrored sense of belonging survey that was the same (see Appendix F), only worded slightly different to summarize the instructor population. The instructor SoB data was gathered and input in the same manner as the student data. A factor analysis was

planned, but it was determined that a sufficient factor analysis was not possible, due to small sample size (15) relative to the total number of questions (24). To understand the difference in instructors from a quantitative perspective, further analysis is described below based on an instructor's noted investment or use of sense of belonging strategies in the classroom (see Table 17). This was compared to the instructors that did practice the sense of belonging based on the observational data.

Table 17

Mean and Standard Deviation of Student and Instructor Sense of Belonging

Instructor Invested	N Obs	Variable	N	N Miss	*M*	*SD*	Min	Max
No	51	Week9_SoB	51	0	-0.17	2.37	-6.13	4.82
		Diff_Scores	51	0	-0.02	2.68	-7.37	9.67
Yes	139	Week9_SoB	13	0	0.06	2.19	-10.25	4.49
		Diff_Scores	0	0	0.01	2.97	-8.30	9.67

Given the classroom observations, five instructors (in six different classrooms) were classified as not invested, and the rest were classified as invested. This was determined by a range of points applied to each instructor based on the qualitative themes and codes during their observation. For example, if students appropriately joked or talked freely, this was noted as an SoB point, and no points were given if the students did not interact. The points ranged from 4-15, with a median of 5.5, rounded to 6. Any instructor that scored a 6 or less was determined to be not invested in the sense of belonging based on observation of their classroom on that scheduled day.

Student in each classroom had their instructor's S number assigned to them, based on the unique course section number, so that student survey data could be matched to the instructor classification of invested vs. not invested. The mean total Week 9 SoB score

for the two groups and the mean of the difference in scores from Week 9 to Week 14 are as follows:

As observed above, there were 51 students that were classified with instructors that were not invested in SoB and 139 students with instructors classified as being invested in SoB. The mean Week 9 total SoB scores for students with instructors that were not invested was -0.171 and for students with instructors that were invested 0.063. Similarly, for the mean of the difference in scores see mean values of -0.02 and 0.007, respectively. As this was observed visually, a one way ANOVA was ran as well to determine if there was any other empirical evidence that might come to the same conclusion (see Table 18).

Table 18

ANOVA for Week 9 Total SoB Scores and Invested Instructor

Source	*DF*	*SS*	*MS*	*F*	*pr > F*
Model	1	2.05	2.05	0.41	0.54
Error	188	942.95	5.02		

Given the *p*-value of 0.54 it can be concluded that the mean total Week 9 scores are not equal for instructors invested in sense of belonging compared to those that are not. It can be deducted that mean total of Week 9 SoB scores for instructors invested in sense of belonging, based on the observational data, were not significantly different from the scores of the instructors who were not invested in the sense of belonging. Turning next to the change in scores from Week 9 to Week 14, the following ANOVA was produced (see Table 19):

Table 19

ANOVA for Change in SoB Scores and Invested Instructor

Source	*DF*	*SS*	*MS*	*F*	*pr > F*
Model	1	0.03	0.03	0.00	0.95
Error	188	1546.52	8.23		
Corrected Total	189	1546.55			

With a *p*-value of 0.95, it can be concluded that the mean values of the change in SoB scores from Week 9 to Week 14 are not significantly different. Both tests confirm what had been observed in the initial analysis of means. Only a much higher rate of numbered participates, meaning a larger study, might create different determining numbers.

The small difference in the data was not surprising, if consideration of instructor impact was in competition with other factors, such as those found relevant to the scores in the analysis of demographics. There could have been many other potential predictors that were not identified in this study. Moreover, there may be enough interest in pursuing even the slightest relationship between the two populations; many educators who instruct in the methodology of teaching encourage awareness to those learning how to teach. This "teacher awareness" promotes strategies of positivity in areas of modeling, enthusiasm and attitude when creating the dynamics within a classroom (Rogers & Freiberg, 1994; Bruner, 1996). A notation of difference could become important, particularly when there may be an association to classroom dynamics where an instructor appears to be invested or not invested. Without this investment, a lack of exposure to these strategies could have been a factor in a lower sense of belonging for some, if not

all, of these students. Regardless, an instructor within a classroom carries the accountability of a great deal of the dynamics (McKeachie & Hofer, 2001), and these should be reflected in the most positive sense.

Research Question 4--Observational Data

Observations were completed to as an additional piece of the research design to further increase internal validity (Merriam, 1998, p. 204). Also, triangulation can help to reduce any bias that could have been present from the collaborative participant perspective. An outside researcher was brought in to observe me while I conducted my class and noted areas of sense of belonging and affective learning techniques with the same instrument used for other instructors. Creswell (2007) states that using multiple strategies helps to confirm validity when viewed by other sources, which adds to the strength of the design and to offer additional perspective while the research is being conducted (Creswell, 2007, p. 45).

The Observational Data Sheet contained data information that was two-fold (See Appendix A). First, it had a checklist set up as five subsets with five questions each; these indicated categories that allowed the researcher to quickly record information at the beginning of the observation. The subset on the checklist related to the following information: organization, classroom climate, student participation, peer-to-peer interaction and instructor-to-student interaction. Second, the observation form had open-end statements that allowed for comments on the activities that were taking place, organization and sequencing of learning and examples of interactions, and also, the willingness for members of the classroom, including the instructor, to the ease with which attitudes and beliefs were expressed and shared. These categories created the

themes and codes to indicate frequent use of these behaviors, which supported the sense of belonging as it did or did not occur (Creswell, 2007, pp. 150-51). Further, this observation measurement had indicators that allowed for recorded examples that the instructor used to create a sense of belonging in the classroom.

Themes

In relationship to the observational checklist and its subsets, themes for observing sense of belonging attitudes and behaviors were named. These were: *Organizational techniques, Learning with others, Appropriate peer communication, and Instructor encouragement and enthusiasm.* In reference to the amount of observation time, these themes were coded as: a) Very low *(no or one indicator),* b) Low *(two indicators),* c) Medium *(three indicators),* d) High *(four or five indicators).* Twenty observations were completed; with a total of 16 different instructors observed (some instructors had two separate courses). Classroom climate has an additional scale, and this checklist was marked this within the first five minutes of the observation. The climate was thought to reflect the dynamics of an instructor's learning style (McKeachie & Hofer, 2001) more than classroom activities, so regardless of the activities, this would influence the learning environment to some extent on a daily basis, not just on observation day. The categories for this scale were: Rigid (4%), Formal, (32%), Informal, (44%) and Loose, (20%), based on teacher expected responses from students. For example, how did an instructor expected to be addressed? With a title, i.e., "Dr.," this was considered rigid or formal, or by first name, considered "informal or loose."

Organization and timing was a key component, as without the attention of the group, learning is not possible, as stated by Bandura's social learning theory (Grusec,

1992; Bandura; 2006). Most of the observed instructors were seasoned teachers; the process of noticing if the class was organized was shown by student behaviors that demonstrated that they had been previously informed or taught the expectations of the classroom. For example, when students went into peer editing mode, they knew the organized pattern of what was expected and knew how to carry out those expectations. Organizational behaviors were: Very low, 5%; Low, 45%; Medium, 50%, and High, 0%. Very low was considered loud or disrespectful attitudes or actions toward others and medium was obvious by standard operating procedures that appeared to be familiar and followed by students.

Learning with others, as is typified in learning communities where students could work with and learn from each other, is a needed concept for accelerated learning, as noted by Brookfield (2004). Also ingrained in such practices are the concepts of Affective Learning (Bloom et al.,1956; Anderson & Krathwohl, 2001). The behaviors for learning with others were: Very low, 5%; Low, 30%; Medium, 20%, and High, 45%. This might have been demonstrated by individual vs. partnered or group learning from one extreme to the other. Many instructors had integrated learning opportunities that involved communal learning practices. Some of these were groups of 2s, 3s and 4s to do computer research, analyze essays, Q & A sessions, and even entire classrooms involved in a total group discussion with gathering chairs in a large circle. Analyzing this data showed that 65% of the students in these classrooms were ingrained into these types of learning situations.

Theoretically, the interpretation of Maslow's belief was when safety and comfort are established, the sense of belonging can take place (Maslow, 1943; 1968), and one

such place is the classroom. Clearly stated, observation of peer communication with comradeship, cooperative learning, encouragement of each other and laughter would portray this type of communication. These behaviors were recorded as: Very low, 5%; Low, 50%; Medium, 30%, and High, 15%. The numbers were interpreted as 45% of the students or instructors observed expressed an above average level of sense of belonging in the classroom, but 55% were below average Getting higher numbers in this area may take time, or may take further intervention and learning strategies for development of the sense of belonging.

However, as noted by this observer and influenced by the criteria mentioned above, classroom dynamics (how students interacted with one another) were influenced by classroom climate (how the class interacted as a whole) (McKeachie & Hofer, 2001). As previously stated, it is believed that the climate is controlled by the personal approach towards teaching set by each individual instructor (Komos, 2011). The data revealed that 36% of instructors led formal or rigid classrooms, although 44% led informal classrooms. Speculation of these statistics could be the general attitude of common college classroom behaviors. Most of these classrooms are conducted in a more formal way than classes in public school, as what would be common in a room of adult learners (Merriam, Caffarella, & Baumgartner, 2006). This is still a normal interpretation of the college classroom; therefore, a leaning toward less social behavior within a college class may continue to be the norm and also an unspoken expectation.

Rounding out the themes for the observations were *Instructor encouragement and enthusiasm,* which was included as a form of clarity and approachability, matching the sense of belonging survey. It was added in this way because it was used as a primary

indicator to the growth of the student/instructor relationship. These behaviors were: Very low, 5%; Low, 25%; Medium, 45%, and High, 25%. Examples of each end of the spectrum of the sense of belonging are described in the following sections.

Sense of Belonging Development

One instructor used smaller groups of 4-5 students, where students worked together to practice points and counterpoints of a debate as the culmination of an assignment on Formal argument. He would visit each table for a few minutes, listen to the argument and comment or add suggestions to the group. During the time I observed the majority of members were active in their participation while taking part in this exercise. Students were extremely honest and open with each other, were highly engaged while defending their topics, and yet had mutual respect for each person's opinion.

Another instructor did a round table with the class arranged in a circle, so that everyone could view everyone. He had also handed out a list of questions that he was asking in answer to a Close Reading assignment; this allowed the students to be prepared and not feel as if they were put "on the spot" by being blindsided by a question that they were not prepared to answer. Developmental students struggle at times with speaking and reading in front of the class and interacting in the class as a whole. Again, the students seemed to be familiar with this protocol of the assignment. Almost all appeared to be comfortable in a group of about 12 students (i.e., only two seemed unwilling to participate). The discomfort of these two was not commented on, nor were they singled out, but still treated as part of the greater group. Obviously, the instructor had worked to create this environment as a safe place to share ideas, speak in front of the group, and feel validated while doing so.

Sense of Belonging Not Observed

Areas of low marks were only observed in six out of the 20 classroom observations. With the interpretations that were described above, either the sense of belonging was not adhered to on that day with the given lesson, or these instructors were not invested in the ideal to promote the sense of belonging in the classroom. Only two out of the six classrooms were noteworthy.

The first class where the sense of belonging was not observed was instructed by a gentleman who had voiced opinion during the training sessions that he was in disagreement with Maslow's theory. However, as a respected member of the department, his ideology against the hierarchy of needs was a sound argument. This instructor led an early morning class (7:30 am), and he gave a standard lecture on grammar every morning; this particular lesson observed was on was on semi-colons.

The process was as follows: the lecture was given, worksheets were passed out, students filled out these half sheets for approximately 5-10 minutes and then stood in a line, first come, first served, to get extra credit points on that day's grammar lesson. There was little interaction between the students and the instructor during the lecture (i.e., it was not a discussion!), and although he spoke to each student in line when reviewing their worksheets, this time was limited to a minute or less of personal interaction. Students also did not interact with each other while at their tables while waiting for this exercise to complete, nor did they talk while waiting in line.

The other classroom observed was an attempt at group learning, but the process was viewed by this researcher as unsuccessful. In the beginning, students had been placed at tables of four or five and given a high level reading assignment. I had come in

at a halfway point, so students were already set up in these groups. About 5 minutes into the observation, I had the distinct impression that the class that day may have been "staged" for my benefit. Each group sat silently at their tables, with the premise that they were reading the article. However, hardly anyone was engaged, and there was little to no communication among students. Instead, many were disengaged, and the primary source of occupation was cell phone use. These behaviors went on for a disappointing twenty minutes. After this time, the instructor started a lesson at the board discussing the article. However, it was neither a lecture nor an open discussion, but a discourse of his interpretation of the article and his personal literary criticism of this famous writer. He did express the idea that he would like students to be able to give a literary criticism on this author also, but there was no formal training or instruction on how to do so. Some students appeared to be listening at this point, but few participated, paid attention, or were invested in giving input.

All in all, the observations were beneficial to the research. It was positive to see the majority of the redesign team invested in good teaching, and many were clearly using techniques that promoted sense of belonging. However, in regard to the sense of belonging, it was not always clear if the level of teaching that had taken place was due to the intervention, or that a high number of instructors were just very good at their profession. It did not seem possible, after the observation of so many classrooms, that the development of the sense of belonging was a phenomenon--a process that had occurred over time. Regardless, the classrooms that did display a strong level of the sense of belonging were the classrooms that were engaged, comfortable, and easy to be around,

and spending time in those situations was truly enjoyable. However it occurred, the sense of belonging was observable in most classrooms, and by observation the learning process appeared enhanced because of it.

CHAPTER V

DISCUSSION

Community colleges in the United States are in transition, much of which is related to the downward trend of the American economy in the first decade of the 2000s. Finding ways to effectively and efficiently spend budget dollars has become highly necessary for these 2-year institutions of higher education. To maintain a competitive stance with other colleges, developmental education students have a great need to become better educated more quickly than through the old programs and strategies used in the past. With the combination of a developmental course with the more advanced skills of a college transfer course, and by doubling the credit hours per semester, a student can achieve success in a shorter amount of time, thereby increasing a greater opportunity for persistence and academic achievement. This method of accelerated learning became an important aspect in the community college's curriculum redesign program that was examined in the current research. The evaluation of this program focused on the newly designed curricula and explored the effectiveness of the redesign program that was in its first year; specifically, from the point of view of the impact it may have had on the students' sense of belonging. For the majority of developmental students in 2-year colleges, the success of this new program will reduce the need by investing only one semester in developmental classes instead of the out-dated two semester approach.

One area of the study that seemed promising was the investment that the redesign team had put into affective learning. The expectation was with accelerated learning, student investment would increase and this would create positive attitudes toward collaborative learning. Because of new teaching strategies, a greater level of aptitude could be developed in a shorter amount of time, and a true learning community could be created. Accelerated learning was based on affective learning principles, along with an intervention that also promoted Maslow's hierarchy of needs, more precisely, the sense of belonging.

Inclusive to this, a decision to triangulate the study was made with an observational visit which included a measurement scale. This would give a firm indication, and of course, solidify the findings with three separate data techniques that might increase the chances for positive results. Could the sense of belonging be built in these classrooms? If so, these predictors might be associated with the successful student who (a) persisted through the course and (b) succeeded academically. With accelerated learning techniques and sense of belonging training, the intervention appeared to be a plausible study. Many factors were reflected in the data and others were reflected that had not been predicted.

Research Question 1: The Reliability and Factor Structure of the Sense of Belonging Survey

An area that proved encouraging to the data analysis was the sense of belonging measurement itself. At the time that this study was designed, there were no other scales that specifically designed to measure the sense of belonging in community college students (Tovar & Simon, 2010, p. 200). In the matter of time that it took develop

implement this current study, a scale did come out developed by Tovar and Simon (2010). They stated, "This article extends...literature on SB [sense of belonging] by conducting the first validation of this promising instrument reported in the literature…" While the article was invaluable in the development of questions, its population attended a West coast master's level university. There were concerns that the unique population of community college may not be served with the use of that survey, so the answer was to develop an innovative scale that might measure the sense of belonging.

The newly developed sense of belonging scale was the answer to find accurate measurement to this personality-based factor. Other theories, e.g., the Mattering Scales (Schlossberg, 1990) were used administratively to test students for addressing perception of climate in their learning environment. Astin (1984) had been promoting similar aspects of well-being for students, researching his involvement theory that contributed to student contentment and therefore retention (Schroeder, 2003). These indications from the research of others allowed for belief that it would be possible to measure the sense of belonging with the right items clustered together on a survey, using Tinto's constructs for guidance.

Once this sense of belonging scale was developed, applied and analyzed, the reliability data showed Cronbach Alpha scores (see Table 2) for both Week 9 and Week 14 were 0.85 and 0.87 respectively, high for measures of personality, where the sense of belonging would be categorized (Ary et al.,2006, p.264). This was encouraging, as good reliability is needed before validity can be tested, if at all. These numbers encouraged a stronger possibility for correlation. Because this was an untested measurement, the outcomes were previously unknown. At this point in the data analyses, there was a level

of confidence with some associations toward the sense of belonging as the data proceeded into factor analyses.

Factor Analyses

The initial run showed promise, in Week 9, 19 items remained after the first run with many factors loading together in the named categories. As some questions were not interpreted as written, these were dropped, and a secondary run occurred. The orthogonal transformation matrix assured that the groupings, although latent correlations, created outcomes of the variables that were strongly related to the original factors. These were broken into the factor loadings that showed as Factor 1, peer to peer outreach/ interaction and Factor 2, instructor approachability/clarity to respond to a student. Other factors were Factor 3, school services, Factor 4, classroom environment, and Factor 5, instructor outreach. With the highest factor loadings in peer to peer relationships and student to instructor relationships, the sense of belonging might have been taking place in the classroom by Week 9. The sense of belonging occurs when an individual not only feels a part of, but contributes to the group (Hoffman et al., 2002; Locks et al., 2006, p. 259; Tovar & Simon, 2010, p. 200). Although personal sense of belonging was meant to be measured in all responses, it did appear that SoB was achieved through these similar variables and still contributed to an overall personal sense of belonging.

In Week 14, one of the previous factors fell away, classroom environment. There was some speculation about this; was the sense of belonging within the classroom not as meaningful as the data may have alluded? This may have indicated that the remaining factors were more condensed (see Table 7) with only four factors now in Week 14 vs. five factors in Week 9. One interpretation is that this showed stability in the data with

less items in the same range of .59 to .88. The evidence that the factor of classroom environment did not remain was questionable. Perhaps the environment of the classroom was no longer a concern. For example, as indicated in Question 12, "I know the names of everyone in my class," was the lowest factor in the second run of the analyses (0.52). By this time, relationships in the classroom were chosen, and there may have been comfort there, but not knowing the name of everyone in the class was anomalous. For many college courses, this would be reasonable to note that not all undergraduate students would know the names of every member in their classroom. However, at this community college developmental English classroom rosters are capped at 20 students (Table Top Community College, 2014). It would be reasonable to think that the majority of these students, with twice a week attendance of 2.5 hours per class period, would learn the names of 12-19 other students. Especially with training and then observation that demonstrated a sense of belonging as an influential piece in the curriculum. However, other social behaviors may have been determined, such as when groups were formed, if others members of the class were not in an individual's group, these other members did not hold a priority to that person's sense of belonging.

Research Question 2: Association Between Sense of Belonging and Relevant Student Demographics

There were strong and weak contributions to this scale. There were some strong questions that led to higher predictors than others that might make a difference in one's sense of belonging. Week 9 had a greater variance than Week 14, again alluding to the possibility that the population was noticeably less stable in T^1, and then gained in stability by T^2. The scale did express direction toward the establishment of SoB by some of the

following indicators. There were items that indicated a greater sense of belonging score, i.e., time spent with other teachers, meaning another instructor or tutor helped with academic understanding, some social time at the college was advantageous, as in socializing within a part of a group encouraged the sense of belonging. Another item that encouraged a positive SoB was the approachability/outreach of the instructor. This was highly important to the student population; not only was it reflected positively in the regression analysis, but it also was commented upon most often by the student in the write-in area of the SoB survey.

One hindering predictor that reduced the sense of belonging score was a lack of association with an instructor. As reflected above, feeling as if one's instructor was approachable had the adverse affect if the student felt as if he or she could not reach out to an instructor for help when needed. This may allude to a possible phenomenon that many instructors may not be aware. The effort to build that relationship is highly influential to most students, and continued effort by instructors will make a difference to student sense of belonging, and in turn, in persistent student behaviors.

The largest predictor that showed a drop in SoB was advanced social life, which at the college level may have hindered good value of SoB, as in unproductive time that did not lead to improved student skills or persistent academic behaviors (see Table 8). This result was interesting, as some time spent at the college appeared as an advantage to student SoB. This would be congruent with Tinto, (1975, 1983); Astin, (1984), and Tovar and Simon (2010). Some sense of belonging development is imperative for student success, but too much may be a detriment. Established programs in departments

for Student Success in many colleges and universities now comprehend the importance of FYE programs and workshop development for students (Schroeder, 2003, p. 3; Tinto, 2007; Adams, 2008, p. 16).

These demographic predictors, for the most part, were effective in pulling out some predictable characteristics that may have been suspected and are now supported for greater student success. All students can benefit from more studying, positive social relationships, and interaction with instructors; what was confirmed in this study is that these actions may reflect a developmental population even more.

Research Question 3: Retention, Grades and the Sense of Belonging

The data analyses of a wide variety of multinomial models indicated that there was no significant association between the sense of belonging and the outcome of successful completion of the course. Successful completion of the course was defined as a passing grade of A, B, or C. Many types of regression were run in order to evaluate any potential association. Most of these analyses reported that no noticeable difference was measured.

This was not consistent with the expectation at the completion of the course. Any increase in retention would have been a positive, as this intervention was based in part to contribute to ways that college retention rates can be improved. The particular focus on sustaining the college student is moving toward holistically educating the entire person (Astin, 1984; Schlossberg, 1990, Tinto, 2007). This idea, although not new, has been discussed in educational realms since the 1970s. It is now catching on but continues to get interrupted with other facets to education, including a poor economy (Bethea, 2014) and other current challenges in education

The retention rates for spring 2013 were 76%, per statistical information gained through the TTCC office of Planning, Research & Effectiveness, (Duell, 2015). The retention rates for fall 2013 were 76% (see Table 12). The English Redesign Program for the academic year 2013-14, created an additional amount of time, energy and unrest in a department that had not needed to embrace change for a number of years. Through CCCS demands, over half of the full-time staff was necessarily involved with the productivity of the redesign, along with a development of a large pilot team of adjunct instructors. This included a new intervention process that was to be researched and recorded throughout the entire academic school year. In any institution, this focus on an expedited program with a high rate of faculty involvement over an academic year would have caused a deviation from what was typical. Overall grades or retention rates could easily drop in similar situations, but these did not. As speculation, perhaps the sense of belonging intervention helped to maintain the retention rate for the fall 2013 semester.

The grade reporting was incongruent. There was no significant effect on grades, either positive or negative, with the sense of belonging intervention. As the sense of belonging would classify as a psychological personality trait, it is difficult to assess it as a determinate for grade production (Rogers & Freiberg, 1994; Goodlad, 2004; Feldman, 2014). With large scale interventions on educational communities, grades are subjective; there are many reasons why students either do or do not score well. Even in large scale interventions, such as No Child Left Behind (2002), too many outside variables play into the assessment of student success. What was positively recorded was that more students received As than received Bs, and that more students received Bs than received Cs (see Table 13) of the students who completed the course.

Research Question Four: Instructor Investment Verses Non-Investment in Sense of Belonging

There were two parts to this question, with scores for the sense of belonging for students as successful, but not so when SoB was attempted for instructors. Though the instructors took a sense of belonging survey toward the end of the fall 2014 semester, that sample size was deemed too small to use on regression equations. But multinomial regression was performed to see if students who had instructors with low SoB investment observation scores might be a contributor for students in these classes also with low SoB scores. The other half of the analysis was to run regression on extracting the non-invested instructors identified from observation scores. After the data were analyzed, there was one slight variation in instructor input that could not be successfully interpreted as influential on the negative impact of students and their sense of belonging.

The observations revealed five instructors that had no evidence of sense of belonging techniques or strategies. A general review of the five instructors did not invest all had a commonality. Those classrooms reflected a lack of flexibility, or little noted attempt to do something new with personal teaching practices (Rogers & Freiberg, 1994). This evidence is supported by the examples given in the Observation section, and were characterized by noting an old-fashioned teaching style that promoted the instructor as a figurehead in front of the classroom imparting knowledge, with little to no student engagement (McKeachie & Hofer, 2001; Galbraith, 2004).

Students and their instructors could be referenced through the aforementioned institutional S number identifier (see Chapter III). These two populations were matched for possible relationship and there were no significant findings for those instructors who exhibited a lack of investment in a sense of belonging. First, an ANOVA was run for the

51 students who attended these classrooms, but there was no difference between instructors who did invest, and those who did not. Next, an ANOVA was run to see if there was relationship in students and their change in SOB scores between T^1 and T^2 in regard to their non-invested instructor. The *p*-values reflected a higher sense of belonging in classrooms where an instructor was invested, than the few classrooms that were not. These values were also consistent in the difference and that the range of values for students with instructors invested in SoB was larger for both the Week 9 total SoB score and in the difference of these scores. Over a longer time period, if continually assessed, that finding might have become significant.

Limitations

Design

Reconsideration of Time^1 to Time^2. This was one reason to reconsider the detriment with a pick of the weeks chosen for survey distribution. With perhaps an earlier date within the semester to define T^1, the variables may have been more extreme with higher numbers with broader reporting times. However, with an attrition rate of 20-25% in some classes, much research effort would have gone to waste, as it was determined that tossing out another 40+ surveys would have been fruitless, but necessary, as only full survey sets were counted as total contributions. On an average, many community college students leave within the first few weeks of classes; it has been reported that very few of these reasons are academic (Astin, 1984; Tinto, 1993).

Questioning. Some of the demographic findings did lead to second thoughts on picking the 24 questions. Clearly, this was a learning tool, and a lesson in objectivity vs. subjectivity. Attempting to be objective did not allow for some of the subtleties that may

have been important but could not be measured. For example, it was hard to code the information noting the difference of social and academic integration. Even though the answers seemed basically clear at the beginning to this researcher, these were still undefined enough to lend to a level of ambiguity in the corresponding answers. Such as, answering the hours of "Social Life at TTCC." This was not seemingly a bad question, and it was answered enough to determine two areas of social life on campus, (a) Social life of 6-8 hours and (b) Advanced social life for 9+ hours.

The error of the question was not amount of hours, but the problem became what was that student doing in those 6, 7, 8, or 9+ hours? Social life, as participating in club activities, or social life, as in smoke breaks in between classes? Could this have been just a typical cumulative score? Without a foreseen definition in specific questioning, it could not be defined. Other potential predictors which could have been evaluated are: second language learners, commuting practices, living distance from the college, and outside support that may have fulfilled sense of belonging needs other than those available to college students on campus.

The Human Factor

Truth in self-reporting. There is a hidden factor in self-reported demographic surveys that allows the responder a pretense of alluding to a question or questions. Conrad, et al. discusses it as sensitive questioning. There are certain questions out there that are considered by cultural norms that are not anyone's business, and this includes certain research questions (Conrad et al., 2013). Depending on the individual and one's personal life experiences, there may be a question, or questions that he or she will not answer. If these items are related to income (the biggest eluding question of the

demographics), health, employment or other values that one might consider very personal, a person may feel free to ignore, be dishonest, or evade the question. In a survey situation, this means that possibly, because it is a written measurement as opposed to a spoken one, some questions will not be answered in a truthful manner.

The first could have been considered coincidental; *Interaction with Instructor Outside of Class*, (55 missing answers), or the answer could have been considered as not relevant by the responders. The second highest answer was SES with 46 missing answers (see Table 8). An interesting phenomenon, with an example of work by Conrad et al. (2013) on questioning, more information could be gathered on participating honestly to questions and especially in consideration of the mean age of these participants (age 19). This could be an issue with the level of honesty in this population. Answers to the first batch of surveys were highly varied in responses; some answers were contradictory from other similar answers on the form. There was immediate concern that the survey may become compromised because of it. Fortunately, the return rate was high, and there were many surveys with consistent reporting. However, instability felt like an underlying theme at times throughout the analyses, again, likely due to the age median of the student population.

Collaborative participant. Fulfilling the role as collaborative partner left me somewhat struggling with observational bias (Merriam, 1998, p. 101). Although I understood not all in the teaching profession need to be enamored with Affective Learning strategies or the sense of belonging in the classroom. There are many dedicated individuals who believe in a different way to structure lesson plans and conduct a class, and these people can be fine instructors. Knowing this made me practice open-

mindedness and it eventually led to an acceptance that others did not take this research as seriously as did I.

Faculty cohesiveness. That same cohesiveness of faculty for the fall 2013 semester did not carry over into the spring 2014 semester. Investment, once high, was limited with some continual drop in general enrollment of the institution by nearly 1,000 students (rrcc.edu), and a number of classes were cancelled due to these classes not meeting minimum roster requirements of 12 students. Because of this, communication was not as current or as plentiful as it had been the previous few months. The redesign courses where tough to teach, and students were noticeable resistive at times to the doubled work load, as per self-reporting by the participating instructors. Double the workload for students also meant double the workload for the instructors! The redesign was no longer new and innovative and exciting, so there was no great instructor interest to be involved.

This was apparent when those in the redesign had been highly supportive of my research in the first semester. My coworkers were conscience and responsive to the demands that a study of this type brings. By the spring semester, much of the staff had changed, registration rates went down, and 25 courses that had participated in redesign dropped dramatically to 15 courses that semester. This left communication gaps that affected the research. One example was that surveys in the fall semester were completed and returned within a week or 10 days of dissemination. In the spring semester, I was asking for returns of a handful of Week 9 surveys through Week 12. For this reason, an executive decision was made to only pass out one survey to students, but two surveys to

staff members in Week 9 and Week 14. As the spring redesign staff had dropped to 11 members, this potential sample size was too small to anticipate the possibility of good correlation.

Delimitations

The redesign was undermined by a cultural and economic bent. The national economy had suffered for the previous four years. Many students had attended the community college to become gainfully employed in a trained profession (Clark, 2005). By spring 2014, the US economic strain was finally beginning to ease, and registration dropped for the CCCS system by 14% from the previous two semesters (Table Top Community College, 2014). When this occurred, courses no longer filled. The first faculty members to lose hours and assignments were the part-time adjunct instructors. These actions put a strain on the institution and the position and support of the redesign program changed.

Due to a reorganization of administrative reporting departments, obtaining institutional data was difficult, and at times the research felt compromised because of this. Communication between redesign members was sporadic at times; without the information that was not received, some data could not be analyzed to the extent that was previously thought possible.

Recommendations

As stated earlier, the face of education is changing; technology and communication have afforded educators with access to current computer trends and knowledge has been exponentially increased with greater options to educate others (Slater & Law, 1999). It could be helpful and more successful to work with a smaller

population of instructors and students in a similar project. Greater success through structure and management may be achieved within a more limited population. Because the demographics of this distinct population were fairly homogeneous, it would be possible to develop a smaller program to accomplish similar outcomes.

As the study did indentify certain specific demographics that affect sense of belonging, one recommendation would be to put an early warning system in place for those who present with a known decrease in sense of belonging, e.g., SES, no time spent with school services, and little interaction with the instructor as indicators for at-risk student behaviors. Not surprisingly, the other good predictor that lowered sense of belonging in students was those who worked 40+ hours per week.

Another area where there was noted concern was in the necessary loss of grammar skill instruction previously available to ENG090 students; there was no longer time to address these basics in the combination classes. Some interest was sparked by instructors to set up a workshop program for students lacking in these basic skills. A potential partnership entailing the English department and Student Services to supply these skills for students to better succeed through redesign courses could be a solution.

An interview with one full-time English faculty member, K. Whitecotton, (September, 2014), pursued trial workshops for redesign students scheduled for the spring semester of 2014. At that time, students who took advantage of those workshops were few, but with greater structure and institutional support, the ability to grow those numbers would become a worthy possibility.

Implications

After much research on the topic of education in the community college environment and years of studying Maslow's hierarchy of needs theory, it seems as if there is a place for change in policy and procedure for this type of 2-year post secondary education (Barnes & Piland, 2013). Community colleges have always addressed the alternative learner; that may not change. Those who study educational psychology understand that there will always be a number of students who can be well-served in the community college education system (Tinto, 1975, 1987;Pascarella & Terenzini, 1991; Locks et al., 2006).

One area that could benefit from change is the lack of continuous investment in programs and projects such as this Developmental Education English Redesign Program, similar to the outcome of the No Child Left Behind Act of 2002. It takes time to convince those involved in institutional education to "persist" with one good idea for more than a year or two (Bruner, 1996; Goodlad, 2004). Educational investment takes time to develop, and although those in the profession believe this, bureaucratic measures keep these possibilities limited (Barnes & Piland, 2013). Ideas and implementation of attempts like the redesign program may be good ones, but these will continue to fail without more patience for long-term investment. Persistence, just like the demand that was placed upon these students, show that many educators in this field cannot or do not have the continuous resources or funding to model the same behaviors.

Conclusions

This was a study that was designed to help implement an intervention for a large curricula change at a typical middle class community college. Two populations involved,

both the students and the instructors, revealed some particular areas of further interest. Some of these were accelerated learning practices, the sense of belonging in the classroom, and collaborative learning in both populations. The largest finding was in relation to understanding that specific demographics have some effect on how students are able to learn, which can be reflective of one's sense of belonging (Schroeder, 2003; Tinto, 2012).

Another area of pursuit was noted in the quality of teaching that occurred in the majority of the classrooms through the qualitative method of observation. A useful sense of belonging instrument for observation was developed and measured the need for the educational awareness of sense of belonging in the college classroom. The research questions designed for the outcome of the study were successful in most areas, as in using an effective measurement tool of a sense of belonging scale and a specified demographic scale for at-risk college students.

Also noted was the important role that college and college integration matters in relation to a student's well-being, both academically and socially. There was demonstration of an above average successful completion rate of the developmental English students who attended classes in the redesign curricula at this 2-year college in the fall semester of 2013. It seems credible that attention to similar studies could continue to develop effective sense of belonging strategies in the college classroom.

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APPENDIX A

OBSERVATIONAL DATA SHEET

Classroom Observation Sheet
English Department Redesign

Affective Learning in the Classroom: The main focus for this observation is not based on the evaluation of teaching practices, but objectives related to skills that are increased by a sense of belonging within the classroom. These skills can be increased with effective communication, problem solving techniques, respectful interaction between instructors to students, and student to student cooperation. Check all that apply throughout the time that you are observing. Please note: The term "comfortable," in this case, can be thought of as a synonym for "safe or safety."

Organization: Is there basis of organization present for optimal learning?

- ☐ The lesson has been clearly stated
- ☐ The instructor responds to student problems
- ☐ Use of time is effective
- ☐ The timing of delivery is adequate
- ☐ Necessary tools are readily available

Classroom Climate: Is the feeling within the classroom rigid, formal, informal or loose? (Circle one)

- ☐ Does the instructor appear to be comfortable in front of the class?
- ☐ Instructor is interested and enthusiastic?
- ☐ Students are invested and engaged?
- ☐ Are first names used by the teacher and other students?
- ☐ Is humor used appropriately?

Student Participation: Are students comfortable in this learning environment?

- ☐ Do students communicate verbally/non-verbally with each other when appropriate?
- ☐ Do students appear to be comfortable in their seating arrangement?
- ☐ Do the students respond to the teacher with questions?
- ☐ Do the (majority) students participate in discussion?
- ☐ Do the students appear to have their physical, emotional and intellectual needs met?

Student to student interaction: Have students built relationships in this classroom environment?

- Do students discuss freely with one another?
- Do students ask questions of one another?
- Do students work well together on assignments/projects?
- Do students interact with one another in respectful manners?
- Is discussion presented in a fashion where everyone seems to have equal status?

Instructor to student interaction: How does the instructor communicate with students?

- Projects a manner of classroom management (authority)?
- Explains objectives in a projected voice heard/comprehended by students?
- Ideas are expressed concisely and with clarity?
- Encourages students to ask questions and/or participate?
- Answers questions when asked?

Please indicate the learning situation/activity or activities that was/were taking place while observing this classroom:

_____
_____
_____
_____
_____
_____
_____

Did there appear to be an established order, organization or sequence that was obvious:

_____
_____
_____
_____
_____
_____
_____

Did students interact well with one another? Give examples of yes/no:

_____
_____
_____
_____
_____
_____
_____

Did students appear to be in the learning process, through the lesson, the instructor, or one another? Give examples:

_____
_____
_____
_____
_____
_____
_____

Did the instructor seem to encourage feelings, emotions, and honest interaction between themselves and his/her students? Explain:

_____
_____
_____
_____
_____
_____
_____

Were attitudes and beliefs shared freely in the classroom? Were these expressed by the instructor, students or both? Explain:

_____
_____
_____
_____
_____
_____
_____

APPENDIX B

INSTITUTIONAL REVIEW BOARD APPROVAL

UNIVERSITY of
NORTHERN COLORADO

Institutional Review Board

DATE: January 16, 2015

TO: Elizabeth James
FROM: University of Northern Colorado (UNCO) IRB

PROJECT TITLE: [676164-2] IRB for Dissertation 6/2014
SUBMISSION TYPE: Amendment/Modification

ACTION: APPROVAL/VERIFICATION OF
EXEMPT STATUS DECISION DATE: January 16, 2015

Thank you for your submission of Amendment/Modification materials for this project. The University of Northern Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to federal IRB regulations.

Thank you for providing clear explanations of how data was obtained and how anonymity will be maintained in the use of the data.

Best wishes with your research and please don't hesitate to contact me with any IRB-related questions or concerns.

Sincerely,

Dr. Megan Stellino, UNC IRB Co-Chair

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Sherry May at 970-351-1910 or Sherry.May@unco.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.

APPENDIX C

INTRODUCTION TO RESEARCH LETTER

Dear Student,

As you have been informed by your instructor, you are involved in a pilot program at Red Rocks Community College. This includes a case study that allows for exploration of how college English courses will be conducted in the near future. Your course is one along with 23 others that will gather information which will involve three short surveys and a classroom observation during the semester. This will be done by determining factors such as background, college/student investment, peer support, student/instructor relations and academic learning (Tinto, 2002). These factors will be measured along with affective learning, which has been known to contribute to a sense of belonging in the classroom.

> *A sense of belonging is defined as a personal involvement an individual attaches to their social environment in order to reach a level of comfort. Over time, that individual feels a part of a group, and in return is recognized as an important member of that group* (Hagerty, et al, 1992).

You are sincerely asked to participate in this research, but your involvement throughout the semester is purely voluntary. You will be required to add your S# to the survey but not your name. Student numbers are strictly used for compilation purposes only, and individual answers will remain anonymous. You may stop your participation at any time. If you have further questions, you may contact Tim Griffin, Executive Director of Planning, Research & Effectiveness for RRCC at 303-914-6516. Thank you for being an important participant of research at **RRCC!**

Respectfully submitted,

Elizabeth JK James, MA
Red Rocks Community College
Doctoral Candidate
University of Northern Colorado

APPENDIX D

DEMOGRAPHIC SURVEY FOR STUDENTS

DEMOGRAPHICS SURVEY S#_____

Please answer each question. This entire survey should take you **less than 10 minutes to complete. Please include your S#, it is used to match surveys and will not be used for identification purposes. THANK YOU!!!**

1. Age	16 __ 17 __ 18 __ 19 __ 20 __ 21 __ 22 __ 23__ 24__ 25 __ 26 __ 27 __ 28 __ 29 __ 30__ 30-35 __ 36-40 __ 41-50 __ 50+ __
2. Gender	Male __ Female __ Intersex __
3. Marital Status	Single __ Married __ Divorced __ Living in a committed relationship __
4. Year in school	Freshman ___ Sophomore ___ Sophomore+___
5. Attending classes	Number of credits per semester: 3 __ 9-12 ___ 3-6 __ 12-15 ___ 6-9 __ 15+ ___
6. Socio Economic Status (SES)	Income per year: Exempt __ Less than 18,000 __ 30,000-50,000 __ 18,000-24, 000 __ 50,000-60,000 __ 25,000-30,000 __ 60,000+ __

7.	Employment (including work study)	Hours per week: Less than 10 __ 31-40 __ 11-20 __ 40-45 __ 21-30 __ 45+ __
8.	Social Life at TTCC: Includes breakfast or lunch, clubs, athletics, etc; time spent with any other students, including short class breaks.	At College 0 __ 6-8 hrs __ 1-2 hrs __ 9-10 hrs __ 3-5 hrs __ 10+ hrs __
9.	Are you a parent?	What are the age(s) of the child/children? _____
10.	Do you use college support services? Includes all, i.e, advising, counseling, Learning Center, study groups, tutoring, FA, VA, ODS, etc.	Yes __ No __
11.	Have you communicated with your instructor outside of required class time?	If so, how much time? 15 min-60 min __ 2-3 hrs __ 1-2 hrs __ 3+ hrs __
12.	Have you spent any time with an instructor/ program director/ dean (other than your required class instructor for learning/support)?	If so, how much time? 15 min-60 min __ 2-3 hrs __ 1-2 hrs __ 3+ hrs __

APPENDIX E

SENSE OF BELONGING SURVEY FOR STUDENTS

S# _____

Redesign Pilot Program for Students
Survey 1 & 2

Hi Students! Here is your next survey on Affective Learning and the Sense of Belonging in the classroom. A sense of belonging is described as: *The personal involvement that one attaches to their social environment when a level of comfort is required. Over time, an individual feels a part of the group, and in return s/he is recognized as an important member of that group.* **In this instance, the "group" is your current classroom situation.** Mark the box that most accurately describes you. Please answer these questions to the best of your ability; DO NOT SKIP ANY QUESTIONS, if you are in doubt, pick the answer that is the closest fit.

Any comments related to the Redesign Program can be written here. Any questions that you may have about this survey or any other piece of the research can be written here. Thank you for your participation in this research!

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

SENSE OF BELONGING SURVEY FOR STUDENTS

Questions	Almost always	Sometimes	Occasionally	Infrequently	Almost never	N/A
1. I feel confident in an academic setting						
2. I enjoy the subject(s) taught in this class						
3. I contribute to the class with personal comments						
4. I like working with others in class						
5. I work individually in the classroom						
6. I enjoy hands-on learning						
7. I have many friends in this school						
8. I spend time with peers outside of the class-room						
9. I contact peers for non-academic reasons						
10. I call, text or email other students in this class						
11. Other students have called, texted or emailed me						
12. I know the names of everyone in my class						
13. I use the extra services provided at this school						

Questions	Almost always	Sometimes	Occasionally	Infrequently	Almost never	N/A
14. I participate in extra-curricular activities						
15. I spend time in other areas of the school						
16. I have been in touch with school personnel for assistance						
17. I have been contacted by school personnel						
18. When I have any school-related issue, I know where to go to get problems solved						
19. I consider my instructor approach-able						
20. I know that I can ask my instructor for help						
21. My instructor answers my questions						
22. I have met individually with my instructor						
23. I have called, texted or emailed my instructor						
24. My instructor has called, texted or emailed me						

APPENDIX F

SENSE OF BELONGING SURVEY FOR INSTRUCTORS

S# _____

Redesign Pilot Program Instructor Survey 1 & 2

Dear Instructors, Here is the survey on Affective Learning and the Sense of Belonging in the classroom. A sense of belonging is described as: *The personal involvement that one attaches to their social environment when a level of comfort is required. Over time, an individual feels a part of the group, and in return s/he is recognized as an important member of that group.* **In this instance, the "group" is your current classroom and teaching situation.** Mark the box that most accurately describes you. Please answer these questions to the best of your ability; DO NOT SKIP ANY QUESTIONS, if you are in doubt, pick the answer that is the closest fit.

Questions	Almost always	Sometimes	Occasionally	Infrequently	Almost never	N/A
1. I feel confident in the academic setting for this class.						
2. I enjoy teaching the subject(s) taught in this class.						
3. I allow students to contribute to the class with personal comments.						
4. I promote students working with others in class.						
5. I promote individual work in the classroom.						
6. I teach hands-on learning.						
7. I have a number of friends at school.						

Questions	Almost always	Sometimes	Occasionally	Infrequently	Almost never	N/A
8. I spend time with peers outside of this institution.						
9. I have contacted peers for non-academic reasons.						
10. I call, text or email others in this institution on a regular basis.						
11. Others from this institution have called, texted or emailed me.						
12. I know the names of almost everyone in my department.						
13. I encourage the use of extra services provided at this school.						
14. I am involved in extra-curricular activities.						
15. I am involved in extra-curricular activities.						
16. I have been in touch with school personnel for assistance.						
17. I have been contacted by school personnel.						

Questions	Almost always	Sometimes	Occasionally	Infrequently	Almost never	N/A
18. When I have any institution-related issue, I know where to go to get my problem(s) solved.						
19. My students seem to be able to approach me.						
20. I tell my students that they can ask me for help.						
21. When asked, I answer my students' questions.						
22. I have met individually with students.						
23. I have called, texted or emailed my students.						
24. My students have called, texted or emailed me.						

Any comments or questions related to the Redesign Program, including ideas or suggestions, that you may have about this survey or any other piece of the research can be written here. I sincerely thank you for your participation in this research!