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Predictors of School Connectedness in Community Colleges

James A. Gardner

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PREDICTORS OF SCHOOL CONNECTEDNESS IN COMMUNITY COLLEGES

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DEDICATION

I dedicate my work on this dissertation to my wife, Gloria and to my mother, Patricia. Thank you Gloria for your unwavering support, love and practical help throughout this process. You knew I could do it even when I didn't. Thanks mom, for your love and support throughout my life. You came so close to seeing me finish.

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JAMES A. GARDNER

ABSTRACT

College students leave school before completing their degrees. Costs are high when college students fail to persist and reach their graduation goals. There are many reasons why students fail to persist which have already been thoroughly investigated elsewhere. Prior research has shown a positive correlation between strength of school connectedness and persistence. This document examined the concept of school connectedness and how it related to perceived strength of school connectedness in older, nontraditional age community college students in votech programs as compared to traditional age students in associate degree programs.

To measure perceived strength of school connectedness, this research used archival data from a Noel-Levitz™ student satisfaction survey from 22 community colleges. The data are from spring 2009 through 2012 and contain 13, 225 total student records. The data were quantitatively analyzed using multiple regression analysis, as appropriate for the research questions.

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CHAPTER I

PROBLEM STATEMENT

Community college students fail to persist to completion of a recognized credential in satisfactory numbers (Halpin, 1990). Considering the fact that over 40 percent of all undergraduates are enrolled in community colleges, this is significant. Recognized credentials include certificates of proficiency, associate degree attainment or transfer to a four-year institution. According to the American Association for Community Colleges (2012), only 46 percent of community college students who entered with the intention of earning a degree or certificate, reached their goal within a six-year period. That means that less than half of the students enrolled in a two-year program completed their certificate, degree, transfer or were still enrolled after six years. Low completion rates continue to negatively affect students and community colleges.

Age differences seem to have an effect on persistence and completion. Older, nontraditional age students may be less likely to complete than their younger counterparts.

Research by Horn and Nevill found only 12 percent of older students were “strongly directed” as compared to 39 percent “strongly directed” among the youngest group (2009). Older students have competing priorities and conflicts with family life, dependent children, full-time work schedules, and other adult responsibilities not typically experienced by younger college students (Spellman, 2007).

Community colleges face challenges in promoting school connectedness in their respective institutions. Because community colleges are primarily commuter schools where students attend classes as just a part of their day along with work and family responsibilities, it is more of a challenge to help students connect with each other and with faculty and staff. Thirty percent of entering community college students do not attend orientation, further reducing the opportunity to promote school connections and the majority do not even complete online orientation (American Association of Community Colleges, 2012). School connectedness is more likely when students participate in orientation and first year experience programs, yet even with mandatory participation being required, students often find ways around attendance and participation.

Purpose

Community college students quit before they earn a certificate or degree in large numbers (Horn, 2009 ; Tinto, 2012). It is important to examine this population of older, nontraditional age votech students because as graduates they play a vital role in our community as workers who support our economy with service work that is important to the community. Students completing their degree or certificate are more likely to earn a living wage, pay income tax, buy goods and provide a valuable service to the community by applying their work skills.

Using data collected from a community college student satisfaction survey instrument, this study measured perceived strength of school connectedness between four groups. By quantitatively examining data from the satisfaction instrument, the study measured students' perceived strength of school connectedness, comparing older, nontraditional age students versus younger students, votech students versus associate's degree seeking students, and older votech students versus younger associate's degree students. The study also examined whether nontraditional age votech students rate the categories of *campus climate*, *concern for the individual* and *student centeredness*, differently.

There are potentially high costs associated with students failing to complete. Additional research may reduce the costs to community colleges due to lost funding revenue from students not completing. Many community colleges are funded based on student completion—certificates or degrees (Zarkesh and Beas, 2004 ; Polatajko, 2011). Funding is reduced when students do not complete. Individual students too, are adversely affected by not completing. They pay for tuition without the benefit of higher wages from earning a degree or certificate. The community is negatively affected when students fail to complete, because of a less skilled workforce and less revenue from their income tax. Learning more about strength of school connectedness as it relates to persistence and completion may help institutions provide the necessary support or interventions that may increase school connectedness and persistence. Examining this large group of older than traditional age votech students in community colleges has provided some answers.

This study examined the relationship between students 25 and older in vocational/technical programs in community colleges and their perceived strength of school connectedness. Strength of school connectedness was measured by examining item responses of

students on the Noel-Levitz Student Satisfaction Survey™ where students indicated the importance of items relating to school connectedness and how well they believed their community college performed on those items. Results from this study may be used to imply interventions for the indicated population to help improve their strength of school connectedness and persistence.

To help examine the population, the study employed the following research questions:

1. Is there a significant difference in perceived strength of school connectedness between being a vocational/technical (votech) student and being an associate degree student in a community college?
2. Is there a significant difference in perceived strength of school connectedness between older, nontraditional age students and traditional age students in a community college?

Hypotheses

1. H₀: There is no statistically significant difference in perceived strength of school connectedness among vocational/technical community college students as compared to associate degree students.
2. H₁: There is a statistically significant difference in perceived strength of school connectedness among vocational/technical community college students as compared to associate degree students. There is an expectation that votech students will have lower strength of school connectedness because of practical considerations of program separation—separation from the general student population.

3. H₀: There is no statistically significant difference in perceived strength of school connectedness among older, nontraditional age community college students as compared to traditional age students.
4. H₁: There is a statistically significant difference in perceived strength of school connectedness among older, nontraditional age community college students as compared to traditional age students. It is expected that older, nontraditional age community college students will have lower strength of school connectedness because of their previously established connections in other significant areas of their lives.

Key Terms

To better understand some of the terms and phrases used in this document as they relate to the study, this section describes them in some detail. *School connectedness* is a term used throughout to describe the relationship students have with other individuals at the learning institution, such as other students, faculty, and staff. School connectedness describes a relationship or bond with others at the school. The phrases, *campus climate*, *concern for the individual*, and *student centeredness*, come directly from the Noel-Levitz™ student satisfaction survey (Noel-Levitz, 2014). These three phrases are, for the purposes of this document, considered to be closely related to one another and to school connectedness. The terms *votech* and *career and technical education* (CTE) are used interchangeably and refer to college programs where students learn both knowledge and skills which tend to lead directly to employment in careers with technical skills (Hirschy, 2011). *Nontraditional age* refers to students 25 and older (Kasworm, 2010). *Performance-based funding* is a method of funding community colleges based on a system of measuring institutional effectiveness (Zarkesh and Beas, 2004) in hopes of increasing accountability. Prior to states adopting performance-based

funding, they employed enrollment-based funding strategies. *Completion agenda* is closely related to performance-based funding, holding community colleges accountable for students completing certificates and degrees, rather than funding institutions based on students being enrolled. This is common in CTE programs (Shulock and Offenstein, 2012).

CHAPTER II

INTRODUCTION

This chapter presents and examines research literature that pertains to persistence in higher education, issues of older, nontraditional students, experiences of votech students, and school connectedness. The literature helps to situate this study and illustrates a potential need for more research to help us understand the relationship between being an older, nontraditional age student in a vocational/technical program and the students' perceived strength of school connectedness. Understanding the relationship between this population and their perceived strength of school connectedness may lead to changes or adjustments to how these students are oriented when beginning their college programs. It may also lead to interventions which to help them to persist through to completion of their respective certificates or degrees.

Persistence in Higher Education

Tinto has researched and examined college student persistence for more than 40 years to uncover the reasons students drop out and learn what might be done to help them complete their degrees. In an article titled *Classrooms as Communities* (Tinto, 1997), he explored learning communities in the college classroom and how students developed a network of support which helped connect them with the institution, allowing them to persist. Tinto explained that the peer network helped students engage more fully in their academic life, encouraging their continued attendance and participation. Tinto (1987) focused on school community when he suggested that: “the more central one’s membership is to the mainstream of institutional life, the more likely, other things being equal, is one to persist” (p. 123). Tinto also maintained that students require academic, social, and personal support from the school. This support, whatever its form, needs to be readily available and connected to other parts of the students’ total school experience. These analyses helped Tinto and subsequent researchers to better understand persistence in higher education.

Tinto (1975) stated that even though a student may perform adequately in a higher education institution, they may drop out because of a lack of integration in the social life of the school. He stated that given the characteristics of students entering college, including previous educational success or failure, gender, race, or ability, that individual’s level of school connectedness or integration into the school’s academic and social systems, the strength of their school integration has the greatest effect.

Many community colleges are developing and implementing first year experience (FYE) programs to help students acclimate to college and to help them persist. FYE programs are mandatory for credit earning students who are new to the college experience and require formal orientation, new student convocation, seminars, and also offer bridge courses to help students who need remedial coursework prior to qualifying for college courses. FYE programs help students connect, engage, plan, and succeed (Cuyahoga Community College, 2014). A plan is developed for the student with academic counselors and student success specialists. The FYE seminars are specifically designed to help students learn to succeed by learning good study habits and test-taking skills. Since all new students are required to complete FYE requirements, there are opportunities to share common new student concerns and experiences with each other, letting new students know that they are not alone in this new situation.

Older Nontraditional Students

Older, nontraditional age students are increasing in numbers in community colleges and universities (National Center for Education Statistics, 2014). Changing job market needs are just one reason older students might go back to college to learn new skills and gain credentials. Some older students may be attending college for the first time as their desire to change career paths lead them to needing additional knowledge, skills and credentials (Kim, 2002). What do we know about these students aged 25 and older? Are they more or less connected than their younger counterparts? Would more information about older students' perceived strength of school connectedness help college faculty and administrators meet their needs and help them persist? Perhaps they are *more* connected than younger students and we might be able to glean

information from them that could help younger students. With the increasing number of older students entering colleges and universities it will continue to be important to know about their strength of school connectedness and how it affects their performance and persistence.

Because older votech students need to persist and attain their credential goals, because communities need skilled and educated workers to thrive (Trostel, 2010), because institutions of higher learning are funded based on student success, this study was done. Other researchers have looked at school connectedness and its relationship to persistence. They have examined older college students and votech students, yet we still did not know enough about school connectedness and votech students versus other community college students, and we did not know enough about older community college students and their younger counterparts as it pertains to strength of school connectedness. This study to compared perceived strength of school connectedness between these groups.

Community Colleges

Community colleges, originally called junior colleges, were originally established in the late nineteenth century in an effort to separate the first two years of college from the second two (Kane and Rouse, 1999). The goal was to ease the burden on four-year institutions and to offer certificates or associate's degrees as their highest credential. Following World War II, these two-year institutions gained in popularity due to the influx of soldiers returning from active duty, with education vouchers from the GI Bill. Following the Korean War there was a similar surge in enrollment and in the 1960s when baby boomers reached college age, there was another major increase. Following the Vietnam War, those wishing to avoid the draft, headed to community colleges. Early on, community colleges were considered viable entry into college and served primarily as transfer institutions, enabling students to take their first two years at lower tuition

rates. After community college students completed much of their basic coursework, they would transfer to a four-year school for a baccalaureate degree. Since that time, community colleges have expanded their role in higher vocational education, allowing students to take classes and earn credentials which allow them to improve their skills and earning potential. Since community colleges have traditionally been open admission institutions, students can be admitted without even graduating from high school in some instances. Community colleges continue their mission of greater access to higher education while meeting new challenges of greater success.

The students who make up the community college student body are not representative of those enrolled in 4-year institutions. Twenty percent of community college students ages 18- 24 identified themselves as employees who enrolled in college compared to only 9% of the same age group for all other sectors of higher education (American Association of Community Colleges, 2012). Sixty percent of community college students report to be working more than 20 hours per week. Community colleges have historically enrolled approximately half of all undergraduate students of color (Mullin, 2012) and the number of students of color who are completing their degrees is increasing faster than the number who enroll, indicating not only access, but improved success. Approximately 70 percent of community college students are enrolled part-time, more than 10% did not earn a high school diploma, more than 30% had dependents, and 15% were single parents (Mullin, 2012).

Economic trends and unemployment have a direct relationship with post-secondary enrollment. As individuals become unemployed, they turn to higher education to help bolster their skills or to help prepare them for new areas of employment. In the great recession, from 2007 to 2010, community colleges increased their enrollment by 900,000 students, or more than

32% (Barr and Turner, 2013). In the United States in the 2011 – 2012 school year, there were 10,528,608 students enrolled in public 2-year institutions. For the same time period, there were 9,731,902 students enrolled in public 4-year institutions. Nearly 800,000 more students were enrolled in community colleges.

Votech Students

How do votech students compare to other degree-seeking students in the area of school connectedness? Votech students were of particular interest in this study because of the fact that students can learn skills and go to work to apply those skills (Loera, Nakamoto et al., 2013). Vocational areas focus on practical work skills along with credentials—certificates and degrees. Work ready skills that can be learned in a relatively short period of time can help students get jobs in their chosen fields that can help them pay for school or allow them to support themselves or contribute to family income (Brown, 2003 ; 2013). The same classes that teach students work skills can apply toward their degrees (Brand, 2008). By learning if a relationship exists between vocational students and school connectedness, it is possible that school faculty and administrators might either learn from this group, if their perceived strength of school connectedness is high, or provide support to help them connect in school. Although some research has focused on votech students, more work was needed to learn about this group.

In votech programs and other lab class settings, students are often required to work in teams to carry out a given learning task, causing them to work in situations where they rely on one another to reach their goals. Although space and equipment considerations may force instructors to employ cooperative group work in labs, it is this cooperative group work that may

be a benefit to students in improving learning and school connectedness. In an automotive technician program, students work together to analyze, evaluate and solve vehicle problems to make needed repairs to vehicle components and systems. In this process, students utilize available vehicle service information along with knowledge and skills they develop in their team settings. The interaction between faculty and students and students with students, promotes discussion and problem solving in the analysis and repair process.

Programs under the heading of votech or Career and Technical Education (CTE) are encompassing and widely varied in scope. According to the National Center for Education Statistics (2007), the following major areas are covered with numerous subheadings and career specializations under each; agriculture and natural resources, business management, business support, communication and design, computer and information services, consumer services, education, engineering, architecture and science technologies, health sciences, manufacturing, construction, repair, and transportation, marketing, protective services, and public, legal, and social services.

CTE and votech programs are widely varied in scope and specialization, but they have some common traits. These programs often involve technical skills, which once learned, may be applied in the workplace, even prior to graduation (Brown, 2003). Votech programs are labeled as subbaccalaureate and are offered in community colleges and other 2-year schools (Grubb, 1999). Votech programs are designed to prepare individuals for work by teaching skills necessary for employment and are also designed to help students develop careers in their specialized fields. Short-term certificates of less than one year, longer term certificates of up to two years, and associate's degrees are all possible paths for students looking to enter a semi-professional career field. Some careers, such as nursing, may require board certification in

addition to a certificate or degree, while jobs in automotive repair trades may only skills and voluntary certification by technicians (National Institute for Automotive Service Excellence, 2014). By design, votech programs are designed to help individuals gain employment rather than just educate them. This is one of the most important similarities between the various votech and CTE programs.

Votech programs are offered in 2-year, 4-year public and private institutions, but this study focused on only 2-year schools. These statistics are gathered from 1,089 2-year institutions that offer subbaccalaureate degrees and certificates (National Center for Education Statistics, 2007). In the years 2011 and 2012, there were 8,449,000 students enrolled in subbaccalaureate occupational education programs in the U.S., with 47.6% of those students being over the age of 25 (National Center for Education Statistics, 2012). Students enrolled in subbaccalaureate occupational education programs had parents with now college experience. In 2011 and 2012, 46.5% of these students' parents had no college and 28.7% had a bachelor's degree or higher (National Center for Education Statistics, 2012).

School Connectedness

For the purposes of this study, this document refers throughout, to the term *school connectedness*. Researchers have varying opinions about what is school connectedness, reflected by varying terminology and descriptors concerning school connectedness. School connectedness is an overarching term which refers to the closeness of the relationship a student has with their school and the people they interact with in that school. Blum (2005, p. 16) stated that “school

connectedness refers to an academic environment in which students believe that adults in the school care about their learning and them as individuals.” Wilson and Gore (2009, p. 71) stated that, “School connectedness is defined as college students’ subjective sense of “fit” within the university and the perception that they are personally accepted, respected, included, and supported by others in the academy (Bollen and Hoyle 1990); Goodenow 1993; Hagerty, Williams, and Oe 2002; Hoffman et. al. 2002). These definitions of school connectedness help us understand the potential implications of the attitudes and ideas surrounding students’ feelings about their place in the college setting.

Connectedness in votech programs. Collaborative learning projects help students make connections with one another (Cabrera, Crissman et al., 2002). Students are put in situations, driven by faculty and course requirements that force them to work cooperatively with their classmates to achieve a common goal. In classroom settings, students may need to work together to research a topic and present their findings to the class. This time spent together can foster bonds and connections that may not happen without the cooperative project. These team task settings encourage and sometimes, demand cooperation that promotes connectedness with other students (2002).

Students form connections with faculty and faculty with students, in the learning process. Students rely on faculty to impart knowledge and demonstrate skills in order for them to learn. In this teaching and learning process, students may form bonds with faculty that help them break down barriers and encourage learning to take place (Crosnoe, Johnson et al., 2004). Learning takes place outside formal classroom and lab settings as well, especially when students require additional or remedial instruction from teachers. These one-on-one learning settings allow

faculty to connect with their students in a more relaxed environment where the student can ask questions and communicate comfortably for better understanding. These circumstances may promote student and faculty connections.

In lab settings, skill demonstrations require students to work in close proximity with faculty, making connections more likely than in a lecture format (Brown, 2003 ; Loera, Nakamoto et al., 2013). A major part of the learning process in votech lab-based programs, involves instructors working with small groups of students, demonstrating skills. This direct interaction permits students to work with faculty, allowing them to ask questions as needed and facilitating circumstances where faculty can closely observe and correct newly learned behaviors as students perform them. The barriers created by formal classroom lecture structure are not present in the small group lab demonstrations, putting students and faculty in a more interconnected setting, encouraging conversation and interaction.

Connectedness and school staff. Students rely on college and university staff to help them with semester-to-semester and everyday requirements. Institution staff help students to establish their schedules, register for classes, obtain financial aid, and complete other requirements. There may be only casual contact between students and staff, or there may be connections formed that will help tie students to the institution and help them persist. College and university staff, from enrollment staff to financial aid staff to program assistants and managers, all provide opportunities for students to make connections that may make the difference between success and failure.

Researchers have studied school connectedness and its influence on student success. School connectedness has been referred to using terms such as, school bonding, school engagement, school belonging, school cohesion, class belonging and academic integration. Each

of these researchers examined school connectedness from various perspectives to measure the relationship between school connectedness and success. School connectedness research has shown that there is a relationship between connectedness and student success (Tinto, 2003).

In a study from the early nineteen-nineties, Goodenow examined adolescent junior high and middle school students and their perceived sense of school belonging. The purpose of the study was to validate a previously developed instrument and to predict at-risk students (1993). The completed instrument included 18 items which were selected by measuring internal validity using Cronbach's alpha. These items were selected from an original list of 42 items, then 28 items and finally the selected 18 after dropping items of low variability which detracted from the scale reliability. Goodenow postulated that students' successes in school are influenced by more than just their abilities and efforts. She indicates that their sense of belonging in the school setting has a substantial effect as well (1993).

Goodenow states that students' success in school is due not only to their abilities and efforts, but to their level of belonging in the school setting (1993) along with their relationships with their teachers, staff and peers. How accepted do these students feel? Do they perceive not only acceptance, but respect, inclusion and support by others in their school? These factors influence their ability to survive and thrive in the school setting.

Blum also determined that faculty were key in the school connectedness equation as they establish the culture within their classrooms. They posited that teachers can create an environment in their classrooms that promote school connectedness and counter student isolation. Consistent high behavior and academic expectations for all students, not just high

performing students, sends a message that all students are expected to succeed. Providing learning settings where autonomy is prevalent allows students to practice decision-making skills. Team exercises and cooperative learning has also shown to promote high levels of school connectedness. Such cooperative learning settings tend to break down barriers and reduce social isolation, helping to integrate students across gender, ability, and ethnic backgrounds. This research is encouraging for teachers, suggesting that they have control in improving school connectedness among their students.

Variables correlating with school connectedness. Students' relationships with teachers, staff and peers affect their perceived sense of belonging, motivation and ultimate outcomes in their classes. Researchers have found that throughout students' time in school, from elementary grades through college (Tinto, 1993), making connections and fitting in is critical to their performance and persistence. Social relationships in school are critical among contextual factors for positively affecting student performance and success (Goodenow, 1993). When students experience empathy and support in the school setting, that experience of support leads to a sense of belonging which leads to increased academic motivation and engagement (McNeely and Falci, 2004). These theories have been empirically supported for positive academic results (Connell and Wellborn, 1991).

Goodenow developed and tested her Psychological Sense of Student Membership Scale (PSSM) in order to measure sense of belonging within adolescents. These items are listed in the appendix of this document and share some commonalities with the items from the Noel-Levitz Student Satisfaction Inventory™ which was used to gather data in this proposed study. Goodenow focused on measuring students' sense of belonging in school and the Noel-Levitz

survey focuses students' self-reported level of importance and level of satisfaction with their experiences in community colleges. The Goodenow paper measured the construct validity of the PSSM and provided a correlational analysis of school membership and academic achievement. The results of the study supported construct validity and reliability across samples for the scale. The study's results also suggested that psychological membership may be a significant factor in school motivation, effort, participation and scholastic success (1993).

High strength of school connectedness at the university level has been shown to improve persistence and student success in similar ways as connectedness in middle and high school students. Wilson and Gore in an article entitled *An Attachment Model of University Connectedness* stated that, "Students with high levels of school connectedness have been found to be more likely to complete their degrees than are students with low levels of university connectedness (2013, p. 178)." Wilson and Gore believed that not enough attention had been paid in earlier literature, to college students and connectedness. They developed an attachment model for university students that examined college students' associations and relationships with their families and friends as well as their perceptions of the university environment and their connectedness to the university (2009). Connections to the university were examined by assessing faculty and peer interactions, and considered students' perceptions of faculty empathy, peer support, faculty support, and classroom comfort. Wilson and Gore state that connectedness to the university is a major contributor to student success (2009).

The 529 undergraduate students completed questionnaires to assess their perceptions of parental, peer, friend, and university characteristics which would help establish an attachment model. To measure school connectedness the authors adapted the Psychological Sense of School Membership Scale (Goodenow, 1993). They learned that attachment style with parents partially predicted attachment to peers and peer attachment styles partially predicted faculty and university attachment styles. Students' perception of attachments to those close to them earlier in life, helped predict attachment with the university and likely success in school.

Insecure attachment styles partially predicted insecure attachment to the university. Insecure attachment styles have been shown to have a negative effect on goal setting and completion (Elliot and Reis, 2003), the ability to ask for help from faculty (Larose, Bernier et al., 1999), the ability to be successfully mentored by a professor (Larose, Bernier et al., 2005), the ability to respond to an offer of help with academics from a professor (Perrine, Rose M. and King, 2004), and the amount of stress encountered by a student, resulting in a decision to drop out (Perrine, Rose, 2001). Wilson and Gore's findings (2013) suggested that students with insecure attachment styles were less connected to the institution, possibly leading to lower performance and dropping out. They recommend that universities promote connectedness by having those students who are identified as less connected, be involved in programs that may enhance their connectedness.

Blum and his colleagues (2005) convened an invitational conference, inviting researchers and individuals representing government, health care, and education to examine current findings

and best practices as they related to school connectedness and its effect on high school students' health and school success. They cited from research literature, three characteristics of schools that fostered school connectedness' they were, high academic standards along with teacher support, positive and respectful adult/student relationships, and a school environment that is safe emotionally and physically. From the literature, the team synthesized a set of core principles intended to guide schools about school connectedness and its effect on students.

Blum, et. al determined through literature research that school connectedness reduced the likelihood of emotional distress among high school students. School connectedness has been correlated with other mental health symptoms as well. General functioning, anxiety and depression have also been shown to be highly correlated (Shochet, Dadds et al., 2006). Current research focuses on adolescents in high school and middle school. Strength of school connectedness and its effect on emotional distress and other general mental health issues should also be examined in college students to learn what may be done to help that population.

Factors that Blum (2005) attributed to school connectedness included students feeling like they belong, believing that their teachers care about them, and how they learn, students believing that learning is important, having school friends, that discipline is administered fairly, and having opportunities to participate in extracurricular activities. They cited factors that threaten school connectedness, including social isolation, unsafe school environments, and poor classroom management (Bishop, Bishop et al., 2004). It is the teachers that create the structure that encourages students to grow within a healthy structure of cooperative learning and healthy decision making. The cooperative setting helps break down barriers and allows students to connect with other students, faculty, and the institution. These factors were determined to affect strength of school connectedness.

Considerable school connectedness and belongingness research has focused on middle and high school students. Freeman, et. al (2007) indicated that not enough research had been done with college populations and belongingness and its effect on academic motivation. Specifically, they examined potential relations between college students' sense of class belonging and of effective teaching characteristics. They also studied whether a sense of belonging in one class affected an overall sense of university belonging. In their research Freeman et. al (2007), looked at three questions as they related to college freshman and their sense of belonging the class level and at the university level. They compared motivational indicators, such as, intrinsic motivation, self-efficacy, and task value, to the students' subjective sense of belonging. Additionally, they compared class belonging and student perceptions of instructor characteristics. Finally, they explored the relationship of class belonging to a general sense of school belonging. The focus on younger students laid groundwork for research in higher education connectedness.

Although they were not able to make any conclusions about the causal effect between effects of belongingness and academic motivation, Freeman et. al (2007) posited that both were positively affected by effective instruction. Their findings indicated that college freshman were similar to younger adolescents as they relate to academic motivation and belongingness needs. They determined that psychological sense of belonging was significantly related to academic motivation in early college freshman. They determined that students' sense of belonging in a single class were related to their sense of school belonging.

Freeman et. al (2007) indicated that a combination of academic and social factors may stimulate a sense of belonging and ultimately improve academic motivation. Students who felt a

sense of belonging in a particular class, reported positive motivation about that class and they indicated that they felt more confident about their abilities to succeed in that class. They found that students' social acceptance was a positive predictor of their sense of university-level belonging and that their perceptions of faculty caring also contributed to their strength of university belonging. They concluded that students' sense of social acceptance by their peers and school personnel, might be the most important variable in their sense of belonging.

School connectedness with the institution, specifically the college or university, may be referred to as university belonging. University belonging—a strong affiliation with the institution, may be linked to better social adjustment. Wilson and Gore found that students who used support services were more likely to integrate into the campus community and therefore were more likely to have higher levels of social adjustment (2013). Support services were those created by the university to help meet the needs of students in areas of counseling, fitness and health, student life, and tutoring. Wilson and Gore indicated that the more students interacted with personnel and other students in these support areas, the more social interaction they required and the more likely they were to be socially adjusted.

In a longitudinal study, Pittman and Richmond (2007) examined the relationship between university belonging and adjustment to college in 79 college freshman in an attempt to learn what may be done to help them better adjust to college life. To measure university belonging, they adapted the Psychological Sense of School Membership Scale (PSSM) (Goodenow, 1993) for use with college students. To measure peer relationships, they utilized the Inventory of Parent and Peer Attachment (Armsden and Greenberg, 1987). They assessed student scholastic competence, social acceptance, and self-worth by self-report, using the 54-item Self-Perception Profile for College Students (Neemann and Harter, 1986). Problem behaviors were measured

utilizing the Adult Self-Report (ASR) (Achenbach and Rescorla, 2003). Pittman and Richmond's (2007) findings were similar to past studies with younger students, indicating that a sense of university belonging is linked to positive self-perceptions of social acceptance and scholastic competence. Additionally, students who had positive changes in sense of university belonging, also had lower levels of internalizing problem behaviors. Pittman and Richmond reported that their findings suggest that sense of belonging was associated with students' feelings rather than specific behaviors (2007). They suggest that university administrators look for ways to improve first-year student sense of belonging and look for ways to help them build friendships. A stronger sense of university belonging along with more positive friendships, their research suggests, could enhance first semester experiences.

Research literature has shown a positive correlation between school connectedness and persistence (Sorey and Duggan, 2008). Students with higher levels of school connectedness are more likely to complete a credential such as a certificate or a degree (Wilson and Gore, 2013). Higher levels of school connectedness often leads to better student performance and higher completion rates (Tinto, 1975).

Connected and engaged students have been shown to perform better on tasks and assignments and are more likely to be successful in school (Blum, 2005) as well as possessing higher levels of motivation (Freeman, Tierra M., Anderman Lynley H., Jensen Jane M., 2007). According to Goodenow (1993, p. 80), "Students' classroom engagement, academic effort, and subsequent success or failure are influenced not only by individual differences in skills, abilities, and predispositions, but also by situational and contextual factors." She cites being accepted and students' sense of belonging as being contributing factors in motivation, effort, participation, and achievement. School connectedness positively affects student performance in school.

Much research has already been done to analyze school connectedness and its relationship with student performance and persistence (Goodenow, 1993 ; Libbey, 2004 ; Rovai, Wighting et al., 2005). Research has shown that students who are connected to the institution, to other students, and to faculty and staff, have greater success in school performance, persistence, and completion (Goodenow, 1993). When students persist and complete credentials—certificates and degrees, and they perform better in their classes and programs, they win (U.S. Census Bureau, 2012). Connected, successful students tend to reach their academic and professional goals (Blum, 2005). Reaching academic and professional goals provides the individual and their families with more opportunities to earn and thrive in society (The National Commission on Community Colleges, 2008). Their employers benefit from having educated, higher performing employees (Trostel, 2010). Communities benefit from having satisfied employers that pay taxes and support the community (2010). Strength of school connectedness is related to positive results for all concerned.

Justification

With a clear definition of school connectedness and close look at what other researchers have examined, it is apparent that there is more room for an examination of school connectedness and its potential effects on student success in higher education. Research has shown that school connectedness has an effect on persistence and completion. Researchers have looked at students ranging in age from elementary school through graduate school. This study proposes to examine a group not yet looked at—older than traditional age community college students in votech and CTE programs and compare their perceived strength of school

connectedness with their non-votech traditional age community college counterparts. The results may help community college administration and faculty to help either or both groups by understanding more about them and their strength of school connectedness.

CHAPTER III

METHODOLOGY

This chapter focuses on procedures that guided this study. This chapter describes participants, instruments, data collection and data analysis.

Research Questions

The questions that guided this study are as follows:

1. Is there a significant difference in perceived strength of school connectedness between vocational/technical students and associate degree students in a community college?
2. Is there a significant difference in perceived strength of school connectedness between older, nontraditional age community college students and traditional age community college students?

1. H₀: There is no statistically significant difference in perceived strength of school connectedness among vocational/technical community college students as compared to associate degree students.
2. H₁: There is a statistically significant difference in perceived strength of school connectedness among vocational technical community college students as compared to associate degree students.
3. H₀: There is no statistically significant difference in perceived strength of school connectedness among older, nontraditional age community college students as compared to traditional age students.
4. H₁: There is a statistically significant difference in perceived strength of school connectedness among older, nontraditional age community college students as compared to traditional age students.

Participants

Archival data was used for the quantitative portion of this study. The responses from 11,173 community college students from 22 community colleges across the United States were examined. Eleven small (less than 5,000 enrolled), seven medium (5,000 – 14,999) and four large (15,000 or greater) community colleges are included in the sample. Half of the students responding were from urban settings and half from rural settings. Included in the sample are 12,235 respondents who listed associate degree as their educational goal and 1,027 who listed vocational/technical as their educational goal. Of this total, 9,592 are female and 3,633 are male. The sample includes 4,428 aged 18 and under and 8,772 aged 25 and older. Self-reported ethnicity for the sample includes 1,216 African-American, 195 American Indian or Alaska

Native, 404 Asian or Pacific Islander, 9,895 Caucasian/White, 750 Hispanic, 222 Other and 484 Preferred not to respond.

Operational Definitions of Independent and Dependent Variables

This study measured perceived strength of school connectedness between four groups using community college student satisfaction instrument. Specifically, the study measured students' perceived strength of school connectedness by quantitatively examining data from the satisfaction instrument, comparing older, nontraditional age students versus younger students, votech students versus associate's degree seeking students, and older votech students versus younger associate's degree students. The study also examined whether nontraditional age votech students differentially rate the categories of *campus climate*, *concern for the individual* and *student centeredness*.

Survey Instrument

According to the Noel-Levitz Student Satisfaction Inventory Interpretive Guide:

The Noel-Levitz Student Satisfaction Inventory (SSI) is focused on community college students, allowing schools to learn levels of satisfaction among their student population. Of the 70 Likert scale items on the SSI, students respond to how important each item is to them and their level of satisfaction at their community college. The Student Satisfaction Inventory is a very reliable instrument. Both the two-year and four-year versions of the SSI show exceptionally high internal reliability. Cronbach's coefficient alpha is .97 for the set of importance scores and is .98 for the set of satisfaction scores. It also demonstrates good score reliability over time; the three-week, test-retest reliability coefficient is .85 for importance scores and .84 for satisfaction scores. There is also evidence to support the validity of the Student Satisfaction Inventory. Convergent validity was assessed by correlating satisfaction scores from the SSI with satisfaction scores from the College Student Satisfaction Questionnaire (CSSQ), another statistically reliable satisfaction instrument. The Pearson correlation between

these two instruments ($r = .71$; $p < .00001$) is high enough to indicate that the SSI's satisfaction scores measure the same satisfaction construct as the CSSQ's scores, and yet the correlation is low enough to indicate that there are distinct differences between the two instruments (Noel-Levitz, 2014, p. 6). The instrument was administered in the spring of 2009, 2010, or 2011.

For the purposes of this study, the following subscales were used:

- **Campus Climate:** Assesses the extent to which your institution provides experiences that promote a sense of campus pride and feelings of belonging. This scale also assesses the effectiveness of your institution's channels of communication for students.
- **Concern for the Individual:** Assesses your institution's commitment to treating each student as an individual. Those groups who frequently deal with students on a personal level (e.g., faculty, advisors, etc.) are included in this assessment.
- **Student Centeredness:** Assesses your campus's efforts to convey to students that they are important to your institution. This scale measures the extent to which students feel welcome and valued. The items which contribute to each scale can be reviewed within your campus report. The HTML electronic report includes the items within the scales on the scale report; when you select the scale name it will expand to show the items. In the paper report, there is a section which provides the scales alphabetically and the list of items within the scale (Noel-Levitz, 2014).

Independent Variables

The independent variables for this study are age and program type. The terms *votech* and *career and technical education* (CTE) are used interchangeably and refer to college programs where students learn both knowledge and skills which tend to lead directly to employment in careers with technical skills (Hirschy, 2011). *Nontraditional age* refers to students 25 and older (Kasworm, 2010).

Dependent Variable

Perceived strength of school connectedness is the dependent variable. Sixteen Likert scaled items from the subscales, campus climate, concern for the individual, and student centeredness were utilized. These scales were selected based upon their comparative validity with respect to the Goodenow *Psychological Sense of Belonging Scale*. Students responded from 1, not satisfied at all to 7, very satisfied. A total combined score of the 16 items indicated their perceived strength of school connectedness, with a score of 112 being the highest possible

Controls

The demographic information used for the predictor variables follows commonly used descriptors, but is described in detail here. *Age* has been divided into two categories. In SPSS, age is coded as either 1 or 2. The numeral 1 indicates students aged 24 and younger, and 2 indicates those students who are 25 and older. In SPSS, *gender* is coded as 1 or 2. Numeral 1 indicates female and 2 indicates male. In SPSS, the variable, *school choice* is coded 1, 2, or 3, and indicates whether the institutions the students attended was their first (1), second (2), or third (3) choice. In SPSS, *Educational goal* is coded 1, or 2 and indicates whether the students identified themselves as seeking an associate degree (1) or a vocational/technical program (2).

In SPSS, *Grade Point Average* (GPA) is coded 1- 6 and is designated as (1) no credits earned; (2) 1.99 or below; (3) 2.0 – 2.49; (4) 2.5 – 2.99; (5) 3.0 – 3.49; and (6) 3.5 or above. In SPSS, *Employment* is coded 1 – 5 and is indicated by (1) full-time off campus; (2) part-time off campus; (3) full-time on campus; (4) part-time on campus; and (5) not employed. In SPSS, the category, *race*, is coded 1 – 7. One (1) is African-American; (2) American Indian or Alaskan Native; (3) Asian or Pacific Islander; (4) Caucasian/White; (5) Hispanic; (6) Other; and (7) prefer not to respond.

Table 1

Noel-Levitz Survey Items Categorized by Scale

Item	Campus climate	Concern for the individual	Student centeredness
1. Most students feel a sense of belonging here.	x		x
2. Faculty care about me as an individual.	x	x	
16. The college shows concern for students as individuals.	x	x	x
22. People on this campus respect and are supportive of each other.	x		
27. The campus staff are caring and helpful.	x		
28. It is an enjoyable experience to be a student on this campus.	x		x
29. Faculty are fair and unbiased in their treatment of individual students.		x	
31. The campus is safe and secure for all students.	x		
36. Students are made to feel welcome here.	x		x
44. I generally know what's happening on campus.	x		
48. Counseling staff care about students as individuals.		x	
52. This school does whatever it can to help me reach my educational goals.	x		
57. Administrators are approachable to students	x		x
59. New student orientation services help students adjust to college.	x		
63. I seldom get the "run around" when seeking information on this campus.	x		
67. Channels for expressing student complaints are readily available.	x		

Data Analysis

For research question number one, a multiple regression analysis was used to determine whether there is a significant difference in perceived strength of school connectedness between older, nontraditional age community college students and traditional age community college students and whether there is a significant difference in perceived strength of school connectedness between vocational/technical students and associate degree students in a community college. A group identified as aged 25 and older, considered nontraditional age, was compared with students identified as under the age of 25. This measured whether there is a statistically significant difference in the total school connectedness scores for the two groups of community college students. The second groups are comprised of associate degree-seeking students and votech.

Justification

Much research has been done relating to persistence in college students and community college students also. Research has also been done in school connectedness, showing a positive correlation between high strength of school connectedness and persistence. What has not been researched is specific populations of community college students—specifically older, nontraditional age students and students in vocational/technical programs. These students have unique circumstances that may contribute to the strength of school connectedness and therefore persistence.

CHAPTER IV

RESULTS

Following the previously discussed methods of quantitative analysis, this chapter shows the results of the data analysis from the community college student satisfaction survey instrument and displays those findings in both narrative and table formats.

Descriptive Statistics

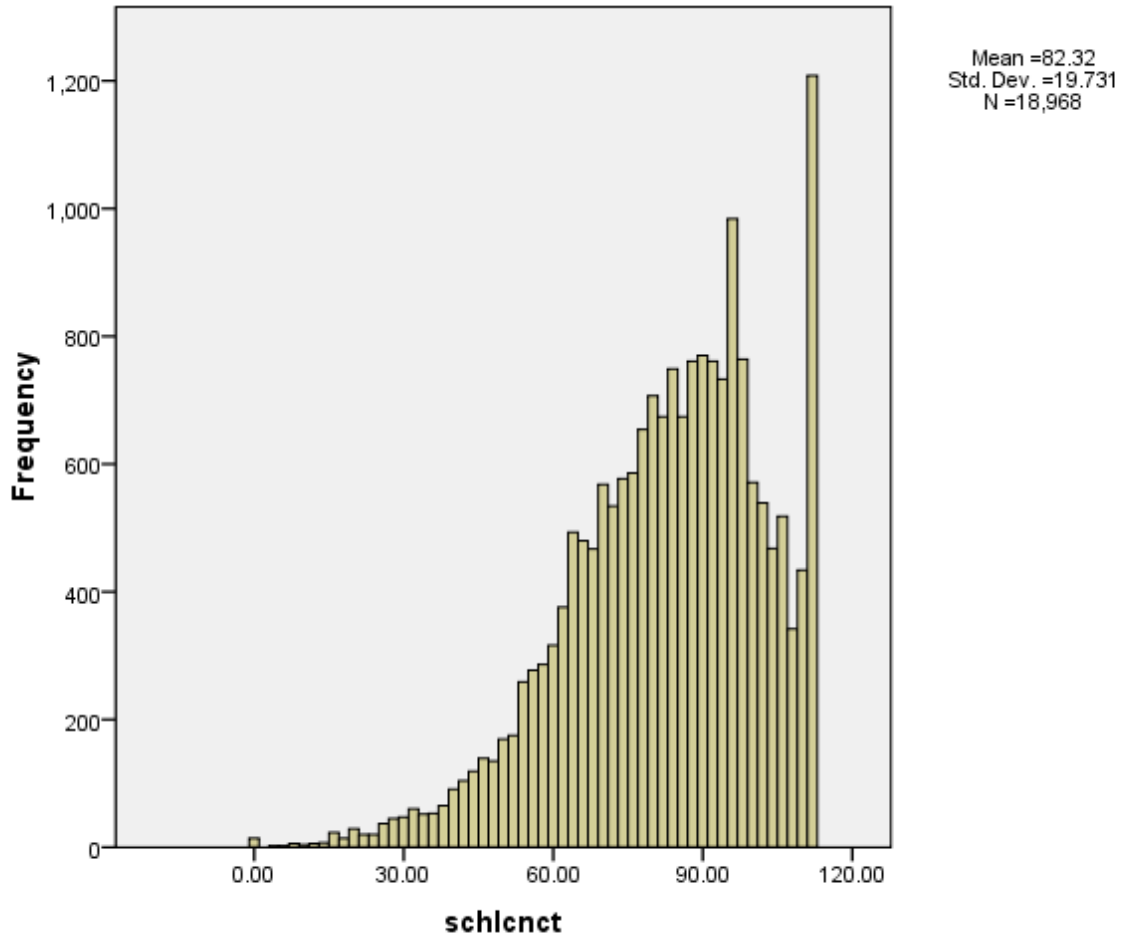
The demographic information used for the predictor variables follows commonly used descriptors, but is described in detail here. *Age* has been divided into two categories. In SPSS, age is coded as either 1 or 2. The numeral 1 indicates students aged 24 and younger, and 2 indicates those students who are 25 and older. *Gender* is coded as 1 or 2. Numeral 1 indicates female and 2 indicates male. The variable, *school choice* is coded 1, 2, or 3, and indicates whether the institutions the students attended was their first (1), second (2), or third (3) choice. *Educational goal* is coded 1, or 2 and indicates whether the students identified themselves as seeking an associate degree (1) or a vocational/technical program (2). *Grade Point Average* (GPA) is coded 1- 6 and is designated as (1) no credits earned; (2) 1.99 or below; (3) 2.0 – 2.49; (4) 2.5 – 2.99; (5) 3.0 – 3.49; and (6) 3.5 or above. *Employment* is coded 1 – 5 and is indicated

by (1) full-time off campus; (2) part-time off campus; (3) full-time on campus; (4) part-time on campus; and (5) not employed. The category, *race*, is coded 1 – 7. One (1) is African-American; (2) American Indian or Alaskan Native; (3) Asian or Pacific Islander; (4) Caucasian/White; (5) Hispanic; (6) Other; and (7) prefer not to respond.

There were a total of 13,225 valid student responses from the student satisfaction survey. Of the students responding to this satisfaction survey, 4,428 (33.5%) were 24 and younger, 8,772 (66.5%) were 25 and older. The age breakdown of this population is consistent with national community college enrollment trends (American Association of Community Colleges, 2016). In the gender category, there were 9,852 females (72.5%) and 3,633 males (27.5%) which is consistent with national community college enrollment trends (2016). Under school choice, 10,700 (81.3%) listed their school as their first choice, 2,013 (15.3%) as their second choice, and 450 (3.4%) as their third choice or lower. In the educational goal category, 12,235 (92.3%) were *associate degree* students, 1,027 (7.7%) *vocational/technical program* students. In the GPA category, 866 (5.1%) had *no credits earned*, 226 (1.7%) were 1.99 or below, 941 (7.2%) 2.0 – 2.9, 2,162 (16.6%) 2.5 – 2.99, 3,962 (30.4%) 3.0 – 3.49, 5,072 (38.9%) were 3.5 or above. Regarding employment status, 3,992 (30.4%) worked full-time off campus, 3,956 (30.1%) worked part-time off campus, 179 (1.4%) worked full-time on campus, 577 (4.4%) worked part-time on campus, and 4,447 (33.9%) were not employed. There were 1,216 (9.2%) African-Americans, 195 (1.5%) American Indian or Alaskan Native, 404 (3.1%) Asian or Pacific Islander, 9,985 (75.2%) Caucasian/White, 750 (5.7%) Hispanic, 222 (1.7%) Other, and 484 (3.7%) preferred not to respond. The vast majority of students are in the Caucasian/White category, which is consistent with national community college enrollment trends (2016).

Chart 1

Reported Frequency of School Connectedness Histogram



The distribution curve for the strength of school connectedness in the sample for this study showed a basically normal distribution in Chart 1. The -6.77 skewness statistic illustrates this, although there was a large group of students who rated school connectedness at the highest possible level. The -6.77 statistic is deemed small, indicating a normal distribution (Cohen and Cohen, 1983).

Correlations among the predictor variables are presented in table 2. GPA shows the lowest correlation of .006 with school connectedness and school choice shows the highest correlation of -.178 with school connectedness. Age was determined to have a relationship of -.219 with school choice. School connectedness correlates significantly with educational goal (-.020), with age (-.044), with employment (.077), with school choice (-.178), and with race (-.053). Gender significantly correlates with educational goal (.044), with age (-.028), with employment (.016), and with race (.048). Educational goal significantly correlates with school choice (-.019), and with race (.026). Age significantly correlates with school choice (-.219), with GPA (.097), and with race (-.050). Employment significantly correlates with school choice (-.022). School choice significantly correlates with GPA (-.053) and with race (-.033). GPA significantly correlates with race (.112). These correlations indicate that this dataset meets the assumption for multicollinearity.

Table 2

Correlations

	School Connectedness	Gender	Ed. goal	Age	Employment	School choice	GPA	Race	
Pearson Correlation	schlcnc	1.00	-.001	-.020*	-.044*	.077*	-.178*	.006	-.053*
	Gender	1.000	.044*	-.028*	.016	-.005	-.008	.048*	
	Ed. goal		1.000	.002	.013	-.019*	-.014	.026*	
	Age			1.000	.020*	-.219*	.097*	-.050*	
	Employment				1.000	-.022*	-.015	-.004	
	School choice					1.000	-.053*	-.033*	
	GPA						1.000	.112*	
	Race							1.000	

*Indicates variables with significant correlations

Results of Regression Analysis

Table 3 presents the Model Summary. The Model Summary table presents the percentage of school connectedness that is explained by the variables included in the model. The variables include: gender, educational goal, age, employment, school choice, GPA, and race. The R square value indicates that the model accounts for 4.9% of variance in school connectedness.

Table 3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.222 ^a	.049	.049	18.85713

Table 4 presents the ANOVA results which indicates the overall model is significant.

Table 4

ANOVA

Model	Sum of Squares	df	Mean square	F	Sig
Regression	205851.126	7	29407.304	82.700	.000
Residual	3970176.212	11165	3355.591		
Total	4176027.338	11172			

Table 5 is the Coefficients table. For research question one, the unstandardized coefficients give a measure of the difference in school connectedness between votech students and associate degree student. The unstandardized coefficient for educational goal is -1.667 ($p < .05$) which indicates a significant difference in school connectedness between votech and associates degree students. Associate degree students are significantly more connected than votech students (see Table 10). This yields an effect size of 0.03, which can be considered small. For research question two, the unstandardized coefficient gives a measure of the difference in school connectedness between older, nontraditional age students and traditional age students. The unstandardized coefficient is -3.836 ($p < .05$) which indicates a significant difference in school connectedness between older, nontraditional age students and traditional age students. Traditional age students are significantly more connected than traditional age students (see Table 7). This yields an effect size of 0.24, which is considered a small effect size.

Table 5
Coefficients

Model	Unstandardized		Standardized		
	B	Std. Error	Beta	t	Sig
1 (Constant)	102.863	1.536		66.976	.000
Gender	-.084	.400	-.002	-1.575	.115
Ed. goal	-1.667	.670	-.023	-2.486	.013
Age	-3.836	.389	-.094	-9.862	.000
Employment	.856	.106	.075	8.110	.000
School choice	-7.837	.374	-.199	-20.973	.000
GPA	.184	.136	.013	1.356	.175
Race	-1.104	.124	-.065	-.867	.000

A number of other significant differences emerged among categorical variables that were not part of the original analysis, including: employment, school choice, and race. Mean values of school connectedness for each category are presented in Tables 8, 11, and 12.

The mean for gender 1 (female) is 83.91. The mean for gender 2 (male) is 83.80.

Table 6

School Connectedness/Gender

Gender	Mean	Std. Deviation
1	83.91	19.43
2	83.80	19.30

The mean for age 1 (under 25) is 85.05. The mean for age 2 (25 and older) is 83.28.

Table 7

School Connectedness/Age

Age	Mean	Std. Deviation
1	85.05	19.06
2	83.28	19.54

The mean for race 1 (African-American) is 86.18. The mean for race 2 (American Indian or Alaskan Native) is 88.31. The mean for race 3 (Asian or Pacific Islander) is 83.47. The mean for race 4 (Caucasian/White) is 83.69. The mean for race 5 (Hispanic) 87.60. The mean for race 6 (Other) is 83.62. The mean for race 7 (Prefer not to respond) is 76.75.

Table 8

School Connectedness/Race

Race	Mean	Std. Deviation
1	86.18	20.09
2	88.31	20.45
3	83.47	18.61
4	83.69	19.19
5	87.60	18.50
6	83.62	20.82
7	76.75	20.55

The mean for GPA 1 (No credits earned) is 82.95. The mean for GPA 2 (1.99 or below) is 82.72. The mean for GPA 3 (2.0 – 2.49) is 84.02. The mean for GPA 4 (2.5 – 2.99) is 84.11. The mean for GPA 5 (3.0 – 3.49) is 84.17. The mean for GPA 6 (3.5 or above) is 83.78.

Table 9

School Connectedness/GPA

GPA	Mean	Std. Deviation
1	82.95	20.23
2	82.72	23.00
3	84.02	21.35
4	84.11	20.14
5	84.17	19.14
6	83.78	18.58

The mean for educational goal 1 (Associate Degree) is 83.98. The mean for educational goal 2 (Vocational/technical program) is 82.54.

Table 10

School Connectedness/Educational Goal

Ed. Goal	Mean	Std. Deviation
1	83.98	19.37
2	82.54	19.67

The mean for school choice 1 (1st choice) is 85.45. The mean for school choice 2 (2nd choice) is 78.81. The mean for school choice 3 (3rd choice or lower) is 70.42.

Table 11

School Connectedness/School Choice

School Choice	Mean	Std. Deviation
1	85.45	18.72
2	78.81	19.47
3	70.42	24.31

The mean for Employment 1 (Full-time off campus) is 80.87. The mean for employment 2 (Part-time off campus) is 83.50. The mean for employment 3 (Full-time on campus) is 86.40. The mean for employment 4 (Part-time on campus) is 87.81. The mean for employment 5 (Not employed) is 85.34.

Table 12

School Connectedness/Employment

Employment	Mean	Std. Deviation
1	81.87	20.69
2	83.50	18.76
3	86.40	17.86
4	87.81	17.48
5	85.34	18.93

CHAPTER V

INTRODUCTION

It was determined that it was important to examine a population of older, nontraditional age votech students because as graduates they play a vital role in our community as workers who support our economy with service work that is important to the community. Prior research has already shown a strong relationship between school connectedness, persistence, and success in school (Goodenow, 1993). Little is known about votech students and older, nontraditional age students in community colleges. Using data collected from a community college student satisfaction survey instrument, the study measured students' perceived strength of school connectedness, comparing older, nontraditional age students versus younger students and votech students versus associate's degree seeking students.

Strength of school connectedness was measured by examining item responses of students on the Noel-Levitz Student Satisfaction Survey™ where students indicated the importance of items relating to school connectedness and how well they believed their community college performed on these items. To help examine the population, the study employed the following research questions:

1. Is there a significant difference in perceived strength of school connectedness between being a vocational/technical (votech) student and being an associate degree student in a community college?
2. Is there a significant difference in perceived strength of school connectedness between older, nontraditional age students and traditional age students in a community college?

The results indicated that both age and program type were significant predictors of strength of school connectedness among community college students.

Interpretation of the Findings

When examining the data it was determined that associate degree-seeking students were significantly more connected than votech students (see Table 10). One explanation for the difference in mean school connectedness scores between associate degree students and votech students, is the separation of votech students from the rest of the student body while students are taking their major coursework.

Often, votech programs require specialized equipment that may be housed in separate buildings. Automotive technology students, for example, are involved in working with noisy vehicles and equipment that may not be welcome in an academic environment. Segregating those activities and students are necessary to prevent distractions and circumstances that would hinder learning. The end result of this segregation is lower strength of school connectedness.

Associate degree students are potentially more involved with college activities, especially when they are a part of the general population, further enhancing connectedness. Community colleges offer engaging activities for students that are specifically designed to promote school

connectedness. Since votech students are in a separate building, they are less likely to participate in those activities and therefore be less connected.

After examining the data it was determined that traditional age students were significantly more connected than older, nontraditional age students (see Table 7). One explanation for this difference is that younger students are beginning a new chapter after high school and separating themselves from family for a new direction. Their need for autonomy causes them to seek to be part of the new group—the college community. As they become more involved, they form bonds with school friends, faculty, and staff at the college. They continue to strengthen school connectedness as they progress and evolve in college life. Older students have already established themselves in other communities. They are involved with careers and with their families. As a result, these older students have less need to connect with the college community. Younger students may fit in the college culture more than older students because colleges have traditionally been established for the 18 to 24 year-old group. Younger students may have recently graduated from high school and are in the school mode of their lives. They may even be attending college with their peers with whom they attended high school. Ely describes the non-traditional student and explains that their many personal responsibilities and rigid schedules, allow them to be on campus only to attend classes, use the library, and conduct research (1997). The combination of less need for school connections and less time to establish them, may account for lower school connectedness than younger students.

Another consideration as to why younger students are more connected, is that they have more time. They are less likely to have families, full-time jobs, and homes that require large amounts of their time. Older students must split their time resources between class time and

family, work, and home life. Practical life demands preclude older students from spending additional time on campus with friends, faculty, and staff.

After running a multiple regression using the data from the student satisfaction survey, it was determined that there were several substantial predictor variables which would help predict school connectedness in community college students. Beginning with the means tables, it is determined that gender and GPA are not significant predictors of school connectedness. The maximum school connectedness score was determined by multiplying the highest score on the Likert scale (7) by the number of items used to measure school connectedness (16). $7 \times 16 = 112$. Mean scores for the 9,852 females who responded was 83.91 with a standard deviation of 19.43. The 3,633 males had a mean score of 83.80 and a standard deviation of 19.30. With a mean difference of only .11 between genders and a Sig of .834, gender is not a significant predictor of school connectedness.

The variable, age, has a Sig value of .000 and is a significant predictor of school connectedness and was originally hypothesized to be a strong predictor at the start of this research project. Age was divided into two categories, the value 1 was assigned to respondents under 25 and the value 2 was assigned to those 25 and older. The mean score for those under 25 is 85.05 with a standard deviation of 19.06. The group aged 25 and older has a mean score of 83.28 and standard deviation of 19.54. The mean of 85.05 would indicate that the younger group is more connected than the older group with a mean of 83.28.

A large percentage of community college students work while attending college. In fact, 84% of community college students work, and 60% work more than 20 hours per week (Mullin, 2012). Examining the predictor variable, *employment*, it is interesting to note that students working part-time on campus are significantly more connected than those in other groups. So,

although they work, this group of students works at the community college they attend. In the survey instrument, respondents were asked their employment status and selected from, full-time off campus, part-time off campus, full-time on campus, part-time on campus, or not employed. The least connectedness score was for the students working part-time off campus and the highest part-time on campus. The second highest connectedness score was for those students working full-time on campus. Students working on campus have the highest scores of all the groups. Perhaps their additional time on campus affects their connectedness. They may feel a greater sense of affiliation with the institution because of their employment there. Those working part-time have a higher score than full-time employees and that may be due to the fact that they see themselves more as students than as college employees. They may view their affiliation as employees as important, yet temporary. Students who were not employed had the third highest connectedness score, following full-time on campus-employed students. Students who were not employed may have a stronger bond with fellow students, faculty, and staff because they have no other connections to an employer and coworkers. They may spend more time at school before and after classes because they do not have to go to work. Their bond with school becomes more important because it becomes an integral part of their lives, fulfilling their need for connectedness and integration. The least school connected group, those working part-time off campus, are perhaps less connected to others at their school because they still have work commitments, but not at the school. Their work may fill needs for affiliation, making school connections less necessary. Employment is a significant predictor of school connectedness among community college students.

The variable, school choice is a significant predictor of school connectedness and actually showed the highest variation in mean scores. Respondents selected one, two or three, to indicate whether the institution they were currently attending was their first, second, or third (or higher) choice when selecting a community college to attend. Those students who attended their first choice school had the highest school connectedness, with a mean score of 85.45 and those who selected 3 had a significantly lower mean score of 70.42. Students attending their first choice school would predictably be more connected than those who planned to attend another school and could not for various reasons. If a student attends a school because it is ‘the only one they could get into, they may feel resentment toward the other schools they could not attend and may even feel resentment toward the school they now attend. Making connections with other students, faculty, and staff becomes unimportant and they score lower on the school connectedness scale.

Implications of the Findings

This study sought to learn about the strength of school connectedness among older and younger community college students and among associate degree students as compared to vocational/technical students. Earlier research already has made connections between school connectedness and success in higher education. The newfound knowledge learned in this study that younger students are more connected and associate degree students are more connected than vocational/technical students, may help college faculty, administrators, and staff in their efforts to help all their students succeed.

Three considerations to help connect older, nontraditional age votech students are, streamlining the educational process, changing their perspective and orientation to the college, and providing enlightened staff resources. Older students in a votech program may benefit from

a process that saves them time, from registration through attending classes. A focused first year experience class would help students know what to do and when. Older votech students are as much a college student as are younger students in an associate degree program, but they may identify themselves by their program more than being a college student. Reinforcing their status as a college student, rather than by specific program would help orient them and strengthen their perspective. The individual program or counseling staff needs an individual who understands the unique needs of the older votech student. This person should be able to help them develop a workable plan to connect and succeed.

Limitations of the Study

Every attempt was made to analyze data from a large sample in order to determine what variables would predict school connectedness among community college students. A multiple regression was run, including all available demographic variables in order to effectively eliminate confounding variables for the most accurate results attainable. All research studies and analyses have limitations even with the most rigorous attempts to avoid them. This study used data from a tried and tested student satisfaction instrument, but since the information was self-reported, there are possibilities the respondents could make errors when completing the instrument. The instrument did not allow respondents to report which specific program in which they were enrolled, only associate degree or vocational/technical. Having the ability to further delineate responses by program area may have allowed a finer analysis and may have revealed more about school connectedness among various community college students.

Quantitative studies allow researchers to analyze data, allowing them to reach conclusions about a situation or population. A mixed methods phenomenological study would have allowed respondents to describe their school connectedness issues as they described their

connectedness specifics with other students, faculty, and staff. This quantitative study allowed analysis of the *what* without the ability to learn *why*. The quantitative approach without a qualitative component was a limiting factor of this study.

Other limitations to the study, include the fact that there are many other considerations of school connectedness factors. Personality of the individual student may play a major factor in how connected the student may become in their time in a school or program. Introverted students may choose to isolate themselves and not interact with faculty, other students, and staff. Student personality may preclude individuals from allowing others to connect with them, limiting their connectedness and potentially their school success.

Another potential factor which may affect school connectedness is the culture in the program or school along with the personalities and skills of faculty, staff and other students. If the culture of the school is one of acceptance and inclusiveness, faculty and staff may be more likely to reach out to make connections and help students to make connections. A culture or climate that discourages faculty/student interaction, may also lower strength of school connectedness.

Matching a student with a school or program or matching a student with a faculty member, may help student connectedness. Such a match is very difficult to purposely happen since students end up in a program with a professor in a program, without much opportunity to deliberately match. Students may select their faculty in some of their classes, based on input from other students, but the match process is more by chance than by design. Even so, a good match between student and faculty, institution, and staff, may contribute to school connectedness.

Future Research

The dataset used for this study was from a large sample of nearly 22,000 respondents. That large sample proved to reveal significance in all but two of the predictor variables. The large dataset proved useful, but had limitations. What was helpful about the dataset was that it was obtained from 22 community colleges, rather than merely a few sources. The demographics reported and collected were very useful in the analysis as the researcher identified significant predictors of school connectedness. One area of the demographics that may have proven useful in this study, would be if the vocational/technical students would have been identified by program, rather than just the large heading, vocational/technical. As stated earlier in this document, the vocational/technical category is vast and varied. Having the ability to examine differences between votech programs may have revealed more than merely comparing students from that broad category with those from associate degree students.

Additionally, for future research, a qualitative study using interviews may have revealed more about school connectedness within a particular program and its students. A phenomenological study would give insight into the experiences of the students as they pertain to school connectedness. Those revelations might allow for program changes that would improve school connectedness for all students, and particularly for populations of students exhibiting low strength of school connectedness. This study originally intended to examine strength of school connectedness between traditional age and nontraditional age students and between vocational/technical students and associate degree-seeking students. The data analysis showed that there are indeed differences between those groups, but failed to give insight as to why. Knowing why younger students are more connected, might help faculty, staff, and administrators improve school connectedness among nontraditional age students. More attention may need to

be paid to those older students to help them connect to faculty, staff, and the institution. Additionally, this study showed higher strength of school connectedness among associated degree students compared to vocational/technical students. A phenomenological approach may uncover the reasons why. The nature of qualitative research is better suited to answering the whys than quantitative studies.

More research needs to be done to determine whether these students who scored higher school connectedness scores, actually achieved their goals and earned program credentials. A longitudinal study would employ the same instrument used in this study and then track student progress to determine if they graduated or earned certificates.

Students who are less connected are less likely to complete. There are high costs associated with failing to complete—high costs to the students, to the institution, and to the community. Individual students are adversely affected by not completing. They pay for tuition without the benefit of higher wages from earning a degree or certificate. Many community colleges are funded based on student completion—certificates or degrees (Zarkesh and Beas, 2004 ; Polatajko, 2011). Funding is reduced when students do not complete. The community is negatively affected when students fail to complete, because of a less skilled workforce and less revenue from their income tax. Learning more about strength of school connectedness as it relates to persistence and completion may help institutions provide the necessary support or interventions that may increase school connectedness and persistence. Examining this large group of older than traditional age votech students in community colleges may provide answers.

School connectedness has been shown to have a strong correlation to student success, whether it is success as in persistence and completion, or success as in grades and performance in class and lab settings. Determining how to improve connectedness between students and

students, or between students and faculty and staff, is a worthwhile endeavor. Helping students to connect and succeed is why any college employees should come to work each day. Students are the reason we are all there. Student connectedness has proven to lead to success. That is reason enough to pursue the topic.

APPENDIX

Goodenow's Psychological Sense of Belonging Scale items (PSSM)

1. I feel like a real part of (name of school).
2. People here notice when I'm good at something.
3. It is hard for people like me to be accepted here. (reversed)
4. Other students in this school take my opinions seriously.
5. Most teachers at (name of school) are interested in me.
6. Sometimes I feel like I don't belong here. (reversed)
7. There's at least one teacher or adult in this school I can talk to if I have a problem.
8. People at this school are friendly to me.
9. Teachers here are not interested in people like me. (reversed)
10. I am included in lots of activities at (name of school)
11. I am treated with as much respect as other students.
12. I feel very different from most other students here. (reversed)
13. I can really be myself at this school.
14. The teachers here respect me.
15. People here know I can do good work.
16. I wish I were in a different school. (reversed)
17. I feel proud of belonging to (name of school).
18. Other students here like me the way I am.

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