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# FACTORS CONTRIBUTING TO STUDENT PERSISTENCE AT TENNESSEE TECHNICAL COLLEGES

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# FACTORS CONTRIBUTING TO STUDENT PERSISTENCE AT TENNESSEE TECHNICAL COLLEGES

by

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## Dedication

I dedicate this work to my wife, Deanna N. Rayner, my children, Rashad, Devyn, and Christian. And my only grandbaby thus far, Kyla. You allowed me the opportunity to attend school, knowing that it would significantly alter the time that we typically spend together as a family. You also supported me during difficult times. I hope my efforts have encouraged each of you to continue on a path that uplifts God so you can achieve and receive all that He has in store for you.

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## Abstract

The purpose of this qualitative case study is to explore factors that may contribute to student persistence in the completion of their program of study in an urban technical college setting. The study aims to identify the cognitive, social, and institutional factors that contribute to student persistence in the completion of their program of study. The following questions guided this study: (1) what are the cognitive, social, and institutional factors that may help technical college students persist in the completion of their training program, (2) what social factors would enhance technical students' educational experience to improve persistence to program completion, (3) what cognitive factors would help better prepare students to persist in program completion, (4) what institutional factors would equip educational leaders and their faculty with tools needed to make informed adjustments to their programs of study? The qualitative case study explored the admissions and retention policy of three urban Tennessee College of Applied Technology (TCAT). Extant data extracted from the 2014 to 2018 student exit interview questionnaires were used to provide descriptive statistics about the student's level of satisfaction with the cognitive, institutional, and social factors found in the learning environment. The content analysis provided insight regarding the cognitive, social, and institutional factors that contribute to student persistence. Themes emerged from the analysis of admissions and retention policy documents and descriptive statistics. The major themes were: connected learning, support systems, engagement, academic rigor, and competence. The study demonstrated that these factors were prominent in the admission and retention policies utilized by the TCATs. The results provide the educational leaders and faculty at the TCATs relevant evidence that informs the adjustments to their practices and programs essential to student persistence and completion.

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# Chapter 1

## Introduction

According to Seidman and Tinto (2012), the economy of the United States is affected by how successful higher education institutions are at retaining their students to completion. Furthermore, the ability to develop the United States workforce market is unquestionably linked to successful retention practices that enhance student persistence at higher education institutions (Johnstone, 2007; Marshall & Case, 2010; Tinto, 2012). The research also found that students who persist in college to completion may attain multiple certificates and licenses that result in higher wages during their careers than non-credentialed workers with only a high school diploma (Altbach, Gumport, & Berdahl, 2011; Tinto, 2012). In 2015, about 25 percent of the workforce in the U.S. had a certificate or license related to their jobs (U.S. Bureau of Labor Statistics, 2015). The data also shows that 52 percent of the upper-income jobs in America are held by highly educated workers that hold a postgraduate degree and that women are 5 percent more likely than men to have a certificate or license (U.S. Bureau of Labor Statistics, 2015).

### Statement of the Problem

College enrollment nationwide and in the Southern Regional Education Board states declined by 5 percent in 2012 and 3 percent in 2017 (SREB, 2019). College-going rates declined in 14 of the 16 SREB states. In terms of the percentage of graduates from a technical college, 53 percent of the SREB white population earned credentials, compared to 26 percent of African Americans and 21 percent of the Hispanic population (SREB, 2019). The harsh reality is that millions of adults situated in the urban school communities throughout the country are without the academic and technical skill sets needed to compete for high tech jobs (Carnevale, Smith, & Strohl, 2010; Hyslop & Imperatore, 2013; Symonds, Schwartz, & Ferguson, 2011).

The study aims to identify the cognitive, social, and institutional factors that contribute to

student persistence in the completion of their program of study. This qualitative case study utilizes the tenets of Tinto's and Swail's Student Persistence Model, Astin's and Braxton's Student Involvement and Integration Model, as well as Kuh's Student Engagement Model to explore the factors that hinder or promote student persistence. The work of these researchers has contributed extensively to the literature that argues there are a plethora of cognitive, institutional, and social factors that influence student persistence and retention. Swail's Geometric Model for Student Persistence and Achievement provides the theoretical framework. To advance the theoretical perspective, the tenets of the Social Constructionism Theory helps to bring an understanding of the themes or factors that policies and students suggest as the reason for their persistence. There is a limited amount of current research exploring the factors that assist student persistence at large urban technical colleges.

National Center for Education Statistics (2018) data shows fall enrollment at higher education institutions in the U.S. increased by 24 percent between 1996 and 2006. In fact, the upward trend in college enrollment continues to increase. The NCES (2018) found fall enrollment at higher education institutions in 2016 (19.8 million) was approximately 12 percent higher than in 2006 (17.8 million). Also, between fall 2006 and fall 2016, the percentage increase in the number of students enrolled in higher education institutions was higher for students under age 25; this pattern is expected to remain constant in the coming years (NCES, 2018). The enrollment of students under age 25 increased by 13 percent from 2006 to 2016 (NCES, 2018). Enrollment of students age 25 and older was 11 percent higher in 2016 than in 2006. From 2016 to 2027, the increase of students under age 25 is projected to be 5 percent higher than students age 25 and over (NCES, 2018).

However, from fall 2012 to fall 2017, total college enrollment in the Southern Regional

Education Board (SREB) states, which includes Tennessee, decreased by 3 percent, a decrease of about 205,500 students (SREB (2019). Because of this problem, enrolling students and keeping them enrolled became a point of focus for educational leaders in the region.

**Southern Region and Tennessee Data**

Southern Regional Education Board (SREB) data shows that students earned approximately 449,800 technical certificates and diplomas nationwide from higher education institutions during the 2016-17 school year (SREB, 2019). That number is 2,000 fewer credentials awarded than in 2015-16 and approximately 23,000 less than in 2014-15 (SREB, 2019). The SREB states continue to produce the largest share of the technical certificates and diplomas. Students in SREB states completed 38 percent of the credentials (171,300) compared with students in the West at 31 percent, students in the Midwest at 19 percent, and students in the Northeast at 11 percent (SREB, 2019)

As it relates to enrollment, the period from 2007 to 2012 shows a sharp contrast to the period to follow; the total enrollment grew by over 18 percent in the SREB region (SREB, 2019). However, from fall 2012 to fall 2017, 10 SREB states had decreases in college enrollment rates that exceeded the reductions in enrollment in the United States as a whole (SREB, 2019). Nationwide, the decline is smaller than the nearly 5 percent drop in enrollment during the 2012 to 2017 timeframe (SREB, 2019). Needless to say, downward trends in college enrollment is problematic for Tennessee's economy.

In 2014, the New Economy Index (NEI), which measures labor factors, capital, and technology projections from at least ten emerging industries, ranks Tennessee 40$^{th}$ in the nation, suggesting higher education systems are failing to prepare its citizens for jobs in a knowledge-based, technology-driven global economy (IT & IF, 2014). Tennessee, along with many states, is

facing a significant skills gap, that if not treated as a priority, will find it challenging to overcome the projected needs in the future labor market (Carnevale, Smith, Strohl, 2013). Finney, Leigh, Ruiz, Castillo, Smith, and Kent (2017) suggest that over 58 percent of the jobs in Tennessee will require a higher education credential of some sort by the year 2025. The 2015 estimates show only one-quarter of Tennesseans age 25 and older have at least a bachelor's degree, falling short of the national average of 29 percent (Carnevale et al., 2013; U.S. Census Bureau, 2015a). Also, only 36 percent of Tennesseans in the 25 to 34 age range had an associate's degree or higher in 2014; the national average is 42 percent during this time (Center for American Progress, 2015; IRHE, 2016). However, during the fall of 2018, Tennessee's higher education institutions enrolled 348,591 students (THEC Factbook, 2108).

Furthermore, the percent of high school students from 2009 to 2015 had insignificant upward movement, remaining constant at around 21 percent, which exacerbates the difficulty of increasing credential attainment in Tennessee (Tennessee Department of Education, 2018). However, the Tennessee higher education system experienced increases in university and community college enrollment from 2008 to 2015, approximately 5.6 percent (NCES, 2015). By contrast, the enrollment at the TCATs decreased by .5 percent during the same period. As it relates to adult participation rates in college programs, Tennessee is at 5.1 percent, which is below the national average of 7.6 percent (THEC, 2016g).

**Tennessee colleges.** According to data compiled by the Lumina Foundation (2018), the college enrollment in Tennessee remains consistent when compared to the national trend. Reforms in higher education, including Tennessee Promise and Tennessee Reconnect, have encouraged more students to pursue a technical credential or associate's degree that offers graduates the opportunity to attain multiple certificates and licenses. As a result, the potential for

increased earnings for higher education credential holders attracts more first-time and returning students to Tennessee's colleges and universities. However, despite the commitment by Tennessee's lawmakers to increase college affordability, less than a third of the state's low-income population enroll in higher education programs (Lumina Foundation, 2018). While some of Tennessee's public institutions got better at retaining students from their first to the second year, the community college's retention rates cannot compete with Tennessee's four-year institutions. Since 2013, Tennessee's community college graduation rate has increased from 13 percent to 22 percent (Lumina Foundation, 2018). The graduation rates at the Tennessee Colleges of Applied Technology (TCAT) is about 82 percent and remains consistently higher than most higher education institutions from year to year (THEC Factbook, 2019). However, according to the College System of Tennessee (2019) data, the number of TCAT graduates decreased by 7 percent in 2018, nearly 500 fewer graduates than in the prior year. Future reductions in the number of graduates will significantly diminish the ability of the TCATs to address the workforce needs of businesses and industries that seek to hire skilled workers.

Therefore, the need to retain higher numbers of students at the Tennessee Colleges of Applied Technology became the primary focus of Governor Bill Haslam's Drive to 55 Initiative. The goal of the Drive to 55 Initiative is to raise higher education credential attainment in Tennessee to 55 percent by 2025 (THEC, 2015). To accomplish this goal, the state's educational institutions must increase the number of adults that possess credentials by more than 17 percent annually between 2015 and 2025 or graduate more than 79,000 students per year during this period (THEC, 2015a). At the onset of the Drive to 55 Initiative in 2014, 46 percent of all students enrolled in a Tennessee higher education institution attended a public college or university governed by the Tennessee Board of Regents, 20 percent attended a UT System

institution (THEC, 2016a). A portion of the remaining students, 26 percent, enrolled at private, not-for-profit independent schools. The smaller number of students that remained, about 8 percent enrolled in one of Tennessee's 27 TCATs. In comparison, THEC's 2018 fall enrollment report shows a 2 percent decline in TCAT enrollment statewide, with only 6 percent of Tennessee's students registered at a TCAT (THEC, 2018). As a result of the relatively small number of Tennesseans attending a TCAT, a higher percentage of the students must be retained through graduation to assist the Drive to 55 Initiative.

**Tennessee higher education commission.** According to the Tennessee Higher Education Commission (2015) data, only thirty-two percent of the citizenry in the State of Tennessee holds a degree, diploma, or certificate from a post-secondary institution. This aspect has prompted Tennessee's politicians and business leaders alike to pause and seriously consider what needs to be done to create opportunities for more Tennesseans to enter post-secondary institutions with a better than average chance to earn a degree, diploma, or certificate. The lack of a sufficiently credentialed workforce not only concerns government officials and business leaders in Tennessee; it is a concern for political and business leaders throughout the United States as well (THEC, 2015).

The fact of the matter is, there are insufficient numbers of credentialed, highly skilled workers in Tennessee to ensure the current and future state economy remains strong and vibrant in order to maintain competitiveness in the 21st-century global economy (THEC, 2015). An unskilled workforce has a direct correlation to the poverty rate of 11.8 %, which is down by 3% since 2014, but there are still 38 million people living in poverty (Census Bureau, 2018). During the fall of 2014, an estimated 40 million Americans existed in economic conditions that deprive them of their dreams and aspirations (Comings & Cuban, 2007). Per the United States Census

(2010), the poverty rate in Memphis, Tennessee, was at 27.4% of the populace. The poverty rate in 2018 is 27.8%, basically unchanged, according to the Memphis Poverty Fact Sheet (2019). However, many U.S. citizens have set their site on obtaining the American dream but do not have adequate financial means, nor do they have adequate skills to compete for high skills, high wage jobs (Thomas & Petty, 2014).

**Drive to 55 initiative.** The Drive to 55 initiative enacted into law by Tennessee Governor Bill Haslam and the Tennessee General Assembly in 2014 proved to be a creative, bold, and innovative strategy that has the entire country marveling at Tennessee's workforce development efforts. The overarching goal of Drive to 55 is to increase the number of Tennesseans with degrees, diplomas, and certificates to fifty-five percent by the year 2025 (THEC, 2015). In 2013, approximately thirty-two percent of Tennesseans held a post-secondary degree, diploma, or certificate (THEC, 2015). Three years later, in 2016, the College System of Tennessee Economic Reach and Impact Report (2018) posits about 41% of Tennesseans held a post-secondary credential. The Drive to 55 initiative provides enrollment strategies and funding sources for students that pay the remaining portion of a student's tuition after all other forms of education funding have been exhausted. This funding source has greatly enhanced college enrollment opportunities for Tennessee's high school graduates and the adult population that plans to enroll at a Tennessee College of Applied Technology or community college. In fact, Tennessee lawmakers earmarked 10.6 million dollars to fund the Tennessee Promise initiative during the 2015-2016 academic year (THEC, 2015).

Consequently, President Barack Obama recognized the potential of this self-sustaining initiative and raved at its potential to mass-produce human capital with technical skill sets that matched job availability in the high demand manufacturing, transportation, and healthcare

sectors in the State of Tennessee. The initiative is projected to achieve the initial goal of 55% credential attainment by the target year 2025 (THEC, 2015). However, the increased enrollment quickly exposed some TCATs to the fact that they were mostly unprepared to effectively help students to manage the hardships that typically cause them to prematurely drop-out or stop-out of their program of study. According to Kerka (2005), many students from disadvantaged environments tend to experience a multitude of barriers or hindrances that may derail efforts to pursue post-secondary educational credentials. Students also face large numbers in the classrooms, environments with divergent cultures, varying socioeconomic statuses, and language barriers that they had to manage in order to persist in college (Thomas & Petty, 2014).

**Tennessee colleges of applied technology.** During the 2017-2018 academic year, the Tennessee Colleges of Applied Technology enrolled over 19,000 students statewide; of that number, 7718 students earned a credential, but only 5912 graduates, or approximately 76%, got jobs in their field of study (Tennessee Higher Education Fact Book, 2018). Furthermore, the Academic Supply and Occupational Demand Report (ASODR) shows the TCATs and other higher education institutions in Tennessee are failing to adequately supply graduates with the technical skills that match the job demands of business and industry (THEC, 2019). According to THEC (2019), there were 14,325 positions available in the production cluster, which includes jobs such as metal fabricators and machinists, and 4,290 jobs available in the computer information cluster, and 9,125 jobs available in the machine operator repairer cluster statewide in 2018. Tennessee's technical colleges only produced 3,329 graduates or approximately 12% of the workforce that is needed to fill the vacant jobs within these job clusters (THEC, 2019). However, the educational leaders at the TCATs are fully aware that the number of completers produced by the colleges fails to adequately yield the skilled laborers needed to fill the plethora

of technical jobs that become available annually. Additionally, the ever-present threat from the for-profit higher education institutions whose recruitment and marketing strategies are relentless makes competition between colleges a fierce business (Kotler and Fox, 1995).

Tennessee's state legislators and local elected leaders often tout the high completion rates produced by the Tennessee Colleges of Applied Technology (TCATs) but have historically ignored the consistently low number of annual graduates and their lack of job attainment within their field of study. During the eight-year tenure of Tennessee Governor Bill Haslam, lawmakers began developing and implementing policies that were designed to increase the number of technical college graduates with the skills needed to fill the job vacancies (THEC, 2015). For decades, higher education institutions tended to rely on traditional remedies to increase enrollment, such as expanding class sizes, constructing additional classroom space, and adding generalized programming that fails to prepare graduates for high skill jobs adequately (Kolter and Fox, 1995).

Some higher education institutions continue to utilize the high enrollment, high-cost training model simply to perpetuate revenue gains, but fail to consider the benefits of student retention as a component of their business model (Kotler and Fox, 1995). While higher education enrollment has increased ten-fold since the mid-1900s to well over 14 million students annually, the ability to keep students in school remains a difficult challenge for educators (Tinto, 2012). Aside from the life struggles that students encounter, institutions face increased operating costs, shifts in the demographics of the population, and competition from for-profit institutions prompted education leaders to rethink their student retention strategies (Tinto, 2012). Therefore, public higher education institutions began developing and implementing retention strategies that considered cognitive, social, and institutional factors that positively affect student outcomes

(Swail, 2004). However, because there are no prescribed retention strategies that work at every college, continued research is needed to better understand the factors that assist TCAT students in persisting in the completion of their program of study.

**Theoretical Perspective**

The Social Constructionism Theory (SCT) will serve as the theoretical viewpoint for the study. According to Leeds-Hurwitz (2009), the SCT supports the notion that meaning is developed in coordination with others and not separately within an individual. Therefore, social constructs can be different based on the society and the events going on during the period in which they occur. An example of a social constructing is naming a National Football League (NFL) quarterback, the greatest of all time (GOAT), or superstar because people connected to the NFL world collectively bestowed that level of recognition or importance on a person. The social construct demonstrates how people in society construct ideas or concepts that may not occur without the existence of sportswriters and media who validate the concept. Social constructs depend on the human perspective and knowledge that does not just exist by chance but is created or constructed by society.

Many theories were utilized to guide this study involving student persistence at three large urban Tennessee technical colleges (Knoxville, Memphis, & Nashville). Tinto's Persistence Theory (2012), in conjunction with Swail's Geometric Model for Student Persistence and Achievement (2004), as well as Astin's (1984) and Braxton's (2014) Student Involvement and Integration Models are the primary theories. The study also made use of Kuh's (2001) research that involves Student Engagement. The SCT, along with the theories mentioned above, build out the structure of the study and help to validate the themes derived from TCAT policies and the data gathered from the student exit interview questionnaire described later in Chapter 3.

**Geometric model for student persistence and achievement.** The Geometric Model for Student Persistence and Achievement will serve as the framework to guide this study on student persistence at three large urban Tennessee technical colleges (Knoxville, Memphis, & Nashville) in conjunction with SCT as the theoretical foundation. According to Swail (2004), the components of the Geometric Model of Student Persistence and Achievement (GMSPA), which includes cognitive, social, and institutional factors, must coexist to establish the traction that enables students to manage their college experience to the extent that they persist to completion. Swail (2004) suggests the cognitive factors address the students' academic strengths and weaknesses in disciplines such as reading, writing, and mathematics proficiency. He also suggests that cognitive factors align with the academic capacity that students bring to the college experience and are enhanced while enrolled. Moreover, the student's decision-making and problem-solving ability are essential components of the cognitive element related to student persistence.

Social factors include a student's willingness and ability to form positive relationships with like-minded colleagues, their values, and coping skills. Swail (2004) posits that students tend to persist and achieve academic success as they become socially integrated into the campus environment. Also, exposing students to diverse cultures, races, and campus groups helps to create a social foundation that assists student persistence in the higher education environment (Swail, 2004). He suggests that students without a strong social foundation and support system tend to have lower self-esteem and less academic proficiency, which threatens their ability to persist.

Additionally, Swail (2004) suggests that institutional factors refer to the practices, strategies, policies, and culture of a higher education institution that influence student persistence

and achievement. He posits institutional factors include faculty teaching ability, academic support programs, financial aid, student services, recruitment and admissions, academic services, curriculum, and instruction. According to Swail (2004), institutional factors must accommodate all students and make it easier to assimilate into the college environment. Swail's Geometric Model for Student Persistence and Achievement stresses the importance of practices and policies that assist student persistence.

Because the Social Constructionism Theory serves as the foundation of the study, it is beneficial to connect it to the Geometric Model for Student Persistence and Achievement at this stage of the research. According to Leeds-Hurwitz (2009), SCT supports the thought that meanings are not developed in a silo, but in combination with a community of people and not individually. Therefore, social constructs can be different based on the society and the events going on during the period in which they occur. With that said, the data that materializes from the analysis of TCAT admission and retention policies and student exit questionnaires will assist the perceptions of the researcher to generate major themes.

Creswell (2014) posited that a theoretical framework assists the focus of research studies by providing guidance and validation of findings. Theories provide researchers underpinning for exploration and concepts in the recognized peer-reviewed literature, which adds validity to the problem being studied and the results (Creswell, 2014). Research and understandings of students in higher education have transitioned away from a focus solely on recruitment and packed classrooms to a focus on practices that increase student persistence and credential attainment (Swail, 2004). There are multiple theories, understandings, and approaches to support student persistence and retention in college. The theory utilized to undergird the exploration of student persistence at three large urban Tennessee technical colleges (Knoxville, Memphis, & Nashville)

is Swail's Geometric Model for Student Persistence and Achievement (2004). Also, the Social Constructionism Theory further provides the foundation for the study. It helps the researcher narrow the search for viable themes or factors that students give as the reason for their persistence. The overall makeup of the theoretical framework guides the study. It explains how the themes are derived from TCAT policies, and the data mined from the student exit interview questionnaires described later in Chapter 3. The theory helps to explain the evolution and importance of the social, cognitive, and institutional factors that assist students in generating the motivation needed to persist in the completion of their higher education program of study.

**Significance of the Study**

The results from this study will add to the literature and benefit higher educational institutions throughout the State of Tennessee and possibly other higher education institutions to better understand the factors that contribute to student persistence at technical colleges. Identifying the reasons why students persist in the completion of their program of study would equip the educational leaders and their faculty with the proper knowledge and tools needed to make informed adjustments to their programs of study. Enhanced practices and methods of delivery will assist students in persisting and graduating within the forecasted time for their completion (U.S. Department of Education [DOE], 2010). The research presented in the study attempts to contribute new knowledge to the literature related to the motivational factors that influence students to persist.

Additionally, this research provides benefits to the stakeholders, and the populace within the educational community, by providing a method for the colleges to better prepare students to enter the workforce. The findings from this research will allow educational leaders to realign their vision, mission, and strategies to ensure students are enrolling in appropriate programs of

study that employ practices that motivate students to persist. Without saying, the enrichment of the students' educational experience is meant to aid the production of higher numbers of graduates, which is vitally important to the mission of quality higher education institutions.

**Research Design**

This case study will explore the cognitive, social, and institutional factors found in TCAT admissions and retention policies using Qualitative Content Analysis (QCA) to identify factors that may contribute to student persistence resulting in the completion of their program of study. In this study, Swail's Geometric Model for Student Persistence and Achievement will provide the framework with support from several theories such as the Theories of Student Persistence, Student Involvement and Integration, and Student Engagement. Data will be compiled from the student exit questionnaires (SEQ) to provide descriptive statistics that provide a picture of the cognitive, institutional, and social factors associated with the student's experience while enrolled at the TCATs. To advance the theoretical perspective, the Social Constructionism Theory helps to bring an understanding of the themes that emerge from the policies and factors that students rank on the exit questionnaire as possible reasons for their persistence.

Admission and retention policies, as well as exit questionnaires associated with urban TCATs located in Knoxville, Memphis, and Nashville, Tennessee, will be utilized. The case study design supports the purpose, research questions, data collection, data analysis, and methodology. Yin (2009, p. 19) suggests that case studies may also be useful for explaining presumed causal links between variables that may be too intricate for a survey or experimental designs. Case studies may describe the real-life context in an ordered sequence of events, illustrate specific ideas, and uncover a situation when outcomes are not clear (Yin, 2009). The study will explore texts to identify the cognitive, institutional, and social factors situated in

student admission and retention policies that assist or hinder student persistence at urban TCATs. Exit questionnaires came from a population of TCAT students that attended the three large urban technical colleges. The researcher will conduct a thematic analysis of the admissions and retention policies and collect descriptive statistics from the questionnaires that complement the data that emerges from the policy analysis. An analysis of the policies facilitated the emergence of codes and patterns that provided a clear view of the themes that describe the factors that may contribute to student persistence at the urban TCATs.

A qualitative method used in the study helps reveal information by exploring why relationships are meaningful and how the relationships affect students (Morse and Niehaus, 2009). Knowing and understanding which traits may have a positive or negative impact on the student's academic progress, engagement, and integration to campus life may be advantageous to other student populations by helping to discover the factors that contribute to student persistence. Tinto (2004) emphasizes the value of relationship and engagement as practices that assist student retention and note that higher education leaders should build, then inform students of academic, personal, and social support services that are available to students. Furthermore, meaningful interaction involving educational, personal, and support services influences a students' sense of connection to the college, which promotes student motivation to persist (Tinto, 2004). Habley (2004) suggests that interactions that students have internally with faculty, advisors, peers, and administrators directly affect student retention. Tinto (2010) argued that the study of student success should help build evidence-based models to improve student retention and persistence.

**Purpose Statement.** The purpose of this qualitative case study is to explore factors that may contribute to student persistence in the completion of their program of study in an urban technical college setting. The study aims to identify the cognitive, social, and institutional factors

that contribute to student persistence in the completion of their program of study. This study uses the tenets of Swail's Geometric Model for Student Persistence and Achievement to provide the theoretical framework for the study. The researcher uses Qualitative Content Analysis (QCA) to examine the TCAT's admission policies, college marketing material, and student retention policies in conjunction with the data derived from student exit interview questionnaires collected by the Student Affairs Department personnel upon their departure from the colleges. It is suspected that this effort will uncover factors that may contribute to student persistence and retention. The literature review reveals the meager amount of research that examined the factors related to student persistence at urban Tennessee Colleges of Applied Technology located in the western, middle, and eastern regions of the state.

**Research questions.** This qualitative case study aims to identify the cognitive, institutional, and social factors that may contribute to student persistence in the completion of their program of study. The following questions guided this study:

***Central research question***. What are the cognitive, social, and institutional factors that may help technical college students persist in the completion of their training program?

***Sub-questions:***

1. What social factors would enhance technical students' educational experience to improve persistence to program completion?
2. What cognitive factors would help better prepare students to persist in program completion?
3. What institutional factors would equip educational leaders and their faculty with tools needed to make informed adjustments to their programs of study?

**Study factors.** This study explores the cognitive, institutional, and social factors that may influence a student's persistence in the completion of their training program. Swail (2004) states, "the cognitive factors relate to the intelligence, knowledge, and academic ability a student brings with him or her to the college environment" (p.14). Additionally, the cognitive factors may be measured by variables such as program selection and high school graduation, extracurricular involvement in academic activities. Swail (2004) states, "cognitive factors are important because they directly relate to the student's ability to comprehend and complete the academic portion of the college curriculum" (p.14).

Institutional factors relate to the ability of the institution to provide the academic and socially fitting support systems that students need before and throughout their connection to the college environment (Swail, 2004). Swail (2004) states, "institutional factors, refers to the practices, strategies, and culture of the college or university that, in either an intended or unintended way, impact student persistence and achievement. (p.13) Factors such as course availability, faculty teaching ability, academic advising services, financial aid, campus safety practices, and career counseling. The Geometric Model can be framed in a triangular shape with the institutional factors at the base of the triangle because the practices at the colleges form the foundation for student success in college (Swail, 2004). Here is where the higher education institutions can identify the needs of students and match the needs with strategies and practices that promote persistence (Swail, 2004).

Swail (2004) states, "social factors include parental and peer support, the development or existence of career goals, educational legacy, and the ability to cope in social situations. (p. 14) There is a plethora of literature that agrees about the importance of social integration concerning student persistence and the fact that students find persisting in college more difficult when they

fail to integrate socially into the campus environment thoroughly. Swail (2004) states, "although the components of the geometric model have a direct effect on a student's stability during college, it also can be seen as a flexible set of programs or conditions that the college can mold to meet the diverse needs and attributes that the individual student brings with him or her to the college environment." (p.15)

**Delimitations.** The researcher chose to explore the cognitive, social, and institutional factors that may enable TCAT students at urban colleges to succeed by persisting in college and progressing towards graduation. In so doing, the researcher chose only to include TCAT student exit questionnaires (SEQ) from three large urban colleges located in Memphis, Knoxville, and Nashville, Tennessee. Also, the admissions policies related to student access and retention were analyzed. In essence, this study aimed to contribute to the understanding of the factors associated with college students that persist to completion. It must be noted that the findings from the current study will be delimited to TCATs and should not be generalized to other types of colleges and universities.

First, because this study has a qualitative component, the research findings are not generalizable to other colleges. Although the units of study and mean rates gathered from the questionnaire data represent several timeframes, it is done for descriptive purposes to confine the data to the 2014 to 2018 period only. Also, there is no attempt to draw a causal conclusion based on the data from the questionnaires. Several assumptions were made in the current study, specifically in the area of participants being frank with their answers to the questions on the student exit interview questionnaire. The researcher conducting the case study is the president of the TCAT in Memphis.

Included in the limitations of this proposed study are time constraints, complete access to

the internal admissions policies at the other urban TCATs, and limitations in the scope and the overall approach to the research. The descriptive statistics represent only the voices and experiences of students that took part in programs and completed the exit questionnaire at one of the three urban TCATs, specifically Knoxville, Memphis, and Nashville. Another limitation is that the magnitude of documents to be analyzed from three large urban institutions is a daunting endeavor. Moreover, some difficulty occurred, gathering all of the relevant policy documents. Last, internal policies created and implemented by the urban TCAT presidents were particularly challenging to assemble because the documents were not easily accessible.

**Summary**

The American educational system is being challenged to produce higher numbers of graduates with the knowledge, skills, and ability to compete in a global economy that requires skills that match the high-tech jobs. If there is no systemic and comprehensive intervention implemented to understand and serve the educational needs of students, there is a chance that the skills gap will widen further. This study attempted to understand what factors enabled students at urban TCATs to persist and complete college, and to provide insights for policymakers and leaders about how to improve the completion rate for this group. This chapter introduced the problem statement, theoretical perspective, significance of the study, research design, and purpose statement. Additionally, the chapter includes the research questions, study factors, delimitations, and limitations. Chapter 2 includes an extensive review of the literature. In Chapter 3, the details of the methodology are outlined. After that, Chapter 4 will expound the findings of the study. Chapter 5 provides the discussion section that outlines the results and future recommendations.

# Chapter 2

## Literature Review

The purpose of this qualitative case study is to explore factors that may contribute to student persistence in the completion of their program of study in an urban technical college setting. The researcher intends to identify the cognitive, institutional, and social factors found within the TCAT admissions and retention policies that may assist or hinder persistence. I begin the literature review by discussing several theories that suggest the reasons students persist or drop out of college. The literature review includes the work of Tinto and Swail concerning student persistence, the work of Astin, and Braxton related to student involvement and integration, as well as Kuh's work on student engagement. These researchers provide a preponderance of literature about the cognitive, institutional, and social factors that contribute to student persistence and retention in the higher education environment. After that, I will delve into a discussion of the university, community college, and technical college experience. Last, I will provide a thorough review of the literature on Swail's Geometric Model on Student Persistence and Achievement, which provides the foundation for the Content Analysis that is addressed later in Chapter 3, the Methodology.

### Theory of Student Persistence

Adamo (2008) suggest that persistence is defined as a quality allowing a person to continue towards their goals or objectives no matter who or what obstructs their path or the level of difficulty. Persistence is also defined as the aspiration and act of students staying within their selected higher education system or institution from the onset of their enrollment until graduation (Berger & Lyons, 2005). Retention is defined as students who continue from the first term of training to the next through to graduation (U.S. Department of Education [DOE], 2010).

According to Berger & Lyons (2005), student retention is the ability of an institution to keep a student in school from their time of admission to graduation. Identifying the reasons why students persist in the completion of their program of study would equip the educational leaders and their faculty with the proper knowledge and tools needed to make informed adjustments to their programs of study.

**Tinto.** When Tinto's (1975) Student Persistence Theory came on the scene, its focus was on student integration, which created a significant amount of discourse about student retention. With a primary focus on the four-year college student, Tinto's (1975) Student Persistence Theory incorporated several components or factors resulting from his research regarding influences on student persistence. Tinto (1975) suggests that students begin their college experience with certain expectations and aspirations. Therefore, the impact of institutional factors, such as faculty-student interaction, peer group interaction, and extracurricular involvement, helps to shape the students' development as they journey through college (Tinto, 1975). Additionally, Tinto (1975) posits that students that become socially integrated within the college experience tend to display a higher level of commitment to attaining their academic goals, their institution, and are more likely to persist and graduate. Further review of the literature suggests Tinto's influential theory has not diminished in popularity over the years; it has maintained relevance, making persistence and retention areas of focus that is extremely popular among the researchers in higher education. Tinto (1975) suggests the student's desire to persist stems from their ability to quickly assimilate to the higher education environment, which assists students in performing well academically and maintaining continuous enrollment.

Furthermore, persistence is the product of the student's own intrinsic and extrinsic motivation that stems from the social and academic accomplishments that students realize during

their higher education experience (Tinto, 1987). Tinto (1989) also suggests that faculty members who interact with students in a positive manner enhance the probability of those students deciding to stay in college. He advances the notion that the students' level of academic integration directly affects the level of the ongoing commitment to their goal of completing college. Moreover, Tinto (1993) suggests that students dropping out or stopping out of higher education programs is the result of academic difficulty, uncertainty about their program of study, unclear career goals, problems assimilating to the college environment, and reluctance to make an academic commitment. Also, Tinto (1993) suggest that students' integration or lack thereof, into the college environment affects their persistence and outcomes (e.g., degree attainment).

Furthermore, Tinto's College Persistence Model posits that academic and social integration of students into the culture of a higher education institution perpetuates continued enrollment that results in program completion (Tinto, 1993). He suggests how students go about managing a comfortable and nurturing social realm can contribute to their college retention. In fact, empirical studies have confirmed that meaningful interaction among students, faculty, and advisors promotes learning and increases retention (Jones, 2010; Kuh & Hu, 2001).
Tinto (1993) posits the student integration model forms the conceptual basis of much of the research on persistence, graduation, and connected institutional policies. Generally, Tinto's Persistent Model (1993) is designed to assist higher education institutions to better understand the reasons students drop out or stop out, so the institutions can plan and design activities that address the needs of students with the goal being to increase retention and graduation rates.

Tinto (2004) suggested that to improve retention rates, higher education institutions should offer and make academic, personal, and social support services readily available to students. After that, educational leaders began placing their attention and resources toward

student retention efforts, which indicates a shift from the prior focus being about maximizing student headcount (Tinto, 2004). Also, the interactions students have with faculty, staff, and peers that provide academic, personal, and support services can ignite a students' sense of connection to the institution and enhance their ability to adapt to the campus culture and meet expectations that promote persistence. Faculty should focus on ways to improve student education, and increased student retention would follow (Tinto, 2007).

Factors in the variety of educational outcomes such as high academic performance and program completion are credited to actions or inaction of the institution (Tinto, 2012). Furthermore, student success and persistence require collaborative work between students and higher education institutions (Tinto, 2012). Additionally, college environments that afford opportunities for students to be engaged in supportive environments with faculty and quality programs can positively impact a student's desire to persist in college (Battistich, Schaps, & Wilson, 2004; Dixon, Cotner, Wilson, & Borman, 2011; Kuo, 2010).

Further review of the literature reveals hardships encountered by students such as transportation issues, no childcare, lack of adequate funding, and no family support while attending college as primary reasons students give for dropping out (Cox, 2009). According to Cox (2009), students that face these hardships often use practices that appear useful but often fail to manage critical issues before they become overwhelming. As a remedy for the reasons students drop out of college, Tinto (2008) puts forth the idea that effective student retention strategies should include educational programs and a campus culture where student engagement with staff and student peers is evident. Furthermore, prior research suggests factors such as hands-on training, class cohorts, and limited course choices as factors that enhance a student's ability to stay enrolled in college (Dixon et al., 2011; Kuo, 2010). The result of the relationship

between these characteristics presents evidence of enhanced motivation that encourages students to persist in the completion of their program of study (Dixon et al., 2011; Kuo, 2010). However, Tinto (2012) suggests that the process of persistence should not be viewed as the opposite of the student departure process. Therefore, persistence experiences of students should not be assumed by research findings to suggest what fixes departure fixes persistence (Tinto, 2012).

Tinto (2012) posits, the understanding gleaned from his earlier models assisted the acceptance of a population of students entering higher education in a high at-risk status, which forced institutions to identify these risk characteristics and provide these students the tools required to persist to completion. Payne (2008) postulates that the integration of first-time college students into institutional activities is critical to their longevity. Due to the tendency of first-year college students to be motivated by performance and not being socially motivated, many become disconnected from activities that assist their persistence. The failure of full-time and part-time students to connect socially and academically is the reason why many students struggle with the college experience regardless of their level of maturity and sole focus on academic accomplishment (Payne, 2008). Sideridis & Kaplan (2011) suggest higher education institutions that promote the value of facilities amongst students and add programs that are intentionally designed to support the social and academic needs of students typically achieve higher retention and graduation rates. Swail, Redd, and Perna (2003) stated that in "terms of college persistence and achievement, three particular factors account for the entire spectrum of student outcomes: cognitive, social and institutional" (p. 77).

**Swail.** Swail's (2004) Geometric Model of Student Persistence and Achievement (GMSPA) postulates cognitive, institutional, and social factors must coexist to establish a

foundation that enables students to manage their college experience to the extent that they persist in the completion of their program of study. According to Swail (2004), cognitive factors address the students' academic strengths and weaknesses in disciplines such as reading, writing, and mathematics proficiency. He also suggests that cognitive factors align with the academic capacity that students bring to the college experience and are enhanced while enrolled. Moreover, the student's decision-making and problem-solving ability are essential components of the cognitive element related to student persistence.

Social factors include a student's willingness and ability to form positive relationships with like-minded colleagues, their values, and coping skills. Swail (2004) posits that students tend to persist and achieve academic success as they become socially integrated into the campus environment. Also, exposing students to diverse cultures, races, and campus groups helps to create a social foundation that assists student persistence in the higher education environment (Swail, 2004). He suggests that students without a strong social foundation and support system tend to have lower self-esteem and less academic proficiency, which threatens their ability to persist.

Additionally, Swail (2004) suggests that institutional factors refer to the practices, strategies, policies, and culture of a higher education institution that influence student persistence and achievement. He posits institutional factors include faculty teaching ability, academic support programs, financial aid, student services, recruitment and admissions, academic services, curriculum, and instruction. According to Swail (2004), institutional factors must accommodate all students and make it easier to assimilate into the college environment. Swail's Geometric Model for Student Persistence and Achievement accommodates Tinto's and Astin's theories that stress the importance of practices and policies that assist student persistence.

## Theory of Student Involvement and Integration

Student involvement, according to Astin (1984), is the amount of "physical and psychological" energy that students spend on their academic experience (p. 518). Additionally, many studies relate the level of student social and academic integration into the college environment as being correlated to how well a student fits into a school and the student's persistence in staying in school (Tinto, 2007). According to Bean & Eaton (2002), the student integration model's foundation is academic integration (value congruent) and social integration (social support), identifying both factors as essential elements to student retention.

**Astin.** Tinto's Persistence Theory (1993) complements Astin's Involvement Theory (1993) by recognizing and agreeing that interaction is essential to students successfully integrating into the college environment. Both theories posit that cognitive, institutional, and social factors are known to assist college students' capacity to persist. Research also suggests that students learn and retain more information if the material taught is culturally relevant to the students' everyday life (Astin, 1993). Astin (1993) argues that factors such as high academic achievement, a desire to learn, and involvement with positive activities on the college campus are all affiliated with student persistence and retention. On the other hand, research finds that students who struggle with engaging academically and socially within the college environment exhibit the tendency to perform poorly, which eventually results in their dropping out of college (Astin, 1993; Salinitri, 2005; Tinto, 1997).

Astin's Involvement Theory emerged from data gathered from prior research centered on college dropouts and the environmental factors that were believed to affect student persistence (Astin, 1996). The findings from Astin's research suggest that a higher level of learning takes place while students engage with peers, faculty, social groups, and other college activities that

involve socialization. Moreover, Astin (1999) posits engagement is relevant to student involvement and can be validated by the amount of time students allocate to participation in social and academic activities. Educational institutions that offer programs and activities meant to increase interaction amongst students, faculty, and staff have realized an increase in student persistence (Astin, 1999). He found that students that take it upon themselves to become active participants in the socialization and academic achievement process tend to learn and retain more knowledge.

The literature further shows as students become more social in college, the level and the intensity of their involvement in the institutional environment affects their willingness to persist. Astin's Involvement Theory is pretty straightforward in suggesting that students learn by becoming intertwined in the fabric of a meaningful college experience. Nora (2003) states that the "influence of social experiences on minority student persistence centers on the informal contact between students and faculty" (p. 58). However, the frequency of interactions between students and staff or students and faculty or students and their peers in itself does not guarantee student engagement will occur (Nora, 1993). Also, Nora (1993) posits what is most important is the quality of student interactions, readily adjusting to college life, and the progression of academic self-efficacy affects a student's persistence to completion.

**Braxton.** Braxton, Sullivan, and Johnson (1997) suggest social integration pertains to the extent of congruency between the individual student and the social system of a college or university. Braxton, Milem, and Sullivan (2000) suggest social integration is a contributing factor to a student's institutional commitment and persistence, which corresponds with a segment of Tinto's Model of Student Departure (1975). Tinto's work in this area is supported by a significant level of first-hand experience in the four-year higher education environment (Braxton,

Milem and Sullivan, 2000). A considerable portion of Braxton's research focuses on Tinto's 1975 research that provides a comprehensive look at reasons for student departure from the college environment. For example, class discussions, a form of active learning, wield a positive influence on social integration, subsequent commitment to the institution, and intent to return to college each fall, year after year until completion (Braxton, Milem and Sullivan, 2000).

Although Braxton, Milem, and Sullivan (2000) found a definite link between active learning in the form of class discussions and subsequent institutional commitment and the intent to return, their primary focus centered on the role of active learning in fostering the social integration of students. Braxton, Milem, and Sullivan (2000) suggest that the use of enthusiastic learning practices, directly and indirectly, affects college student departure decisions and increasing student knowledge. Braxton, Hirschy, and McClendon (2004) posit the commitment of the institution to the welfare of its students as an influencer of social integration. Furthermore, Braxton, Jones, Hirscy, & Hartley III (2008) suggest any class activity that involves students doing things and engaging in critical thinking while working on class projects is an essential practice that faculty should consider. Interaction in the classroom that includes discussions, role-playing, cooperative learning, debates, and the types of questions faculty ask on examinations represent forms of active learning (Braxton et al., 2008). The importance of active learning stems from the contribution it makes to influencing college student success (Braxton et al., 2008).

According to Braxton et al. (2008), a pattern of findings emerged from their research indicating that active learning practices that faculty use helps create the perception that the college is committed to the student's well-being and their development as a student. It is this perception that also leads to their sense of social integration (Braxton et al., 2008). With that said, the more significant a student's degree of social integration, the greater is his or her level of

commitment to continued enrollment in college (Braxton et al., 2008). The greater the student's level of subsequent commitment to the college, the greater is the student's likelihood to persist (Braxton et al., 2008).

Braxton et al. (2014) found student involvement and integration as essential factors that assist student persistence. Therefore, they put forth several recommendations that emerged from their research. First, they suggest that faculty development activities should include workshops and seminars focused on active learning practices. Next, faculty that utilize lively learning practices in their courses should carry some weight on annual performance evaluations and salary decisions. Also, student advisors should assist students in selecting programs or courses in which faculty make frequent use of active learning practices. Last, Braxton et al. (2014) suggest that the evaluation tool used by students should include items that ask whether faculty engage in the use of active learning practices in their course.

**Theory of Student Engagement**

Research encompassing student retention suggests that engagement is another factor that influences persistence. Adamo (2008) postulates that student engagement is defined as the level of interaction with peers, instructors, and administrators throughout the educational process. Rowan-Kenyon, Perna & Swan (2011) found that the mingling of internal and external activities enhanced the educational aspirations of students. The literature posits that positive educational experiences tend to stabilize student’s attention to and interest in educational pursuits and cultivates attitudes that promote engagement within the school environment (Stone & Lewis, 2012).

**Kuh.** Retention is often associated with student persistence to complete educational goals. Several contributing factors can have an impact on student retention, but one that stands

out is the culture of an organization (Kuh, 2001). As it relates to higher education, the organizational culture is described as the behaviors of the faculty and staff in the organization that contribute to the social and psychological climate at the college (Kuh, 2001). Therefore, it is feasible to assume that there is a robust relationship between positive engagement and positive educational outcomes, which is not surprising. According to Kuo (2010), factors such as hands-on training, class cohorts, and limited course choices are also factors that enhance student persistence, adding to their ability to stay enrolled in college.

Kuh (2001) suggests the institutional policies that promote engagement have proven effective at assisting student persistence and that there are some student engagement surveys designed to assess the effectiveness of these institutional policies and practices. The most widely used instrument at this time is the National Survey of Student Engagement (NSSE) (Kuh, 2003). Astin (1985) states that ‘‘the effectiveness of any educational policy or practice is directly related to the capacity of that policy or practice to increase student involvement.’’ (p. 36) Kuh (2003) postulates, the findings in several studies indicate that the quality of interactions among groups is a key factor that influences student engagement at an institution. Therefore, when interactions among diverse groups are positive, perceptions of the interpersonal environment are likely to be positive; the opposite effect is possible when negative interactions among groups lead to perceptions that the campus environment is negative (Kuh, 2003). As a result, the efforts of campus leaders to improve acceptance and appreciation of diversity may need to do much more than attract diverse students to campus and foster interaction among students (Kuh, 2003). The responses from the studies suggest that interactions among diverse groups are most likely to have positive effects when the groups are of equal status. There are common goals and inter-group cooperation, leadership supports group equality, and there are ample opportunities for group

members to get to know one another (Kuh, 2003).

Kuh et al. (2006) suggested, institutions need to develop and implement programs that support students and faculty engagement, and learning communities, to provide institutional environments students perceive as welcoming to all and supported by the leaders in higher education. Kuh (2006) states, "an excellent undergraduate education is most likely to occur in an institution that maximizes good practices and plays a leading role in enhancing students' academic and social experiences on campus." (p. 426) According to Kuh et al. (2006), student engagement assists persistence; it is at the intersection of student behaviors and institutional conditions because student perceptions of the institutional environment and the academic and social norms influence their level of engagement in the campus environment.

**The University and Community College Experience**

There is a wealth of research that exists on persistence and completion within the realm of higher education. In fact, in 1991, Ernest Pascarella and Patrick Terenzini published an 800-page volume reviewing almost 3,000 studies on how college affects students (Bailey, 2005). The studies surrounding student dropout and retention became necessary at four-year institutions because researchers wanted to understand attrition better to identify practices that assist persistence, increase graduation rates, and the overall stability of the institution (Bailey, 2005).

Tinto's (1975, 1987, 1993) theoretical model on academic and social integration, as well as Deci's and Ryan's (2000) research, provided a mechanism to analyze the gamut of reasons that students decide to stay or leave college. As a result, several new practices emerged with a focus on the first year of the university student's transition to college, and the value of student engagement with faculty inside and outside of the classroom (Upcraft, Gardner, and Associates, 1989). Additionally, an array of intervention programs meant to enhance the freshman year

experience for students, such as intensive orientations, freshman seminars, and various extracurricular programs, was introduced (Upcraft at el, 1989). According to (Upcraft at el, 1989), much of the early work on persistence and retention was gathered from quantitative studies with a sole focus on residential universities and students of majority backgrounds. Therefore, the research was inadequate because it failed to consider the experiences of students in other types of institutions such as community and technical colleges and students of various genders, races, ethnicities, income levels, and orientation (Upcraft at el, 1989).

Borglum & Kubala (2000) suggest that the plethora of data on persistence and retention has helped researchers better understand how the process of student retention varies in different institutional settings, residential and non-residential, two-year as well as four-year institutions. For instance, Tinto's (1997) research on student persistence in non-residential higher education settings found that adverse external events experienced by students diminish their desire to persist and that positive events achieve the opposite effect. Also, Braxton and Hirschy (2005) acknowledge that work done by researchers over the years at the university level provides several persistence and retention theories, some sociological, some psychological, and others economical in nature that is considered appropriate for explaining the reason students stay or leave school.

However, from the onset of research geared toward retention, the four-year institutions responded by implementing activities meant to enhance the experience of first-year students such as service-learning programs, sporting activities, Greek life activities, and faculty-sponsored activities that employ engaging teaching methods (Deci and Ryan, 2000). Nevertheless, there are still groups of students within the university environment that come with challenges that make retention difficult. Such as the first-generation student, commuter, student-athlete, and low-

income students that help to identify the work an institution must do to enhance retention (Deci and Ryan, 2000).

Nevertheless, there is a plethora of published material on retention and completion enhancement related to universities; however, the research is limited on the effects of cognitive, institutional, and social factors that address persistence and achievement at community colleges (Bailey, 2005). According to Bailey (2005), the lack of research on community and technical college persistence and retention is problematic. Additionally, a review of the literature resulted in the limited discovery of theoretical frameworks that directly address the findings as to why students drop out or persist at TCATs. Community college (CC) appeal to many students because the cost is less than a four-year university, and the admission policies are typically less stringent, making it accessible to interested students (Seidman, 2012; Tinto, 2012; Townsend & Dougherty, 2006). According to Crisp & Mina, 2012; Townsend & Dougherty (2006), community college freshmen-students have different characteristics from first-year university students. Barbatis, 2010; Juszkiewicz, 2015; Braxton et al.; 2014; Seidman, 2012; Tinto, 2012) suggest (CC) students are nontraditional, the first family members to attend college, have a low-socioeconomic background, attend part-time, at risk of dropping out, and are 46% of all U. S. minority students.

Sandoval-Lucero, Maes & Klingsmith (2014) posit community colleges are considered to be a major player in providing a valuable higher education experience for students that results in academic preparation leading to gainful employment or a pathway to a four-year institution. Another trait of the community colleges is the tendency to offer a plethora of academic programs that provide access and opportunity for training that benefits students, businesses, and the economy (Topper & Powers, 2013). Additionally, community colleges are known to benefit

communities by entering into lucrative partnerships with employers to offer re-training services to displaced workers and students that want the higher education opportunity but lack the financial means needed to attend a university (Belfield & Bailey, 2011). The National Center for Education Statistics (2007) notes that community colleges have become increasingly important in the landscape of American higher education. At the end of the Great Depression, the United States federal government created and gave financial support to community colleges to meet the training needs of the workforce (American Association of Community Colleges, 2016). At the onset of the community college development, the colleges served as small liberal art schools with a student population of 200 or fewer students (Valentin, 2000). The community colleges are typically accredited to award certificates and associate of arts or science degrees (Scott, 2010).

During the 1970s, the community college experience continued to grow as partnerships with high schools offered an opportunity for students to dually enroll in college courses that provided college credit (Scott, 2010). More dual credit and dual enrollment opportunities exist today at Tennessee high schools, thanks to the onset of Governor Haslam's Tennessee Promise. Tennessee Promise adds funding to high schools and two years of free tuition to high school students that enter Tennessee's community and technical colleges upon graduation (THEC, 2015). Over the years, community colleges have become the choice of many students embarking on their higher education endeavors. According to Cohen, Brawer, and Kisker (2013), 70% of high school graduates enroll directly in higher education institutions; of that number, 40% enroll at community colleges. The CC's open admission policy, coupled with low tuition and geographic proximity to home, makes the colleges a viable pathway to higher education for many students (Cohen et al., 2013). According to Cohen et al. (2013), this is especially true for first-generation college students and those who are from low-income families, as well as adults

returning to school to obtain additional training or credentials (Cohen et al., 2013).

The National Student Clearinghouse (2015) posits about half or 46% of all students who graduated from a four-year institution during the 2013-14 academic year had enrolled at a community college at some point within the prior ten years. The report also shows that between 2010 and 2014, all undergraduate enrollments dropped at public community colleges and for-profit colleges. Still, slight increases materialized at public and private nonprofit four-year institutions (National Student Clearinghouse, 2015). During this period, community colleges' enrollment share declined from 29% to 25% of full-time undergraduate and from 44% to 42% of all undergraduate students (National Student Clearinghouse, 2015). As for the completion rate of all first-time, full-time students who started at community colleges in 2010, 19.5% earned a certificate or an associate degree from the same institution within 150% of the standard time (NCES, 2014).

The State of Tennessee acknowledges the importance of community colleges in higher education by proclaiming these institutions as vital players for workforce development (THEC, 2015). With the passage of the Focus on College and University Success (FOCUS) Act on April 19, 2016, the legislation mandated the restructuring of Tennessee's higher education system by incorporating independent governing boards to oversee each of the state's six public universities (Barber, Chesley, & Flora, 2016). The Tennessee Board of Regents (TBR) previously governed the six public universities as well as Tennessee's 13 community colleges and 27 technical colleges (Barber et al., 2016). These changes are a part of Tennessee Governor Bill Haslam's Drive to 55 Initiative, which proposed to assist 55 percent of the citizens of the state in attaining a higher education credential by 2025 (Barber et al., 2016). Furthermore, the Tennessee Promise and Tennessee Reconnect initiatives seek to ensure last dollar funding is available to high school

and adult students attending community college, essentially allowing students that qualify to attend tuition-free (Barber et al., 2016).

Also, each community college has a unique mission, with open access policies offering wide-ranging educational choices and services specific to the needs of community college students while providing focused teaching and training (American Association of Community Colleges, 2016). Moreover, many of the two-year institutions have policies and procedures that are designed to accommodate many disadvantaged, non-traditional students (Goldrick-Rab, 2010). Community colleges are necessary for preparing the workforce needed for the United States to thrive and compete globally (McGlynn, 2010; Sutherland, 2011). Therefore, community colleges are counted on to be majors players in workforce development, skills training, and conduits to four-year institutions (McGlynn, 2010; Sutherland, 2011). American Association of Community Colleges (2014) reported that much of the new job growth projected by 2020 would require some form of secondary education. When the projection of new jobs is expanded to 2026, two thirds will require some sort of a college credential, and 36% of jobs will require at least an associate's degree (Carnevale, Smith & Strohl, 2013). According to Bryant (2015), more community college students must persist and graduate to keep pace with employer demand. Therefore, a significant role of higher education consists of being dynamic innovators that require ongoing improvement geared toward meeting the needs of diverse college populations. Thereby being a conduit that enables graduates to acquire skills and knowledge needed to compete for more advanced jobs and career opportunities (Jean-Francois, 2013).

**The TCAT experience.** The Tennessee Board of Regents system provides and supports the TCAT training model that is proven and successful at transitioning students from admission to completion at a high rate. Additionally, the TCAT training model mimics the technical

workplace by requiring full-time students to attend school six hours per day, five days per week, as though they are working a full-time job. The TCATs are strategically dispersed throughout the State of Tennessee, offering over one hundred less than two-year technical programs ranging from automotive technology to dental assisting and welding (THEC, 2018). According to the Tennessee Higher Education Commission Fact Book (2018), the TCAT's completion rate statewide is 81.6%, and the job placement rate is 84.8% for the 2017-2018 academic year. However, the high completion and placement rate is somewhat misleading due to how the TCATs are allowed to report student outcome data to the accrediting agency, the Council on Occupational Education (COE, 2018). The COE was incorporated as a non-profit educational organization under the laws of the State of Georgia in June 1994 (COE, 2019). In 1995, the Council became a fully operational accrediting agency after all assets and membership of the agency were transferred from SACS to the Council. The Council on Occupational Education serves as a national accrediting agency for the accreditation of non-degree-granting and applied associate degree-granting higher education technical institutions.

Historically, the Tennessee Colleges of Applied Technology's unique training model has produced some of the highest graduation and job placement rates in the country (THEC, 2018). However, there are factors related to a student's reason for departing from the college that enables the college to forgo reporting the actual number of student withdrawals. For example, students that drop out of TCATs before earning the diploma, but earn a certificate, are considered graduates. On the other hand, students that exit as a result of documented mitigating circumstances are considered allowable exclusions that are not included in the college's annual performance report, which lessens the number of yearly dropouts reported.

Although the TCAT training model produces high completion percentages system-wide,

there is a significant number of students that drop out or stop-out of the TCATs annually. Additionally, TCATs enroll the smallest amount of students within the TBR system annually, approximately 8 percent or 19,643 students statewide during the 2018 academic year (THEC, 2018). Therefore, the number of graduates is insignificant when compared to the availability of skilled jobs in Tennessee. Collectively, these factors hinder the TCAT's ability to significantly enhance revenue and higher numbers of skilled graduates to fill the plethora of job vacancies reported by Tennessee's businesses and industries (THECMP, 2015).

As a result, research is needed to identify best practices and deficient practices revealed in the TCATs' student retention policies meant to assist students in persisting in the completion of their program of study. Researchers such as Dixon, Cotner, Wilson, & Borman (2011) suggest students engaged in technical colleges where school curricula integrate with career educational goals have a higher tendency to develop robust relationships with peers and faculty that assist persistence. Additionally, technical college students find relevance in their studies, graduate from college at a higher rate, and earn higher salaries than their non-academic counterparts (Davis & McPartland, 2012). Gebre, Saroyan, and Bracewell (2014) posit that the degree of engagement by students is higher in technical training environments, which allows for more effective teaching. Gebre et al. (2014) also suggest that social engagement is associated with effective teaching, but statistically, it is not as relevant as cognitive and applied engagement. Furthermore, they speculate that the level of engagement by the student is far greater in a technology-rich program, but only if the instructor is knowledgeable and proficient in using the technology in the classroom.

Swail, Redd, & Perna (2003) posit the Geometric Model of Student Persistence and Achievement (GMSPA) theory focuses on the cognitive, institutional, and social factors, which

provide a foundation for student persistence. According to Packnett (2010), the GMSPA model points to a student-centered viewpoint related to factors that influence students to persist; it scrutinizes both students and the higher education institution. Therefore, higher education institutions are responsible for identifying and matching the needs of various student populations with the essential support systems needed to enhance persistence (Swail, 2004). In doing so, higher education institutions should consider the ethnicities of individual students and groups on the college campus (Swail, 2004). He also suggests the diagnostic process that provides supplementary knowledge of the student is a vital component of the geometric model because, without knowledge, the institution cannot make practical decisions about how to assist students in overcoming factors that impede their persistence.

**Geometric Model of Student Persistence and Achievement**

Swail's (2004) theory, as presented in the literature, focuses on the cognitive, institutional, and social factors that provide a foundation for student persistence and retention (Swail, Redd, & Perna, 2003). According to Packnett (2010), the model puts forth a student-centered viewpoint that scrutinizes both students and the higher education institution. The analysis of the student and institution focuses on the cognitive and social characteristics that students possess (Swail, 2004). Additionally, the role of the institution as it relates to addressing the needs of the student while engaged with the college is highlighted (Swail, 2004). Institutions that are serious about retention will create and maintain a campus culture that identifies and addresses the needs of students and social groups.

Swail (2004) postulates cognitive, institutional, and social factors must coexist to ensure students have a foundation that enables them to develop and persist to completion of the college experience. He suggests that when all tenets of the model are in balance, persistence is most

likely to happen. Figure 1 illustrates how the components of Swail's Geometric Model of Student Persistence and Achievement showcases the foundation that must exist within the college culture for student retention efforts to be effective at higher education institutions.

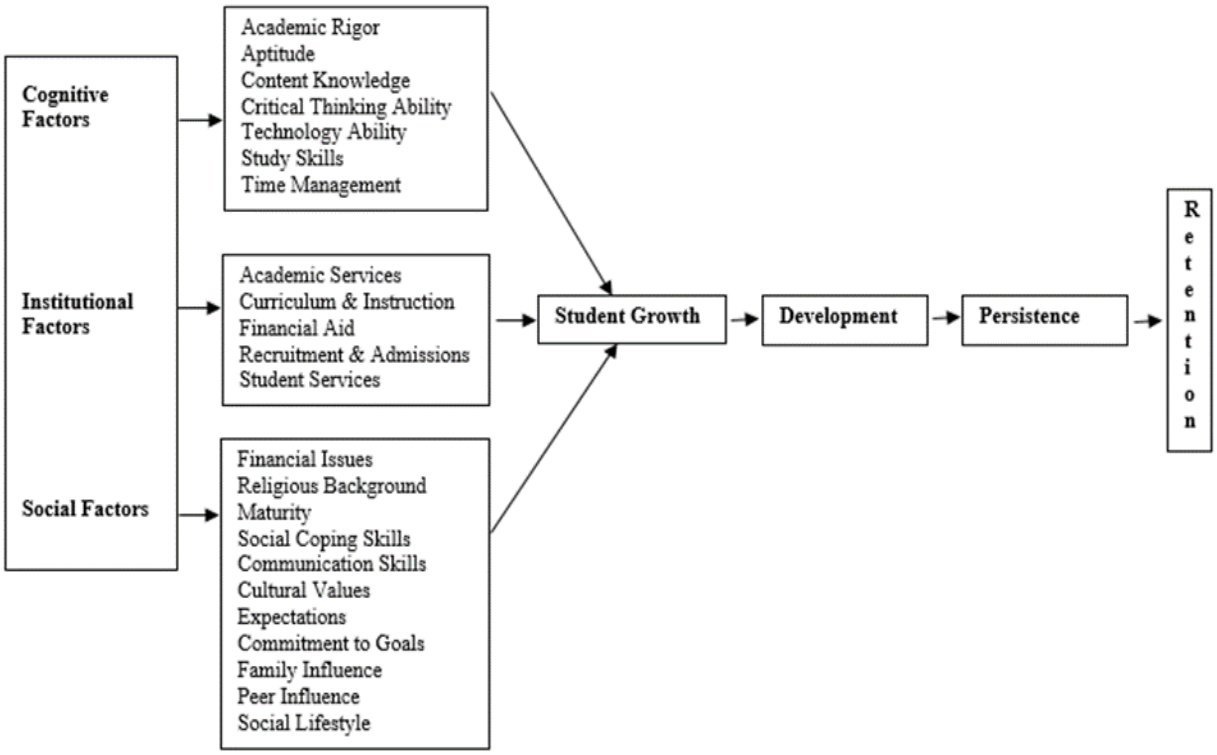


*Figure 1.* Swail's Persistence and Achievement Model. Adapted from "The Art of Student Retention," by W. S. Swail, 2004. *The Art of Student Retention*: *A Handbook for Practitioners and Administrators*. Austin, TX: Educational Policy Institute.

Cognitive factors include critical thinking skills, academic skills, intellectual aptitude, and decision-making skills (Swail, 2004). Simply stated, cognitive factors address the students' academic strengths and weaknesses, such as reading, writing, and mathematics proficiency. He further asserts that cognitive factors have much to do with the intelligence, knowledge, and academic ability that students possess and bring to the college experience. These factors are important because they are indicators of how the students' may comprehend and their ability to complete college-level academic requirements (Swail, 2004). Moreover, the decision-making

and problem-solving ability of students are essential components of the cognitive element (Swail, 2004). The work of Tinto (1975, 1993), Bean (2002), and Anderson (1985) also support the significance of decision-making as it relates to student persistence and dropout. In the GMSPA model, cognitive and social factors intersect to develop the decision-making process. Social factors also include a student's circle of supportive friends, values, and social coping skills (Packnett, 2010).

According to Swail (2004), social factors also refer to the student's ability to make friends, interact appropriately with others, and their attitude. The literature supports and educational leaders posit that students tend to achieve academic success as they become socially integrated into a campus environment that is designed to assist student outcomes (Swail, 2004). He postulates that a student's social foundation and level of exposure to various cultures, races, and campus groups influence social development that is vital to higher education, career, and personal accomplishments. On the other hand, students without a strong social foundation and support system tend to have low self-esteem and limited effectiveness in academic proficiency (Swail, 2004).

The institutional factors refer to the practices, strategies, policies, and culture of a higher education institution that, in one way or another, influence student persistence and achievement (Swail, 2004). He suggests that examples of institutional factors include faculty teaching ability, academic support programs, financial aid, student services, recruitment, admissions, academic services, curriculum, and instruction. Policies and interventions came into existence in response to concerns about retention and have shaped how practices evolve to help students persist (Berger, Ram'rez, & Lyon, 2012). Policies and interventions at the federal and state levels have impacted retention and developments in the form of campus interventions (Berger et al., 2012).

Moreover, the Federal government has initiated policy initiatives over time, such as the GI Bill, Civil Rights Act, and Federal Financial Aid, that have increased the importance of and access to higher education (Berger et al. 2012). As a result, an assortment of policies designed to increase access and retention are available to enhance college degree or credential attainment. Additionally, the role of state-level policy initiatives has also increased over time. While states historically have played a limited role in this regard, that has not been the case in Tennessee during the past eight years. In Tennessee, the accountability systems in which retention and completion are viewed as a key criterion for student success and as a driver that establishes funding levels for the state-operated higher education institutions (THEC, 2015). According to Swail (2004), social factors and institutional factors are considered by students as they ponder whether to persist or drop out of school. Furthermore, he advises that institutional factors must accommodate all students and make it easier for the student to adapt to the college environment.

Therefore, higher education institutions are responsible for identifying and matching the needs of various student populations with the essential support systems needed to enhance persistence and, in doing so, should consider the ethnicities of individual students and groups on the college campus (Swail, 2004). According to Swail (2004), the analytical process that provides additional knowledge of the student is a vital component of the geometric model because, without knowledge, the institution is incapable of making practical decisions about how to assist students in overcoming factors that impede their persistence. The strength of Swail's Geometric Model for Student Persistence and Achievement is a multi-faceted framework that incorporates the tenets of multiple theorists that address student persistence, engagement, involvement, and integration. The combining of these models can inform and assist institutional leaders to develop, implement, and evaluate practices and policies that support student

persistence. While the framework displayed simplifies the concept of the student experience in education, it does offer a visual interpretation of how students and higher education institutions should interact.

This study sought to identify the cognitive, institutional, and social factors found in TCAT admissions and retention policies that may contribute to persistence amongst students enrolled at urban Tennessee Colleges of Applied Technology. More specifically, the three urban TCATs are located in the west, middle, and eastern sectors of Tennessee. The theoretical framework utilizes Swail's Geometric Model for Student Persistence and Achievement (2003), which is the leading theory in conjunction with the tenets of aforementioned models that address student persistence, involvement, integration, and engagement, which are known to assist student persistence and retention. The theories aid the focus of the study and support the notion of cognitive, institutional, and social factors contributing to student persistence while enrolled at an urban TCAT.

**Summary**

After reviewing the literature, there is a preponderance of the evidence that suggests cognitive, institutional, and social factors influence student persistence at higher education institutions. Additionally, the evidence supports campus integration, student-faculty interaction, self-efficacy, and informal learning as playing significant roles in assisting students in persisting and maintaining enrollment (Swail, 2004). Moreover, as one analyzes the plethora of literature through the lenses of persistence models put forth by researchers such as Swail, Tinto, Astin, and others, the outcome suggests cognitive, institutional, and social factors as contributors to college students' desire to persist.

According to Burr & Gergen (2015), when students and faculty view these factors

through the lens of the social constructionism theory, it explains how people and organizations describe, explain, think about, and construct their understandings of the environment in which they exist. As a result, most higher education institutions abandoned the strategy that relied on enrolling high numbers of students hoping to graduate more and adopted policies that inform faculty and staff about best practices proven to assist students in persisting to completion. Burr (1995) suggests the social constructionism theory not only addresses how people define problems, but it also addresses how people respond to obstacles as they arise. Chapter 2 outlined a plethora of literature about student persistence and retention. Chapter 3 presents the methodology, including the study setting, study population, data collection, study design, data analysis, ethical considerations, and positionality statement.

# Chapter 3

## Methodology

This qualitative case study uses a Social Constructionism theoretical foundation to explore the cognitive, institutional, and social factors that may help urban technical college students persist in the completion of their training program. Yin (2009) states, "A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (p.18). More often than not, a case study tends to take a qualitative perspective that involves exploring, describing, and explaining a phenomenon but can use quantitative measures (Yin, 2009). This case study uses qualitative content analysis (QCA) to explore TCAT admissions and retention policies to identify factors that assist student persistence. The QCA is supported by complementary quantitative descriptive statistics that display a summary of existing data that relates to cognitive, institutional, and social (CIS) data that help to identify factors that may contribute to student persistence and retention. The QCA will aid the analysis of institutional admissions and retention policies at three large urban TCATs located in (Knoxville, Memphis & Nashville) Tennessee. To complement the QCA results, descriptive statistics formulated from nearly 43,000 student responses to questions on an exit questionnaire will provide their perspectives on CIS factors experienced during enrollment. According to Berger & Lyons (2005), student retention is the ability of an institution to keep a student in school from their time of admission to graduation. They further define student persistence as the aspiration and act of students staying within their selected higher education system or institution from the onset of their enrollment until graduation.

The content of the methodology chapter provides a brief description of the qualitative and

descriptive statistics used in the study to unveil and spell out the findings produced by the different methods. In this study, the qualitative nor descriptive statistics standing alone can adequately address the intent of the research project. However, together the methods address the research questions and strengthen the validity of the findings. The outcome of this study may add to existing research that suggests cognitive, institutional, and social factors influence student motivation to persist in the completion of their program of study.

The research questions aim to uncover the cognitive, institutional, and social factors that may contribute to student persistence at three urban Tennessee Colleges of Applied Technology. In this study, urban TCAT is operationalized as being located in large cities with populations of 200,000 or more. Urban TCATs typically provide students access to many off-campus entertainment options, including museums, bars, clubs, concerts, movies, and plays, for example. They also tend to attract a more diverse student population in terms of social-economic status, race and gender.

This study will explore the central research question: What are the social, cognitive, and institutional factors that may help technical college students persist in the completion of their training program? The study will also explore three sub-questions:

1. What social factors would enhance technical students' educational experience to improve persistence to program completion?
2. What cognitive factors would help better prepare students to persist in program completion?
3. What institutional factors would equip educational leaders and their faculty with tools needed to make informed adjustments to their programs of study?

## Qualitative Research

A qualitative research method in combination with descriptive statistics is useful to analyze TCAT policy related to student admissions, retention, and student exit interview questionnaires to gain a better understanding of factors that assist student persistence and retention. The qualitative method allows for "exploring and understanding the meaning individuals or groups ascribe to a social or human problem" (Creswell, 2009, p. 4). According to Leavy (2014), the qualitative approach assists the researcher in learning about social phenomena, which results in a deeper understanding of social problems. Also, the qualitative approach is generally useful when the intent is to explore, describe, or explain the meanings that people attribute to activities, situations, events, people, artifacts, or to build a more in-depth understanding of some dimension of social life. Creswell (2003), on the other hand, noted that a qualitative approach enables researchers to gather information or data resulting in knowledge creation based primarily on constructivist/interpretive viewpoints that put forth meanings from individual experiences. Bogdan & Biklen (2007) comment that the qualitative research method "demands that the world is examined with the assumption that nothing is trivial, that everything has the potential of being a clue that might unlock a more comprehensive understanding of what is being studied" (p. 5). Qualitative methods enable the researcher to delve into the content of the material that is under review (Creswell, 2003). Therefore, the qualitative approach with assistance from the content analysis method is useful in this study to address the suggested research questions.

In order to add validity to the QCA, a quantitative component employing descriptive statistics is applied to SEQ data attained from students that exited the three urban TCATs mentioned in the earlier chapters from 2014 to 2018. In this study, the descriptive statistics

displayed in the table format will complement the data derived from the admissions and retention policies employed by the TCATs to assist students in persisting to completion. The descriptive statistics provide simple summaries about the sample and the measures associated with the student exit questionnaire (SEQ) results. When paired together with the qualitative data attained from the college's policies related to retention, simple graphic analysis strengthens the findings gathered from the study.

Additionally, descriptive statistics provide a process to describe what is or what the data shows and does not attempt to reach any conclusions, judgments, or inferences that are external from the actual data that is collected (Tarasenko, 2018). The descriptive statistics shown in this study describes what is going on in the data as it relates to the student's perception of their college experience. The presentation of the data descriptively adds validity to the findings from the statistical analysis, which aims to provide a picture of what the data may be alleging. The results can be a conduit to more advanced methods of analysis in future research.

**Study Setting**

The study setting involved three large urban TCATs located in west, middle, and east (Memphis, Nashville, Knoxville) Tennessee. The mission of the colleges is to prepare students for the workforce by providing technical training that results in a certificate or a diploma after completion of short-term training programs. The study includes data from 2014 to 2018 academic years for the three urban TCATs that served approximately 19,222 students or an average of 4,806 per academic year. As a system, the 27 TCATs served 63,088 students during the equivalent enrollment period.

Currently, the TCATs as a whole offer more than 640 technical programs of study in industry clusters such as transportation, healthcare, distribution, computer, and advanced

manufacturing that provide training for communities and businesses throughout the State of Tennessee. Students that plan to attain a certificate or diploma from a TCAT must complete between 222 to 2160 clock hours of training that is primarily hands-on (i.e., truck driving, dental assisting, animal lab technology, collision repair, and machine tool technology).

**Study Population**

According to Jang (2005), approximately half of the student population attending the U.S. higher education institutions drop out of college, thus creating a dilemma that is a primary concern for educational leaders. Nearly 50 percent of the dropouts are usually apart of the traditional college student population (Rayle and Chung, 2007). A traditional student is considered in the high school population that transitions directly to college shortly after graduating from high school (Rayle and Chung, 2007). However, the nontraditional college student population is increasing (CLASP, 2015). Estimates suggest 40% or more of the current college population at U. S. higher education institutions are non-traditional (CLASP, 2015). Today's college student population consists of parents, caregivers, full-time employees, retirees, and the traditional 18-year-old who transitions to college shortly after graduating from high school (CLASP, 2015).

In Tennessee, 68 percent of higher education students attended a college or university governed by the Tennessee Board of Regents and University of Tennessee system, and 24 percent enrolled in private, for-profit independent schools during the fall of 2018 academic year (THECMP, 2018). The TCATs enroll approximately 8 percent of the higher education students at its 27 colleges located throughout the state (THECMP, 2018). The units of study for this case study is TCAT admissions and retention policies and student completers that submitted the exit interview questionnaire after participation in one of the TCAT certificate and diploma-granting

programs. Approximately 4748 graduates provided 42,697 responses on the TCAT questionnaires collected from Knoxville, Memphis, and Nashville during the 2014-2018 reporting period.

Information from the Tennessee Higher Education Commission was examined to gather the demographic profile data depicted in Table 1 below. The data represents the student population within the three urban TCATs selected for the study. Additionally, data were gathered from the same source and compared to the TCAT population statewide.

Table 1

*Demographic Profile of the Study Colleges and TCATs Statewide*

| Demographic | Study Colleges | TCATs Statewide |
|---|---|---|
| Men | 62% | 64% |
| Women | 38% | 36% |
| African American | 37% | 15% |
| Hispanic | 6% | 5% |
| Other/Unknown | 6% | 5% |
| White | 51% | 75% |

The average age of the student population examined in the study began trending downward from 2014 to 2018 academic years. This decline in student age is contributed to the onset of the Tennessee Promise scholarship, which is a state fund that pays college tuition for high school students that transition to college shortly after graduation. The scholarship can be used at eligible colleges and universities offering an associate degree program and the 13 community colleges and 27 colleges of applied technology in Tennessee. Tennessee Promise was initiated during the fall of 2015. Table 2 below displays the average age of students and the continuous decline in the age of students.

Table 2

*Age Trend of Study Population Examined in the Study*

| Academic Year | Average Age |
|---|---|
| 2014-15 | 27 |
| 2015-16 | 25.9 |
| 2016-17 | 24.6 |
| 2017-18 | 24.4 |

Note. The average age of TCAT students is getting younger.

**Data Collection**

Qualitative and quantitative data are collected and utilized in this research. The purpose of using both collection methods for this study was to vividly highlight the context of the institutional admissions and retention policies that hold vital components of the TCAT's strategy and practices employed to assist students in persisting to completion in their program of study. In the study, quantitative data collected from the SEQ provided complementary data by examining the cognitive, institutional, and social factors in such a way to enhance or emphasize the qualities of each when compared to admissions and retention policy.

**Admissions and retention policy.** A qualitative element provides evidence by exploring why interaction and integration are essential and how they impact students. Morse and Niehaus (2009) suggest that qualitative research methods explain the 'why' component of the problem or issue because the nature of the inquiry method allows for an immersion into the data. According to Morse and Niehaus (2010), qualitative methods assist the researcher in exploring which elements of the admissions and retention policies under review positively impacted the student integration and engagement at the colleges. The unit of study for the qualitative component was

the institutional admissions and retention policies that articulate the TCAT student retention practices and strategies.

The guiding principles found in the admissions and retention policies exhibited in Table 3 exist in some form at the three urban TCATs due to mandates put forth by the Tennessee Board of Regents. Admissions policies guide the onboarding process for prospective students and ensure the common challenges that students may encounter during their enrollment process are greatly diminished. After that, the retention policies are employed to help students navigate through the cognitive, institutional, and social minefields that obstruct student persistence during their enrollment.

Table 3

*Admission and Retention Policies and Primary Components*

| Primary Policies | Primary Components |
|---|---|
| Admissions | Application & enrollment procedures<br>Cohort & open entry programs available<br>Financial aid available to eligible students<br>Program offerings & scheduling |
| Retention | Grade > 73 passing in technical programs<br>Grade > 80 passing in Allied Health programs<br>Students must attend 90.3% of scheduled hours<br>Suspensions are appealable<br>Social interventions/student life activities<br>Disruptive behavior not tolerated<br>Suspensions are appealable<br>Paid and unpaid work-based learning activities<br>Debt-free education |

The admissions criteria found on the TCAT websites will be analyzed to identify the common themes. Furthermore, the student retention strategies found in handbooks, flyers, manuals, and catalogs are analyzed by keeping notes that eventually divulge common themes.

After that, four years of data collected from the 2014 to 2018 student exit interview questionnaires provide descriptive statistics. Tinto (2010) argued that the study of student success should augment building evidence-based models to improve student retention and persistence. Due to the study's focus, which is to identify the factors that assist or hinder student persistence to attain a greater understanding of the influencers of student persistence, the documents collected appear to be sufficient and reliable sources.

**Exit interview questionnaire.** The Student Affairs Division, which is the department within the TCATs that is responsible for policies relating to student recruitment, admissions, advising, and financial aid, also present the exit interview questionnaire to students upon discovery of students completing their program of study at the colleges. Student exit questionnaire responses from fall 2014 to the end of the summer term of 2018 were the units of study selected to supplement the findings that emerge from the QCA. The purpose of the SEQ is to obtain feedback on the students' perceptions of their educational experiences while enrolled at the three urban TCATs. When administered, the SEQ solicits responses from students that share their perception of cognitive, institutional, and social factors associated with the student's experience during enrollment. The responses and the ratings from the SEQ are collected throughout the school year by support staff and instructional leaders who compile annual reports for each program at the colleges.

The student exit interview questionnaire is a tool that possesses nine components that are arranged in categories that represent cognitive, institutional, and social tenets. The survey requests students that are exiting the colleges to respond to several probing questions by rating the cognitive, institutional, and social aspects of their college experience. Student responses on the SEQ suggest their level of satisfaction with their college experience by rating several

cognitive, institutional, and social factors. The descriptive statistics in Table 4 summarize the factors along with the mean rating by campus. The exit questionnaire data represents 42,697 responses from the students that attended the three urban colleges who completed the SEQ during the 2014 to 2018 reporting period. There are nine questions included in the questionnaire that ask students to rate the college's programs and services using the following scale: Respondents answered (4) for excellent, (3) for good, (2) for satisfactory, and (1) for poor.

Table 4

*Descriptive Statistics of Factor Percentage and Mean Rating by College*

| Factors by Campus | N | Excellent | Good | Satisfied | Poor | Mean Rating |
|---|---|---|---|---|---|---|
| Cognitive Factors | | | | | | |
| Knoxville | 803 | 56.9% | 30.3% | 10.2% | 2.6% | 3.40 |
| Memphis | 2,598 | 57.3% | 32.0% | 9.2% | 1.5% | 3.50 |
| Nashville | 1,407 | 57.9% | 28.9% | 10.2% | 2.9% | 3.40 |
| Combined | 4,808 | 57.4% | 30.8% | 9.7% | 2.1% | 3.40 |
| Institutional Factors | | | | | | |
| Knoxville | 4,487 | 58.5% | 31.2% | 8.4% | 1.9% | 3.50 |
| Memphis | 12,393 | 49.9% | 33.0% | 13.1% | 4.0% | 3.20 |
| Nashville | 6,981 | 50.0% | 32.4% | 13.7% | 4.0% | 3.30 |
| Combined | 23,861 | 51.5% | 32.5% | 12.4% | 3.6% | 3.30 |
| Social Factors | | | | | | |
| Knoxville | 2,811 | 71.5% | 22.6% | 4.7% | 1.2% | 3.60 |
| Memphis | 7,051 | 55.7% | 30.1% | 11.3% | 2.9% | 3.40 |
| Nashville | 4,166 | 56.9% | 28.5% | 11.5% | 3.1% | 3.40 |
| Combined | 14,028 | 59.2% | 28.1% | 10.0% | 2.6% | 3.40 |

*Note. N represents the number of responses collected from the exit questionnaires.*

The questionnaire results are analyzed by the college administrators who are seeking data that assist the development and implementation of practices that aid students to persist in the completion of their program of study. Swail (2004) postulates cognitive, institutional, and social factors must coexist to ensure students have a foundation that enables them to develop and

persist to completion of their college experience. He suggests that when all three tenets are in balance, persistence is most likely to happen. The three factors, along with the nine components depicted in the exit interview questionnaire, are shown in Table 5 below.

Table 5

*TCAT Exit Interview Questionnaire Components by Factor*

| Cognitive Factors | Institutional Factors | Social Factors |
|---|---|---|
| Live work projects | Physical conditions of the facility<br>Financial aid services<br>Lab, shop, and test equipment<br>Job placement services<br>Student support services | Occupational instructor<br>School administrators<br>Student life activities |

**Cognitive factors**. According to Swail (2004), the cognitive factors that influence persistence are two-fold; they address the students' academic strengths and weaknesses in disciplines such as reading, writing, and mathematics proficiency that students bring to their college experience. He also suggests that as students transition through the college experience, cognitive factors such as critical thinking skills, intellectual aptitude, and decision-making skills are enhanced, which contributes to their willingness to persist (Swail, 2004). Frankly, the student's decision-making and problem-solving ability are essential components of the cognitive element related to student persistence. The student population that completed the exit questionnaires utilized in this study ranked cognitive activity associated with live-work projects, practical experiences, and clinical experiences relatively high with a mean rating of 3.40. The exit questionnaire used a ranking scale akin to the Likert scale, with four being excellent on the high end and one being poor on the low end.

**Institutional factors.** Swail (2004) referred to the institutional factors as the practices,

strategies, policies, and culture of a higher education institution that, in one way or another, influence student persistence and achievement. He postulates that examples of institutional factors include faculty teaching ability, academic support programs, financial aid, student services, recruitment, admissions processes, facility conditions, curriculum, and instructional methods. The combined mean rating associated with the institutional factors is 3.30.

**Social factors**. Swail (2004) posits that the student's ability to make friends, interact appropriately with others, and their attitude are relevant social factors that contribute to a student's willingness to persist. Additionally, the literature supports and educational leaders posit the probability that students will achieve academic success as they become socially integrated into a higher education environment (Swail, 2004). He postulates that a student's social foundation and level of exposure to various cultures, races, and campus groups influence social development that is vital to success in higher education, career, and personal accomplishments. Social factors also consist of a student's values system, coping skills, and depth of their support system that involves family, friends, as well as faculty and staff. Students that fail to develop socially within the college environment tend to have lower self-esteem and less academic proficiency, which threatens their ability to persist (Swail, 2004). The combined mean rating for the social factors is 3.40.

## Study Design

This case study utilized a qualitative content analysis approach with complementary support from descriptive statistics, which adds validity to the findings gathered through the use of content analysis. The institutional admissions policies, retention policies, and the SEQs provided a reliable source to pick the themes found in the policies and the student's perceptions. These themes and viewpoints relate to the cognitive, institutional, and social components

referenced in Swail's GMSPA model. A qualitative method used in the study helps reveal information by exploring why relationships are meaningful and how the relationships affect students (Morse and Niehaus, 2009). Knowing and understanding which traits had a positive or negative impact on the student's academic progress, engagement, and integration to campus life may be advantageous to other student populations at similar institutions by helping to discover the factors that contribute to student persistence.

Tinto (2010) argued that the study of student success should help build evidence-based models to improve student retention and persistence. Habley (2004) suggests that interactions that students have internally with faculty, advisors, peers, and administrators have a direct effect on student retention. Tinto (2004) emphasizes the value of relationship and engagement as practices that assist student retention and note that higher education leaders should build, then inform students of academic, personal, and social support services that are available to students. Furthermore, meaningful interaction involving educational, personal, and support services influences a students' sense of connection to the college environment, which promotes student motivation to persist (Tinto, 2004). After the IRB approval and committee approval, data from the institutional retention and admissions policies and the student questionnaires are gathered to assist the emergence of cognitive, institutional, and social factors that may contribute to or hinder student persistence and retention.

**Qualitative content analysis.** To assist the study, the TCAT retention policies that were in place to assist student persistence and retention at the three large urban colleges will be analyzed. Roller and Lavrakas (2015) suggest qualitative content analysis is a systematic reduction of content, analyzed with utmost attention to the context in which the literature is fashioned to identify themes and precise interpretations of the data. The initial phase of the study

utilized QCA to uncover and compile the cognitive, institutional, and social themes contained in the policies that directly relate to initiatives meant to assist student persistence and retention. After the analysis, the data is shown in a table for ease of review and interpretation. The data that emerges at this phase aim to assists the depiction of the factors that policies shared from the three urban TCATs.

Leavy (2017) states, “content analysis generally involves an initial immersion into the content to get a sense of the “big picture,” determining the units of analysis, coding, analysis, and interpretation, there are typically multiple rounds of coding and analysis.” (p. 147) A component of content analysis is the initial immersion phase. The initial immersion phase encourages the researcher to think through their approach before delving into the data to ensure the potential vastness of the data set is clear to the researcher (Leavy, 2017). According to Saldana (2014), the initial immersion phase allows the researcher to “gain deep emotional insight into the social world you study and what it means to be human” (p. 583). Also, the initial immersion assists the researcher in beginning the development of ideas about the data set and the reduction process (Creswell, 2014). After that, the immersion phase facilitates the identification of the units of analysis, which are healthy chunks of data such as a column of print, paragraph, or sentence in a magazine article (Leavy, 2017).

Phase two involves coding; the process of assigning a word or segment of a sentence that is found in the data, which allows the researcher to reduce and categorize the data. According to Saldana (2009), the code that is selected produces summarized data and provides the essence of that segment of data. There are several ways to go about coding data, including computer software programs and In vivo coding (Strauss, 1987). In this study, In vivo coding is useful and highly favorable because the technique allows for prioritizing and maintaining the actual

responses used by the study participants (Strauss, 1987). According to Leavy (2017), the researcher's approach should complement the purpose of the study and the research questions.

The third phase includes categorizing and theming, which involves gathering and grouping similar codes together (Saldana, 2014). While the categorizing process is occurring, themes emerged from the coded data (Leavy, 2017). A tool that was helpful to the researcher at this point was memo writing, which is a practice that is beneficial during the coding, categorizing, and the theming phase (Leavy, 2017). Hesse-Biber & Leavy (2011) states, "memos are a link between the researcher's coding and interpretation, and they document your impressions, ideas, and emerging understandings, and assist you later in your write-up." (p. 152). The fourth phase entailed interpreting the data, which involved using the memos and notes that the researcher created to make sense of the patterns, concepts, and most importantly, the themes that emerged from the coded data (Mills, 2007).

According to Stemler (2001), content analysis is defined as the "systematic and replicable technique that is used to compress many words of text into fewer content categories based on explicit rules of coding" (p. 1). Furthermore, content analysis is a reliable method to study documented human discourse due to it being a systematic process for investigating texts (Alder & Clark, 2011; Babbie, 2013). Also, it is used in multiple ways in social sciences to allow interpretation of inferences from media such as visual images, auditory sound bites, songs, commercials, and a plethora of written documents (Krippendorf, 2013; Neuendorf, 2002). Roller and Lavrakas (2015) suggest qualitative content analysis as "the systematic reduction of content, analyzed with special attention to the context in which it was created, to identify themes and extract meaningful interpretations of data." (p. 232). In this study, the researcher is interested in collecting data that assist the identification and understanding of cognitive, institutional, and

social factors in TCAT admission ad retention policies that assist or hinder student persistence.

**Geometric model.** Percival, Harvel, Stokes, Shah, and Zakoor (2016) posits Swail's (2004) geometric model compiles the work of other persistence and retention models to form a model with effective practices that assist persistence. However, while the other models have been beneficial in outlining the difficulties and guidelines associated with student persistence, the connection between college and student is lost because grasping the concepts found in multiple models can be problematic (Swail, 2004). Therefore, Swail (2004) attempts to consider the theoretical frameworks of previous retention theories and models and develop a model that is more practical and user-friendly. He suggests the GMSPA model is different from others because it places students in the center of the model. The GMSPA model has three main categories, including cognitive, institutional, and social; these three combined are the main facilitators of student persistence (Percival et al., 2016).

According to Percival et al. (2016), higher education institutions that understand the link between the social factors, cognitive factors, and institutional factors that affect the students' experience in college can develop and implement strategies that are useful in promoting student retention. Additionally, this study uses Swail's (2004) model to assist the researcher in identifying the social, cognitive, and institutional factors in school admissions and retention policies, which helps college leaders provide better support that enables urban TCAT students to persist to graduation. Cognitive factors, institutional factors, and social factors, which are a part of Swail's (2004) model, assisted the construction of the research questions in this case study. The results of this study will be applicable in the higher education environment to better promote a successful college experience for urban TCAT students.

Furthermore, the results from the study can potentially help other higher education

institutions with similar training models to provide effective practices that assist students in their journey with persisting to graduation. The case study assists the identification of factors found in TCAT admissions and retention policies that may influence college persistence. Swail's (2004) geometric model serves as the theoretical foundation; therefore, it aids the study to expand the body of knowledge about persistence.

**Descriptive statistics.** The student exit questionnaires gathered from three urban TCATs provided descriptive statistics for the study. The descriptive statistics summarize and describe the responses that students provided on questionnaires from 2014 to 2018. Descriptive statistics displayed in this study provide the average level of satisfaction that students perceive as related to the cognitive, institutional, and social aspects of the TCAT campus environment. Descriptive statistics are shown using a mean rating, which is occasionally used in qualitative studies to extract more meaning from a quantitative dataset, such as the results from student exit questionnaires (Leavy, 2017). In this study, analyzing averages associated with responses to the exit questionnaire helps to identify patterns in the data and provide support for the qualitative findings (Sandelowski, 2001). The analysis of the exit questionnaire results provided by students described their level of satisfaction with the cognitive, social, and institutional factors contained in the student exit questionnaire. The cognitive factors included live-work projects, practical experiences, academic preparedness, and the student's self-directedness. Social factors involved the level of interaction amongst faculty and staff, counseling services, and participation in campus life activities. The institutional factors include the level of satisfaction with financial services, job placement services, and the physical condition of the facility.

## Data Analysis

Merriam (1998) postulates there are multiple ways to analyze qualitative data; the

primary technique should assist the researcher in interpreting data, which enhances knowledge and understanding of the phenomenon under study. This study uses a qualitative content analysis (QCA) that allows the researcher to delve into the themes contained in the admissions and retention policies. The researcher then compares the data to the statistics derived from the existing student exit interview questionnaire attained from the urban TCATs. Schreier (2012) suggests that the QCA method considers the environment, apparent, and hidden content and content that is lacking from the material that is analyzed.

The TCAT admission and retention practices include policies found in brochures, orientation power points, student handbook, the TCAT website, and the TBR website. The analysis prompts the researcher to analyze the data gleaned from the student exit interview questionnaires to validate the themes provided in the TCAT admissions and retention policies to understand better whether the practices and policies utilized by the TCATs hinder or enhance student persistence and retention. An initial step in the study is the preparation process, which requires the researcher to obtain permission from stakeholders at the Tennessee Board of Regents (TBR) in Nashville, Tennessee, to utilize the student questionnaire data. Written approval was granted during the early planning stage that provided access to four years of student questionnaire data in pdf format from three large urban TCATs. None of the materials utilized in the study contained any markings or details that expose identifiable student information.

As for the exit questionnaires, a team of TCAT administrators examines the reports to identify strengths and weaknesses in the quality of institutional practices, programs, and social services provided to students. Also, the Tennessee Board of Regents (TBR) members and TBR Central Office staff, including the chancellor of the College System of Tennessee, review the

findings, determine need, plan, develop, and assist the implementation of remedies designed to assist student persistence and achievement. TCAT exit questionnaires contain questions that ask the student to rate cognitive, social, and institutional factors that are related to their college experience.

For example, cognitive factors form the academic ability, technical ability, quality of learning, and academics related to extracurricular activities. The social factors consist of financial issues, social lifestyle, and social coping skills, to name a few. The institutional factors include academic services, financial aid programs, admissions policies, curriculum, and instructional methods. The questionnaires used in the study provided over 42,697 responses attained from students that attended large urban technical colleges in Memphis, Nashville, and Knoxville, Tennessee. A quantitative ranking instrument provided the results from four years of SEQ data, which is collected from students that attended and exited the three urban TCATs.

**Thematic analysis.** The various forms of discourse that were thematically analyzed provided a means to identify and gain a greater understanding of the cognitive, social, and institutional factors that may contribute to student persistence. As the data is analyzed, Leeds-Hurwitz (2009) suggests the social constructionism theory (SCT) is useful to inform the notion that meanings are developed in coordination with others rather than separately within an individual. Therefore, social constructs can be formed by students and the researcher as a result of the communal events that are occurring continuously within the higher education environment. This study used Swail's Geometric model as the leading theory in the framework, along with the Student Persistence, Student Involvement, and the Student Engagement theories to identify, gather, and understand the factors thought to contribute to student persistence and retention.

**Triangulation.** A strategy that the researchers utilized to enhance the confidence in the collection of documents to be analyzed was the triangulation method (Leavy, 2017). Hesse-Biber & Leavy (2011) suggest triangulation occurs while using multiple methods, multiple sources of data, or numerous theoretical approaches to speak to the same questions, thereby enhancing the confidence or validity of the uncovered themes. Additionally, Patton (2014) suggest the validity of the researcher's findings increase as a result of attaining and linking of other sources with similar findings. This study required a thorough analysis of TCAT policy efforts related to student admission and retention. The admission and retention policies exist within TCAT flyers, student handbooks, orientation and admission materials, and student exit interview questionnaires that amass data about the student's perception of cognitive, social, and institutional influences ingrained in the TCAT culture. Moreover, triangulation is achievable by using multiple theoretical perspectives that allow different interpretations to emerge from the data (Hesse-Biber & Leavy, 2011). Triangulation is an exhaustive endeavor, but it is an essential part of research to assist the interpretation of data, validity, and the creation of meaning (Hesse-Biber & Leavy, 2011).

## Ethical Considerations

Ethical considerations revolve around securing and storage of the data received from the archived SEQ reports. Before analyzing college admissions policies and the SEQ, steps were taken to plan the analysis process to avoid research bias. This study utilized safety measures to ensure the security and rights of participants are safe. The SEQ data received from the Tennessee Board of Regent's (TBR) central office was on a secure server. All identifiable naming conventions were removed from the data, which heightens confidentiality. Only the TBR key holder of the SEQ material has full access and the ability to make changes or expose confidential

student content. Permission to use the SEQ data was approved via an email from the keyholder at the TBR central office, Dr. Lynn Goodman, personal communication, April 14, 2019.

**Positionality Statement**

According to Fennell (2008), the notion of positionality can often be multifaceted, particularly when biases abound. Merriam (1998); Merriam & Tisdell (2015) posits, the researcher is vital to the study process; biases must be detached before the data is scrutinized to ensure the results are valid. Munhall (1988) suggest the researcher must remain neutral during the research process, to ensure their effort is not biased in any way, valid, trustworthy, and ethical. As the researcher, the way I view and interpret the social world is affected by where, when, and how I am socially situated and in what culture.

The position from which the researcher sees the world around them impacts their research interests, how they approach the research, the participants, the questions asked, and how data is interpreted. Leavy (2017) posits positionality describes a researcher's worldview and the position they establish within their research study. The researcher's worldview involves their assumptions and belief system that informs their reality of the world, what they can learn, and how it can be learned (Leavy, 2017). Furthermore, assumptions are influenced by an individual's background, their beliefs about political parties, work experiences, gender, religion, and prior life experiences. With that said, positionality requires me to acknowledge and pinpoint my views and experiences in relation to the research study and methods that are used. This means it was necessary that I perform ongoing self-assessments about my assumptions and experiences and how my position may influence my data analysis and interpretation.

As the President at one of the TCATs, contact with students eager to complete their program of study and students that lack motivation in their educational journey is imminent. As

President, countless hours are spent examining the academic and behavioral aspects of students to understand what motivates them to become self-directed learners that persist in the completion of their programs. The President is also a contributor to institutional policy development, implementation, adherence, and evaluation to determine the level of effectiveness. However, the President does realize that all students learn differently, which involves a variety of motivational factors that provide a countless number of ways to assist student persistence.

Also, because I have worked with the Student Affairs Division for over twenty years at two different TCATs, I have my own beliefs about practices and strategies that may assist students to persist. I am aware that I hold biases that could be problematic and diminish the quality and reliability of my study. It was necessary to develop strategies and practices to keep any potential biases in check. On several occasions, I shared my past experiences working in the Student Services with my administrative staff to remain aware and control my biases.

Furthermore, any assumptions, biases, and responses acknowledged before and during the research process require documenting throughout the research project (Leavy, 2017). There are many methods available to address the influences attached to the research, such as memo writing and journaling, which I performed. As the researcher, I also planned to utilize the services of the TCAT Memphis retention committee to discuss, review, and make suggestions related to the content and findings.

**Summary**

This study used the qualitative content analysis method that was supplemented with descriptive statistics to explore and examine the factors that may contribute to student persistence in the completion of their program of study. The QCA method helped to ascertain the themes found in TCAT material, such as the admission and retention policies. Leavy (2017)

suggests the themes flow from the process of preparing the data, initial immersion into the data, coding, theming or categorizing, revising, analyzing, and the interpretation. The themes gleaned from the admissions and retention policies were analyzed alongside the SEQ data to uncover any factors thought to hinder or complement institutional efforts meant to assist student persistence. The overarching goal of the study was to identify the factors that may contribute to student persistence to determine whether TCAT practices and policies hindered or assist the student retention endeavor.

Theories that assist the exploration of factors related to student persistence include the following, Tinto's Persistence Theory (1987), Astin's Student Involvement Theory (1984), and Swail's Geometric Model for Student Persistence and Achievement (2004), which serves as the primary theory. Also, the work conducted by Braxton et al. (2014) and Kuh (2003), which involves student integration and engagement, contribute to the study. Social Constructionism Theory provided the theoretical perspective that aided the generation of meaning or insight concerning the cognitive, institutional, and social factors. These theories explain the evolution and importance of the cognitive, institutional, and social factors that assist students in persisting in the completion of their higher education credentials. It behooves higher education leaders to provide programs, services, engaging activities, and positive peer influences that create a campus environment that contributes to student persistence.

The results are presented in Chapters 4. Chapter 5 discusses the study's findings or themes in detail, answer the research questions, and provides implications and areas for future research relating to student persistence at Tennessee Colleges of Applied Technology.

# Chapter 4

## Results

The purpose of this qualitative case study is to explore factors that may contribute to student persistence in the completion of their program of study in an urban technical college setting. The study aimed to identify the cognitive, institutional, and social factors that contribute to or hinder student persistence. Social Constructionism Theory, which supports the notion that meaning is developed in coordination with others and not separately within an individual, provides the theoretical foundation (Leeds-Hurwitz, 2009).

This chapter started by providing a restatement of the problem, a review of the research design, research questions, and document analysis. The chapter also provides an appraisal of the descriptive statistics that emerged from the analysis of the student exit questionnaire data. Chapter 4 continues with a synopsis of the major themes, which provide a deeper understanding of cognitive, institutional, and social factors that contribute to or hinder student persistence. The chapter concludes with a summary. Several prominent themes that emerged from the document analysis and descriptive statistics were: Connected Learning, Support Systems, Engagement, Academic Rigor, and Competence.

### Restatement of the Problem

The percentage of adults in Tennessee that hold a college credential is below the national and the SREB average (SREB, 2019). According to SREB (2019), there are disparities between races; 53 percent of the SREB white population hold higher education technical credentials, 26 percent of African Americans, and 21 percent of the Hispanic population. Millions of adults in urban school communities do not possess the academic and technical skills required to compete for high tech jobs (Carnevale, Smith, & Strohl, 2010; Hyslop & Imperatore, 2013; Symonds,

Schwartz, & Ferguson, 2011) effectively. Therefore, enrolling students and helping them to maintain enrollment is a major priority for colleges in Tennessee and the surrounding states (SREB, 2019).

**Review of the Research Design**

This case study used Qualitative Content Analysis (QCA) to identify factors that may contribute to or hinder student persistence. Swail's Geometric Model for Student Persistence and Achievement provided the framework with support from well-known theories involving Student Persistence, Student Involvement and Integration, and Student Engagement. Data was compiled from student exit questionnaires (SEQ) that provided descriptive statistics that revealed a picture of the student's experiences while enrolled at the TCATs. The Social Constructionism Theory established an understanding of how themes emerge from the admission and retention policies and the exit questionnaire data. SCT posits that meaning or knowledge is constructed in coordination with others and not solely within an individual (Leeds-Hurwitz, 2009).

Content Analysis supported by descriptive statistics was the chosen methodology for this study and is typically present in qualitative research studies. Several data sources were used to assist the production of a robust perspective of the phenomenon under examination. The use of qualitative content analysis was utilized to analyze the TCAT admissions and retention policy documents to uncover major themes that suggest the benefit of strategies and practices meant to promote student persistence.

In support of the QCA, there are descriptive statistics that described and summarized the questionnaire data collected by the researcher. Furthermore, descriptive statistics are sometimes utilized in qualitative research to extract additional meaning from numerical datasets, such as the data obtained from the student exit questionnaires (Leavy, 2017). Determining rates or averages

associated with responses to the exit questionnaire assisted the identification of patterns in the data that provides support for the themes extracted by the analysis of the policy documents. This study explored the central research question: What are the social, cognitive, and institutional factors that may help technical college students persist in the completion of their training program? The study also explored three sub-questions:

1. What social factors would enhance technical students' educational experience to improve persistence to program completion?
2. What cognitive factors would help better prepare students to persist in program completion?
3. What institutional factors would equip educational leaders and their faculty with tools needed to make informed adjustments to their programs of study?

**The Policy Documents and Major Themes**

Data analysis provided insight regarding the various cognitive, social, and institutional factors that contribute to student persistence. Several major themes materialized from the review of admissions and retention policy documents along with the descriptive statistics gathered from the student exit questionnaires. The major themes were: Connected Learning, Support Systems, Engagement, Academic Rigor, and Competence. While reviewing the college's admission and retention policies, these elements were prevalent throughout.

**Connected learning**. The first theme, Connected Learning, is a concept that suggests students are being educated in a warm and supportive training environment that provides real-world learning experiences, applicable training projects, and relevant course content. The process involves infusing traditional instructional methods with practical and active learning experiences that encourage individual and group interaction. Brown, Czerniewizc, and Noakes (2016)

suggests that Connected Learning is about a learner-centered attitude where meaningful, practical experiences and supportive relationships are pillars of the educational approach.

**Support systems**. The second theme, Support Systems, was prevalent in the material, reflecting the college's effort to assist student persistence. There is a plethora of resources available to students, such as academic and behavioral advising, financial aid offerings, transportation assistance, training aids, and quality instruction. Small classes and remedial services are components of the college's supportive school environments. According to (Engstrom & Tinto 2008), a consistent degree of student success that results in program completion is difficult to sustain in higher education. However, colleges with open access policies, affordable tuition, flexible scheduling, and robust support services to address student needs can do just that (Cohen et al., 2013).

**Engagement.** The third major theme, engagement, explored the notion of students becoming more academically and socially integrated into the fabric of the college environment as a factor that makes them more likely to persist. Classroom engagement and participation are essential factors for student retention and persistence (Booker, 2007). Gasman & Palmer (2008) posits that students who feel connected, valued, challenged, supported, and nurtured within the college community possess the recipe for success. Collegial relationships within the institutional environment are fundamental to a student's decision to persist in college (O'Neal, 2012). Practices that promote student engagement with faculty, staff, and peers are widespread throughout the policy documents.

**Academic rigor and competence.** The final themes discussed are Academic Rigor and Competence, which were embedded all through the faculty training materials, curriculum, admission, and retention policies. Policies stress the importance of critical thinking skills,

academic skills, intellectual aptitude, and decision-making skills. These factors are crucial because they help to gauge the cognitive attributes of students and may indicate the need for remediation to increase the likelihood of students navigating college-level academic requirements successfully (Swail, 2004). The student catalog and instructor material were available in digital form with a detailed explanation of the core curriculum and a description of the objectives and requirements of numerous academic-related programs such as SkillsUSA and the National Honor Society. These documents provided students with applicable academic information relative to their program of study.

**Document Analysis**

Websites, admissions materials, student handbooks, faculty materials, retention policy, and strategic plans were carefully reviewed to ensure the researcher was informed of how the TCATs are currently and historically presented (TCAT Knoxville, 2020, Website). The researcher uncovered multiple themes in the material related to cognitive, institutional, and social influencers that are purposed to promote student persistence. Data extracted from the documents were organized into relevant content or categories, emergent themes, then into the major themes.

The common elements that emerged from the document analysis are multifaceted to include but are not limited to cognitive aspects such as aptitude testing, academic rigor, hands-on learning, time management, prior learning assessments, and student skills and leadership competitions. Additionally, the admission and retention policies found on the TCAT's website revealed information about training methods and resources that showcase the college's effort to ensure systems and practices aided student persistence (TCAT Memphis, 2020, Website). The college's policies provided content noting the students had access to pre-enrollment orientation, financial aid, job placement services, community resource information, remediation, campus

beautification projects, safety practices, and campus-wide maintenance projects.

Advising plays a role; information was available about the admissions and retention effort featuring counseling services provided to students experiencing academic, attendance, and behavioral issues that could disrupt their training (TCAT Memphis [TCATM], 2020, Current students section). If these efforts fail, there was due process, the procedure that provides students an opportunity to appeal any academic, conduct, and attendance violation as a last resort to suspension from the colleges. Content about social elements arose from the policies related to students' financial issues and lack of family support. Faculty assisted by providing students the opportunity to take part in hands-on training, which prepared students to participate in cooperative work assignments that support learning, provides employment and income before students completed their program of study.

The Student Handbook and the structure of the faculty syllabus stressed the achievement expectations for students, the academic, as well as the hands-on practical rigor that is involved in the technical programs (TCATM, 2020, Website). Also, the SkillsUSA program objectives and requirements, the annual academic calendar, and the early warning protocols for students that were struggling with attendance, conduct, and academics were some of the components that assisted the college in relaying retention expectations.

Impressions of student engagement were exhibited frequently on the college's website, in orientation materials and digital notifications were relaying campus activities all about the colleges. Through a plethora of flyers, an extensive list of campus functions emerged, such as the scheduling of food trucks on campus, student appreciation events, and student lead social events demonstrated the narrative that engagement and involvement was a major component of the student experience at the TCATs. The notion of cognitive, institutional, and social factors

contributing to student persistence was prevalent in the college's mission statement, the websites, in admissions and retention materials, and online student resources.

Higher education institutions are responsible for identifying and matching the needs of students with the support systems shown to enhance persistence (Swail, 2004). According to Swail (2004), the analytical process that is akin to the methodology used in this study can provide additional knowledge of vital components found in his geometric model. Because, without knowledge, institutions are not capable of making practical decisions about how to assist students in overcoming deterrents that stymie their persistence.

**College website**. Content on the websites provided information about the college's mission statement, vision statement, and educational philosophy, which illustrates the college's commitment and desire to support student access, success, quality training, and completion (College System of Tennessee, (n.d.), Institutions). Websites were intentional to provide students the particulars on the admissions process, course offerings, remedial services, advising, financial aid options, and expectations related to training. Additionally, the website and informational materials located throughout the campuses listed numerous social opportunities available on and off the campus for the students, faculty, and staff. The social events enabled the campus populace to become involved with St. Jude charity events, SkillsUSA talent competitions, leadership competitions, job fairs, student government, and the popular student appreciation celebration held at the beginning of the fall term. As Figure 2 illustrates, the major themes that emerged from the document review were: connected learning, engagement, and support systems. The researcher discusses the themes and the contribution they make to student persistence later in Chapter 5.

**Admissions materials**. The admissions materials were designed to entice students to

enroll. Therefore, it was presented in multiple formats, including online, program pamphlets, recruitment flyers and infographic sheets. Admissions materials provided prospective students with program descriptions, instructional formats, job opportunities, campus layout, costs, and funding options (TCAT Memphis [TCATM], 2020, Current students section). The hands-on training methods and the classroom environment was a focal point of the material. Themes resonated from the admissions material promoted a culture of student engagement with peers, faculty and staff support, safety practices, self-directed learning, and assimilation were of high priority for the instructional leaders. Additionally, there were pictures of classroom engagement and hands-on learning present in most of the materials, which again reiterated the college's intentional focus on active learning. The major themes extracted from the admission materials were: competence, engagement, and support systems.

**Student handbook**. The student handbook was available to students in multiple formats, including print and digital. In the handbook, prospective and current students could find a detailed explanation of the program curriculum, academic requirements, attendance requirements, campus activities, and conduct requirements (TCATM, 2020, Current students section). The handbook also described the objectives and a student-friendly due process that offered students that get off track ample opportunity to comply with the academic practices meant to enhance persistence and success. The major themes that emerged from the handbook were: academic rigor, competence, connected learning, engagement, and support systems.

**Faculty materials**. The instructional and guidance documents that were analyzed encouraged faculty to build professional relationships with students and stress the importance of taking responsibility for their learning to reach the academic and personal goals they established (TBR, n. d., Instructional projects). The instructor material mentioned the use of proactive

protocols to alert students, faculty, and advisors of potential violations of attendance, behavior, and academic deficiencies that may result in adverse action against the student. There was also an emphasis on self-directed learning, student efficacy, critical thinking, and promptness (TBR, n. d., Learning support section). Typically, adverse actions result in students' placement into a probationary or suspension status. Either way, the adverse action may lead to suspension, which halts their opportunity to persist in the program of study. The themes that emerged from the faculty material were: competence, connected learning, engagement, and support systems.

**Retention materials**. Numerous resources with the retention of students as the primary focus were made available to TCAT students (TBR, n. d., Academic retention, Policy/guideline section). Some specific resources included information about and support from their advisor, the remediation lab, the computer labs, the attendance monitoring system, the career services center, and the paid cooperative work assignments. These resources highlighted the level of institutional support that the college's leadership team made available to the students, faculty, and staff. The information and access to advising staff were conveniently accessible to students from 7:30 am to 8:30 pm Monday through Thursday on campus, by email, virtual means, and telephone. The major themes deduced from these resources were: connected learning, support systems, and engagement.

**TCAT strategic plan.** The strategic plan utilized a comprehensive approach focusing on the needs of students and supporting institutions in successfully increasing credential completion. Strategic plans further supported the institutional responsibility of all educational stakeholders involved to serve students better as they persist in college completion (TBR, n. d. Strategic plan).

Tenets of the strategic plan reiterate several emergent themes that are associated with institutional factors that contribute to student success and persistence. As enrollment increases

and persistence decreases, it is imperative to offer TCAT students pathways to persistence that support retention and credential completion (THEC, 2015, Factbook). These pathways consist of strategies that promoted student access, student success, quality education, and resourcefulness.

***Access.*** Student access strategies are needed to fulfill the mission of service and outreach to all Tennesseans; the Tennessee Board of Regents System (TBR) strives to increase the number and diversity of students in the system. The TBR System broadens opportunities for those students that desire to develop their professional skills, enrich their lives, and connect to tomorrow's workforce. The TBR system seeks to ensure that every prospective student has the opportunity to enroll in colleges of applied technology. TCATs seek to optimize gateways to higher education through the use of technology, the promotion of learning partnerships across the state, and the development of additional campus sites.

***Student success.*** Increasing the number of citizens with diplomas and certificates is a critical focus area for the TBR System and the State of Tennessee. Fostering student persistence to completion enhances the growth of existing businesses, the ability to attract high paying industries, the enrichment of strong communities, and the future quality of life for each student. The TBR System structured credential programs so that students may successfully graduate in a timely and cost-effective manner. The plan strongly suggested a focus on student persistence through intrusive personal advisement and technology-based choice systems that lead to an experience of community and inclusion. Students were provided with real-world learning opportunities (co-op, internship, clinical experiences). By aligning pathways within and between TBR institutions and credit for life experience, the time to credential attainment was shortened for students.

***Quality.*** Quality comes into play while TCATs strive to achieve excellence in all areas of the educational process by providing high-quality academic programs, faculty, services, and facilities at all levels. The document review showed the TBR System is committed to continuous quality improvement processes to help students acquire and retain the knowledge, skills, and abilities they need to become highly skilled graduates, dynamic leaders, and hardworking citizens. The quality of academic programs is measured by student performance and assessment, meeting accreditation standards, and formal reviews conducted by external agencies. TCATs also ensured quality instruction and service to students was sustained through ongoing professional development activities for employees and regular reviews of data gathered by satisfaction questionnaires completed by graduates and employers.

***Resourcefulness.*** TBR seeks to achieve its mission through innovation and sensible use of resources. The TBR aims to elevate the priority of higher education so that there will be full support of the funding and increases in state appropriations. TBR institutions seek to identify alternative revenue enhancements and efficiently use their resources to sustain quality and provide access to grow the number of students at TCATs. Community partnerships were targeted to provide financial support for campus operations, equipment, and construction of training sites. The major themes that emerged from the strategic plan components were: competence, engagement, and support systems.

**Descriptive statistics.** In order to add validity to the QCA, the researcher compiled descriptive statistics from the student questionnaire data provided by students upon their exit from the three urban TCATs from 2014 to 2018. The descriptive statistics enhanced the validity of the qualitative data gathered in this study. Descriptive statistics displayed in Table 6 complements the data derived from the admissions and retention policies employed by the

TCATs to aid student persistence.

The Student Affairs Division asked students to complete the exit questionnaire before they exit the colleges to rate the programs and services using the following scale: 4 = Excellent, 3 = Good, 2 = Satisfactory, and 1 = Poor (TCATM, 2020, Consumer Information). The content of the questionnaire is comprehensive and asks students to rate the quality of labs, shops, and diagnostic equipment to ensure training that mimics industry standards. Live-work projects, practical experiences, and clinical experiences were prominent in training to expose students to real-life training exercises. Quality occupational instructors were recruited from business and industry partners, so students are exposed to caring, engaging, and knowledgeable teachers that desire to see students succeed. The college's administrators are evaluated to make sure the vision and mission of the colleges are made known and pursued by faculty and staff. Financial aid programs such as (Federal Pell Grant, Tennessee Promise, Tennessee Reconnect, and Lottery Scholarships) are critical to student success. Therefore, the availability and helpfulness of the financial aid programs are rated by students.

The TCATs provided academic counseling services (career, technical, and personal) as a vital component of the college's retention strategies. Also, job placement services (job readiness and employability skills training) were available. Last, student life activities (job fairs, guest speakers, special events) and the physical condition of the colleges (maintenance, housekeeping, and parking) are valued retention efforts that were rated by students.

Table 6 presents the mean rating for the cognitive, institutional, and social factors extrapolated from the 2014-2018 student exit questionnaires collected from the three large urban TCATs. Furthermore, Table 6 provides the combined number of responses for each factor and the percentages of the responses per category. The descriptive statistics in a table format describe

what is going on in the data as it relates to the student's perception of their college experience. When combined with the themes attained from the college's admission and retention policies, the descriptive statistics strengthened the findings gathered by the data collection process.

Table 6

*Descriptive Statistics of Combined Cognitive, Institutional, and Social Factors*

| Combined Campuses | N | Excellent | Good | Satisfied | Poor | Mean Rating |
|---|---|---|---|---|---|---|
| Cognitive Factors | | | | | | |
| Combined | 4,808 | 57.4% | 30.8% | 9.7% | 2.1% | 3.40 |
| Institutional Factors | | | | | | |
| Combined | 23,861 | 51.5% | 32.5% | 12.4% | 3.6% | 3.30 |
| Social Factors | | | | | | |
| Combined | 14,028 | 59.2% | 28.1% | 10.0% | 2.6% | 3.40 |

*Note. N represents the number of questions answered on the exit questionnaires, not the population total.*

Furthermore, the descriptive statistics complement the findings by providing a sense of what the data is alleging. An analysis of the exit interview data yielded 4,808 responses from graduates who gave the cognitive factors in the questionnaire a 57.4 percent rating in the Excellent category and a 30.8 percent rating in the Good category. The mean rating is 3.40 on a 4-point scale. The institutional factors in the questionnaire yielded 23,861 replies, with 51.5 percent of the graduates giving an Excellent rating, the Good rating is 32.5 percent. Also, the mean rating is shown as 3.30 on a 4-point scale. Social factors yielded 14,028 responses, with 59.2 percent of the graduates giving an Excellent rating and 28.1 percent giving a rating of Good. The mean rating for the social factors is 3.40. Based on the responses, the mean ratings represent the perspectives of the student's cognitive, institutional, and social experience being

rated consistently above 3.36, which supports the effort of the colleges to utilize admission and retention policies to assist persistence. The number of responses is represented by N in Table 6 and vary from 4808 to 23,861 because of the number of questions asked in the cognitive, institutional, and social categories on the questionnaire. There was one question in the cognitive category, five questions in the institutional category, and three questions in the social category.

**Connection Between Policy Documents, Descriptive Statistics, and Major Themes**

After reviewing the major themes that emerged from the policy documents and the exit interview questionnaire data, it was apparent that the colleges intentionally represented themselves in a specific manner with policies in a print and digital format. The students' perspectives are made evident through their ratings on the exit questionnaire, which complements the policy documents that suggest support systems, connected learning, engagement, academic rigor, and competence played a significant role in their successful college experience.

The notion of support systems relates to the ability of the higher education institution to provide the academic and socially relevant support that is essential to student success before and during their learning experience (Swail, 2004). Influential factors such as course availability, faculty teaching ability, academic advising services, financial aid, campus safety practices, and career counseling are essential to students' desire to persist. The policy documents intentionally included practices that utilize faculty, staff, peers, and family members as instruments to enrich the student’s educational experience.

Additionally, the concept of connected learning was prevalent in the student questionnaire content; it stands out throughout the admission and retention literature on the

websites, in printed documents, and the faculty training materials. Having an intimate classroom climate, real-world learning opportunities, externships, and hands-on projects exemplified the TCAT's commitment to connected learning.

The idea of student engagement was displayed on the college's websites, digital messaging systems, and student handbooks. There were several activities listed in the faculty materials and websites that require students to engage in college-related extracurricular activities on campus and externally with community partners. Strategic plans contain elements that are key to student success as well; the mission of the plan was to support student access, success, and quality instruction. Additionally, activities meant to heighten engagement amongst students, faculty, and staff were apparent within the retention strategies; the data extracted from the exit questionnaire supported the effectiveness of the practice.

Academic rigor and competence also played a role in student persistence. These elements were prominent throughout the content in the admission and retention policies that promote the value of academic rigor and competence to the learning experience and the effect on a student's desire to persist. Findings from prior research show that students with positive perceptions of their academic ability typically decided to persist to the completion (Gloria & Robinson Kurpius, 2001). Swail (2004) posits that cognitive factors align with the academic capacity that students bring to the college experience and are enhanced while enrolled. He also suggests that student's decision-making and problem-solving ability are essential components of the cognitive element related to student persistence. Additionally, students with greater self-efficacy persisted longer in school due to their belief that they would succeed at some point (Bandura, 1997). The TCATs appear committed to these cognitive, institutional, and social strategies that aid student persistence.

Figure 2 displays the categories that were gathered from the documents that were subject to the content analysis process, which provided the extraction of the categories from the policies, emerging themes, and the major themes. The general process used for data analysis and interpretation followed Leavy's (2017) steps that include (1) data preparation and organizing, (2) the initial immersion or reading the material, which helped to generate my initial ideas, (3) coding, (4) categorizing, and initial theming, and (5) interpretation. Coding required reducing and classifying the data that was generated.

Code words were assigned to relevant phrases in the admissions and retention policies. These codes were related to the purpose of my research and the research questions. The coded data lead to the search for patterns and the relationships between the codes. At this point, the grouping of the related codes produced the policy categories. Further study of the codes and categories lead to the emerging themes that were placed into the cognitive, institutional, and social factors buckets. The major themes that emerged show cognitive, institutional, and social factors that are known to influence student persistence and retention.

The cognitive, institutional, and social components shown in figure 2 represent interwoven factors that are essential to an educational institution being able to facilitate student persistence. Swail (2004) suggests that when the components of all three factors are equally balanced for the students, they are more likely to persist. Therefore, it is when the equilibrium is established between the following: connected learning, support systems, engagement, academic rigor, and competence is the learning environment best suited for students to persist. Swail (2004) posits students rarely enter the higher education environment with the cognitive, institutional, and social factors aligned in a manner that lends itself to a learning experience void of impediments that derail achievement. For that reason, the ability of the educational institution

to deliver the appropriate level of support needed to manage the student's college experience is paramount.

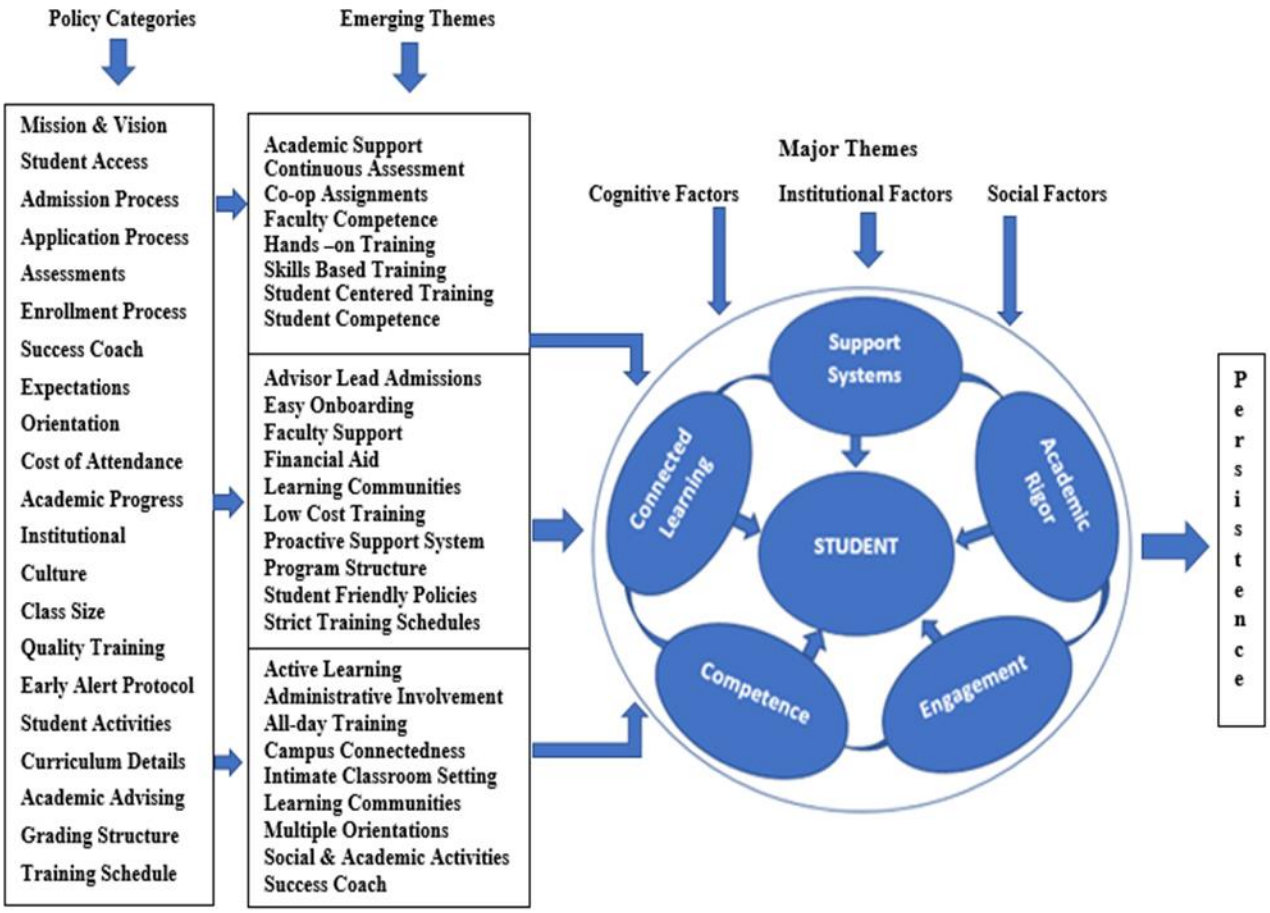


*Figure 2.* Themes aligned with Swail's Persistence model. Adapted from "The Art of Student Retention," by W. S. Swail, 2004. *The Art of Student Retention*: *A Handbook for Practitioners and Administrators*. Austin, TX: Educational Policy Institute.

**Summary**

The purpose of this qualitative case study was to explore factors that may contribute to student persistence in the completion of their program of study in an urban technical college setting. The study identified the cognitive, institutional, and social factors that may contribute to student persistence in the completion of their program of study. Students persisting to completion at the three large urban TCATs is a primary concern for the leadership, therefore,

warranting investigation.

While a plethora of research has shown that family support, ability to pay, and entering the college environment academically prepared strongly influence students' decisions to persistence, these are not the only factors that prompt the student's decision to drop-out or stop-out of technical colleges (Kaighobadi & Allen, 2008; Madgett & Belanger, 2008). The findings from the qualitative case study allowed the researcher to understand better the cognitive, institutional, and social factors that influence urban TCAT student persistence in the completion of their program of study. Additionally, the results enhanced the sparse literature about elements shown to promote student persistence at technical colleges that utilize a training model akin to the hands-on methods at the TCATs.

Studies have shown that an array of contributors found in the cognitive, institutional, and social realm can entice or diminish a student's motivation to persist throughout four-year institutions, and at less than two-year technical programs (Shelton, 2003; Tinto, 2006; Davidson, Beck & Milligan, 2009; Gray, Vitak, Easton, & Ellison, 2013). However, to better understand the factors found at urban technical colleges, this study focused on TCAT admissions and retention policies. When knowledge of these factors is paired with the traditional cognitive, institutional, and social factors derived from prior research, a more in-depth understanding of student persistence became apparent. A better understanding allows for more applicable and precise practices for improving student persistence can be developed and implemented.

Documents and artifacts helped to illustrate how the colleges represented themselves relative to efficacy expectations. Admission literature, curriculum objectives, faculty training materials, honor programs, early alert systems, academic requirements, and campus life activities highlighted the expectations that the colleges had for students to reach their peak potential. The

emergence of the major themes helped to validate how the colleges represent themselves to align with the cognitive, institutional, and social factors that assist TCAT students persist in the completion of their program of study.

Swail's (2004) Geometric Model for Student Persistence and Achievement postulates student involvement, integration, and engagement is essential to students during their college experience because these factors are known to assist persistence and retention. The tenets of Swail's model are displayed in the results of my study, which also focuses on the cognitive, institutional, and social factors contributing to student persistence while enrolled at an urban TCAT. A discussion of the themes, interpretation of the research findings, implications for practice, and recommendations for future research were included in the next chapter.

# Chapter 5

## Discussion of Findings

The purpose of this chapter is to provide an interpretation of the research findings presented in Chapter 4. In order to frame this discussion, the chapter starts with a review of the problem and research questions. After that, an interpretation of the research findings as they relate to the literature review and the theoretical framework. Last, the implications for practice are explored, followed by the limitations of the study, suggestions for future research, and summary.

### Review of the Problem

Millions of adults in urban communities do not have the academic and technical skills that employers seek out to fill their high tech jobs (Carnevale, Smith, & Strohl, 2013; Hyslop & Imperatore, 2013; Symonds, Schwartz, & Ferguson, 2011). Student incentive to persist is an issue in higher education, which has been studied from multiple perspectives including, but not limited to, cognitive, institutional, and social factors (Madgett & Belanger, 2008; Pintrich & Zusho, 2007; Tinto, 1975, 1993, 1998). The research indicated that student persistence at four-year undergraduate institutions with a less stringent admissions process and some urban technical colleges that offer open enrollment continue to have problems retaining larger numbers of students to completion (SREB, 2019).

While economic status can affect a student's decision to persist in college, there is a lack of research on how cognitive, institutional, and social factors influence student persistence in an urban technical college setting. In an effort to mitigate this gap in the literature, this study was focused on the cognitive, institutional, and social factors that impact persistence toward program completion within technical colleges in an urban setting.

This study explored the central research question: What are the social, cognitive, and institutional factors that may help technical college students persist in the completion of their program of study? The study also explored three sub-questions:

1. What social factors would enhance technical students' educational experience to improve persistence to program completion?
2. What cognitive factors would help better prepare students to persist in program completion?
3. What institutional factors would equip educational leaders and their faculty with tools needed to make informed adjustments to their programs of study?

**Aligning with the Theoretical Framework**

The study of persistence theory provided a viable means of understanding the reasons students decide to stay enrolled or depart from the higher education journey that they begin. A primary purpose of putting forth a framework was to provide theoretical understanding and guidance to the research project. The researcher chose to view the problem and conduct the research using the Geometric Model for Student Persistence and Achievement as the guiding theoretical framework for this case study.

**Geometric model for student persistence and achievement.** Swail's (2004) model places the student at the center of a three-prong model that considers cognitive, institutional, and social factors. He suggested that when the components of all three factors are equally balanced, students were more likely to persist in the completion of their program of study. Swail's (2004) model postulates students seldom arrive at a higher education institution with the cognitive, institutional, and social factors aligned in a manner that affords a learning experience that is void of obstacles that impede persistence. Therefore, the equilibrium of a student's triangle is based

on “the ability of the institution to deliver the appropriate level of support services to counter the strengths and weaknesses of the student” (Swail, 2004, p. 18). The model emphasized the importance of services on campus, including financial aid, student services, recruitment and admissions, academic services, and curriculum and instruction (Swail, 2004).

***Cognitive factors.*** Swail (2004) suggested that cognitive factors pertain to the students’ academic strengths and weaknesses in areas such as reading, writing, and mathematical ability. He also suggested that cognitive factors were about the academic ability that students have when they arrive at college. Also, the student’s decision-making and problem-solving skills were essential components of the cognitive element that assist their propensity to persist.

***Institutional factors.*** Swail (2004) posits that institutional factors relate to the practices, strategies, and policies that influence student persistence and achievement. He posits institutional factors include faculty teaching practices, academic support programs, financial aid, student advising services, recruitment and admissions techniques, relevant curriculum, and quality instruction. These institutional factors make it easier for students to integrate into and manage the college environment, which assists student persistence and achievement (Swail, 2004).

***Social factors.*** Swail (2004) suggests that social factors refer to the student’s propensity to make friends easily, being cordial toward others, and a positive attitude. He posits students tend to achieve academic success as they become socially and academically integrated into the college environment. A social foundation and ongoing exposure to diverse groups of people from different social-economic backgrounds and the influence of campus life activity encourage engagement and integration, which is vital to the career and personal accomplishments of students (Swail, 2004). The literature supported the notion that students tend to achieve academic success as they become socially integrated into a campus environment that was designed to assist

student outcomes.

## Interpretation of the Findings

This segment of the case study considered the research findings using the literature review and the theoretical framework as a basis for the interpretation. While the literature on the problem helped provide meaning to the themes that emerged from the data, the Social Constructionism Theory was a useful lens for the researcher when connecting the findings to student persistence.

Five major themes emerged from the research; all were related to specific material presented in an extensive literature review, which is found in Chapter 3 of this case study. The ability of the researcher to extract and interpret the major themes was assisted by prior research done on factors that may influence student persistence in the higher education setting. Concepts, including Connected Learning, Support Systems, Engagement, Academic Rigor, and Competence, represented major elements of previous research that relates to student persistence.

**Connected learning.** The notion of connected learning is about how student learning and growth are rooted in social relationships and the culture of the educational environment (Brown, Czerniewicz, & Noakes, 2016). Prior research suggests that the facets of connected learning are what facilitate student's comprehension of course material as though it was a part of their daily routine and their living environment. The notion of connected learning was a redundant theme that was widely represented throughout the policy documents and the views of students, as noted by the data collected from the student exit questionnaires. According to Astin (1984), student involvement is the amount of "physical and psychological" energy that students spend on their academic experience (p. 518). Several studies suggest how well students integrate socially and academically into the college environment affects their degree of desire to persist in

school (Tinto, 2007).

Connected learning combines classroom ideas and concepts with hands-on experience that involves projects that relate directly to the subject matter under study. Furthermore, connected learning is something that is created and developed by students and instructors while engaged in the learning event (Doll, 1983). The concept centers around the belief that students will put more effort into their coursework and enhance their likelihood of academic success when they were connected intrinsically to the academic assignments (Doll 1983).

Additionally, research suggests that students learn and retain more information if the coursework was culturally relevant to the students' everyday life (Astin, 1993). Astin (1993) argues that factors like high academic achievement and involvement with positive activities at the college influence student persistence and retention. Conversely, students who have difficulty engaging academically and socially tend to perform poorly (Astin, 1993; Salinitri, 2005; Tinto, 1997). As a result of the research findings, higher education institutions are rethinking and redoing the structure of their programs of study to create more positive interaction among students, faculty, and staff in hopes of generating more completers (Barefoot, 2000).
Both the TCAT policy documents that involve admissions and retention practices and the questionnaire data supported connected learning as a means to influence persistence.

**Support systems.** This major theme can be connected easily to prior literature on student persistence. For instance, Swail (2004) suggests that institutional practices, strategies, policies, and a campus culture that are responsive to the needs of the student influences persistence and achievement. These institutional factors may include faculty teaching ability, academic support programs, financial aid, student advising services, a student first campus culture, and relevant instruction. According to Swail (2004), institutional factors must accommodate all students and

make it easier to assimilate into the college environment.

Arana, Castaneda-Sound, Blanchard & Aguilar (2011) posit that support systems enable students to overcome adversity and the uncomfortable feeling of isolation that comes to students that experience difficulty adjusting to the college environment. According to Arana et al. (2011), students who persisted through their academic programs mentioned their connection to faculty and supportive institutional programs was a significant source of assistance in college, while students with less social support showed a lesser tendency to persist.

Furthermore, Pascarella and Terenzini (1980) supported the notion of faculty being heavily engaged in the college experience of students to influence persistence and academic achievement. The cumulative effect of such relationships helped to build the student's confidence in their ability to endure the rigors of college life while progressing toward program completion (Pascarella and Terenzini, 1980). Tinto (2004) also emphasizes the value of being relational was a practice that higher education leaders and their support staff should cultivate in the educational environment by informing students of the academic, personal, and available social support services. Sideridis & Kaplan (2011) posit that higher education institutions should design their facilities with students in mind, add programs and activities that support the social and academic needs of students to encourage persistence. Additionally, the literature expounded on the importance of colleges designing pre-enrollment policies that assist student persistence, including open enrollment practices, affordable tuition, flexible scheduling, and robust support services to address student needs at the onset of enrolling (Cohen et al., 2013).

**Engagement.** Adamo (2008) postulates that student engagement is defined as the level of interaction with peers, instructors, administrators, and staff that occurs throughout the educational process. Positive educational experiences tend to stabilize the student's attention to

and interest in educational pursuits and cultivates attitudes that promote engagement within the school environment (Stone & Lewis, 2012). Rowan-Kenyon, Perna & Swan (2011) found that the mingling of internal and external activities enhanced the educational aspirations of students.

Tinto (2004) acknowledges student engagement as a meaningful practice involving educational, personal, and support services that tend to generate a sense of connection to the college, which in turn provides an incentive to persist. On the other hand, Nora (1993) suggests that the number of interactions that students have with their peers and staff at the college does not ensure that student engagement will take place. Most important is the quality of the interactions, the student's ability to assimilate to the college environment, and their self-efficacy that influences a student to persist to completion (Nora, 1993). Tinto (1987) suggests that the more in touch students were with the activities surrounding campus life, the more likely students are to persist.

Furthermore, institutional policies that promote engagement assist student persistence. Student engagement surveys such as the (NSSE) have documented the opinions of students who score social activities as a key factor that enhanced their willingness to remain in school to completion (Kuh, 2003). Highly effective educational policy or practices meant to address student retention was related to the ability of the practice to increase student involvement (Astin, 1985). Gebre, Saroyan, and Bracewell (2014) found that student engagement occurred at a greater degree in technical training environments, which allows for more effective teaching. They also suggest the practical teaching that comes about as a result of social engagement motivates students to persist. However, the degree of student persistence was directly linked to faculty being competent in their subject matter and highly proficient at using technology in the classroom (Gebre et al., 2014). Kuh et al. (2006) suggested that institutions should implement

programs that promote engagement and the formation of learning communities that students perceive as welcoming. Favorable institutional conditions help to project the intended perceptions of the educational environment and influence the degree of engagement within the campus environment, which influences student persistence (Kuh et al. (2006).

**Academic rigor.** Research conducted on the reasons that students depart from college early included the academic rigor they encounter. Additionally, Tinto (1975) found that the reasons most often given for early departure are insufficient funds, lack of family and institutional support, and difficulty assimilating to the college environment. According to Swail (2004), cognitive factors align with the academic capacity that students bring to the college experience, which is enhanced when they successfully overcome the academic challenges encountered in the classroom. Ferrante (2016) suggests a logical way to help students to persist involves connecting students struggling academically with advisors, faculty, and staff that will help them identify proven study practices. He also posits, far too often, there is a disconnect from a network of support both on and off-campus to assist students that encounter difficulties that hinder their persistence.

Furthermore, research conducted by DeShields, Kara, and Kaynak (2005) suggests that the social adjustment of students to the college setting was essential to the level of commitment students place on their academic performance. Research has also found that social life and extracurricular activities were major influencers on students' academic growth and persistence (Terenzini, Theophilides, & Lorang, 1984). Likewise, research conducted by Adamo (2008) found that students who socially assimilate into the college setting tended to be more engaged in their learning and persist at a higher rate even when they enter college with academic deficiencies. The TCAT admission and retention policies consistently acknowledged that

students have to undergo rigorous training to ensure their skill levels were adequate to compete in today's workforce. However, the retention policies also point out the institutional support systems and practices that were in place to assist students that experience academic difficulty.

**Competence.** Competence is the confidence in one's abilities to pursue and attain their goals (Deci & Ryan 2000). This research complements prior studies that have shown that students who had positive perceptions of themselves and their abilities made fewer decisions to drop out of college (Gloria & Robinson Kurpius, 2001). Conversely, students with a higher level of self-efficacy remained in school longer because they believed in their ability to complete the academic work needed to graduate (Bandura, 1997). Elliot, McGregor, & Thrash (2003) suggest that healthy competition with others can help the competitors gain a feeling of competence, especially when they do well in the competition.

Furthermore, Guiffrida, Lynch, Wall, and Abel (2013) found that students that identified their academic ability as the core reason for attending college were more likely to persist to completion. Marsh & Hau (2003) mention that the big-fish-little-pond effect in the research that they conducted suggests a student's belief about their ability was based on both the academic achievement of the student and on the achievement performance of other students in the same program or school. Brookshire and Palocsay (2005) found that the grade point average of students factors into their ability to persist. Therefore, one can assume that students who perform at a high academic level may decide to go to college after high school and probably persist and succeed at a higher rate than students that display poor academic performance.

The TCAT admission policy requires prospective students to take pre-enrollment assessments before enrollment. Many of the programs required specific scores on assessments for placement in programs. Additionally, the TCAT retention strategies considered the academic

performance of students as being relevant to their persistence and completion. Students that show a propensity to perform poorly were required to take part in remedial studies that intend to enhance their academic performance, which enables students to function adequately within the program of study. Self-efficacy was a factor that determines the choices that students make and may influence how much effort is put forth in their coursework and how long they persist in school (Bandura, 1982; Pajares, 2006).

The study of persistence plays a vital role in understanding why students behave the way they do in their programs. The purpose of identifying and defining a framework was to provide a theoretical perspective and direction into the research of a specific topic of interest. I chose to view the problem and conduct my research utilizing the Geometric Model for Student Achievement and Persistence as the guiding theoretical framework for this study.

**Implications for Practice**

Patton (2014) suggests that the document review provides an organizational context to the phenomenon of student persistence. Documents analyzed in the study involved the student admission and retention policies that were found primarily on the website of each college and in print material such as brochures, flyers, faculty materials, and strategic plans. The admission and retention policy content varied slightly at the three urban colleges due mostly to the different program offerings.

Themes extrapolated from the policy documents were supplemented by descriptive statistics that were derived from the student exit interview questionnaires. Descriptive statistics helped to provide the triangulation that was needed to check the trustworthiness of the research (Vogt, Gardner, & Haeffele, 2012). Exit questionnaire data provided a snapshot of the students' perception of the cognitive, social, and institutional influences related to their college experience.

**Admission policies.** Persons seeking admission to the colleges must be at least 18 years of age or have a high school diploma or equivalent to begin their study in many of the non-health-related programs. Common to all programs of study was an assessment test that aims to determine prospective student's academic aptitude. Different assessments were required based on the program of study. For instance, all medical-related programs of study require a high school diploma or equivalent, and a passing score on the rigorous entrance assessment. Therefore, only the applicants that meet the testing standard gained acceptance into the medical-related programs. The academic rigor associated with the medical-related programs required a high level of academic aptitude and readiness. Programs such as aviation technology and truck driving require a set test score before applicants were considered eligible for admission. Assessments associated with the admissions process are essential; remediation does impact graduation rates. The U.S. Department of Education (2015) reported that at four-year institutions with open admissions policies, only 34% of their students earn a bachelor's degree within six years. However, four-year colleges with acceptance rates at or below 25% have a six-year degree completion rate of 89% (U. S. Department of Education [NCES], 2015). TCATs are not four-year institutions, but they have open admissions policies.

Most programs do not allow low test results to stymie student enrollment, but these students are required to intermingle remedial studies into their program of study. The remedial assignments continue until the student's aptitude enables them to successfully navigate the course material attached to the program of study.

A common practice of the colleges allows students to apply and enroll in technical programs that have vacant slots up to the eighth week of each term. This practice was referred to as open-enrollment. Open admissions programs help to attract a diverse student population,

especially minority men and women (Lavin & Crook, 1990). Several of the cohort programs, which are usually related to the healthcare field, allow enrollment multiple times during the school year, but only once per term. The web-based admission procedure was designed to be user-friendly, which simplifies the enrollment process for prospective students. Additionally, admissions staff were assigned to each of the college's programs of study. The admissions staff are responsible for personally walking each applicant through the admissions process when needed. Admission policies suggested that staff take a hands-on approach with applicants to ensure any barriers related to enrollment were quickly mitigated. Prospective students were paired with an admissions advisor who covers all aspects of the admissions process before finalizing program selection. Admission steps include the following:

1. Candidates must declare an occupational objective and or demonstrate through admissions testing and consultation the potential for achieving that objective.
2. Candidates complete an enrollment application.
3. Candidates take admissions assessment based on their program of interest.
4. Candidates must provide official high school transcript/diploma, college transcript/degree, or GED scores when required.
5. Candidates provide proof of required immunizations.
6. Candidates must attend two student orientation sessions on the first day of class.

The objective of orientation was to introduce students to the president, administrators, faculty, the college's mission, educational philosophy, and organizational structure. Advisors also shared and reiterate policies that pertain to retention strategies, academics, conduct, and attendance.

**Retention policies**. Most TCAT retention policies were developed, approved, implemented, and applied using a system approach, which ensures the due process steps were

consistent amongst the colleges. However, different retention guidelines do exist in varying formats amongst the urban TCATs. For example, the researcher found that TCAT Memphis utilized in-house retention strategies that supplement but do not supplant the system policies. TCAT Memphis administrators, faculty, and student advisors contributed to the construction, implementation, evaluation, and adjustments to the retention practices. The practices intend to emphasize the cognitive, social, and institutional factors that data suggest assist student persistence.

Myers (2012) posits institutions that include supportive services, encouragement, and acceptance of all ethnicities, cultures, and learning styles in their retention practices were performing actions that are known to enhance persistence and retention of students. Furthermore, Myers (2012) suggests that faculty and staff that promote an inclusive learning environment tend to avoid making students feel intimidated or isolated. The flexibility allowed at the campus level offered colleges the opportunity to affect change in response to data provided by research and exit interview questionnaires.

The researcher did not find evidence during the document review that suggests supplemental retention practices exist at TCAT Knoxville or Nashville. Retention strategies were relatively consistent across the three urban technical colleges. TCAT retention policies were weighted heavily in the areas of (a) academic performance, (b) student conduct, and (c) student's adherence to the attendance policy. The policies were designed to support the cognitive, social, and institutional factors that the research postulates as influencers of student persistence.

***Student academic policy.*** Academic performance is a measure of a student's ability and performance. Student achievement was assessed by (a) the quality of task completion, (b) grades earned, (c) credentials earned, and (d) units of study completed. Retention practices were

activated before enrollment during admissions testing, which gauges the academic ability of prospective students and their academic performance from the onset of enrollment and throughout subsequent trimesters. According to Museus and Ravello (2010), academic advising is more than signing students up for classes; it is also about adding a human touch with a collegial relationship being a factor that helps to promote academic success, retention, and completion. Infusing a human element communicates interest and helps the advisor understand a student's background, challenges, work status, and career goals (Museus & Ravello, 2010).

The colleges have established a tiered warning protocol that includes (a) good standing, (b) academic warning, and (c) academic probation to ensure students receive comprehensive advising before any adverse action is administered against a student. Students must maintain a minimum grade of 73 in trade and industry programs. Most health-related programs, such as nursing, require students to earn a grade of 80 or above in coursework to maintain enrollment. Students are placed on academic warning at the first sign of academic distress, academic probation, then academic suspension if cumulative grades fail to meet the established standards.

However, when students were identified as having academic difficulty, they were assigned to a counselor that meets with the student and faculty frequently and encourages participation in scheduled remedial sessions. The counselor and faculty continue to work with students in distress with hopes the academic deficiency was mitigated. The remedial efforts continue for the student throughout each unit of study. Students that make the necessary progress continue training, whereas subpar grades will require students to continue the transition through the academic progression that includes academic suspension. The overarching goal of the retention strategies was to assist 100% of the students in maintaining good academic standing consistently to completion.

***Student conduct policy***. Students are citizens of the academic community. Therefore, they were expected to conduct themselves as law-abiding members at all times. Admission to the TCATs carries with it special privileges and imposes special responsibilities apart from those rights and duties enjoyed by non-students. The presidents of the institutions have jurisdiction to take action deemed necessary to maintain campus conditions and preserve the integrity of the college and its educational environment. TCATs are under the jurisdiction of the TBR and is bound to implement policies that address student's that violate campus ordinances that adversely affects the institution's or student's pursuit of their educational objectives.

Students are responsible for compliance with the Student Conduct Policy and with similar institutional policies and regulations at all times. Disciplinary action is taken against a student for violation of the policies and guiding regulation. The conduct policies apply in all programs and off-campus, when the conduct impairs, interferes with, or obstructs any institutional activity or the mission, processes, and functions of the colleges. The Tennessee Board of Regents authorizes the college's leadership under its jurisdiction to take such steps deemed necessary to maintain campus conditions and preserve the integrity of the institution and create a campus culture that promotes student persistence.

***Student attendance policy***. Students at the TCATS were expected to maintain satisfactory attendance and to progress appropriately toward their training objectives. The Student Attendance Policy (SAP) provides criteria for evaluating student achievement relating to their identified occupational competencies and defines retention standards for the colleges. TCAT's attendance policy requires every student to attend regularly. Continuous interruptions to training because of excessive absences may harm student progress. Regularly attending school is important because the ability to integrate helps students academically and socially, which is

essential for success and persistence (O'Neal, 2012).

Full-time and part-time students enrolled that are absent for more than 5.5% of the scheduled training hours were alerted of the number of hours remaining before a suspension. Any known community and institutional resources were utilized to assist students with attendance concerns. The TCAT policy considers the hardships that may arise during enrollment. Students that fail to provide documentation that supports the reason for missing excessive time were typically suspended from training for a specified time. However, a student suspended for excessive missed time may appeal the suspension in writing to the president. Students that request an appeal of their suspension for attendance violation can remain in class until the suspension was reviewed and a final decision rendered.

The findings from this study continue the progression of scholarly work concerning persistence in a higher education setting. The findings offer an additional lens to view and mitigate the problem, as cognitive, institutional, and social factors have demonstrated their role as influencers of student persistence at higher education institutions. With that said, connected learning, support systems, engagement, academic rigor, and competence have established their importance as influencers of student persistence. This data may be worthwhile to educational leaders and researchers because it has the potential to provide additional clarification as to why students make decisions in the manner that they do in particular higher education settings.

After clearly interpreting the findings using the literature review as a guide to comprehend the data and the theoretical framework as the lens to view it, this researcher has identified practices that may influence student persistence in an urban TCAT setting. Furthermore, the findings could provide instructional leaders and policymakers involved with higher education more knowledge that informs the need for federal, state, and local policy that is

designed to assist students in persisting.

## Limitations of the Study

The case study is limited to three urban TCATs; there are twenty-seven technical colleges that are peppered about Tennessee. One of the limitations of the case study was the fact that the researcher is the president at one of the urban TCATs included in the study. A researcher can bring his or her own bias into the study. Also, the internal policies that were created and implemented by the urban TCAT presidents were particularly challenging to assemble because the documents were not easily accessible. Additional limitations were time constraints, travel, and lack of easy access to the internal admissions policies at the selected urban TCATs. Some difficulty occurred, gathering relevant admission and retention policy documents due to the excessive number of revisions caused by the onset of the COVID-19 pandemic. The enormousness of the added admission and retention policies amongst the three TCATs prohibited the inclusion of more policies in the study.

Last, the descriptive statistics were gathered from students who completed the exit questionnaire during the 2014 to 2018 timeframe. The questionnaire data were deemed accurate and represent the perceptions that students provided at the time of their exit from the TCATs.

## Future Research

While the study focused solely on the cognitive, institutional, and social factors that may influence student persistence, future research may utilize a quantitative or mixed methods study design to identify the level of influence that the factors have on student persistence. Future research may provide a clearer picture of how important cognitive, institutional, and social factors are to student persistence when compared to other factors such as race, gender, or socioeconomic status. The findings may provide researchers a more comprehensive

understanding of factors that promote or hinder persistence from which additional policy may emerge for improving student persistence.

The three largest urban TCATs within the Tennessee Board of Regents System were the colleges used for this case study. These colleges were selected because the researcher is a president at one of the urban TCATs. Therefore, he was an interested educational leader and recipient of the research findings. Future studies may utilize other TCATs within the TBR system, a combination of urban and rural colleges, or all of Tennessee's higher education institutions that offer technical programs of study.

**Summary**

The qualitative case study explored factors that may contribute to student persistence in the completion of their program of study in an urban technical college setting. The study identified cognitive, institutional, and social factors that may contribute to student persistence in the completion of their program of study. The tenets of Swail's Geometric Model for Student Persistence and Achievement were used to provide the theoretical framework for the study.

There is a significant amount of research available on student persistence related to university settings (Tinto, 1975, 1987, 1993; Deci & Ryan, 2000) but, there was a lack of research that examines the cognitive, institutional, and social factors that influence student persistence in an urban TCAT setting. This study answered the central research question and the sub-questions, as five major themes emerged from the data when attaching cognitive, institutional, and social factors to student persistence, including connected learning, support systems, engagement, academic rigor, and competence. These themes revealed various cognitive, institutional, and social factors found to be relevant to a student's decision to persist in the completion of their program of study.

Furthermore, this study demonstrated that these factors were prominently on display in the admission and retention policies utilized by the urban TCATs. The TCATs were intentional about its commitment to students regarding connected learning, support systems, engagement, academic rigor, and competence. The policies also validate the commitment of the educational leaders to support the faculty at the TCATs by providing the tools needed to make informed adjustments to their programs of study. Through the GMSPA model lens, which focuses on balancing the cognitive, institutional, and social factors that students encounter in college, this research demonstrated the benefit of these tenets to student persistence.

## References


Adam, M. (2010). A shifting diversity: Implications of legal changes in diversity in higher education. *Hispanic Outlook in Higher Education*, 21, 14–16. Retrieved from http://search.proquest.com/docview/822464993?accountid=35796

Adamo, G. (2008). Students intent to persist: An analysis of a selected post-secondary for-profit institution (Doctoral dissertation). Retrieved from ProQuest Dissertation and Thesis.

Adler, E., & Clark, R. (2011). An invitation to social research: How it is done. Belmont, CA: Thomson.

Allen, D. (1999). Desire to finish college: An empirical link between motivation and persistence. *Research in Higher Education*, 40(4), 461-485.

Altbach, P. G., Gumport, P. J., & Berdahl, R. O. (2011). American higher education in the twenty-first century: Social, political, and economic challenges (3rd ed.). Baltimore, MD: The John Hopkins University Press.

American Association of Community Colleges. (, 2016). Fast facts from our fact sheet. Retrieved from http://www.aacc.nche.edu/AboutCC/Documents/AACCFactSheetsR2.pdf.

Anderson, E. (1985). *Forces influencing student persistence and achievement*. In L. Noel,

Andrews, T. (2012). What is social constructionism? Grounded Theory Review., 11(1), 39-46

Arana, R., Castaneda-Sound, C., Blanchard, S., & Aguilar, T. E. (2011). Indicators of persistence for undergraduate achievement: Toward an ecological model. *Journal of Hispanic Higher Education, 10*(3), 237-251.

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of college student personnel*, *25*(4), 297-308.

Astin, A. W. (1985). Involvement: The cornerstone of excellence. Change 17(4): 35–39. a, A. W. (1993). What matters in college: Four critical years revisited. San Francisco, CA: Jossey-Bass.

Astin, A. W. (1996). Involvement in learning revisited: Lessons we have learned. Journal of College Student Development, 37(2), 123 134.

Astin, A.W. (1999). Student Involvement: A development theory for higher education. *Journal of College Student Development*, 40, 518-529.

Babbie, E. R. (2013). The practice of social research (13th student ed.). *Belmont, CA: Wadsworth Cengage Learning*.

Baker, S. R. (2004). Intrinsic, extrinsic, and amotivational orientations: *Their role in University adjustment, stress, well-being, and subsequent academic performance*. Current Psychology, 23 (3), 189-202.

Bailey, T. R. (2005). Paths to persistence: An analysis of research on program effectiveness at community colleges.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122-147.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Bandura, A. (2006). Adolescent development from an agentic perspective. In F. Pajares & T. Urdan (Eds.) *Self-efficacy beliefs of adolescents* (Vol. 5, pp. 1-43). Greenwich, CT: Information Age.

Barbatis, P. (2010). Underprepared, ethnically diverse community college students: Factors contributing to persistence. Journal of Developmental Education, 33(3), Ba14-24.

Barber, J. H., Chesley, C. G., & Flora, B. H. (2016). Impacts of the FOCUS Act on Governance in Tennessee Higher Education Institutions. *Journal of Academic Administration in Higher Education*, *12*(2), 33-47.

Barefoot, B. O. (2000). The first-year experience: Are we making it any better? *About Campus, 4*(6), 12-18.

Battistich, V., Schaps, E., & Wilson, N. (2004). Effects of an elementary school intervention on students' "connectedness" to school and social adjustment during middle school. *The Journal of Primary Prevention, 24*(3), 243-262. DOI: 10.1023/B: JOPP.0000018048.38517.c

Bean, J., & Eaton, S. (2001). The psychology underlying successful retention practices. Journal of College Student Retention: *Research, Theory & Practice*, 3(1), 73–89. doi:10.2190/6R55-4B30-28XG-L8U0

Bean, J., & Eaton, S. (2002). The psychology underlining successful retention practices. *Journal of College Student Retention* 3(1), 73-89.

Bean, J.P., & Metzner, B.S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research*, 55(4), 485-540

Belfield, C. R., & Bailey, T. (2011). The benefits of attending community college: A review of the evidence. Community College Review, 39(1), 46-68. doi: 10.1177/0091552110395575

Berger, J., & Lyon, G. (2005). Past to present. A historical look at retention. In A. Seidman (Ed.) *College student retention. Formula for student success* (pp. 1-27). Westport, CT: American Council on Education and Praeger Publishers

Berger, J. B., Blanco Ram'rez, G. & Lyon, S. (2012). Past to present: A historical look at

retention. In A. Seidman (Ed.), *College Student Retention: Formula for Student Success* (pp. 7-34). Lanham, MD: Rowman & Littlefield

Bogdan, R. C. & Biklen, S. K. (2007). *Qualitative research for education: An introduction to theories and methods (5th ed.).* Boston, MA: Pearson.

Booker, K. C. (2007). Perceptions of classroom belongingness among African American college students. *College Student Journal*, 178-186.

Borglum, K, & Kubala, T. (2000). Academic and social integration of community college students: A case study. Community College Journal of Research and Practice, 24, 567-576

Bowen, G. A. (2009). Document analysis as a qualitative research method. Qualitative Research Journal, 9(2), 27-40.

Braxton, J. M., Doyle, W. R., Hartley III., H., V., Hirschy, A., S., Jones, W., A., & McLendon, M. K. (2014). Rethinking college student retention. San Francisco, CA: Jossey-Bass.

Braxton, J.M., Jones, W.A., Hirscy, A.S., & Hartley, H.V., III. (2008). The role of active learning in college student persistence. *New Directions for Teaching and learning.* DOI: 10.1002/tl.

Braxton, J.M., Milem, J.F., & Sullivan, A.S. (2000). The influence of active learning on the college student departure process: toward a revision of Tinto's theory. *The Journal of Higher Education, 71*(5), 569-590.

Braxton, J. M., Sullivan, A. S., & Johnson, R. (1997). *Appraising Tinto's theory of college student departure. In J. Smart (Ed.), Higher Education: Handbook of Theory and Research* (Vol. 12, pp. 107-164). Bronx, NY: Agathon Press.

Brookshire, R. G., & Palocsay, S. W. (2005). Factors contributing to the success of undergraduate business students in management science courses. *Decision Sciences Journal of Innovative Education,* 3(1), 99-108.

Brown, C., Czerniewicz, L., & Noakes, T. (2016). Online content creation: Looking at students' social media practices through a connected learning lens. *Learning, Media, and Technology, 41*(1), 140-159.

Bryant, R. T. (2015). *College preparation for African American students: Gaps in the high school educational experience*. Atlanta, GA: Morehouse College. Retrieved from http://www.clasp.org/resources-and-publications/publication- 1/Collegereadiness2 2.pdf

Burr, V. (1995). *An introduction to social constructionist*. London, UK: Rutledge.

Burr, V. (2015). *Social Constructionism*. 3rd ed. New York, NY: Routledge/Taylor & Francis Group.

Carnevale, A., Smith, N., & Strohl, J. (2013). Recovery: Job growth and education requirements through 2020. Washington, DC: Georgetown University, Center on Education and the Workforce

Castellano, M., Sundell, K. E., Overman, L. T., & Aliaga, O. A. (2012). Do career and technical education programs of study improve student achievement? *Preliminary analyses from a rigorous longitudinal study.* International Journal of Educational Reform, 21, 98-118.

Center for American Progress. (2015). *Talk poverty*: Tennessee. Retrieved from http://talkpoverty.org/state-year-report/tennessee-2015-report/

Chickering, A., Reisser, L. (1993). Education and identity (2nd ed.) San Francisco, CA: Jossey-

Bass.

CLASP (2015). [Table depiction of 'Yesterday's Non-Traditional Student is Today's Traditional Student']. *Center for Postsecondary and Economic Success*. Retrieved from http://www.clasp.org/resources-and-publications/publication-1/CPES-Nontraditional-students-pdf.pdf

Cohen, A. M., Brawer, F. B., & Kisker, C. B. (2013). The American community college. John Wiley & Sons.

Comings, JP.; Cuban, S. (2007). Supporting the persistence of Adult Basic Education students. In: Belzer, A., editor. Toward defining and improving quality in Adult Basic Education. Mahwah, NJ: Lawrence Erlbaum Associates; p. 125-140

Council on Occupational Education Annual Report Document (2018). Retrieved from https://council.org/wp-content/uploads/2018/12/COE-Annual-Report-Document-2018-12-04-2018-FINAL-for-Posting.pdf

Council on Occupational Education (2019). Achieving Accreditation. Retrieved from https://council.org/

Creswell, J.W. (2003). Research design: Qualitative, quantitative, and mixed methods approaches. Thousand Oaks, CA: Sage.

Creswell, J. W. (2009). Research design: Qualitative, quantitative, and mixed methods approaches. Thousand Oaks, CA: Sage.

Creswell, J. W. (2014). Research design: qualitative, quantitative, and mixed methods approaches. Thousand Oaks, CA: Sage.

Crisp, G., & Mina, L. (2012). The community college: Retention trends and issues. In Alan Seidman (Ed.), College student retention: Formula for student success

(2nd ed.) (pp. 147-165). New York, NY: Rowman & Littlefield Publishing, Inc.

Davis, M. H., & McPartland, J. M. (2012). High school reform and student engagement. *In Handbook of research on student engagement* (pp. 515-539). Springer US. DOI: 10.1007/978-1-4614-2018-7_25

Davidson, W. B., Beck, H. P., & Milligan, M. (2009). The college persistence questionnaire: Development and validation of an instrument that predicts student attrition. Journal of College Student Development, 50(4), 373-390.

Deci, E.L., & Ryan, R.M. (2000). The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11 (4), 227-268.

Deci, E.L., & Ryan, R.M. (2008a). Self-determination theory: A macro-theory of human motivation, development, and health. Canadian Psychology, 49(3), 182-185.

DeShields, O. W., Jr., Kara, A., & Kaynak, E. (2005). Determinants of business student satisfaction and retention in higher education: Applying Herzberg's two-factor theory. *The International Journal of Educational Management, 19*(2), 128-139.

Dixon, M. L., Cotner, B. A., Wilson, T. N. C., & Borman, K. M. (2011). Implementing Career Academies in Florida: *A Case Study Approach to Understanding Successes and Obstacles.* Career and Technical Education Research, 36(3), 207-227. DOI: 10.5328/cter36.3.207

Doll, W. E. (1983). A re-visioning of progressive education. *Theory into Practice*, *22*(3), 166-173.

Eastfield College. (2016). Learning frameworks: EDUC 1300. Retrieved from http://libguides.eastfieldcollege.edu/educ1300

Eckles, J. E., & Stradley, E. G. (2012). A social network analysis of student retention using

archival data. Social Psychology of Education: *An International Journal*, 15(2), 165–180. doi:10.1007/s11218-011-9173-z

Elliot, A.J., McGregor, H.A., & Thrash, T.M. (2003). The need for competence. In E.L. Deci & R.M. Ryan (Eds.), *Handbook of self-determination research*. (pp. 361-387). Rochester: University of Rochester Press.

Engstrom, C., & Tinto, V. (2008). Access without support is not an opportunity. *Change: The Magazine for Higher Learning, 40(1),* 46-50.

Estaville, L. E., Brown, B. J., & Caldwell, S. (2006). Geography undergraduate program essentials: *Retention.* The Journal of Geography, 105(2), 47–52. doi:10.1080/00221340608978660

Finney, J., Leigh, E. W., Ruiz, R., Castillo, W., Smith, E., & Kent, D. C. (2017). *Driven to perform: Tennessee's higher education policies and outcomes*—A Case Study. Philadelphia, PA: Institute for Research on Higher Education, Graduate School of Education, University of Pennsylvania

Ferrante, F. L. (2016). *Persistence of first-year college students: A comparative study of task and social motivation* (Doctoral dissertation, Keiser University).

Forbes, D. L. (2011). Toward a unified model of human motivation. *Review of General Psychology,* 15(2), 85-98. doi: 10:1037/a0023483

Forbus, P., Newbold, J. J., & Mehta, S. S. (2011). A study of non-traditional and traditional students in terms of their time management behaviors, stress factors, and coping strategies. *Academy of Educational Leadership Journal,* 15, 109–125. Retrieved from http://search.proquest.com/docview/887042738?accountid=35796

Gall, M. D., Gall, J. P., & Borg, W, R. (2007). *Educational research: An introduction*. (8th ed.).

Boston, MA. Pearson/Allyn & Bacon.

Gebre, E., Saroyan, A., & Bracewell, R. (2014). Students' engagement in technology rich classrooms and its relationship to professors' conceptions of effective teaching. British Journal of Educational Technology, 45(1), 83-96. doi:10.1111/bjet.12001

Gergen, K. J. (2015). Culturally Inclusive Psychology from a Constructionist Standpoint. *Journal of the Theory of Social Behaviou*r, 45(1), 95-107.

Gloria, A. M., & Robinson-Kurpius, S. E. (2001). Influences of self-beliefs, social support, and comfort in the university environment on the academic non-persistence decisions of American Indian undergraduates. *Cultural Diversity and Ethnic Minority Psychology, 7*(1), 88-102.

Goldrick-Rab, S. (2010). Challenges and opportunities for improving community college student success. Review of Educational Research. 80, 437-469. doi: 10.102/0034654310370163

Gray, R., Vitak, J., Easton, E. W., & Ellison, N. B. (2013). Examining social adjustment to college in the age of social media: Factors influencing successful transitions and persistence. Computers and Education, 67, 193-207

Gregory, T. L. (2013). Two methodologies: *How well can universities predict retention*. (Order No. 1552937, The University of Mississippi). ProQuest Dissertations and Theses, 101. Retrieved from http://search.proquest.com/docview/1508835877?accountid=35796. (1508835877).

Guiffrida, D.A., Lynch, M. F., Wall, A. F., & Abel, D.S. (2013). Do reasons for attending college affect academic outcomes? A test of a motivational model from a self-determination theory perspective. *Journal of College Student Development*, 54(2), 121-

139.

Habley, W. R. (Ed.). (2004). The status of academic advising: *Findings from the ACT sixth national survey (Monograph No. 10*). Manhattan, KS: National Academic Advising Association.

Hagerty, M. R. (1999). Testing Maslow's hierarchy of needs: *National quality-of-life across time.* Social Indicators Research, 46(3), 249–271. Retrieved from http://search.proquest.com/docview/197606335?accountid=35796

Hesse-Biber, S. N., & Leavy, P. L. (2011). *The Practice of Qualitative Research*. SAGE.

House, R.J., and Mitchell, T.R. (1974). Path-goal theory of leadership. *Contemporary Business, 3,* Fall, 81-98

House, R. J. (1971). A path-goal theory of leader effectiveness. *Administrator Science Quarterly*, 16, 331-333.

Hsieh, H. F., & Shannon, S.E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277-1288.

Hsun-yu, C., Wang, X. (2016). Interact for What? The Relationship Between Interpersonal Interaction Based on Motivation and Educational Outcomes Among Students in Manufacturing Programs at Two-Year Technical Colleges. *Community College Review*, 44(1), 26-48.

Hyslop, A**.,** & Imperatore, C. (2013). CTE's role in urban education. *Techniques,* 88(2), 16-19.

Information Technology & Innovation Foundation. (2014). *The 2014 state new economy index: Benchmarking economic transformation in the states*. Retrieved from http://www.itif.org/files/2014-state-new-economy-index.pdf.

Institute for Research on Higher Education (IRHE). (2016). College affordability diagnosis:

Tennessee. Retrieved from http:// www2.gse.upenn.edu/irhe/affordability-diagnosis

Jang, W. K. (2005). Retention of vocational education graduates in public higher education. *College Student Journal*, 39(3), 461–468. Retrieved from http://search.proquest.com/docview/236593824?accountid=35796

Jean-Francois, F. (2013). Effects of remediation on academic success of first-time-in-college female African Americans in a community college, (Doctoral dissertation, Capella University). ProQuest LLC.

Johnstone, S.M. (2007). Advancing campus efficiencies: A companion for campus leaders in the digital era. Bolton, MA: Anker.

Jones, W. A. (2010). The impact of social integration on subsequent institutional commitment conditional on gender. *Research in Higher Education,* 51, 687-700.doi1007/s11162-010-9172-5

Juszkiewicz, J. (2015). Trends in community college enrollment and completion data. Washington, DC: American Association of Community Colleges. Retrieved from http://www.aacc.nche.edu/Publications/Reports/Documents/CCEnrollment_2015.pdf

Kaighobadi, M., & Allen, M. T. (2008). Investigating academic success factors for undergraduate business students. Decision Sciences Journal of Innovative Education 6(2), 427-436

Kemple, J. J., & Wilbur, S. (2008). Long-term impacts on labor market outcomes, educational attainment, and transitions to adulthood. Retrieved from MDRC website: http://www.mdrc.org/sites/default/files/full_50.pdf

Kerka, S. (2005). Learner persistence in adult education. California Adult Literacy Professional

Development Project. Retrieved from http://www.calpro-online.org/pubs/100719LeamerPersistenceNewsletterPress.pdf

Kirp, D. (2019). The College Dropout Scandal. Oxford University Press, 2019

Kotler, P. and Fox, K.F.A. (1995), Strategic Marketing for Educational Institutions, 2nd ed., Prentice-Hall, Englewood Cliffs, NJ.

Krippendorf, K. (2013). Content analysis: An introduction to its methodology. (3rd ed.) Beverly Hills, CA: Sage.

Kuh, G.D. (2001). Assessing what really matters to student learning: Inside the National Survey Of Student Engagement. *Change, (33)*3, 10-17.

Kuh, G.D. (2003). What we're learning about student engagement from NSSE: benchmarks for effective educational practices, *Change, (35)*2, 24-32.

Kuh, G.D. (2009). The Leap Challenge Blog. Rankings privilege status attainment over student attainment. Retrieved from https://www.aacu.org/leap/liberal-education-nation-blog/rankings-privilege-status-attainment-over-student-attainment.

Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2006, July). What matters to student success: A review of the literature, Commissioned Report for the National Symposium on Postsecondary Student Success: Spearheading a Dialog on Student Success.

Kuo, V. (2010). Transforming American high schools: *Possibilities for the next phase of high school reform.* Peabody Journal of Education, 85(3), 398-401. DOI: 10.1080/0161956X.2010.491709

Lavin, D. E. & Crook, D. B. (1990). Open admissions and its outcomes: *Ethnic differences in long-term educational attainment.* American Journal of Education, 98(4), 389-425.

Leavy, P. (Ed.). (2014). *The Oxford handbook of qualitative research*. Oxford library of

psychology.

Leavy, P. (2017). Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches. Guilford Publications.

Leeds-Hurwitz, W. (2009). The social construction of reality. In S. W. Littlejohn & K. A. Foss (Eds.), *Encyclopedia of communication theory* (Vol. 1, pp. 892-894). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781412959384.n344

Lin, Y., & McKeachie, W. (1999). College Student Intrinsic and/or Extrinsic Motivation and Learning. Washington, DC: American Psychological Association

Lumina Foundation. (2018). A stronger nation. Retrieved December 2018 from http://strongernation.luminafoundation.org/report/2018/#nation.

Madgett, P. J., & Belanger, C. H. (2008). First university experience student retention factors. *Canadian Journal of Higher Education*, 38(3), 77-96.

Marshall, D., & Case, J. (2010). Rethinking 'disadvantage in higher education: a paradigmatic case study using narrative analysis. *Studies in Higher Education*, 35(5), 491-504. DOI: 10.1080/03075070903518386.-

Marsh, H. W., & Hau, K. (2003). Big-fish-little-pond effect on academic self-concept. *American Psychologist*, 58(5), 354-376.

McGlynn, A. (2010). Projected jobs call for huge growth in degreed graduates: Mission impossible? The Hispanic Outlook in Higher Education, 21(1), 26-29. Retrieved from ProQuest Education Journals. (Document ID: 2158741111)

Merriam, S. B. (1998). *Qualitative Research and Case Study Applications in Education. Revised and Expanded from" Case Study Research in Education."*. Jossey-Bass Publishers, 350 Sansome St, San Francisco, CA 94104.

Merriam, S. B., & Tisdell, E. J. (2015). Qualitative research: A guide to design and implementation. San Francisco, CA: John Wiley & Sons.

Metz, G. W. (2004). Challenge and Changes to Tinto's Persistence Theory: A Historical Review. *Journal of College Student Retention: Research, Theory & Practice*, *6*(2), 191–207.

Mills, Geoffrey E (2007). *Action research: a guide for the teacher researcher* (Third edition). Pearson Merrill Prentice Hall, Upper Saddle River, New Jersey

Morse, J.M., & Niehaus, L. (2009). Mixed method design principles and procedures. Walnut Creek, CA: Left Coast Press, Inc.

Munhall, P. L. (1988). Ethical considerations in qualitative research. *Western Journal of Nursing Research*, *10*(2), 150-162.

Museus, S. D., & Ravello, J. N. (2010). Characteristics of academic advising that contribute to racial and ethnic minority student success at predominately Caucasian institutions. *NACADA Journal 30*(1), 47-58.

Myers, T. (2012). *The persistence of African American males in community college.* (Doctoral dissertation, North Carolina State University).

National Center for Education Statistics (NCES) (2000, 2005, 2010, and 2014). Integrated Postsecondary Education Data System, fall enrollment data.

National Center for Education Statistics. (2007). Differential characteristics of two-year postsecondary institutions: Postsecondary education -descriptive analysis report. Retrieved from http://nces.ed.gov/pubs2007/2007164rev.pdf

National Center for Education Statistics (2015). *The Condition of Education, Institutional Retention and Graduation Rates for Undergraduate Students*. Retrieved from

https://nces.ed.gov/programs/coe/indicator_ctr.asp

National Center for Educational Statistics (NCES). (2015). The digest of education statistics. Data file. Washington, DC: U.S. Department of Education Retrieved from http://nces.ed.gov/pubsearch/getpubcats.asp?sid=091#06

National Center for Education Statistics. (2019). *Digest of Education Statistics, 2017* (NCES 2018-070), Chapter 3. Retrieved from https://nces.ed.gov/fastfacts/display.asp?id=98

National Student Clearinghouse Research Center (Spring 2015). Contribution of Two Year Institutions to Four-Year Completions (Snapshot Report). Herndon, VA: National Student Clearinghouse Research Center

Neuendorf, K. A. (2002). The content analysis guidebook. Thousand Oaks, CA: Sage.

Nora, A. (1993). Two-year colleges and minority students' educational aspirations: Help or hindrance? In J. C. Smart, (Ed.), *Higher Education: Handbook of theory and research* (pp. 212-247). New York: Agathon Press.

O'Connor, D., & Mulvaney, P. (2013). LIS accountability & accreditation. *Library Journal*, 138(14), 40-440. Retrieved from http://search.proquest.com/docview/1427812612?accountid=35796

O'Neal, Jr., W. (2012). *African American college students: A qualitative study of selected factors affecting dropout,* (Doctoral dissertation, Benedictine University).

Oscos-Sanchez, A. M., Oscos-Flores, L. D., & Burge, K. S. (2008). The Teen Medical Academy: Using Academic Enhancement and Instructional Enrichment to Address Ethnic Disparities in the American Healthcare Workforce. *Journal of Adolescent Health*, 42(3), 284-293. DOI: 10.1016/j.jadhealth.2007.08.023

Packnett, G. (2010). In their voices - Retaining African American students at a predominately

White university: *An examination of theoretical implications and student-centered practices,* (Doctoral dissertation, University of Missouri).

Padilla, R. V. (1991). Assessing heuristic knowledge to enhance college students' success. In G. D. Keller, J. R. Deneen, & R. J. Magillan (Eds.), Assessment and access: Hispanics in higher education (pp. 81-92). Albany: State University of New York Press.

Pajares, F. (2006). Self-efficacy during childhood and adolescence. In. F. Pajares and T. Urdan (Eds.), *Self-Efficacy: Beliefs of Adolescents* (pp. 339-359). Greenwich, CT: Information Age Publishing.

Pascarella, E. T., & Terenzini, P. T. (1980). Predicting persistence and voluntary dropout decisions from a theoretical model. *Journal of Higher Education, 51*(1), 60-75.

Pascarella, E., & Terenzini, P. (1991). *How college affects students: Findings and insights from twenty years of research.* San Francisco, CA: Jossey-Bass.

Patton, M. Q. (2014). *Qualitative research & evaluation methods: Integrating theory and practice 4th Edition.* Thousand Oaks: Sage Publications.

Payne, R. (2008). Nine powerful practices: Nine strategies help raise the achievement of students living in poverty. *Educational Leadership, 65*(7), 48-52.

Percival, J., Harvel, G., Stokes, J., Shah, A., & Zakoor, J. (2016). Development of a university/college pathway for academic success remediation.

Pew Research Center (2014). Hispanic high school graduates pass whites in rate of college enrollment: high drop-out rate at record low. Retrieved from http://www.pewhispanic.org/2013/05/09/hispanic-high-school-graduates-pass-whites-in-rate-of-college-enrollment/

Piaget, J. (2007). The child's conception of the world: A 20th-century classic of child psychology (2nd ed.). Lanham, MD: Rowman & Littlefield.

Pintrich, P. R., & Zusho, A. (2007). Student motivation and self-regulated learning in the classroom. In R. P. Perry & J. C. Smart (Eds.), *The Scholarship of Teaching and Learning in Higher Education: An Evidence-Based Perspective* (p.731-810). Netherlands: Springer.

Polinsky, T. L. (2003). Understanding student retention through a look at student goals, intentions, and behavior. Journal of College Student Retention: *Research, Theory, & Practice,* 4(4), 361–376. doi:10.2190/H9HV-5M07-RUFD-NA39

President Obama. (2015). America's College Promise. Retrieved from https://www.youtube.com/watch?v=W6pZyUmOoCg

Rayle, A., & Chung, K. (2007). Revisiting first-year college students' mattering: *Social support, academic stress, and the mattering experience*. Journal of College Student Retention: Research, Theory & Practice 9(1), 21–37. doi:10.2190/X1265606-4G36-8132

Roller, M. R., & Lavrakas, P. J. (2015). *Applied qualitative research design: A total quality framework approach*. Guilford Publications.

Rowan-Kenyon, H. T., Perna, L. W., & Swan, A. K. (2011). Structuring opportunity: *The role of school context in shaping high school students' occupational aspirations*. The Career Development Quarterly, 59(4), 330-344. DOI: 10.1002/j.2161-0045.2011.tb00073.x

Saldana, J. (2009). An introduction to codes and coding. *The coding manual for qualitative researchers, 3*.

Saldaña, J. (2014). Coding and analysis strategies. In *The Oxford handbook of qualitative research*.

Salinitri, G. (2005). The effects of formal mentoring on the retention rates for first-year, low achieving students. Canadian Journal of Education, 28(4), 853-873. Retrieved from ProQuest Central.

Sandelowski, M. (2001). Real qualitative researchers do not count. The use of numbers in qualitative research. Research in Nursing & Health, 24(3), 230-240.

Sandoval-Lucero, E., Maes, J. B., & Klingsmith, L. (2014). African American and Latina(o) community college students' social capital and student success. College Student Journal, 48(3), 522.

Schreier, M. (2012). *Qualitative content analysis in practice*. Sage Publications.

Scott, O. T. (2010). An exploratory study of first-semester student attrition in a community college, (Doctoral dissertation, University of Louisville.

Seidman, A. (2006). Retention formula slide show. Retrieved May 10, 2006, from the Center for the Study of College Student Retention Website, http://www.cscsr.org/docs/RetentionFormulaUpdate for Web2006.pdf

Seidman, A. (Ed.) (2012). College student retention: Formula for student success (2nd ed.). New York, NY: Rowman & Littlefield Publishing, Inc.

Shallcross, L. (2013, January). Making life work. *Counseling Today*, 34-41.

Shelton, E. N. (2003). Faculty support and student retention. Journal of Nursing Education, 42(2), 68-75.

Sideridis, G. D., & Kaplan, A. (2011). Achievement goals and persistence across tasks: The roles of failure and success. *The Journal of Experimental Education*, *79*(4), 429-451.

Southern Regional Education Board (2019). *SREB Fact Book on Higher Education.* Retrieved

from https://www.sreb.org/sites/main/files/file attachments/3_2019fb_college_part.pdf?1561482087

Stemler, S. (2001) An overview of content analysis. Practical Assessment, Research, and Evaluation, 7. Retrieved from http://socialscientist.us/nphs/psychIB/IBReview/Content_analysis_overview.pdf

Stone, J. R., III, & Lewis, M. V. (2012). College and career-ready for the 21st century: *Making high school matter.* New York: Teacher's College Press.

Strauss, A. L. (1987). *Qualitative analysis for social scientists*. Cambridge university press

Sutherland, J. (2011). Building an academic nation through social networks: Black immigrant men in community colleges. Community College Journal of Research and Practice, 267-279.

Swail, W., Redd, K., & Perna, L. (2003). Retaining minority students in higher education: *A framework for success.* ASHE-ERIC Higher Education Report 30(2), 1-181.

Swail, W. S. (2004). The art of student retention: *A handbook for practitioners and administrators*. Austin, TX: Educational Policy Institute.

Symonds, W. C., Schwartz, R. B., & Ferguson, R. (2011). Pathways to Prosperity: Meeting the challenge of preparing young Americans for the 21st century. Cambridge, MA: Harvard University.

Tennessee Board of Regents (n. d.). Academic Retention and Readmission at the Tennessee Colleges of Applied Technology. Retrieved from https://policies.tbr.edu/policies/academic-retention-and-readmission-tennessee-colleges-applied-technology

Tennessee College of Applied Technology Memphis (2019). Retrieved from

https://tcatmemphis.edu/programs

The College System of Tennessee (2018). *Economic Reach and Impact Report*. Retrieved from https://www.tbr.edu/sites/default/files/media/2019/07/Economic_Reach_and_Impact_of_TBR_2018_1.pdf

The College System of Tennessee (2019). Area workforce data. Retrieved from https://www.tbr.edu/

The College System of Tennessee (2019). *TCAT-Data Dashboard.* Retrieved from https://www.tbr.edu/policy-strategy/data-and-research

Tennessee Department of Education (2018) Retrieved from https://www.tn.gov/education/news/2018/10/1/tennessee-maintains-highest-graduation-rate-on-record-.html

Tennessee Higher Education Commission (2015a). 2014-2015 Tennessee higher education Factbook. Retrieved from https://www.tn.gov/assets/entities/thec/attachments/2014-15_Factbook.pdf

Tennessee Higher Education Commission (THEC). (2015e). Tennessee higher education adult student Factbook, 2014-15. Retrieved from https://www.tn.gov/assets/entities/thec/attachments/ 2014-2015_Adult_Student_Fact_Book.pdf

Tennessee Higher Education Commission (THEC). (2016a). 2015-2016 Tennessee higher education Factbook. Retrieved from https://www.tn.gov/assets/entities/thec/attachments/2015-2016_Fact_Book.pdf

Tennessee Higher Education Commission (THEC). (2016g). Profiles and trends in Tennessee Higher Education: 2016 annual report. Retrieved from https://www.tn.gov/assets/entities/thec/attachments/Profiles0Trends02016.pdf

Tennessee Higher Education Commission Fact Book (2018). Retrieved from https://www.tn.gov/content/dam/tn/thec/bureau/research/other-research/factbook/2018%2019%20Fact%20Book%20Suppressed%20Final.pdf

Tennessee Higher Education Commission Fact Book (2018). Retrieved from https://www.tn.gov/thec/bureaus/planning-and-research/planning-analysis/thec-and-tsac-infographics0/fact-book.html

Tennessee Higher Education Commission (2019). Academic Supply and Occupational Demand Annual Report. Retrieved from https://www.tn.gov/content/dam/tn/thec/bureau/research/other-research/supply-demand/2019%20Academic%20Supply%20and%20Occupational%20Demand%20Report.pdf

Tennessee Higher Education Commission Master Plan (2015). Retrieved from https://www.tn.gov/content/dam/tn/thec/bureau/research/other-research/master-plan/MasterPlan2025_0418.pdf

Terenzini, P. T., Theophilides, C., & Lorang, W. G. (1984). Influences on students' perceptions of their personal development during the first three years of college. *Research in Higher Education, 21*(2), 178-193.

Texas Higher Education Coordinating Board (2016). *Closing the gaps and the 60x30TX Texas higher education plan.* Retrieved from http://www.thecb.state.tx.us/index.cfm?objectid=858D2E7C-F5C8-97E90CDEB3037C1C2CA

The Memphis Poverty Fact Sheet (2019). Retrieved from https://www.memphis.edu/socialwork/research/2019povertyfactsheet.pdf

Thomas, C. C., Petty, T. (2014). Approaches to a successful adult education program: College Student Journal, 48 (3), 473-480.

Tinto, V. (1975). Dropouts from higher education: *A theoretical synthesis of recent literature*. A Review of Educational Research, 45, 89-125.

Tinto, V. (1987). Leaving college. Chicago: University of Chicago Press.

Tinto, V. (1989). Misconceptions mar campus discussions of student retention. *The Chronicle of Higher Education*, *36*(1), B2.

Tinto, V. (1993). Leaving college: *Rethinking the causes and cures of student attrition* (2nd ed.). Chicago, IL: University of Chicago Press.

Tinto, V. (1997). Classrooms as communities: Exploring the educational character of student persistence. *The Journal of higher education, 68*(6), 599-623.

Tinto, V. (1998). Colleges as communities: Taking research on student persistence Seriously. *Review of Higher Education,* 21, (2), 167-177. Doi:10.1353/rhe. 1997.0024

Tinto, V. (2004). Student retention and graduation: Facing the truth, living with the consequences. Washington, D.C.: The Pell Institute.

Tinto, V. (2007). Research and Practice of Student Retention: What Next? *Journal of College Student Retention: Research, Theory & Practice*, 8(1), 1–19. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.133.2661&rep=rep1&type=pdf

Tinto, V. (2008). When Access Is Not Enough. Carnegie Perspectives. *Carnegie Foundation for the Advancement of Teaching*.

Tinto, V. (2010). From theory to action: Exploring the institutional conditions for student retention. *Higher Education: Handbook of Theory and Research*, 25, 51-89.

Tinto, V. (2012). Completing college: Rethinking institutional action. Chicago and

London: *The University of Chicago Press*.

Topper, A. M., & Powers, J. M. (2013). Democracy's college: The American community college in the 21st century: Framing the issue. *Education Policy Analysis Archives*, 27(14/15), 1-8.

Townsend, B.K., Donaldson, J., & Wilson, T. (2004). Marginal or monumental? Visibility of community colleges in selective higher education journals. Paper presented at the Conference of the Council for the Study of Community Colleges, Minneapolis, MN.

Townsend, B. K., & Dougherty, K. J. (Eds.). (2006). Community College Missions in The 21st Century. *New Directions for Community Colleges*, 136.

Upcraft, M. L., Gardner, J., & Associates. (1989). *The freshman year experience*. San Francisco: Jossey-Bass Publishers

US Census Bureau (2010). United States Census Bureau on line. Retrieved from http://www.census.gov/

U.S. Census Bureau. (2015a). *American Community Survey (ACS).* Retrieved from https://www.census.gov/programs-surveys/acs

U.S. Department of Education. (2010). Number of degree/certificate-seeking undergraduate students entering Title IV institutions, by student enrollment type, control, and level of institution: United States, Fall 2009. Washington, DC: U.S. Government Printing Office.

United States Department of Education. (2015a). Fast facts. *National Center for Education Statistics*. Retrieved from http://nces.ed.gov/fastfacts/display.asp?id=40

Valentin, M. S. (2000). The intrinsic and extrinsic motivational determinants of freshmen minority students in a community college (Doctoral Dissertation). Bell and Howell Information and Learning Company.

Vogt, W. P., Gardner, D. C., & Haeffele, L. M. (2012). *When to use what research design*. Guilford Press.

White, A, & Pulla, V. (2013). Strengthening the capacity for resilience in children. In V. 155 Pulla, A. Shatte & S. Warren (Eds.), Perspectives on coping and resilience (pp. 122-151). New Delhi: Authors press.

Willis, J. W., & Jost, M. (2007). *Foundations of qualitative research: Interpretive and critical approaches*. Sage.

Xiong, Y., Li, H., Kornhaber, M. L., Suen, H. K., Pursel, B., & Goins, D. D. (2015). Examining the relations among student motivation, engagement, and retention in a MOOC: A structural equation modeling approach. *Global Education Review, 2*(3).

Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Thousand Oaks, CA: Sage.

Appendix A

Student Exit Interview Questionnaire

TENNESSEE COLLEGE OF APPLIED TECHNOLOGY AT _____

EXIT INTERVIEW AND PLACEMENT INFORMATION

Name _____Program _____ Date _____

**E-mail Address: _____**

I. Please rate the school's programs and services in accordance with the following scale:
4 = Excellent 3 = Good 2 = Satisfactory 1 = Poor N/A = Not Apply

_____ Lab, shop and/or test equipment
_____ Live-work projects, practical experiences, clinical experiences, etc.
_____ Occupational Instructor
_____ School Administrator
_____ Financial Aid (Pell Grant, SEOG, College Work-Study, Lottery Scholarship)
_____ Counseling Services (career, technical and personal)
_____ Job Placement Services (job readiness and employability skills training)
_____ Student Life Activities (job fairs, guest speakers, special events, etc.)
_____ Physical condition of the school (maintenance, housekeeping, parking)

II. Why are you leaving school? (Completed course, financial reasons, etc.)
_____

Do you feel you received the proper instruction? _____Yes _____ No
Could improve (Explain) _____

What suggestions do you offer to improve the program and/or the college?
_____

Please provide any comments or suggestions for improvement regarding Student Services (counseling, financial aid, student activities, assistance with school-related or personal problems, etc.)
_____

Miscellaneous comments pertaining to the college:
_____

Did you receive financial aid? _____ Yes _____No (If yes, indicate type received)
_____

Appendix B

**PRO-FY2020-511 - Admin Withdrawal: Not Human Subject Research**

irb@memphis.edu

Fri 5/22/2020 7:20 AM

To: Ronald Eric Platt (replatt); Roland David Rayner (rrayner)

Institutional Review Board
Division of Research and Innovation
Office of Research Compliance
University of Memphis
315 Admin Bldg
Memphis, TN 38152-3370

May 22, 2020

PI Name: Roland Rayner
Co-Investigators:
Advisor and/or Co-PI: Ronald Platt
Submission Type: Admin Withdrawal
Title: THE CONTRIBUTION OF COGNITIVE, SOCIAL, AND INSTITUTIONAL FACTORS TO STUDENT PERSISTENCE AT TENNESSEE TECHNICAL COLLEGES
IRB ID: PRO-FY2020-511

From the information provided on your determination review request for "THE CONTRIBUTION OF COGNITIVE, SOCIAL, AND INSTITUTIONAL FACTORS TO STUDENT PERSISTENCE AT TENNESSEE TECHNICAL COLLEGES", the IRB has determined that your activity does not meet the Office of Human Subjects Research Protections definition of human subjects research and 45 CFR part 46 does not apply.

This study does not require IRB approval nor review. Your determination will be administratively withdrawn from Cayuse IRB and you will receive an email similar to this correspondence from irb@memphis.edu. This submission will be archived in Cayuse IRB.

Thanks,

IRB Administrator
Division of Research and Innovation
Office of Research Compliance
315 Administration Building
Memphis, TN 38152-3370
P: 901.678.2705
F: 901.678.4409