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The Future of Career and Technical Education

By

Christopher L. Gilchrist

Lynn University

A Dissertation Submitted to the Ross College of Education

of Lynn University, Boca Raton

Presented in Partial Fulfillment of the Requirements for the Degree of

Doctor of Education

in Educational Leadership

2020

LYNN UNIVERSITY

APPROVAL OF DISSERTATION IN PRACTICE

The Future of Career and Technical Education

By Christopher L. Gilchrist, Ed. D.

Lynn University

Joseph Melita, Ph.D.
Chair, Dissertation in Practice Committee

Date

Kathleen Weigel, Ph.D.
Member, Dissertation in Practice Committee

Date

Jennifer Lesh, Ph.D.
Member, Dissertation in Practice Committee

Date

ABSTRACT

CHRISTOPHER L. GILCHRIST: The Future of Career and Technical Education

The purpose of this study was to develop a new model and blueprint of the Southeast School District's Career and Technical Education (CTE) curriculum which invest more in programs and training, connect education to careers and allow easy access and availability to all students. Career and technical education have the potential to engage students through relevant learning experiences and, when infused with rigorous academic standards, to thoroughly prepare students for college and career success. In one Southeast School District, career and technical education are yet to achieve its full potential for students. Whether partnerships have yet to be formed, updated instructional approaches have yet to be implemented, or data systems have yet to be aligned, many students do not have access nor availability to the most effective career and technical education programs. The need to re-imagine and remake career and technical education is urgent. One factor supporting the overall CTE's deficiency is the district's failure to inform students/parents of programs, such as CTE, and the benefits thereof. Dissemination of program information to all students and their parents is a relatively low-cost approach, with the potential to increase program participation among youth who may benefit most from work-based learning opportunities. The vision of the curriculum is that all youth have access to an excellent school curriculum that will prepare them to attain an excellent education and successfully transition to college and a career. The current Southeast School District's CTE curriculum is widespread among 33 high schools where students do not have access nor exposure to specific programs that are of high interest to them. These programs have been identified as critical to developing skills and preparing

youth to become workforce ready. Because campus sites where programs are offered are not accessible to where students live and only one or two schools offer the program of interest, chances of students getting into the program are very minimal. As a result, those students will not be exposed to skills and training that prepare them for opportunities and occupations beyond the classroom. Readiness takes time; students need access to prepare for the future now. Workplace readiness means understanding what to expect and having the skills and training to complete assigned tasks.

Order Number: _____

THE FUTURE OF CAREER AND TECHNICAL EDUCATION

Christopher L. Gilchrist, Ed. D

Lynn University

2020, by Christopher L. Gilchrist

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DEDICATION

I dedicate this dissertation to my inspiring parents, Arthur and Joyce Gilchrist, who first taught me the value of education and critical thought. My unconditional loving parents not only inspired me to always be the best me I could be, but they were also my role models, catapults, safety net, and cheerleading squad that I have needed my entire life. For this, I say “Thank You”.

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CHAPTER I: INTRODUCTION

The Problem

The preamble of the United States Declaration of Independence states, "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable rights that among these are Life, Liberty and the Pursuit of Happiness." The researcher would like to suggest that if there was a survey of U.S. fifth grade students as it relates to career goals and the question, "what would you like to be when you grow up?" The answers, filled with anticipation, admiration, and aspiration, would be, "a teacher, fireman, doctor, or lawyer. There will undoubtedly be similarly positive responses to include The President of the United States. The researcher would further like to suggest that none of the answers would include: a bank robber, an alcoholic, or a high school dropout. There is much research that supports the idea of predisposal and environmental influences that would have an impact the outcomes of the proposed question. To gain further perspective, the researcher examined how overhauling the current Career and Technical Education (CTE) curriculum in a Southeast School District (Pseudonym) would affect its student population and help to meet the demands of Florida's future economy. CTE supports the workforce of tomorrow, career exploration and life skills planning while forming the foundation of CTE. By integrating core academic knowledge with technical and occupational knowledge and skills, students will be on a pathway to post-secondary education and careers. An implementation of a youth apprenticeship, which is designed to provide the skills necessary for lifelong learning and career advancement, will not only meet the needs of all students, but also meet the needs of the forecasted workforce demands. A review of the current Career and

Technical Education (CTE) curriculum in the Southeast School District clearly exposes that all CTE Programs are not created with equal opportunities for all students. Further analysis reveals that its goals of providing all students access to an enriched curriculum and educational experience fall below expectation. A stellar Career and Technical Education Program is one that connects students with high-skill, high-demand science, technology, engineering, and math fields where many good jobs are waiting. Likewise, the lack of acquiring pertinent data of student's personal goals and interest, his or her "pursuit of happiness", are two of the most publicized and contributing factors which land the U.S. behind its global counterparts. Research shows the U.S. educational system's evaluation on its global job readiness of its students has received a failing grade, clearly revealing students are unprepared for an increasingly automated world (Paquette, 2018). Much of the educational success of countries that outperform the U.S., South Korea, Singapore, Germany, Canada, and Switzerland, are structured around student choice (Paquette, 2018). In the United States, the rewards and signals of sound learning is a high school diploma and years of schooling (Bishop, 2010).

The diminishing value of the standard high school diploma has been called into question, especially in large urban school districts. Improving academic environments and helping underserved students, achieve equitable access to higher education and the 21st Century workforce are the factors that must be addressed (Giffi et al., 2015). For example, in 1970, a standard high school diploma was more than sufficient to attain competent employment for individuals with a substantial middle-class income (Kitlowski, 2016). In 2019 for students to truly become graduate ready for college and careers require them to study and complete a rigorous, robust and well-rounded

curriculum that exposes them to a wide range of academic and technical knowledge and skills. This mastery will ensure all doors are left open for students when they leave high school. This is further supported by the increasing demand for higher skills across industries whether blue collar or white. What was considered low skilled, but well-paying jobs, such as manufacturing, construction, natural resources, and the like, have not disappeared, but rather the skills required have become more advanced (Kitlowski, 2016). To employ the skilled applicants needed, employers show a clear preference for individuals with higher levels of education and pay an increasing premium to employ these qualified applicants (Giffi et al., 2015). The income for individuals with just a standard high school diploma is about \$35,256 per year, with an unemployment rate of 5.4 percent (Josephson, 2018). The annual income for an individual with an associate degree is about \$41,496 per year, with an unemployment rate of 4.3 percent (Josephson, 2018). Not coincidentally, employers in 1970 preferred applicants with more significant preparation, whether through education, experience, or other forms of training. To pursue a career, high school graduates will require some education beyond high school, whether it is a certification or degree.

Even though Southeast school district's CTE curriculum offers programs (courses) under the umbrella of 17 career clusters geared toward preparing students for occupations critical to the state's economic development, there is evidence that many students are being excluded from this equation. The goal of this research was to remodel the current Southeast school district's CTE curriculum to allow all students access and availability to a full high-quality CTE menu. The researcher accomplished this by creating a youth apprentice program modeled after the Colorado youth apprenticeship program known as

Career Wise. The alignment provided a "real" world curriculum, which would include a traditional college preparatory curriculum, along with high quality, non-traditional vocational/ technical career path opportunities (Applied Educational Systems, 2019). The alignment of education and industry will help students to successfully achieve global readiness and become productive citizens in society at the same time, increasing graduation rates and decreasing dropout rates (Applied Educational Systems, 2019). Secondary school graduates will acquire skills that can be honed, refined, and applied in the real world (workforce readiness) immediately after graduation or further their education (Applied Educational Systems, 2019).

Background

For over thirty years, the United States of America has consistently applied reforms with the intentions to improve the quality of secondary education. Even though the United States educational system has made progress towards closing achievement gaps, decreasing dropout rates, and creating access to not only post-secondary schools but also the entrance into the workforce, inequalities still exist. In particular, students who are members of low-income families, English language learners, members of ethnic minority groups, and first-generation college attendees fall victims to a country that is failing to invest in the development of all people adequately. The educational playing field must be leveled (Martinez & Klopott, 2005; Noeth & Wimberly, 2002).

Traditionally, these same characteristics have been associated with students, who are underrepresented in post-secondary education and work environments in comparison to students, who take up residence in exclusive suburbs, exempt from repeatedly failing educational and poverty-stricken environments.

Throughout the early and mid-20th Century in the United States, CTE was known as vocational education or V.E. What we now call Career Technical Education was developed from the 1917 Smith-Hughes ACT, which promoted vocational education in agriculture (Herron, 2016). The initial focus for vocational education was agriculture and manufacturing to address the lack of skilled workers in those fields. Vocational education was seen as a lesser form of school, placing some students into programs that ended up limiting their future opportunities (Hanford, 2014). Most of the early vocational educational programs were developed with the primary focus on preparing students to enter the workforce after high school.

In the 1980s, what was once vocational education was transformed into what is now known as CTE (California School Board Association, 2018). The Carl D. Perkins Vocational and Technical Education Act (Perkins Act) was first authorized in 1984 in and again in 1998. The Perkins Act was again reauthorized in 2006 as the Carl D. Perkins Career and Technical Improvement Act of 2006. The purpose of the Perkins Act was to increase the quality of technical education to meet the demands of the evolving workforce in the United States.

The reauthorization of the Perkins Act replaced vocational education with career and technical education. The past vocational education programs offered courses that were relevant at that time, such as woodshop and automotive, and home economics. Even though many of those similar skills are still offered, a pathway that leads to high school graduation, higher education, and critical 21st-century jobs in skilled trades, applied sciences, and technology has emerged (Weingarten, 2015).

According to the Florida Department of Education (2019), college and career ready students are defined as those having the knowledge, skills, and academic preparation needed to enroll and succeed in first college credit-bearing courses within an associate or baccalaureate degree program without the need for remediation. Today, CTE provides a vastly different pathway, one that leads to high school graduation, higher education and meaningful middle-class, 21st-century jobs in skilled trades, applied sciences, and technology. The idea is to prepare students for a career at whatever point they decide to pursue one and to align high school CTE with post-secondary options.

Failure to acquire the knowledge, skills, and academic preparation needed to enroll and succeed in first college credit-bearing courses within an associate or baccalaureate degree program without the need for remediation will be an indication of uncertainties students will face about their future outlook. These same levels and attributes of achievement are needed for entry into and success in the 21st-century workforce education or directly into a job that offers gainful employment and career advancement. Career Ready students will not be required to follow a "normal" training path but will arrive on the job site with rudimentary skills on day one, thus reducing training time and increasing productivity. A youth apprenticeship program like Career Wise will bridge the gap between education and work experience by applying classroom learning to real hands-on work experience.

Statement of Problem

There are many benefits to high-quality CTE programs that meet the needs of all students. Southeast School District is the sixth largest school district in the United States (Florida Department of Education [FLDOE], 2019). The locality of the current county

CTE curriculum, which is widespread among 33 high schools, is a significant factor that prevents total access and exposure to specific programs that are of high interest to students. As a result, this lack of accessibility to CTE programs that prepare students for occupations that are projected to be in high demand in Florida's future workforce is deferring the dreams of students. In many instances, the schools that offer CTE curriculum are placed within areas whereby urban youth would need to provide their transportation and so few schools offer programs that if the information is not disseminated regarding registration, etc., many students will be left out.

Furthermore, paying for public transportation daily can create a hardship on those that need it the most. Moreover, the location of these CTE sites in proximity to where students reside and with so few schools offering the programs have placed children at risk of missing out on the necessary tools to improve their lives. According to the Florida Chambers Foundation (2017), the top three highest career-demand filed in the state by the year 2030 are Aerospace Aviation, Financial Services, and the Medical Field. Currently, three schools provide Aerospace Technologies, and one school offers Practical Nursing (Broward Public Schools, 2018).

The research in this study will address the problems of the lack of availability and accessibility to a full CTE educational experience in the Southeast School District and its impact on children that are left-behind. The Southeast School District is more than broken; this is a story of the tragic loss of opportunity and social injustice in the failure of schools in the Southeast District to meet the needs of all students in their CTE Program. It is time to pull back the curtains and allow students to discover the broad range of skills and competencies that today's employers are seeking.

Currently, Southeast School District's CTE curriculum offers programs (courses) under the umbrella of 17 career clusters; the objectives are to prepare students for occupations important to Florida's economic development. Each one of the 33 public high schools and 16 adult/vocational schools offer CTE programs in this school district. It is still worth noting that the problem of accessibility rises when CTE programs are not made available at students' home school or in another school nearby. If this practice is not rectified, this district may see a decrease in the number of students participating in CTE, dropout rate rise to an all-time high, and the graduation rate drops to an all-time low.

Career Technical Education offers students many advantages not part of the current educational system. For example, an understanding of technology and the connection between school and careers, which are relevance to the outside world, will provide students with a competitive edge in today's job market. Furthermore, the opportunity to succeed via a wide range of educational and career options and ways of learning that engage the mind and the body will stimulate the imagination and build confidence by showing students what they can do with their hands and their minds.

It is worth noting that the absence of Career Technology and Education Curriculum from the campus at students' home school does not meet the needs of all students or maximize the full potential of the CTE curriculum. Rather, it shows a significant deterioration of the CTE Curriculum. The unavailability of variety and a minimum number of schools offering specific CTE programs are impacting the future workforce demands of Florida's economy. The researcher suggested remodeling the current CTE curriculum using the components of the youth apprenticeship program,

"Career Wise," will likely increase the accessibility of programs that are in high demand based upon student interest. As a result, fields that are in demand for Florida's future economy would meet the needs of all students. The researcher also noted that improving the curriculum would increase the number of students participating in CTE programs and maximize the potential and benefits that CTE has to offer.

The responsibility of the educational system is to prepare students for careers of the future and a world they will see 10-20 years from now (Education Week, 2019). Southeast School District's CTE curriculum offers programs, within the 17 career clusters, geared toward preparing a student for occupations important to Florida's economic development. For example, eighteen of the school district's 33 public high schools offer Culinary Arts CTE programs; and 26 schools offer some Business Management (Analysis) programs (Broward Public Schools, 2019). The 18 schools that offer Culinary Arts also offer the Business Management (Analysis) program in which both programs are under the Business CTE cluster. Three CTE programs are offered in at least 18 or more of the county's schools; they are Allied Health Assisting (18), Business Management (26), and Culinary Arts (18).

Only four schools offer automotive repair, three schools offer construction trades and pre-apprenticeships, eight schools offer public safety (police intro and fire rescue intro), and three schools offer aerospace technologies (Broward Public Schools, 2019). The researcher suggested that the curriculum be reviewed to stay current with rapid changes in the workplace; thereby mandating more schools to offer the programs to meet the needs of student interest and exhibit relevancy to Florida's future economy demands. By the year 2030, the state of Florida is expected to add 6 million residents, have more

than 150 million visitors, have up to five million new drivers, need 20 percent more water, and demand 76 percent more energy (Lamback, 2017). Florida's estimations signify that more police and firefighters will be needed. This is a 9-1-1 call for CTE to expand the curriculum and increase school accessibility in public safety.

In this context, the projected increase of six million new residents means new homes, shopping centers, schools, and the like will have to be built. More people mean more motorists are on the streets at any given time; thereby, more freeways, auto repairs and expansions of freeways and roadways will escalate the call for CTE to make these skills and curriculum available and accessible to all students. The Florida Chamber Foundation's preliminary recommendations on the future of Florida's Quality of Life Lamback (2017), revealed the highest-demand jobs by the year 2030 will be Aerospace Aviation, Financial Services, and the Medical Field. Currently, the school district offers three sites that provide Aerospace Technologies and one site for practical nursing (Broward Public Schools, 2018). Eighteen high schools offer Allied Health Assistants. It is projected that this field will experience over a 10 percent growth. As the program grows, more classes and faculty will be needed to ensure students have accessibility and availability to enroll and master the knowledge and skills required for a career.

Florida's School Choice Law states that students can attend any school in the state that has space available. If a student wishes to enroll in a CTE program, and the program of interest is not offered at the student's home school, the student may apply at another school if it has not reached capacity. The residential address of the student does not play a role in the enrollment process (FLDOE, 2019). On the other hand, if a student seeks to enroll in a CTE program which is not available at his/her home school, and the

enrollment is at capacity, the student will be denied. The researcher suggested that school's CTE programs must be aligned with the projected state job growth along with student interest. Also, students should be surveyed, so that district and school administration would have insight into what programs are in high demand based on student interest. If the Florida Chamber Foundation would collaborate with the FLDOE to provide long-term projection data on jobs, etc., the FLDOE can expand its curriculum to meet the needs of students more effectively. The unbalanced numbers and accessibility of CTE programs (courses) offered do not meet the needs of all students and maximize the potential of the CTE curriculum nor does it meet the demands of Florida's future economy.

In 2018, nearly two-thirds of the jobs in the United States required some form of post-secondary education (College & Career Readiness & Success Center, 2013). The 2014-15 school year, however, produced the highest graduation rate in United States history (U.S. Department of Education, 2018). Even though many U.S high school students graduate with a diploma, research shows they are not college or career ready. Many “businesses have indicated they believe only half of high school students are equipped with the most important workplace skills, such as oral and written communication, critical thinking, and problem solving” they need to be successful immediately after high school (Junior Achievement USA, 2013, p. 2). Even though the 2016 school year reported a high graduation rate, only 47 percent of those graduates completed either college or career readiness curriculum of study (Santelises, 2016). Similarly, only eight percent of recent graduates have taken the necessary "foundational sets" of courses they would need to be both college and career ready (Rauseo, 2017).

There were 79,000 high school students enrolled in the Southeast School District in 2017-2018, but records show only 9,044 students completed a CTE program or an industry certification. Likewise, the 2017-18 report shows only 6,829 students were listed in dual-enrollment in Southeast School District (FLDOE, 2019). Statistically, it is estimated that only 20 percent of Southeast School District's students took advantage of the benefits of CTE programs. CTE provides students with not only academic knowledge but also technical and employability skills to pursue higher education along with post-secondary training (Brand et al., 2013). College and career readiness goals can be addressed through CTE programs that will also provide options that are appealing and interesting to those students who might be otherwise at risk of dropping out of high school. CTE has evolved from vocational education classes into something dynamic and multifaceted, a fundamental principle has been strong links between high school education and post-secondary opportunities through the earning of industry certificates, work-based learning experiences connected to local industry, and pathways that can continue into both careers and two-year and four-year colleges. By remodeling the current CTE curriculum to increase availability and variety based upon student interest and Florida's workforce demands would increase the number of students taking advantage of all the benefits CTE programs have to offer; thereby increasing growth in college and career readiness by meeting the needs of all Southeast District students.

Purpose

The purpose of this study was to develop a new model and blueprint of the Southeast School District's CTE curriculum which invest more in programs and training, connect education to careers and allow easy access and availability to all students.

Career and technical education have the potential to engage students through relevant learning experiences and, when infused with rigorous academic standards, to thoroughly prepare students for college and career success. In the Southeast School District and for a variety of reasons, career and technical education are yet to achieve its full potential for students. Whether partnerships have yet to be formed, updated instructional approaches have yet to be implemented, or data systems have yet to be aligned, many students do not have access nor availability to the most effective career and technical education programs. The need to re-imagine and remake career and technical education is urgent.

One factor supporting the overall CTE's deficiency is the district's failure to inform students/parents of programs, such as CTE, and the benefits thereof.

Dissemination of program information to all students and their parents is a relatively low-cost approach, with the potential to increase program participation among youth who may benefit most from work-based learning opportunities. The vision of the curriculum is that all youth have access to an excellent school curriculum that will prepare them to attain an excellent education and successfully transition to college and a career.

The current Southeast School District's CTE curriculum is widespread among 33 high schools where students do not have access nor exposure to specific programs that are of high interest to them. These programs have been identified as critical to developing skills and preparing youth to become workforce ready. Because campus sites where programs are offered are not accessible to where students live and only one or two schools offer the program of interest, chances of students getting into the program are very minimal. As a result, those students will not be exposed to skills and training that prepare them for opportunities and occupations beyond the classroom. Readiness takes

time; students need access to prepare for the future now. Workplace readiness means understanding what to expect and having the skills and training to complete assigned tasks.

This research study is significant because it sheds light on three factors: access, availability, and alignment, which are hindering the potential advancement for all students. The current CTE curriculum is not aligned to student interest or Florida's future workforce demands. The Southeast School District's CTE curriculum should be in alignment with the states' future projections. According to Lamback (2017), by the year 2030, the state of Florida is expected to add six million residents, have more than 150 million visitors, have up to five million new drivers, need 20 percent more water, and demand 76 percent more energy. The state's and county's CTE curriculum offers programs that would prepare students to meet the needs of the state's future economy demands if only access and availability of the CTE programs would meet the needs of all students. As a result, the CTE benefits are minimized by these factors. There is much research available on the benefits of CTE programs and how it increases graduation rates, provides dropout prevention, connects content learned to the real world to make relevance, and improves student engagement. Increasing access and availability of CTE programs will increase the number of students taking advantage of the benefits that are offered through CTE. The 2017-2018 records released showed a dismal 20 percent of the county's high school students took advantage of the benefits of CTE programs that are offered. If CTE programs and clusters are to meet the needs of the state's economic demands, remodeling the current CTE curriculum with a focus on expansion to provide a variety of CTE programs of interest at students' home schools would allow for the

number of students participating in CTE programs to increase. It will maximize the potential of the CTE curriculum to meet the needs of all students by increasing the number of students graduating with college on their minds and career readiness as their goal. The Standards-aligned and Integrated Curriculum is based on industry-validation.

High-Quality CTE programs address the goals of college and career readiness and provide learning options that are appealing for students who want might otherwise be at risk of leaving high school (Brand et al., 2013). CTE programs and pathways ensure that course work is simultaneously aligned to rigorous academic standards. Post-secondary expectations are designed to address the skills needed in specific career pathways. CTE pathways and programs apply contextual learning to help students see the relevance of what they are learning and its connection to career opportunities and life goals (Brand et al., 2013). One of the main components of high-quality CTE curriculum is quality programs (Advanced CTE, 2018). CTE programs respond to the needs of the local economies, along with help students become independent. By doing this, CTE assures our nation's standard of living and help maintain our infrastructure. It is imperative that the programs are not only of high quality but also are offered based on the need and potential growth of the economy. CTE programs are comprised of 16 tracks or clusters that apply to different high demand careers. Some of the tracks are more in demand than others as some tracks have become less popular as the economy and culture of an area changes as well (Applied Education System, 2019). The popularity of the route also changes as breakthroughs, best practices, and other advances are introduced. In other words, the 17 tracks or clusters CTE offer are expansive career opportunities that allow students to explore what they love, which helps students stay academically engaged.

CTE provides an alternative to traditional education, but it is also common for CTE graduates to enroll in four-year universities and pursue advanced degrees. The 17 cluster or career tracks teaches students life skills along with jump-starting their careers, which enables them to become productive members of their community.

The average high school graduation rate for students concentrating in CTE programs is 93 percent, compared to an average national freshman graduation rate of 80 percent. In today's society, to obtain a successful career, every student will require the 13th year of school regardless of their plans after high school. According to the Bureau of Labor Statistics, 10 of 20 fastest growing occupations require an associate's degree or less, and of the 20 occupations with the most significant numbers of new jobs projected for 2018, 13 require on-the-job training or an associate's degree (TeGrotenhuis, 2015). What this means is that CTE programs can prepare the student and provide them with the skills needed to attain these jobs. Taking CTE courses can mean earnings as much as \$19,000 more per year (We Are Teachers, 2015). CTE programs provide relevance and importance to education. CTE programs make learning relevant and essential by not only putting individuals to work to achieve success in many ways but also providing a skilled labor force to enable America to increase its place in a global economy (Gardner-Cladette & Nguyen, 2015). Both Singapore and Germany are top 10 educational countries that lead the U.S. in Math, Reading, and Science. Both countries have exceptional technical and vocational curriculums that are aligned to both the workforce and secondary education.

Additionally, these countries view technical and vocational education at the high school level as the backbone and strength of their economy. A vital element of their

economy is ensuring that students graduate from high school ready not only to complete post-secondary work but also able to join the workforce and apply what they have learned immediately. One thing that is certain about the future is that the young people that are in high school today will be joining the workforce tomorrow. There are gaps between what students are being taught and the skills that are needed to enter the workforce. The academic core subjects today that students learn from are useful, but they are not equipping them with all of the knowledge they need to seamlessly integrate into the workforce (Canon, 2011). School's CTE programs should be aligned with the projected state job growth along with student interest. By remodeling the CTE curriculum to increase accessibility to allow more students to take advantage of CTE is not only vital to Florida's economic growth but also preparing students to compete in a global economy.

Research Questions

The following questions drove the research for this study:

- 1.) How can the current CTE curriculum be remodeled so that all students have full access to a high-quality CTE menu?
- 2.) How can the current CTE curriculum be expanded to meet the demands of the future workforce and student interest simultaneously?

Research Assumptions

The researcher assumed that by modifying the current CTE curriculum will ensure that all students are ready for, have access to, and complete college-career pathways leading to 21st Century jobs. The researcher strongly believed that increasing the accessibility and balancing the CTE programs in Southeast Public School District would increase the number of students taking advantage and participating in CTE

programs. With the increase in the number of students participating and completing CTE programs, the researcher projects the graduation rate will soar as CTE demonstrates a means of reaching out and embracing every student's dream and allowing each student to find their interest that "fits" for them.

Research Design

The researcher utilized a qualitative case study design for this study. The reason for utilizing a qualitative approach to analyze and collect data is because it focuses on obtaining data through open-ended and conversational communication. By using a qualitative case study method, the researcher will be able to not only obtain what people think but also why people think as they do. The researcher collected and analyzed data by facilitating homogeneous focus groups with school personnel; such as administrators, guidance personnel, and parents from the Southeast School District. The purpose of utilizing focus group in this study is to identify and validate an appropriate solution strategy to enable the Southeast Public School District's CTE curriculum to meet the needs of all students along with the demands of the local work industry.

The researcher used a purposive, non-probability sampling strategy to select participants from the selected school personnel. The reason for purposive sampling, also referred to as judgment sampling, is to allow the researcher to be flexible, yet brief, when collecting data from participants. Flexibility allow the researcher to choose participants whose knowledge of the subject matter best fit for appropriate data, similar to the study of Creswell (Creswell, 2013).

Conceptual Framework

Dr. Conley's (2011) Four Keys to College and Career Readiness model incorporates over a decade of research on what it takes to succeed in college and career. According to the model, students are ready for college and careers to the degree to which they have mastered elements in all four keys: Think, Know, Act, and Go. The following are critical elements in the four keys of college and career readiness are communication, problem formulation, time management, study skills, persistence, collaborative learning, technological proficiency, student ownership of learning, and career pathway (Conley, 2011). Conley (2011) defines college and career readiness as a success without remediation in credit-bearing general education courses or a two-year certification program. According to Conley, school systems accountability needs to focus on successful transitions beyond high school, not graduation rates, and teachers should be evaluated by their ability to develop essential learning skills in students, not just content knowledge transmission. Conley's (2011) research stresses the importance of moving students from novice to expert thinkers. Secondary school tends to treat all learners as novices (Conley, 2011). Conceptual learning is a vital concept in Conley's (2011) research in which allows the student to develop a skill that is critical beyond high schools, such as problem-solving, evaluating, and creating. When these skills are obtained, students enter college and the workplace, understanding how the experts think. According to Conley (2011), when students have mastered the elements in the four keys of college and career readiness, these students can apply what they have learned in a real-world situation.

Delimitations

One of the delimitations of this study was the exclusion of private schools. The reason for this is that when students enter a private school setting, they are there typically for the sole purpose of preparing for college. International Baccalaureate students in Southeast Public School District was also excluded from this study for the same reason as the private school students, and these students are prepared to take college-level courses in high school. Another delimitation of the study will be the interview questions. All participants were asked the same unbiased questions in the focus groups. The researcher used more open-ended questions than close-ended questions when interviewing participants of this study. The use of open-ended questions will allowed the researcher to receive a greater variety of answers from all participants in focus groups.

Limitations

One of the limitations of this study was the participants whom the researcher was able to interview or survey. It was challenging to acquire a good number of participants of Southeast School District personnel. This may limit the researcher's abilities to gain an exact type or geographic scope of participants that was desired. Time in this study was another limitation. Data collected and analyzed from case studies may reflect a particular time in which the case study was done. These results reflected the economy, social trends, and the operations of the society at a specific time. Demographics was another limitation of this study. All of the academic tracks of the non-traditional/technical curriculum that was available for students to choose from may not meet the demands or needs of individual schools because of the community in which it resides.

Definition of Terms

For a better understanding of this study, the following terms are operationally defined:

College and Career Readiness: A student who is ready for college and career can qualify for and succeed in entry-level, credit-bearing college courses leading to a baccalaureate or certificate, or career pathway-oriented training programs, without the need for remedial or developmental coursework. However, not every student requires the same proficiency in all areas. A student's interests and post-high school aspirations influence the precise knowledge and skill profiles necessary to be ready for post-secondary studies.

Southeast Public School District: (Pseudonym): a fictitious name of a large urban school district in the southeastern United States.

CTE: Career and Technical Education (CTE) is a curriculum that provides students with the academic and technical skills, knowledge, and training necessary to succeed in future careers and to become lifelong learners. This term applied to schools, institutions, and educational programs that specialize in the skilled trades, applied sciences, modern technologies, and career preparation.

Career Academy: A career academy is a personalized small learning community within a high school, selecting a subset of students and teachers for a Two-, Three-, or four-year span. Students enter through a voluntary process; they must apply and be accepted, with parental knowledge and support.

Urban: An urban area is a human settlement with high population density and infrastructure of the built environment. Urban areas are created through urbanization and are categorized by urban morphology as cities, towns, conurbations, or suburbs.

Perkins ACT: The Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV) is a principal source of federal funding to states and discretionary grantees for the improvement of secondary and post-secondary career and technical education programs across the nation.

I.B.: I.B. is the acronym for International Baccalaureate: a program of education for 16-19-year-old students. International Baccalaureate is an internationally recognized course, taken by students all around the world.

CHAPTER II: LITERATURE REVIEW

Introduction

“Our mission is to promote student achievement and preparation for global competitiveness by fostering educational excellence and ensuring equal access”

- U. S. Department of Education

This review of related literature pertains to the topic of the future of career and technical education with focus on access and availability to students. A search was conducted for relevant studies to determine the synergy between Career and Technical Education (CTE) and College and Career Readiness curriculum currently being implemented by the Southeast Public School District. CTE curriculum, first and foremost, must be cognizant of the needs of all students as well as future job demands. The U. S. Department of Education Data Base, The Division of Academic and Technical Education (DATE), Perkins Collaborative Resource Network, Nation Report Card, as well as other electronic databases such as Google search, were utilized in this study.

Keywords and phrases used in the search were *career and technical education, career and technical education curriculum, history of CTE programs, CTE, apprenticeship, USA’s top-notch programs, CTE vocational education and training and Florida’s Department of Education (FDOE)*. The review is presented in the following categories: history of CTE programs, current state of college and career readiness, CTE-implementation, main components, youth apprenticeship; and current Southeast Public School District’s CTE curriculum and practices. Also, global job readiness and future job growth projections will be discussed.

Students who are considered college and career ready are prepared and succeed in entry-level, credit-bearing college courses leading to a baccalaureate or certificate, or career pathway-oriented training programs, without the need for developmental or remedial course work. It is essential to understand that not all students are the same, and not every student requires the same proficiency in all areas. Students' post-high school aspirations and interests influence the precise knowledge and skill that is necessary to be ready for college and careers.

Southeast Public School District is the sixth largest school district in the United States (FLDOE, 2019). The current County CTE curriculum is so far-reaching between 33 high schools that students do not have access to exposure to specific programs that are high interest to students. Also, Students are not exposed to programs that prepare them for occupations that are projected to be in high demand of Florida's future workforce because it is not accessible to where they live, or there may be only one or few schools that offer requested programs. The CTE programs offered within the county are not balanced throughout the county as far as the number and variety of programs offered. The unbalanced numbers and accessibility are not relevant to Florida's future economic development, but it may play a major role in Florida's workforce. Currently, Southeast School District's CTE curriculum offers programs (courses) under the umbrella of 17 career clusters geared toward preparing a student for occupations important to Florida's economic development. Each one of the 33 public high schools and 16 adult/vocational schools offer CTE programs in this school district. Persistently, accessibility and availability to CTE programs being offered at student's home school do not meet the needs of all students or maximize the potential of the CTE curriculum. Even though

availability of variety in program selections and a minimum number of schools offering these specific CTE programs are not relevant to the needs of the future workforce demands of Florida's economy. The researcher suggested by remodeling the current CTE curriculum to increase the accessibility of programs that are in high demand based upon student interest and also fields that are in demand for Florida's future economy would meet the needs of all students. Including the component, Career Wise, to the current CTE curriculum would increase the number of students participating in CTE programs and maximize the potential and benefits that CTE has to offer. The researcher calls on school officials to expand the number of programs offered as well as the number of sites where students can engage in a full CTE menu.

History of CTE Programs

Throughout the early and mid-20th century in the United States, CTE was known as vocational education or VE. What we now call career technical education was developed from the 1917 Smith-Hughes ACT, which promoted vocational education in agriculture (Herron, 2016). The initial focus for vocational education was agriculture and manufacturing to address the lack of skilled workers in those fields. Vocational education was seen as a lesser form of school, tracking some students into programs that ended up limiting their future opportunities (Hanford, 2014). Most of the early vocational educational programs were developed with the primary focus on preparing students to enter the workforce after high school. The transformation of vocational education model to what is known as CTE began in the 1980s (California School Board Association, 2018). The past vocational education programs offered courses that were relevant for that time, such as woodshop and automotive, and home economics. Today's

CTE programs provide a vastly different pathway that leads to high school graduation, higher education, and essential 21st-century jobs in skilled trades, applied sciences, and technology (Weingarten, 2015).

The new economy requires that employees be able to apply mathematics, technical reading and writing, and science skills in a variety of job task (State University, 2012). The trend in current CTE programs is to teach a variety of skills that can be transferred to the various occupations that are in demand. These skills enable students to be able to develop skills that will not limit them to one particular job or lead them down a path to a dead-end job.

Traditional vocational education has not gone away, but it is evolving. Many of the current jobs in today's workforce require some certification or license. This can be earned through post-secondary training or even while students are in high school. It was a belief that students who desired to enter college upon high school graduation needed a different academic preparation than those that desired to enter the workforce from high school. Today, this is far from the truth due to the continued expansion of today's global economy (Ready for College, 2006). High school graduates must not only be able to successfully make a transition into a post-secondary option but also compete and thrive in the ever so changing workforce once they get there. Regardless of whether joining the workforce immediately after high school or college, all high school graduates should exit high school with not only a minimum level of academic knowledge but also a basic knowledge of skills that are vital to workforce success, CTE helps in meeting this requirement. Career and technical education (CTE) provide students with not only academic knowledge but also technical and employability skills to pursue higher

education along with post-secondary training (Brand et al., 2013). College and career readiness goals can be addressed through CTE programs that will also provide options that are appealing and interesting to those students who might be otherwise at risk of dropping out of high school.

Perceptions of CTE programs

Individuals who are enrolled in or participate in CTE know the expectations employers have for them entering the work environment. From the days of the origins of vocational education, people have had their perceptions of CTE programs. The days of old school wood- shop, home economics, and auto-repair are long gone. CTE is not just learning a trade in a classroom. CTE is more than learning a trade; it is about finding and developing a career (We Are Teachers, 2015). Students can learn from a wide range of career clusters from technology to health and hospitality. Despite what people think, CTE does not just take place in the classroom (We Are Teachers, 2015). CTE starts in the classroom, but it quickly extends into the community and online. Community businesses often help CTE programs by collaborating to align course work with current occupations.

Current State of College and Career Readiness

The FLDOE (2019) defines College and Career Readiness as students having the knowledge, skills, and academic preparation needed to enroll and succeed in introductory college credit-bearing courses within an associate or baccalaureate degree program without the need for remediation (FLDOE, 2019). These are the vital attributes of achievement students need to be prepared to compete in a global workforce and post-

secondary education. According to the FLDOE (2019) college and career, students demonstrate mastery of the Florida Postsecondary Readiness Competencies in English and mathematics that have been identified through a cross-sector collaborative effort by Florida's K12, college and university faculty. Florida's students demonstrate proficiency by achieving passing scores in reading, writing, and mathematics on the Postsecondary Education Readiness Test such as Florida Standards Assessments (FSA) exam or an approved alternative. Students that score below state-adopted standard cut scores in these areas are required to enroll in and complete remediation courses in those areas deficiencies and meet the required score test score before enrollment in post-secondary education, general education, or college-credit courses (FLDOE, 2019).

Students who are successful in higher education and the workforce usually tend to demonstrate a certain maturity that is evidenced by certain observable behaviors and dispositions which have been identified by Florida post-secondary faculty as well as business and industry leaders (FLDOE, 2019). These skills are identified as proper time management, critical thinking, and analytical skills, practical oral and written communication skills, intellectual curiosity, and a commitment to learning.

The vast majority of public two-and four-year colleges in 44 states have reported to enrolling more than a half million students who are not ready for college-level work (Bytrymowicz, 2017). Florida spends hundreds of millions of dollars each year offering remedial classes to college students to re-teach them reading, English, or math skills they should have learned in high school (Ross, 2012). There is a glaring educational gap in the educational system (Bytrymowicz, 2017). For the past eight years, high school graduates from Florida high schools have needed remedial courses in college. In the

2010 school year, 39 percent of Southeast Public High School District graduates along with 38 percent of the state's high school graduates from that year that enrolled into a two or four-year university needed remedial courses (Ross, 2012). On the other hand, reports from both Broward College and Palm Beach State College's freshman class showed a decrease in the number of freshmen enrolled in remedial courses. The factor contributing to the decrease in students' enrollment in remediation courses is not that they are better prepared, but rather they are choosing not to pay for a course in which they will not receive college credit (Travis, 2016). Because of students not enrolling for the needed remediation courses but taking regular college-level courses, first-year freshmen dropout rate has increased (Travis, 2016). A large number of students, based on the percentage of Florida High school graduates taking a college placement test such as the Scholastic Assessment Test (SAT), American College Test (ACT), or College Placement Test (CPT), enrolled into a public Florida college or university needing remediation in at least one subject (FLDOE, 2019).

Career and Technical Education over the past several years has become an essential pillar in the American education system. What was called vocational education or Vo-Tech, CTE provides students real-world skills to enter the workforce in 16 different industries, tracks, or clusters. The transformation explicitly links academic and technical content to help students develop general skills that are vital to be able to compete in the multi-face workforce. Students that enroll in CTE classes are increasingly higher performers, with higher graduation rates along with impressive post-secondary enrollment rate. Students that are involved in CTE classes are also more academically

engaged. The highest value of CTE comes from when students are engaged in high-quality CTE programs of study combined with a rigorous academic workload.

Students that concentrate on CTE programs graduate at a 93 percent rate, which is 10 points higher compared to the national average graduation rate of 83 percent. All 50 states, including Washington, D.C., report higher graduation rates for secondary CTE students than for all students (Applied Educational System, 2019). Students that take one CTE course for every two academic courses minimize the risk of those students dropping out of high school. The student dropout rate for CTE students decreases by 50% (Applied Educational System, 2019). Results from a survey conducted by Career and Technical Education in 2017 showed 81 percent of high school dropouts said that real-world education would have kept them in school. CTE is not a path away from college, but students that take CTE courses are just as likely to pursue a four-year degree as their peers (Pearlstein, 2017).

Current Southeast Public School District CTE Curriculum

Southeast School District's CTE curriculum offers programs within the 17 career clusters geared toward preparing a student for occupations important to Florida's economic development. Eighteen of Southeast school district's 33 public high schools offer Culinary Arts CTE programs, and 26 schools offer some Business Management (Analysis) programs (Broward Public Schools, 2019). The 18 Southeast Public schools that offer Culinary Arts also offer the Business Management (Analysis) program in which both programs are under the Business CTE cluster. Three CTE programs are offered in at least 18 or more of the county's schools, which are Allied Health Assisting (18), Business Management (26), and Culinary Arts (18). Table 1 identifies the five most offered CTE

programs in Southeast Public School District and the projected future demand for the field.

Table 1. *Most Offered CTE Programs in Southeast Public School District.*

Program	# of Schools in Southeast public District that offer the program	Projected future demand for the field
Hospitality & Tourism	12 of 33	High
Java Development	15 of 33	High
Programing		
Allied Health Assistant	18 of 33	Medium
Culinary Arts	18 of 33	Low
Business Management (Analysis)	26 of 33	High

Only four schools offer automotive repair, three schools offer construction trades and pre-apprenticeships, eight schools offer public safety (police intro and fire rescue intro), and three schools offer aerospace technologies (Broward Public Schools, 2019).

Table 2 identifies the programs (fields) that are in high demand according to the Florida’s future projections by the year 2030 and how many schools in Southeast Public School district offer the programs.

Table 2. *Highest Demand Fields.*

Program	# of Schools in Southeast Public School District that offers program	Demand Projection for field in by the year of 2030
Aquaculture	2 of 33	High
Public Safety	4 of 33	High
Emergency Medical Responder	8 of 33	High
Construction/Manufacturing	2 of 33	High
Automotive Repair	3 of 33	High

Energy Generation	1 of 33	High
Aerospace Tech	3 of 33	High

The researcher suggests that Southeast Public School District’s CTE curriculum be remodeled, so that more schools offer the programs to meet the needs of student interest as well as those that are relevant to Florida's future economy demands. By the year 2030 the state of Florida is expected to add six million residents, have more than 150 million visitors, have up to five million new drivers, need 20 percent more water, and demand 76 percent more energy (Lamback, 2017). The state of Florida has a projected increase of six million people and more than 150 million visitors. As a result, more police and fire rescue employees will be needed. To filled these jobs with highly skilled and competent workers, Southeast Public School District will need a new model and blueprint of CTE curriculum that invest more in programs that connect education to work with emphasis on easy access and availability for all students. Student should expect additional CTE programs in public safety. The increased number of six million residents means that new homes have to be built. Due to this projection, an increase in the number of accessible schools offering construction CTE programs should support forecasted growth in population. More people are driving in the state increases demands for accessibility for more auto repair in the county. According to the Florida Chambers Foundation (2017), the top three careers that will be in high demand in the state by the year 2030 are Aerospace Aviation, Financial Services, and the Medical Field. Currently, three schools provide Aerospace Technologies, and one school offers practical nursing (Broward Public Schools, 2018). The following table identifies five fields that will have at least 10% growth by the year 2030. Table 3 identifies the program field, the net job

growth, approximately the number of jobs, the percent of those jobs that require college degree, and the number of schools in the Southeast Public School District that offer that program.

Table 3. Florida Projected Job Growth Fields by Year 2030.

Program	Net Job Growth by 2030	# of Jobs	# of Jobs that require college degree	# of SPSD with program in this field
Aerospace and Aviation	12%	92,598	35%	3 of 33
Finance and Professional Service	18%	888,247	27%	27 of 33
Distribution and Logistics	12%	724,277	21%	3 of 33
Manufacturing	12%	360,783	10%	2 of 33
Health Care and Life Science	27%	810,331	66%	5 of 33

Eighteen highs schools offer Allied Health Assisting, which could be an alternative to nursing. Since this field is projected to have over a 10 percent growth, depending on demand and popularity within the school, a particular program, such as this, may have to add a second teacher in order for the program to grow and meet the enrollment requirement.

If a student wishes to enroll in CTE program and the programs of interest is not offered at the students home school, under the law of student school choice, the student may apply to enroll at another school that offers the program. By law, students may apply to attend public school in Florida that has not reached capacity, regardless of the home address (FLDOE, 2019). If a student wanted to enroll in a CTE program and it is not offered at their home school applies to another school or schools that offers the program and those schools have reached capacity then the student is unable to enroll in

the program. The researcher suggested that school's CTE programs should be aligned with the projected state job growth along with student interest. Students should be surveyed, so that district and school administration have an understanding of what programs are in high demand based on student interest. The unbalanced numbers and accessibility of CTE programs (courses) offered do not meet the needs of all students and maximize the potential of the CTE curriculum neither does it meet the need of Florida's future economy.

Global Job Readiness

The job of the educational system is to prepare students for jobs of the future and a world they will see in 10-20 years from now (Education Week, 2019). By remodeling, the current Career and Technical Education (CTE) curriculum will allow students a choice of a career-ready curriculum which supports the student's personal goals and his or her "pursuit of happiness". One of the most publicized facts on the global position of the U.S. Educational System and the global job readiness of its students is that they fall behind other countries in readiness for an increasingly automated world (Paquette, 2018). Much of the educational success of countries that outperform the U.S. such as, South Korea, Singapore, Germany, Canada, and Switzerland is based on student choice (Paquette, 2018).

In the U.S. the reward and signals of sound learning is a high school diploma and years of schooling (Bishop, 2010). As a possible means to broaden the objective of CTE, where appropriate, to link CTE skill standards to world-class standards, the reauthorization of the Carl D. Perkins Career and Technical Education Amendments of 2006 mentioned the alignment of standards, instruction, professional development, and

assessment to those of the highest-performing countries (McCage, 2017). In higher performing countries, the very nature and content of Occupational/Skill standards dictate the primary input and validation comes from the employers.

In the U.S., this is not the case, as educators (as opposed to employers) are often the prime movers in the professional standards development movement (McCage, 2017). Skill standards often and should reflect what is being taught as opposed to what should be taught. Historically, U.S. educators have used skill standards to define instruction, whereas most of the developed countries the U.S. competes with have used them to define assessment or qualifications (McCage, 2017). As long as the emphasis of the U.S. educational system is placed on just academic course-taking, there will be less time at the secondary level for taking major electives in CTE. In other words, when it comes to CTE, the current U.S. educational system places more emphasis on students being able to know about occupations within a broad career pathway that is articulated to the next level instead of what they can carry out workplace-related activities before they are deemed qualified (McCage, 2017).

Switzerland ranked as the best education system in the world but ranked third overall in the entire human capital report (Geneva Business School, 2020). The two countries to rank higher overall were Norway and Finland (Geneva Business School, 2020). With 70% of young people participating, the Swiss VET system is not only held in high esteem by the public, but it is also a critical component of the Swiss economic engine (National Center on Education and the Economy, 2018). The system also seamlessly connects young people with careers in white-collar and blue-collar jobs

through a robust apprenticeship system, keeping youth unemployment rates down (National Center on Education and the Economy, 2018).

Future Job Growth Projections

Preparing students for the future is why it is vital to remodel the Southeast School District's CTE curriculum to allow all students access and availability to a full high-quality CTE menu to maximize its potential to benefit and meet the needs of all students along with meeting the future demands of Florida's future economy. The job of the educational system is to prepare students for jobs of the future and a world they will see in 10-20 years from now (Education Week, 2019). The current Southeast School District CTE curriculum is so spread out between the 33 high schools that students do not have access to exposure to specific programs that are high interest to students. The student is also not exposed to programs that prepare students for occupations that are projected to in high demand or Florida's future workforce because it is not accessible to where they live or there may be only one or few schools that even offer the program.

According to Lamback (2017) by the year 2030 the state of Florida is expected to add six million residents, have more than 150 million visitors, have up to five million new drivers, need 20 percent more water, and demand 76 percent more energy. The state's CTE curriculum offers CTE programs that would prepare students to meet the needs of the state's future economy demands. There is much research available on the benefits CTE programs and how it increases graduation rates, provides dropout prevention, connects content learned to the real world to make relevance, and improves student engagement. By increasing, access and availability of CTE programs will allow

more exposure increases, the number of students taking advantage of the benefits that are offered through CTE.

The 2017-2018 school year revealed only 20 percent of the county's high school students took advantage of the benefits of CTE programs that are offered. CTE programs and clusters meet the needs of the state's economic demands. Remodeling the current CTE curriculum to expand to offer a variety of CTE programs of interest and to match the needs of that future economy at students' home schools would allow for the number of students participating in CTE programs to increase. This will maximize the potential of the CTE curriculum to meet the needs of all students and increase the number of students graduating considered college and career ready.

The Importance of CTE Programs

In 2016, 40 to 60 percent of first-year college students required remedial courses in math, English, or both (Polumbo, 2018). This signals that millions of students were paying for classes that they did receive college credit for completing. CTE increases graduation rates for high school all students, including those that are at risk of not graduating and those with disabilities. High school students that are enrolled and actively participate in CTE are more academically and actively engaged, perform better, and graduate at higher rates. The average high school graduation rate for students concentrating in CTE programs is 93 percent, compared to an average national freshman graduation rate of 83 percent (Career and Technical Education, 2016). The Statistics, 10 of 20 fastest growing occupations require an associate's degree or less, and of the 20 occupations with the enormous numbers of new jobs projected for 2018, 13 require on-the-job training or an associate's degree (TeGrotenhuis, 2015). This means CTE

programs can prepare the student and provide them with the skills needed to attain these jobs. Taking CTE courses could mean that students' earnings could be as much as \$19,000 more per year than those who do not (We Are Teachers, 2015).

CTE programs reduce dropout rates. CTE programs reduce dropout rates because it offers practical application of knowledge that can help students see the relevancy of their instruction (TeGrotenhuis, 2015). This enables students to become more engaged in their instruction to fully connect to the content, which allows them to understand why the content is essential. A study conducted in a large urban school district in the year 2000 concluded that dropout rates of students involved in CTE programs were half the rate of students who were not enrolled in CTE programs (Wonacott, 2002).

CTE programs provide relevance and importance to education. CTE programs make education relevant and vital by not only putting individuals to work to achieve success in many ways but also providing a skilled labor force to enable America to maintain its place in a global economy (Moore, 2015). President Obama's sixth state of the Union address repeatedly emphasized the importance of access to higher education at an early age (Gardner-Clagett, Nguyen, 2014). The CTE programs of today emphasize the relevance that individuals do not need a four-year degree to be successful but do need some form of post-secondary education or industry training to sustain a job and career.

CTE programs boost the economy. CTE programs best serve students and communities because they adapt to the changing business cycle (Kuykendall, 2015). CTE programs often collaborate with local businesses and colleges to align their curriculum with connecting. Due to the wide variety of offerings through CTE programs,

students have the opportunities to explore different potential career fields. Courses in the medical fields are top-rated than some of the traditional course of vocational education such as wood shop and welding.

Problem-solving and critical thinking is the number one reason why CTE programs are essential in high school (Kuykendall, 2015). The responsibility of educators is not only to teach students what to think but how to think. CTE programs are designed to teach students how to think no matter the task that is in front of them. Students must be able to understand logical connections to solve problems systematically (Kuykendall, 2015). This is not only important in a career but also in life.

Implementing CTE

Administrators and educators are familiar with the benefits that CTE programs offer. The CTE curriculum engages students in real-world, hands-on learning; which also promotes a collaborative and project-based approach. CTE provides students with concrete, skills they need to need to be successful in the career that is in demand. CTE is one of the key strategies that help education adapt to 21st century needs (Stone, 2017). Although CTE learning looks different from the traditional classroom model, implementing a CTE program or academy into a school would adequate research and understanding of the CTE programs, 16 tracks, and current career demands. Seven key strategies are essential when implementing a CTE program (Stone, 2017). They articulate individual purpose, determine which programs to offer, evaluate staffing resources, secure funding, build partnerships within the community, and plan for ongoing evaluation.

CTE is used as a blanket term for some clusters or program models and educational outcomes. It is vital to identify from the start the purpose of implementing a CTE program or academy in the school and what goals are expected to be achieved from the implementation of the program. Examples of the different outcomes or goals of the implementation of a CTE program are dropout prevention, increase college and career readiness, or improve student achievement in core academic skills through an interdisciplinary approach. No matter the schools or district's goals for implanting a CTE program or academy, they must be clearly stated and defined from the start of the implementation (Stone, 2017). The goals of the program will be used as a basis for all of the subsequent decisions that are made concerning how to implement the program.

A significant benefit of CTE programs is that it places focus on building skills in the classroom that can be applied directly into the real world. Offering the right courses is a vital piece to not just a CTE program but any successful program. The courses offered must be able to teach the skills that can be applied to the careers that are in demand. Administrators must have a deep understanding and stay in tune with the industries, skills, and careers that are in demand (Stone, 2017). This is why, during the planning process of implementation of a CTE program, it is vital to plan for the program flexibility and change as the demands and popularity changes. Infusing core skills into the CTE curriculum and considering offering an exploratory course at the middle school level to build a solid foundation of interest and enrollment in the program would enhance CTE's objectives (Stone, 2017).

Once the purpose of implementing a CTE program has been established, there needs to be an evaluation of staff resources. The teachers of CTE courses must have a

deep understanding and experience of the content in which they are to deliver. If teachers are unqualified or not enough qualified teachers available may result in an alternative such online courses to fill in the gaps. Staff support is a critical piece to making the program successful. Counseling and guidance staff are vital in effective CTE programs and are great resources to helping students determine paths where they will be successful and learn how to navigate a different kind of educational model (Stone, 2017).

Members of the staff are individuals who will deliver the content to the students on a day to day basis. It is imperative that these individuals have a deep understanding and experience of the content they are to deliver. According to Stone (2017), professional development (PD) and training opportunities to keep staff in the loop about the objectives and changes within the CTE program are essential. Professional Development also allows the staff member to stay up to date and equipped with the knowledge and resources they need to put strategies into action. Professional Development for CTE teachers should be tailored to that teacher's subject matter (Stone, 2017). Individual staff members, such as guidance, seek a strong understanding of the goals and benefits of CTE, so that they can be effective advocates and translators for students and families involved in the program. It is essential to provide knowledge of interdisciplinary instruction to CTE teachers, especially those with an industry background. Professional Development ultimately makes sure CTE teachers are knowledgeable on the latest standards and comfortable with all of the up-to- date technology the program is utilizing.

The hands-on aspects of a CTE program allow students to make explicit connections to what they are learning and apply to real-world situations. This ultimately

answers the question “Why CTE is essential”. CTE programs become genuinely useful and also accessible when they offer learners the chance to get out of the classroom and experience the working world firsthand (Stone, 2017). Building relationships with industries in the community in which the school resides is the best way to create these opportunities. Schools implementing CTE programs should reach out to different companies and express their interest in creating partnerships between their professionals and students (Stone, 2017). Inviting visitors from the business community to speak on a variety of topics to the class and proposing brief onsite visits are both positive ways to create partnerships. These partnerships lead to more robust ongoing opportunities like mentoring, project-based learning partnerships, internships, and school to work programs.

Implementing a CTE program is a long-term commitment and not a one-time undertaking. Achieving success is all about iteration and scalability (Stone, 2017). Developing a plan for evaluation of the program is vital to the program's success. Feedback from everyone involved in the CTE program would be useful data for the program. Surveying teachers, students, parents, and industry partners would be a great tool to make sure every group has a voice in the program along with ensuring everyone's needs are being met. Other forms of data that could be used to evaluate the program to determine if objectives and goals are being met are: student test scores, online classes or programs, and formative classroom assessments. Gathering and compiling different forms of data will enable administration and staff to make meaningful read on how the implementation is going, and make adjustments to course offerings, curriculum, assessments, format and other program components every year. Careful planning, setting

clear goals, and dedication to continuous improvement, a CTE program can be an essential asset to improve and enhance student outcomes.

Main Components of Effective CTE Programs

As the need to prepare today's students for tomorrow's ever-changing workforce continues to grow, there is a need for high-quality CTE programs. In order for high-quality CTE program to be effective, there must be four important components present. Four vital components should be a part of every high-quality CTE program, which are quality administrators, quality programs, quality teachers, and quality tools and data (Advance CTE, 2017). Without these four components, CTE programs would not be as effective.

Quality administrators are the first vital component of an effective CTE program (Advanced CTE, 2018). It is vital for administrators of an effective CTE program to know and understand the meaning and purpose of the program. Various CTE organizations have noticed a disturbing trend in which many CTE administrators are not coming from the ranks of the CTE teacher community (Advanced CTE, 2018). This creates a situation where individuals have administrators leading an organization, department, or program without the proper knowledge or understanding of the program. These individuals will continuously be faced with the challenge of understanding the nuances of a quality CTE program while at the same time trying to lead the program. Students in a CTE program like this may not benefit from the from all what quality CTE education offers. Understanding the nuances of a quality CTE program is essentially the difference in primary education and CTE including mission, governance, instructional delivery, financing of CTE programs, as well as the professional needs (Advanced CTE,

2018). The ultimate or over-arching difference also correlates to the ability to embrace and determine the right plan of engaging business and industry.

Quality programs are the second vital component in quality effective CTE programs (Advanced CTE, 2018). CTE programs respond to the needs of the local economies, along with help students become independent. By doing this, CTE assures our nation's standard of living and help maintain our infrastructure. It is crucial that the programs not only are of high quality but also are-offered based on the need and potential growth of the economy. CTE programs are comprised of 16 tracks or clusters that apply to different high demand careers. Some of the tracks are more in demand than other as some tracks become less popular as the economy and culture of an area changes as well (Applied Education System, 2018).

The popularity of tracks also changes as breakthroughs, best practices, and also other advances are introduced. In other words, the 16 tracks or clusters CTE offer are expansive career opportunities that allow students to explore what they love, which helps students stay academically engaged. CTE provides an alternative to traditional education, but it is also common for CTE graduates to enroll in four-year universities and pursue advanced degrees. The 16 cluster or career tracks teaches students life skills along with jump-starting their lives, which enables them to become productive members of their community.

Quality teachers are the third vital component of a quality CTE program. Just as quality administrators, CTE teachers need a deep understanding of and experience in the related technical content in which they are to deliver. Just as general education teachers, CTE teachers are sometimes individuals who are coming into not just CTE but education

as a profession altogether as a second career. It is vital that the processes for bringing new CTE teachers to the classroom are straightforward and that efforts are made and inclusive to ensure these individuals are kept up to date with new methods, materials, and products that are occurring within the workforce (Advanced CTE, 2018). It is also just as equally important that classroom pedagogies are reinforced.

Quality tools and Data of a CTE program is the fourth and final component that is vital to a quality CTE program. CTE programs, courses, academies, and teachers need tools that can help assess, measure, and reward both individual and program success. Third party data is essential for schools, programs, and teachers for a variety of reasons (Advance CTE, 2018). Accurate data can be used to improve data-driven instruction along with identification of areas in need professional development.

The New CTE (Youth Apprenticeship)

High school apprenticeships programs provide the foundation for the student to choose among multiple pathways after high school, including enrolling in college, entering an adult apprenticeship program, beginning full-time work, or a combination of these options (United States Department of Labor, 2018). Students who choose to enroll and participate in an apprenticeship program select an or career area to study, in addition to their academic courses that are required for high school graduation (United States Department of Labor, 2018). Students enroll in apprenticeship programs the summer after the completion of their 10th-grade year leading into their 11th-grade year. The reason for this is because, in most states, students are not legal to work until the age of 16. High-quality youth apprenticeships share the same core elements as CTE programs of study. For example, Advance CTE's (2019) policy benchmark tool identifies rigorous

course standards and progressive, sequenced courses; secondary and post-secondary alignment and early post-secondary offerings; industry involvement; labor market demand; and high-quality instruction and experiential learning as necessary for a program to be considered high quality - all of which are reflected across the apprenticeship principles.

There are four element and two main components to successful youth apprenticeships. They are building strong partnerships, aligning programs to industry workforce needs, designing quality programs and promoting student success. The main components are classroom instruction and on-the- job training (United States Department of Labor, 2018). By integrating classroom instruction and hands-on learning, both youth apprenticeships and CTE an enhance learners educational experience and better prepare them for future career success (Advance CTE, 2019). The significance of coordinating high-quality youth apprenticeships and CTE, empowering learners through work-based learning and strong systems alignment anchored in learner success (Advanced CTE, 2019). Rather than isolating CTE as a separate educational strategy, an integrated approach to education and training can ensure that all learners have opportunities to succeed Four Elements of Youth Apprenticeships in a career of their choosing (Advance CTE, 2019).

Building strong partnerships among high schools and colleges, businesses, students and parents, and other community organization are vital to successful high school apprenticeships (United States Department of Labor, 2018). Each partner has a pivotal role to play, and each supplies resource needed for high-quality programs. Businesses are always at the heart of apprenticeship strategies (Advance CTE, 2019).

The businesses employ the apprentices, provide the on the job learning, and are involved in recruitment activities and selecting apprentices (United States Department of Labor, 2018). Businesses are also instrumental in the development of technical classroom instruction. They identify the skills and competencies needed for success on the job, which are then used to design the curriculum.

Aligning programs to industry workforce needs is a vital element to meeting the needs of both the student and future workforce. High school apprenticeships are business driven, and the programs must be aligned to the skill needs of businesses to be effective in helping businesses build a pipeline of future workers (United States Department of Labor, 2018). Industries ranging from advanced manufacturing to healthcare and information technology, and many more are choosing HS apprenticeships to train their next generation workforce (United States Department of Labor, 2018). Many of the businesses participating in HS apprenticeships also have apprenticeship programs for their adult workers, while others find these programs help them recruit and train entry-level employees that may then progress in the organization (United States Department of Labor, 2018). In order to align programs with workforce needs, area businesses would need to be contacted. Contacting local area businesses to identify occupations they currently need additional workers, and in which occupations they project having skilled workforce shortages in the next two to five years will ensure that programs are aligned with industry workforce needs.

Designing Quality Programs will ensure multiple ways that work for business, school systems, and students, but all are based on high quality on the job learning combined with related classroom instruction (United States Department of Labor, 2018).

Successful programs also align coursework with both high school and college requirements so that students receive all educational credentials possible, and can continue their education. CTE programs in high school play a significant role in high school apprenticeships. The curriculum used for high school apprenticeship program is often built using one or more of the 17 nationally recognized career clusters that are used in CTE programs (Advanced CTE, 2018).

Each career cluster has defined career pathways with established plans of study. The career cluster framework identifies the academic and technical coursework students will need to complete in the high school apprenticeship (United States Department of Labor, 2018). Such curricula are rigorous and are based on national standards that have been validated by industry experts (Advanced CTE, 2019). Building on the foundation of existing CTE programs can help a community provide its growing businesses with the skilled workforce they need to thrive.

Promoting student success is the fourth element in a youth apprenticeship program. Successful programs engage in thorough recruitment and selection processes and provide students with the support they need to complete the apprenticeship and take the next steps to succeed in college and careers (Advanced CTE, 2019). High school apprenticeship programs can add value for any student, from those planning to go to a four-year college to those exploring options after high school (Advanced CTE, 2019). For college-bound students, engaging in an apprenticeship can help them clarify their career aspirations and gain real-world work experience (Advanced CTE, 2019). For students who are less sure of their future choices, experiential learning has been shown to increase retention and graduation from high school. Also, for all students, participation

in high school apprenticeship offers career exploration, work experience, and a jump start toward post-secondary education and job opportunities (United States Department of Labor, 2018)

The Importance of Youth Apprenticeship

High school is a critical time for the development of career choices, and communities across the country are launching programs allowing high school students to pursue career-oriented coursework coupled with work-based learning opportunities (Advance CTE, 2019). These programs have different names, high school apprenticeship, school-to apprenticeship, or youth apprenticeship, but all have the same goals providing students with access to high-quality, industry-focused training that combines classroom and on-the-job learning, and affordable pathways to college and careers in high-demand industries (United States Department of Labor, 2019). High school apprenticeship programs also provide businesses with solutions to their workforce needs. By training and mentoring young apprentices, businesses can develop employees who are trained to their precise specifications and have learned the company's unique workplace culture (Advanced CTE, 2018). High school apprenticeship programs also provide a source of qualified workers, reducing recruitment costs, and ensuring businesses have the workforce they need today and for the future (Advance CTE, 2018). Additionally, HS apprenticeship programs are frequently linked to "adult" apprenticeships, referring to apprenticeships after high school in which businesses hire individuals (18 years of age and older) as full-time employees (United States Department of Labor, 2019).

Our current and future economy is connected to the strength and skills of our current and future workforce. As a society, we must ensure that we prepare students of all

ages, genders, ethnic, and social economic backgrounds, not only for college but also for successful careers. CTE's are a vital part of ensuring every student graduating from high school has an opportunity of attaining a college degree or some form of post-secondary training. CTE should be an integral part of every student's education to ensure that they are ready to thrive and compete in an ever so changing workforce, whether it is immediately after high school or college.

CHAPTER III: RESEARCH DESIGN AND METHODOLOGY

Introduction

This chapter outlines the research methodology used to analyze how remodeling the current CTE curriculum in Southeast School District will increase the accessibility of CTE programs and maximize its potential to benefit and meet the needs of all students along with meeting the future demands of Florida's future economy. The current Southeast School District CTE curriculum is so widespread among 33 high schools that students do not have access to participate in specific programs because schools are not accessible to Students' residents and so few schools offer students selected programs. The need to balance access of CTE programs within the Southeast School District is vital to the preparation of students not only for the current workforce but also for the future workforce as well.

The current CTE programs lack balance within Southeast School District in regards to programs offered and the variety of programs available. This deficiency may have a negative impact on Florida's future workforce. A vital element of CTE is not only to ensure that students graduate from high school ready to complete post-secondary work but also be able to join the workforce and apply knowledge and skills learned immediately. By updating the CTE curriculum to increase accessibility and availability, more students can take advantage of CTE, which is vital to Florida's economic growth and is key to preparing students to compete in a global economy.

Research Questions

The following questions drove the research for this study:

- 1) How can the current framework of the CTE curriculum in the Southeast School District be remodeled so that all learners can have access to a meaningful CTE, high-quality menu?
- 2) How can the current CTE curriculum be realigned to meet the demands of the future workforce and student interest simultaneously?

Research Design

The researcher utilized a qualitative case study design for this study. The reason for utilizing a qualitative approach to analyze and collect data is because it focuses on obtaining data through open-ended and conversational communication. By using a qualitative case study method, the researcher was able to not only obtain what people think but also why people think as they do. The researcher collected and analyze data by facilitating homogeneous focus groups with school personnel; such as administrators, guidance personnel, and parents from the Southeast School District. The purpose of utilizing focus group in this study was to identify and validate an appropriate solution strategy to enable the Southeast Public School District's CTE curriculum to meet the needs of all students along with the demands of the local work industry.

The researcher used a purposive, non-probability sampling strategy to select participants from the selected school personnel. The reason for purposive sampling, also referred to as judgment sampling, is to allows the researcher to be flexible, yet brief, when collecting data from participants. Flexibility allowed the researcher to choose participants whose knowledge of the subject matter best fit for appropriate data, similar to the study of Creswell (Creswell, 2013).

Participant Selection

The participants available for focus groups were not chosen at random. The researcher used a purposive, non-probability sampling strategy to select participants from the selected school personnel. The reason for purposive sampling, also referred to as judgment sampling, allows the researcher to be flexible when selecting participants based on their availability. The researcher selected participants with direct or indirect knowledge of the CTE Curriculum for appropriate data collection, similar to the study of Creswell (2013). Southeast Public School District personnel, such as administrator, guidance personnel, and teachers, along with parents, were the participants that were targeted and selected for focus groups.

The researcher employed a purposive method for selecting a participant for conducting focus groups. These participants were selected and identified with specific characteristics to ensure the researcher was provided with a variety of stakeholders perspectives for the study. The rationale for employing a purposive method is time, access to diverse perspectives, and flexibility. This method ensured that the researcher selected participants in a timely fashion along with the flexibility to meet with participants when they were available. Most importantly, this method enabled the researcher to select participants with a variety perspectives; such as school administrators, guidance personnel, teachers, and parents.

The researcher targeted school personnel from the Southeast Public School District for focus groups for this research. The school personnel selected were administrators (principal and assistant principal), guidance personnel, and CTE teachers. The researcher utilized open-ended questions to conduct focus groups. The rationale for

the use of open-ended questions is that they all participants to expand and clarify responses to include more information such as feelings, attitudes, and understanding of the subject. This approach ensured that the researcher can obtain a wide variety of quality answers.

Product

The researcher accomplished the need for CTE accessibility for all students by creating a youth apprentices program modeled after the Colorado youth apprenticeship program known as Career Wise. The competency-based learning youth apprenticeship program will work with the school district and businesses to create career competencies and ensure apprentice works. Consequently, school schedules are optimized to recruit students and acts as an intermediary between the education system and industry to align goals and ensure a streamlined experience. The youth apprenticeship program will provide a "real" world curriculum, which would include a traditional college preparatory curriculum, along with a high quality non-traditional vocational/ technical career path opportunity (Applied Educational Systems, 2019).

The youth apprenticeship program will help students to successfully achieve global readiness and become productive citizens in society at the same time increasing graduation rates and decreasing dropout rates (Applied Educational Systems, 2019). Secondary school graduates will acquire skills that can be honed, refined, and applied in the real world (workforce readiness) immediately after graduation or further their education (Applied Educational Systems, 2019).

Instrumentation

The researcher employed a purposive method for selecting a participant for conducting focus groups. These participants were selected and identified with specific characteristics to ensure the researcher was provided with the best information for the study. The rationale for employing a purposive method is time and flexibility. Focus groups were asked six open-ended questions. Responses were audio recorded on multiple devices, such as handheld digital recorder, iPad recorder, and Android audio recorder. The audio recording was uploaded onto the computer to transcribe audio to text. The researcher used computer-assisted qualitative data analysis software, Nvivo, to aid management and analysis process. The software was also used to query keywords for comparison with manually coded categories and themes. Nvivo will not be the only source of coding; the researcher also took notes and observed body language.

Focus Group Questions

- 1) What methods can school personnel utilize to identify students' interest or goals after high school?
- 2) In what way would the student population be affected if more students had access to participate in the CTE program of their choice?
- 3) What effect, if any, should the state's future job growth projections have on the CTE programs availability?
- 4) How can the current CTE curriculum be remodeled so that all students have full access to high-quality CTE program menu?
- 5) How can the current CTE curriculum be revised to meet the demands of the future workforce and student interest?

6) What would be the effects of the implementation of a youth apprenticeship program?

Data Analysis (Collection)

The researcher conducted a qualitative method case study designed to collect and analyze data from a homogeneous focus group utilizing school personnel, such as administrators, guidance personnel, as well as parents from Southeast School District. The purpose of utilizing the focus groups was to identify and validate an appropriate solution strategy for the current Southeast Public School District's CTE curriculum. The goal was to meet the needs of all students and the demands of the local work industry. Through the utilization of the focus groups, the researcher used an appropriate solution strategy to attain qualitative data from school personnel on the current condition of CTE programs and its alignment to college and career readiness in Southeast School District. The researcher used computer-assisted qualitative data analysis software, Nvivo, to aid in the management and analysis process. The software was also used to query keywords for comparison with manually coded categories and themes.

Along with Nvivo for a source of coding, the researcher also took notes and observe body language for qualitative data analysis. The researcher used a purposive, non-probability sampling strategy to select participants from the selected school personnel. The reason for purposive sampling, also referred to as judgment sampling, it allowed the researcher to be flexible when selecting participants whose time is limited. Similar to the study of Creswell (2013), purposive sampling allowed the researcher to select appropriate participants who best fit the data desired.

Procedures

First, the researcher obtained detailed archival statistics from multiple public domain sources, as stated in chapter II. Also, the researcher utilized descriptive analysis to summarize archival statistics attained from multiple public sources. This analysis will include the archival statistics from the Chamber of Florida, United States Department of Education, FLDOE, and Southeast Public School District. The statistics consisted of projected future high demand occupations, dropout rates, graduation rates, student demographics (ethnicity/race, grade, and gender), number of students receiving industry certifications (CTE), standardized state academic assessment scores, advanced placement course credits earned (A.P. course), attendance, and enrollment in remedial college courses. The reason for the descriptive analysis of archival statistics is because it identified the importance of the need to increase access and availability of a full CTE menu for all students in the Southeast Public School district.

The researcher also analyzed archival statistics and current CTE curriculum to compare alignment needs, relevance, and accessibility. Also, the researcher obtained approval from Lynn University Institutional Review Board (IRB) to facilitate focus groups and analyze data. Once approval received from Lynn University IRB committee, the researcher utilized a purposive sampling strategy to select participants. The researcher solicited participants for voluntary participation in a homogenous focus group study through social media (see Appendix A). The participants that wished to participate confirmed participation by emailing researcher. Once participants agreed to participate, the researcher and participants agreed upon a time and meeting location that is suitable for everyone to conduct the focus group study through email.

On the day of the focus group study, the researcher first asked participants to sign a consent form (see Appendix B) to ensure that participants were 18 years and older, and participation was optional. The participants received a hard copy of the questions that were asked and given a few minutes to look over them and to ask the researcher any question if needed. The researcher asked if all participants are present and if there are any questions before the recording begins. The researcher informed participants of the focus group that the interview duration will depend on the length of the response, but it will not exceed one hour. The researcher informed the participants that the recording has started and it will remain on until the conclusion of the interview. The researcher conducted focus group interview asking participants six questions and allowing participants to respond. Participants' focus groups will be audio recorded with multiple devices, along with written notes.

The researcher analyzed interview transcripts to compare CTE curriculum's alignment needs, relevance, and accessibility. Recorded audio of the focus group was uploaded on the laptop computer and saved on a flash drive. The researcher used computer-assisted qualitative data analysis software to transcribe the audio recording. As previously stated, Nvivo was used to aid management and analysis process. The software was also used to query keywords for comparison with manually coded categories and themes. The flash drive in which the audio recording was saved on, along with the audio transcript, will be kept in a locked safe file cabinet for two years. After two years, the researcher will permanently delete audio, and transcribed files from flash drive signed; likewise, signed consent forms would also be placed in a folder and saved with a flash drive for two years. Afterward, the researcher will shred all signed consent forms.

Ethical Considerations

Participation in this study was entirely optional, and participants had the choice to withdraw and not participate. The researcher solicited participants through social media. Those self-selected for the study were treated with sensitivity and respect. The researcher was transparent and disclose the process and purpose of the study, informed and reminded participants of their rights, both verbally and in writing, adhere to strict confidentiality standards, follow ethical interview practices, and explained the role of the researcher. Participants' names and names of schools were confidential, and pseudonyms were used.

Informational and emotional risks are involved when participating in an audiotaped focus group interview. Informational risk involves the probability of breach of confidentiality or loss of privacy. Accidental disclosure of research information allows for subject identification outside of the research study. The result of this could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation. Emotional risk can be associated with a study if the focus group discussion involves a sensitive research topic that can trigger an unwanted emotional response such as questions involving alcoholism, teen pregnancy, sexuality, sexual, child or spousal abuse, or STDs. Emotion is relative and varies from person to person. The researcher could not assume he or she will encounter this probability. It was crucial that the researcher facilitating the focus group discussion considered the subject's experiences, culture, and environmental setting as well as how a subject might react responding in public (in front of others). To prevent risk as much as possible, the researcher, as previously stated, saved and stored focus

group audio recording, transcript, and signed consent forms in a secure locked file cabinet for two years and then permanently destroy (delete) all content related to this study.

The main advantages of focus group research are that they are beneficial to obtain detailed information about personal and group feelings, as well as perceptions and opinions. Focus groups can save time and money compared to individual interviews. It provided a broader range of information because it allows for subjects to not only respond to the initial question but also respond to others' responses if desired.

Delimitations

One of the delimitations of this study was the exclusion of private schools. The rationale for this decision is that when students enter a private school setting, they are there specifically to prepare for college. International Baccalaureate students in Southeast Public School District were excluded from this study for the aforementioned reason, and these students are prepared to take college-level courses in high school. Another delimitation of the study was the interview questions. All participants were asked the same unbiased questions in the interviews and surveys. The researcher used more open-ended questions than close-ended questions when facilitating focus groups in this study. The use of open-ended questions will allow the researcher to receive a greater variety of answers from all participants in the focus group.

Limitations

One of the limitations of this study was the participants whom the researcher was able to interview or survey. It may be challenging to acquire a good number of participants from the Southeast Public School District. Not able to obtain the correct

participants may limit the researcher's abilities to gain an exact type or geographic scope of participants that were desired. Time in this study is another limitation. Data collected and analyzed from case studies may reflect a particular time in which the case study was conducted. These results reflected the economy, social trends, and the operations of society at a particular time. Demographics was another limitation of this study. All of the academic tracks of the non-traditional/technical curriculum that was available for students to choose from may not meet the demands or needs of individual schools because of the community in which it is located.

Summary of the Study

The purpose of this study was to provide educational leaders and stakeholders with significant, clear and compelling evidence to support the remodeling of the current CTE curriculum in Southeast Public School District to increase the accessibility of CTE programs to maximize its potential to benefit and meet the needs of all students along with meeting the future demands of Florida's future economy. The Southeast School District CTE curriculum is offered at all 33 public schools, but the locations of these sites prevent students from all-access to specific programs that are high interest to them as well as those programs that prepare them for occupations that are projected to be in high demand of Florida's future workforce.

Because it is not accessible to where they live or there may be only one or a few schools that even offer the program, this study is significant because these current practices are overshadowing the positive impact of CTE. According to recent figures, the state of Florida is expected to add six million residents, have more than 150 million visitors, have up to five million new drivers, need 20 percent more water, and demand 76

percent more energy by the year 2030 (Lamback, 2017). The state's CTE curriculum offers CTE programs that would prepare students to meet the needs of the state's future economy demands. The current Southeast School District CTE curriculum should be aligned with student interest and the state's working demands.

In order for the current CTE curriculum to meet the needs of all students and the states, work demands it has to be available and accessible for all students. There is much research available on the benefits CTE programs and how it increases graduation rates, provides dropout prevention, connects content learned to the real world to make relevance, and improves student engagement. By balancing the number of programs to increase variety could increase the number of students taking advantage of the benefits that are offered through CTE. The 2017-1028 school year only 20 percent of the county's high school students take advantage of the benefits of CTE programs that are offered.

CTE programs and clusters meet the needs of the state's economic demands. Remodeling the current CTE curriculum to expand to offer a variety of CTE programs of interest and to match the needs of that future economy at students home schools would allow for the number of students participating in CTE programs to increase. Remodeling of the curriculum will maximize the potential of the CTE curriculum to meet the needs of all students, increasing the number of students graduating considered college and career ready.

According to the American Institute for Research (2018), high-quality CTE programs address the goals of college and career readiness and provide learning options that are appealing for students who want might otherwise be at risk of leaving high school. CTE programs and pathways ensure that course work is simultaneously aligned to

rigorous academic standards. Post-secondary expectations are designed to address the skills needed in specific career pathways. According to American Institute for Research (2018), CTE pathways and programs apply contextual learning to help students see the relevance of what they are learning and its connection to career opportunities and life goals. Advanced CTE (2018), explains one of the main components of high-quality CTE curriculums is quality programs.

CTE programs respond to the needs of the local economy, along with helping students become independent. By doing this, CTE assures our nation's standard of living and help maintain our infrastructure. It is imperative that the programs are not only of high quality but also are offered based on the need and potential growth of the economy. CTE programs are comprised of 16 tracks or clusters that apply to different high demand careers. Some of the tracks are more in demand than others as some tracks have become less popular as the economy and culture of an area changes as well (Applied Education System, 2018). The popularity of track also changes as breakthroughs, best practices, and also other advances are introduced. In other words, the 17 tracks or clusters CTE offer are expansive career opportunities that allow students to explore what they love, which helps students stay academically engaged. CTE provides an alternative to traditional education, but it is also common for CTE graduates to enroll in four-year universities and pursue advanced degrees. The 16 cluster or career tracks teaches students life skills along with jump-starting their careers, which enables them to become productive members of their community.

The average high school graduation rate for students concentrating in CTE programs is 93 percent, compared to an average national freshman graduation rate of 80

percent. In today's society, to obtain a successful career, every student will require the 13th year of school regardless of their plans after high school. According to TeGrotenhuis (2015), the Bureau of Labor Statistics, 10 of 20 fastest growing occupations require an associate's degree or less, and of the 20 occupations with the most significant numbers of new jobs projected for 2018, 13 require on-the-job training or an associate's degree. CTE programs can prepare the student and provide them with the skills needed to attain these jobs. According to We Are Teachers (2015), taking CTE courses can mean earnings as much as \$19,000 more per year. CTE programs provide relevance and importance to education.

According to Gardner-Cladette & Nguyen (2015), CTE programs make education relevant and essential by not only putting individuals to work to achieve success in many ways but also providing a skilled labor force to enable America to increase its place in a global economy. Both Singapore and Germany are top 10 educational countries and lead the U.S. in Math, Reading, and Science has exceptional technical and vocational curriculums that are aligned to both the workforce and secondary education. Both countries view technical and vocational education at the high school level as the backbone and strength of their economy. A vital element of their economy is ensuring that students graduate from high school ready to complete post-secondary work but also be able to join the workforce and apply what they have learned immediately. One thing that is certain about the future is that the young people that are in high school today will be joining the workforce tomorrow.

There are gaps between what students are being taught and the skills that are needed to join the workforce. The academic core subjects today that students learn are

useful, but they are not gaining all of the knowledge they need to seamlessly integrate into the workforce (Canon, 2011). Schools CTE programs should be aligned with the projected state job growth along with student interest. By remodeling the CTE curriculum to increase accessibility so that more students can take advantage of CTE is not only vital to Florida's economic growth but also necessary for students to compete in a global economy.

If career and technical education are to achieve its full potential for students, the right partnerships must be formed, updated instructional approaches must be implemented, and data systems must be aligned to enable students to have access to the most effective career and technical education programs. The Southeast curriculum does not include courses to meet the high-demand jobs, students' lack of accessibility or availability to courses and campus sites.

One thing that is certain about the future is that the young people that are in high school today will be joining the workforce tomorrow. The purpose of this study was to remodel the current Southeast School District's CTE curriculum to allow all students access and availability to a full high-quality CTE menu to maximize its potential to benefit and meet the needs of all students along with meeting the future demands of Florida's future economy. Our current and future economy is connected to the strength and skills of our current and future workforce. As a society, we must ensure that we prepare all students, not just for college but also for successful careers. CTEs are a vital part of ensuring every student graduating from high school has an opportunity of attaining a college degree or some form of post-secondary training. CTE should be an integral part of every student's education to ensure that they are ready to thrive and

compete in an ever so changing workforce, whether it is immediately after high school or college.

CHAPTER IV: RESULTS

Introduction

The purpose of this study was to provide educational leaders and stakeholders with significant, clear and compelling evidence to support the remodeling of the current CTE curriculum in Southeast Public School District to increase the accessibility of CTE programs to maximize its potential to benefit and meet the needs of all students along with meeting the future demands of Florida's future economy. The Southeast District's failure to expand course selections, as well as provide additional sites to enable students to pursue a career and college-ready curriculum, are too often poor to simply non-existent. To continue such practices is to block the maximum potential benefits to students and the forecasted future demands of Florida's economy. Career and Technical Education has the potential to engage students through relevant learning experiences and, when infused with rigorous academic standards, to thoroughly prepare students for college and career success (Career and Technical Education, 2016). Yet, in Southeast Public School District, where an ineffective curriculum is being utilized, career and technical education is yet to achieve its full potential for students. Whether the right partnerships have yet to be formed, updated instructional approaches have yet to be implemented, or data systems have yet to be aligned, many students do not have access to the most effective career and technical education programs. This study aimed to identify and validate an appropriate solution strategy for the out-of-date curriculum that is being offered by the Southeast Public School District. With the development of a new curriculum, Southeast District can meet the needs of all students along with the demands of the local work industry. The results of this study were to not only bring to light the

present bottlenecks (issues) students face daily but also the ideas shared by focus group participants as appropriate solution strategies. This chapter will explain the results of the focus group discussion and interaction as methods of restructuring the CTE curriculum were examined and explored.

Process for Generating, Gathering, and Recording Data

The research findings are based on the research questions and open-ended focus group interview questions. The purpose of the research questions was to narrow the focus of the study. The benefit of the focus group was to allow the researcher to not only hear an array of viewpoints on strategies to improve the district's curriculum but also assess the value of each participant's input (Creswell, 2013). Another benefit was observing the participants dialog while assessing their facial expressions, emotions, passion, and body language when responding not only to the questions but also to each other's responses. Overlaying the solution strategies will not only benefit the Southeast Public School District but also other districts within the state.

The researchers employed a purposive method for selecting participants for the focus groups participation (Creswell, 2013). The participants were selected and identified with specific characteristics to ensure the research is provided with a variety of stakeholders perspectives for the study. The researchers received many responses from the participation request letter. Due to availability of time and date of the focus group there were only sixteen participants that responded with the same date and time they preferred to meet. The reason to separate the sixteen participants into two groups of eight is to ensure the researcher can facilitate to focus groups in a timely and orderly fashion and also what was convenient for the participants and the researcher. The two focus

groups were separated by the preferred time and date they requested as well as evenly as possible by current occupations to ensure the different point views. There was no need to conduct a third focus group session because the second focus group cease to provide new or different information from the first focus group session.

The first focus group included two high school administrators, two guidance personnel, one CTE teacher, and two former students that graduated from high school four years ago. The second focus group included two high school administrators, two guidance personnel, one CTE teacher, and three former students that graduated high school within the past four years. The researcher used a purposive, non-probability sampling strategy to select participants from select school personnel (Blackstone, 2018). The researcher solicited participants for voluntary participation in a homogenous focus group study through social media. Once participants agreed, the researcher and participants scheduled a time and meeting location suitable for everyone to conduct the study. In Table 4, the participant’s names were substituted with pseudonyms, in this case, *participant’s numbers* and describes the participant’s demographics.

Table 4. *Participants Demographics.*

Participants Number	Gender	Occupation	Ethic Background
P1	Male	Principal	African American
P2	Female	Assistant Principal	Hispanic
P3	Female	Guidance Director	Caucasian
P4	Male	Guidance Counselor	Caucasian
P5	Male	CTE Teacher	Hispanic
P6	Male	CTE Teacher	
P7	Female	Former Student (Grad Student)	Biracial

P8	Male	Former Student	African American (Barber)
P9	Female	Principal	Hispanic
P10	Male	Assistant Principal	African American
P11	Female	Guidance Counselor	Caucasian
P12	Female	Guidance Counselor	African American
P13	Female	CTE Teacher	Caucasian
P14	Male	Former Student	African American (Auto Repair)
P15	Female	Former Student	Hispanic (Nursing)
P16	Male	Former Student	Caucasian (College Student)

Focus Group Responses

The participants were eager to share their ideas and feelings about the state of the CTE curriculum being offered by Southeast School district. In a brief discussion before the focus group questions begun ironically in both focus group session participants expressed that they wanted to not only bring awareness to this problem but also help identify appropriate solutions and strategies to solve the problem. The researcher monitored the verbal and non-verbal responses from participants. One interesting factor that emerged from both group sessions is that participant's belief that the district is doing a disservice to students by implementing a program utilizing a curriculum that does not offer all students full assess nor accessibility to a full CTE menu.

Question 1. What methods can school personnel utilize to identify students' interest or goals after high school?

P3: *“Students should be surveyed to identify career interest/path in middle school. Upon arriving in high school, they should be placed on that path or track to help them achieve that career. This is our job as educators; we prepare students for a world they*

will see ten to twenty years down the line. The primary reason foreign countries outperform the United States in education is because students choose a career path early in their educational career.”

Several other participants nodded in agreement. **P7:** *“Along with choosing a career interest and placing students on a career path, it is equally important to connect the student interest with future job projections. It is so important that the school system know and understand the future job projections and prepare students to achieve the jobs of the future.”*

Question 2. In what way would the student population be affected if more students had access to participate in the CTE program of their choice?

Participants were very adamant about the effect on the student population if students had access to the CTE programs of their choice. **P4:** *“There would definitely be more students participating in CTE programs if they had access to the programs related to what they wanted to pursue in the future. It would add more meaning and excitement to their education.”* **P8** *“This is exactly why I dropped out of high school. I knew at the age of 12 that I wanted to cut hair and own my own barber shop. I was bored in high school because I was forced to select and study courses that I was not interested in. I felt I was wasting my time.”* A number of participants felt that by students not having access to CTE programs of interest has a direct impact on students’ academic engagement, and in some cases, discipline problems and the dropout rate.

Question 3. What effect, if any, should the state's future job growth projections have on the CTE programs availability?

Participants agreed that the responsibility of the school system is to prepare students for careers and a world they will see in the future. Likewise, they view CTE as a primary factor in preparing students to succeed after high school by creating a link between what happens inside the classroom and what happens on the job. **P2:** *“It only makes sense to have the CTE programs offered align with the future job projections. The school district is setting students up for failure by not aligning the programs with the future job market. There are two critical components that should be considered when schools offer CTE programs: student interest and future job projections.”*

Question 4. How can the current CTE curriculum be remodeled, so that all students have full access to high-quality CTE program menu?

Remodeling the current CTE curriculum, so that all students have access to a full high quality CTE program created much debate among both focus group sessions. There were a variety of viewpoints as each participant pondered options and solutions to get the Southeast District’s CTE curriculum in compliance. Participants began to reflect on previous thoughts and suggestions from discussions they shared earlier in search of steps to take to eradicate this issue. Participants expressed ideas of what they thought would work and other participants replied with ideas that may or may not work. **P1:** *“District officials should use students’ surveys and job projections to determine programs to offer. No two schools should offer the same program; therefore, there should not be any overcrowding nor any student left out or left behind.”* **P9:** *“What if the school district utilizes the county map to balance the programs offered between those areas of study that reflect future job projections and students’ popular choices, and offer both within a three school radius? In this way, students who don’t have access to a particular program at*

their home school do not have to travel as far to participate in their program of choice at another school. With this equation, three schools that are located near each other, and each offers three different programs aligned to future job projections and three programs aligned by student interest, students will have an option of nine different programs to choose from. If students' home school does not offer the programs they are interested in and one of the other two schools do, they can enroll and participate at one of the other schools.” P5: Why can't the school district build three facilities, one in the north, central, and south end of the county, that offer a full CTE menu? Students can be bused from their home school during the day to take classes in their program of choice and bused back to their home school by the end of the day. There were participants that thought that this could work, but the challenge of funding these suggestions weighted heavily on participants' minds. Several questions were posed regarding the proposed ideas. Two questions arose regarding funding: what revenue will pay for renovation and/or building of three schools to offer an array of CTE classes; where is the revenue to pay for new busing procedures and how would the busing situation affect the elementary and middle schools?

Question 5. How can the current CTE curriculum be revised to meet the demands of the future workforce and student interest?

Remodeling the current CTE curriculum to meet the demands for the state's future work demands is only common sense. **P12:** *“Doesn't it just make sense to align the CTE curriculum and programs offered to the jobs that will be in high demand especially locally, meaning state wide. You do not remodel the curriculum by changing the curriculum. You remodel the curriculum by upgrading programs with students'*

choices of interest and the state's job projections, and make them accessible and available to all students." Participants voiced if a large number of schools in the Southeast District offered a business CTE classes and every other school offered culinary arts, then those schools should be able to add programs that are in high demand according to the state's future job demands. Some participants even thought that when schools began to offer programs that are aligned to student interest and the state's future job demands, schools may have to hire a second teacher to ensure access and availability for all students.

Question 6. What would be the effects of the implementation of the youth apprenticeship program?

When the idea of implementing a youth apprenticeship was mentioned, the researcher noted a multitude of body languages: deep thinking, arm-folding, looking up at ceiling, shifting in positions in chairs as if to obtain comfort, and some uncertainty. The silence broke when a participant asked for clarification about the youth apprenticeship. Upon receiving it, the participant once again displayed the same body language with more deep thought. In both focus group sessions, question six ignited the most participation from the subjects. The responses for question six are in the order in which the participants responded. The participants discussed the benefits of an apprenticeship program, responding and agreeing, one after another. **P11:** *"I really think this could work. It would be on-the-job training (OJT) in a field that the student has chosen, and the student will receive a salary. This would bridge the gap from classroom to the real-world."* **P9:** *"An apprenticeship would be AWESOME because it will help shape ideas about careers while building transferrable skills. Too many students exit high school*

without an understanding of how high education can further their career goals nor no idea of what their career goals are.” P15: “What I like about this is that it does not require schools to have to transform or build new schools. Students actually get paid to learn real-world, hands-on experience. Students would be more motivated and engaged in the classroom because they know what they are learning will be applied on their job site.” P16: “This would have helped me by preventing me from changing my major in college twice before I actually figured out what I wanted to pursue. The high school I attended did not offer a variety of CTE programs. It had culinary arts and other computer technology classes. Students at my school only took those classes as electives for graduation. Youth apprenticeship would have helped me find out what I wanted to study in college. This would have saved my parents and me a lot of frustration and money.” P13: “What I like about this apprenticeship program is that it is available to everyone, no matter where students attend school. The student does not have to travel from their home school to participate in the program. Now the real-world connection that was discussed earlier comes into play. Taking what is taught in the classroom and applying it with on-the-job training will give learners firsthand and deeper understanding of careers. P16: “Youth Apprenticeships will promote students to ask questions and seek understanding of all aspects of their career’s subject master. Sooner or later, as a participant in the youth apprenticeship, students will have to demonstrate comprehension.”

Table 5. *Transcription of Responses form Focus Group. Coded by Themes*

Themes	Codes/Quotes
Student voice/choice and participation in CTE is Paramount.	<p>P3 Students should be surveyed in middle school to determine their career interest.</p> <p>P12 The earlier you find what they want to do; the earlier you can put them on a career path for success.</p> <p>P4 Students participation in CTE would increase if students had access to a program they want to study.</p> <p>P6 Student choice would motivate students to be more actively academically engaged.</p>
Program variety based on future job projections and student interest.	<p>P16 It only makes sense to have programs offered aligned with future job projections.</p> <p>P14 Alignment to future job projections should be a vital component to the programs offered.</p> <p>P1 Students should be surveyed to determine the most popular programs.</p>
The right thing to do	<p>P12 Doesn't that just make sense</p> <p>P7 You remodel the curriculum to make programs accessible and available for everyone.</p> <p>P9 You want students to have access to as many programs available.</p>

Conclusion

The focus group sessions were the primary means utilized to seek solutions to ensure that all students are ready for, have access to, and complete college-career pathways leading the 21st Century jobs in the Southeast Public school District. The results from both focus group sessions validated the literature reviews and confirmed that

a problem does exist within the current CTE curriculum's accessibility and availability in the Southeast School District. More importantly, the focus group sessions identified, validated, and endorsed the youth apprenticeship program as an essential component in helping young people acquire skills and credentials necessary to find jobs with good wages and opportunities for advancement. Focus group participants support youth apprenticeships as an appropriate solution strategy to address the availability and accessibility problem in the CTE curriculum in the Southeast Public School District. All of the benefits of CTE were expressed through the participants' responses in the focus groups sessions. It was that a youth apprenticeship program will take CTE and all of its benefits to the next level. The apprenticeship program will provide additional rigor to student's education just as CTE does but it will more importantly enable students to apply what they actually learn in class. An apprenticeship partnership will increase student engagement but more importantly become accessible and available to all students. An apprenticeship program will ultimately help students to identify a career path. With students identifying their career path, they will be able to prepare for that fields which will make students immediately employable and additionally more academically-ready to further their education. Overall, a youth apprenticeship program will actually put the college and career readiness back into education.

It is crucial that Southeast School District makes a direct connection between learning opportunities and labor market demands. The district should collaborate with local industry partners to design a curriculum relevant to CTE pathways, courses, and curricula, and expand student access to work-based learning. It is imperative that the district engages stakeholders such as community and four-year colleges and workforce

system leaders to strengthen pipelines among secondary education, postsecondary education, and the workforce. The program of study should illustrate the sequence of academic and career and technical education coursework that is necessary for the student to successfully transition into postsecondary educational opportunities and employment in their chosen career path. CTE must become the program of choice. As one former student expressed the personal value of access to a CTE program of interest to them. **P8:** *“I would not have dropped out of high school if there had been a CTE program to peak my interest.”* All five of the former students who participated in the focus groups have been out of high school for at least four years and are employed or furthering their education. They expressed that the transition from high school to the real-world would have been easier if they had participated in a program designed to prepare them for their particular fields of interest whether it was in college prep or career ready CTE Curriculum.

CHAPTER V: CONCLUSIONS, RECOMMENDATIONS, AND SOLUTIONS

Introduction

In this chapter, the overview of the results, conclusions and recommendations of this study are included. The conclusions were based on the purpose, research questions, and results of the study, derived from conversational data provided by two homogenous focus groups that were participants in the study. The implications of these findings and the resultant solutions will also be explained. Recommendations are based on the conclusions and purpose of the study.

Overview of Study

The study was conducted using a qualitative case study design. By using a qualitative case study method, the researcher was able to obtain not only what participants thought, but more importantly, factors that fueled their thought patterns. Two homogenous focus group sessions were conducted to validate that the addition of a youth apprenticeship program, along with providing all students access and availability to participate therein, are not only essential steps that must be included in a revised CTE curriculum but also appropriate solution strategies to elevate the CTE program in the Southeast Public School District. The focus group participants shared an abundance of information based on questions posed. All questions and responses were recorded, transcribed and analyzed.

The researcher used a computer-assisted qualitative data analysis software, Nvivo, to aid in the management and analysis process. Six major themes emerged from the six

open-ended focus group questions. The researcher was able to draw the themes from repetitive participant's responses as well as from participant's responses that were very similar and/or unanimous consensus between the groups.

The findings and recommendations described are centered on the experiences and knowledge of the participants, the research and focus group questions, and the objectives of the study. The research and purpose of the study were driven by the following research questions:

1. How can Southeast School District's current CTE curriculum be remodeled so that all students have access to a high-quality CTE menu?

2. How can the current CTE curriculum be expanded to meet the demands of the future workforce and student interest simultaneously?

By answering these two questions the study achieved the following objectives:

- Bridge the gap between education and industry
- Create access and availability for all students in preparation for the future.

Summary of Data

Three major themes emerged from the conversational data analyzed from the two focus groups. The researcher was able to draw the themes from repetitive participant's responses as well as participant's responses that were very similar and/or unanimous choices of the two groups:

Theme 1: Student voice/choice and participation in CTE is paramount.

Theme 2: Program variety based on future job projections and student interest.

Theme 3: The right thing to do

Themes and Their Implications

Theme 1: Student voice/choice and participation in CTE is paramount. Students need to be able to have a voice/choice in their programs of study as they do when it comes to their career choice. More students would participate in CTE programs if the programs of interest were expanded, accessible and available to all students. **P6** *“Student choice would motivate students to be more actively academically engaged”*. Providing students choices in CTE programs through increasing availability and accessibility would increase the number of students participating in CTE programs. **P4** *“Students participation in CTE would increase if students had access to a program they want to study”*.

Students should be asked about their career interest/goals as early as middle school. **P3** *“Students should be surveyed in middle school to determine their career interest”*. It is the job of the school system to prepare students for the future. In order to prepare students to achieve their career goals, the students must first know their career goals or interest. After identifying their career goals/ interest, the school can place students on a path to prepare them to achieve that goal. Students should as early as middle school should begin to discover career interest. **P12** *“The earlier you find what they want to do; the earlier you can put them on a career path for success”*. Each student should have the ability to choose any option upon graduation, i.e., going into the workforce, attending a two- or four-year postsecondary institution or enlisting in the

military. Career and technical education must become the hallmark of what high school education should be.

Theme 2: Program variety based on future job projections and student interest.

P14 “*Alignment to future job projections should be a vital component to the programs offered*”. Due to the lack of accessibility and availability of programs of interest, students are not taking advantage of the benefits of CTE. **P7:** “*Along with choosing a career interest and placing students on a career path, it is equally important to connect the student interest with future job projections. It is so important that the school system know and understand the future job projections and prepare students to achieve the jobs of the future.*” Offering a variety of programs according to student interest and future job projections will allow more students to have access to CTE programs and all of its benefits. **P8** “*This is exactly why I dropped out of high school. I knew at the age of 12 that I wanted to cut hair and own my own barber shop. I was bored in high school because I was forced to select and study courses that I was not interested in. I felt I was wasting my time*”. By students not having access to CTE programs of interest has a direct impact on students’ academic engagement, and in some cases, discipline problems and the dropout rate.

Theme 3: The right thing to do is to remodel the current curriculum at Southeast School District to meet the demands of the economy and student interest simultaneously.

P12: “*Doesn’t it just make sense to align the CTE curriculum and programs offered to the jobs that will be in high demand especially locally, meaning state wide along with student interest*”. Students should have access to all of the CTE programs available.

Restructuring the curriculum to meet the needs of the future economy and student interest

simultaneously will also help guide those students who have no idea of what career path they wish to pursue. **P16:** *“This would have helped me by preventing me from changing my major in college twice before I actually figured out what I wanted to pursue. The high school I attended did not offer a variety of CTE programs. It had culinary arts and other computer technology classes. Students at my school only took those classes as electives for graduation. Youth apprenticeship would have helped me find out what I wanted to study in college. This would have saved my parents and me a lot of frustration and money.”* It is the responsibility of the school system is to prepare students for careers and a world they will see in the future. Likewise, they view CTE as a primary factor in preparing students to succeed after high school by creating a link between what happens inside the classroom and what happens on the job.

Summary

The study confirmed and validated that a problem exists with the current Southeast School District’s CTE curriculum’s limited programs, lack of accessibility and availability to all students and absence of a youth apprenticeship opportunities. **P4:** *“There would definitely be more students participating in CTE programs if they had access to the programs related to what they wanted to pursue in the future. It would add more meaning and excitement to their education.”* The data further supports the need to remodel the current CTE curriculum to meet the needs of the student’s interest and the future industry demands. **P12:** *“Doesn’t it just make sense to align the CTE curriculum and programs offered to the jobs that will be in high demand especially locally, meaning statewide. You do not remodel the curriculum by changing the curriculum. You remodel the curriculum by upgrading programs with students’ choices of interest and the state’s*

job projections, and make them accessible and available to all students.” Participants expressed that it is a disservice to students to continue on this path of not having open access to a full CTE menu. Participants were adamant about participation in CTE promotes and increases students’ chances to be college and career-ready upon graduation. It was clear that participants were very passionate about students being prepared for their future. They stated repeatedly that it is the responsibility of the school system and the educators to prepare student for a world they will see 10 years in the future. **P2:** *“It only makes sense to have the CTE programs offered align with the future job projections. The school district is setting students up for failure by not aligning the programs with the future job market. There are two critical components that should be considered when schools offer CTE programs: student interest and future job projections.”* Preparing students for college and careers should be top priorities of the school system. Students should be provided with as many options as possible to ensure success in life beyond high school. Participants expressed their disbelief that the Southeast District is implementing a CTE curriculum that lacks availability and accessibility to all students. They recalled their lack of such opportunities, like a CTE program/apprenticeship, and the impact it has had on their lives, but found it hard to believe that in the 21 Century such practices are still occurring. Several shared that if the opportunity had been available, their life’s path would have been different. Participants stated repeatedly that a youth apprenticeship program is a major component of CTE, and it will take CTE programs and all of its benefits to the next level to benefit all students. There is a growing consensus, among participants, that CTE can improve economic mobility by

increasing the number of students who earn career-focused postsecondary credentials and get better-paying jobs.

Too many Florida youth leave school without sufficient qualifications to enter college or rewarding careers (Butrymowicz, 2017). Although Florida graduation rates are up, one in four students still does not receive a diploma within five years of entering high school (Smith, 2018). By ages 20 to 24 only half are employed. A robust youth apprenticeship program would improve educational and occupational outcomes for students in the Southeast Public System while meeting the needs of Florida's employers. Providing opportunities to gain valuable work experience, to combine work-based learning with related courses, and to earn an occupational credential could re-engage many Southeast Public School students, making them ready to enter jobs and careers (American Institute for Research, 2018). The researcher re-examined the research objectives stated at the beginning of the study. The researcher was able to validate that a problem does exist and there is a need for a solution. After reviewing the data presented in chapter four, and the conclusions and recommendations, evaluation shows that the researcher's objectives have been achieved.

Limitations

The limitations of qualitative research are often related to the design of the study. The first limitation in this study was the participants in the focus group. The researcher was able to attain participants from different positions within the Southeast Public School District and former students. These participants provided different point of view (POV) which allowed all the participants to view the issue through a different lens. The researcher was unable to attain a parent representing the Southeast School District.

Parents offer a unique point of view since they live through their children's lived experiences which brings another piece of the puzzle. Another limitation was the researcher's bias in which could cause participants to respond in a way in which they thought the researcher would want them to answer.

Recommendations

This qualitative case study contributes to the existing body of literature on The Future of Career and Technical Education as well as contributes clarity to the Southeast School District's CTE curriculum which prohibits full access and availability to all students. Recommendations for further actions are listed below.

Recommendation 1: Survey Middle School Students to Acquire Interests and Career Goals: Educators can gather data and determine early in student's career how to add and/or delete courses from CTE curriculum based on students' input and what they are thinking when it comes program selections and career goals. Also, this data may help schools gain insight on what business partners to pursue, the range of CTE courses currently being taught, the kinds of CTE partnerships schools are establishing, and educators' views of CTE in preparing students for college and careers.

Recommendation 2: CTE Curriculum Should Be Reexamine Frequently: CTE programs are dynamic; curricula need to stay current with rapid changes in the workplace, requiring ongoing updates and learning on the part of school districts and CTE faculty; identifying the factors facilitating and impeding improvements.

Recommendation 3: Communicate the Value and Promise of CTE with Parents and Students: Students and parents should become educated on the value and promise of a CTE college and career-ready education. If school districts are to prepare

all learners for success in the careers of their choosing, more parents and students need to understand all that CTE has to offer. Studies suggest that when both parent and student are satisfied with their education experience, everyone wins. The field of Career and Technical Education needs to become more publicized throughout communities. For students and parents to know what benefits Career and Technical Education programs offer, they have to search for it. This data should be readily available.

CHAPTER VI: FLORIDA YOUTH APPRENTICESHIP PROGRAM (FYAP)

Overview

The Florida Youth Apprenticeship Program (FYAP) sustainability will be based on the premise that each party involved, the apprentice and the hiring business, benefit from participating in apprenticeship. Students will graduate on time, earn a nationally-recognized industry certification and debt free college credit. Additionally, apprentices enter the workforce either after they've completed a higher-education degree or immediately following their apprenticeship with a professional network and valuable experience in high-paying and in-demand fields. Businesses realize positive return on investment (ROI) based on the value of the apprentices' work, reduce turnover costs and create a talent pipeline of skilled workers for hard-to-fill positions. Modern youth apprenticeship addresses the problem by helping businesses have a hand in shaping their young talent and providing the education system with an applied-learning environment for its students.

Similar to the state of Colorado's Apprenticeship Program, the Florida Youth Apprenticeship program will look to the Swiss apprenticeship system for inspiration and borrow elements of that model to adapt in Florida. In Switzerland there are more than 230 approved apprenticeship occupations, and 40 percent of all companies participate in the program. In that environment, 70 percent of Swiss students choose apprenticeships and 30 percent of them stay with their training company or return after college. In fact, many of the world's largest companies are run by CEOs that started out as an apprentice. It's that kind of endless possibility vision for this program to have apprentices that start in high school and end with college or career success.

Program Goals and Objectives

The Florida Youth Apprenticeship will work together with stakeholders to create meaningful experiences for apprentices and return on investments for business. Both the Apprenticeship program and stakeholders will work together to create an innovative system. The FYAP modern youth apprentices will split time between their traditional high school classroom and the workplace. They earn a wage while receiving hands-on work experience where they can apply their classroom learning each week. By the end of the program, students will have:

- Meaningful work experience
- A nationally-recognized industry certification
- A professional network
- The opportunity to earn debt-free college credit

The Florida Youth Apprenticeship Program is mutually beneficial for both apprentices and hiring businesses. At the conclusion of the apprenticeship, businesses gain:

- A positive ROI based on the value of apprentices' work
- Reduced turnover costs
- A talent pipeline of skilled and loyal workers

The following table identifies existing South Florida Apprenticeships partners and programs along with what CTE field of study the program falls under:

Table 6. *Existing South Florida Apprenticeships Partners and Programs.*

Programs/Partners	CTE Field	Job Projection Demand
Florida East Coast Electrical JACT	Manufacturing	High
South Florida Carpenters JATTF	Construction	Very High
Broward County Plumbers & Pipefitters JAC	Manufacturing	High
Fire Sprinkler Fitters JAC	Training	High
Piledrivers & Divers Highway JAC	Training	High
South Florida Operating Engineers JACT	Science, Technology, Engineering, and Math	High
South Florida Ironworkers	Training	High
ABC Institute, Inc.	Information Technology	Very High
Advanced Education Apprenticeship	Information Technology	Very High
Masonry Association of Florida, Inc.	Training	High
Fort Lauderdale Housing Authority	Hospitality	Medium
School Board of Broward County Physical Plant Operations	Manufacturing	Medium
United Service Training	Training	High
Florida Training Services, Inc.	Training	High
South Florida Manufacturing Association	Manufacturing	High
Broward College IT Apprenticeship Program “New”	Training	High

Employment Process

Students apply with the hiring companies during the spring semester for positions that begin the summer before their junior year. The hiring process will be a competitive, just like any other professional positions. Businesses will select apprentices that are the best fit for their companies’ available positions; there will not be any forced placements. Once hired, apprentices spend part of their week learning at school and part of the week learning on the job. The following table illustrates the schedule of the youth apprenticeship:

Table 7. *Schedule of the Youth Apprenticeship.*

How It Works	Year 1	Year 2	Year 3
High School Academic Classes	3 days Per Week	2-3 Days per week	None
On the Job Training		12-16 Hours per week	32+ Hours per week
HIGHER ED PARTNERS College level coursework aligned with your pathway		COLLEGE COURSES BASED ON YOUR GOALS & READINESS The instruction you receive here will provide you debt free college credit and the knowledge you need for your nationally recognized certification.	

Competency-Based Learning

The Florida Youth Apprenticeship Program will partner with the Southeast Public School District and surrounding businesses to create career competencies and ensure youth apprentice work and school schedules are synchronizes, so that neither falls below

expectations. Additionally, FYAP will recruit students and acts as an intermediary between the education system and industry to align goals and ensure a streamline experience. The Florida Youth Apprenticeship Program will work with industry to create career competencies, so apprentices can be certain that the skills they're developing are in-demand in the job market and set them up for career success. The Florida Youth Apprenticeship will also play an intermediate role between the systems of business and education, recruiting students, ensuring apprentice work and school schedules are optimized, and aligning goals and ensure a streamlined experience. The Florida Youth Apprenticeship will work with employers to train supervisors and apprentice coaches, to prepare apprentices for success in a professional work environment.

An Options Multiplier

The Florida Youth Apprenticeship Program is an options multiplier for students. Apprenticeship can be a powerful enhancement to their education or a fast-track to a middle-class career, or both. Apprenticeship is not a diversion from higher education; it's a rigorous education option that combines theoretical learning with practical learning that focuses on career and education objectives. It can also be a direct path to high paying, in-demand jobs in Business Operations, Financial Services, Advanced Manufacturing, Information Technology and Healthcare. Any student, regardless of future plans, can benefit from an apprenticeship. A student can begin as an apprentice and end with a Ph.D., or apprenticeship can train a student to step directly into a bookkeeper's position which can lead to many promotions with a great salary. The Florida Youth Apprenticeship Program-it is a model of education that reveals multiple options to career and higher education.

REFERENCES

- Advance CTE. (2017). *Strengthening career and technical education for the 21st century act: Carl D. Perkins career and technical education act of 2006*. Retrieved from <https://www.careertech.org/perkins>
- Advanced CTE. (2018). *Career clusters*. Retrieved from <https://careertech.org/career-clusters>
- Allen, J., & Sconing, J. (2005). *Using ACT assessment scores to set benchmarks for college readiness*. ACT Incorporated.
- American Technical Center Education. (2018). *About CTE: CTE works for high school students*. Retrieved from <https://www.acteonline.org/about-cte/>
- Angrist, J. D., Imbens, G. W., & Rubin, D. B. (1996). Identification of causal effects using instrumental variables. *Journal of the American Statistical Association*, 91(434), 444-455.
- Applied Educational Systems. (2019, July 31). *78 career and technical education facts for 2018*. Retrieved from <https://www.aeseducation.com/career-technical-education-facts-that-prove-its-awesome>
- Association for Career and Technical Education. (2007). Career and technical education's role in dropout prevention and recovery. *ACTE Issue Brief*. Retrieved from <https://www.acteonline.org/wp-content/uploads/2018/03/Dropouts.pdf>
- Association for Career and Technical Education. (2009). Career and technical education's role in dropout prevention and recovery. *ACTE Issue Sheet*. Retrieved from <https://files.eric.ed.gov/fulltext/ED596331.pdf>

- Berger, A., Turk-Bicakci, L., Garet, M., Song, M., Knudson, J., Haxton, C., ... & Keating, K. (2013). Early college, early success: Early college high school initiative impact study. *American Institutes for Research*. Retrieved from <https://files.eric.ed.gov/fulltext/ED577243.pdf>
- Bishop, J. H. (2010). *Which secondary education systems work best? The United States or Northern Europe* (Cornell University). Retrieved from <http://digitalcommons.ilr.cornell.edu/workingpapers/105>
- Blackstone, A. (2018). *Principles of sociological inquiry: Qualitative and quantitative methods*. Washington, D.C.: Saylor.
- Bottoms, G., & Sundell, K. (2015). *Credentials for all: An imperative for SREB states*. Atlanta, GA: Southern Regional Education Board.
- Brand, B., Valent, A., & Browning, A. (2013). How career and technical education can help students be college and career ready: A primer. *College and Career Readiness and Success Center*. Retrieved from <https://eric.ed.gov/?id=ED555696>
- Broward Public Schools. (2019). About us. Retrieved from <https://www.browardschools.com/domain/13954>
- Brown, E. (2015). *Is career technical education (CTE) working?: A narrative inquiry on the lived experiences of CTE concentrators* (Doctoral dissertation, UC San Diego).
- Butrymowicz, S. (2017). Most colleges enroll many students who aren't prepared for higher education. *The Hechinger Report*.
- California School Boards Association. (2018). *Career technical education: The evolution of CTE*. Retrieved from

https://www.csba.org/~/~/link.aspx?_id=4C9B001350EB499B95529AA9E53D8572&_z=z

Canon, S.W. (2011). Tomorrow's workforce: What students need. *Education World*.

Retrieved from https://www.educationworld.com/a_admin/tomorrows-workforce-what-students-need.shtml

Career and Technical Education. (2016). *CTE works for high school students*.

CareerWise. (2018). *CareerWise Colorado*. Retrieved

from <https://www.careerwisecolorado.org/>

Castellano, M. E., Richardson, G. B., Sundell, K., & Stone, J. R. (2017). Preparing students for college and career in the United States: The effects of career-themed programs of study on high school performance. *Vocations and Learning, 10*(1), 47-70.

Castellano, M., Ewart Sundell, K., & Richardson, G. B. (2017). Achievement outcomes among high school graduates in college and career readiness programs of study. *Peabody Journal of Education, 92*(2), 254-274.

Chen, X. (2009). Students who study science, technology, engineering, and mathematics (STEM) in postsecondary education. *Stats in Brief*. NCES 2009-161. National Center for Education Statistics. Retrieved from <https://files.eric.ed.gov/fulltext/ED506035.pdf>

Cheney, S., & Roth, G. (2008). The skills imperative: How career and technical education can solve the U.S. talent shortage. *Institute for a Competitive Workforce, U.S. Chamber of Commerce*. Retrieved from

https://www.uschamberfoundation.org/sites/default/files/publication/edu/The_Skills_Imperative_0.pdf

- Conley, D. T. (2011). *Four keys to college and career readiness*. Retrieved from <https://knowledgecenter.csg.org/kc/system/files/conleyPDF.pdf>
- Council of Chief State School Officers. (2014). *Opportunities and options: Making career preparation work for students*. Retrieved from <https://www.ccsso.org/sites/default/files/2017-11/CCSSOTaskForceCareerReadiness120114.pdf>
- Creswell, J. W. (2013). *Research design: Qualitative inquiry and research design*. Thousand Oaks, CA: Sage.
- Darling-Hammond, L. (1998). Unequal opportunity: Race and education. *The Brookings Review*, 16(2), 28.
- DeSilver, D. (2017). US students' academic achievement still lags that of their peers in many other countries. *Pew Research Center*, 15.
- Edmunds, J. A., Bernstein, L., Unlu, F., Glennie, E., Willse, J., Smith, A., & Arshavsky, N. (2012). Expanding the start of the college pipeline: Ninth-grade findings from an experimental study of the impact of the early college high school model. *Journal of Research on Educational Effectiveness*, 5(2), 136-159.
- Education Northwest. (2018). *What the research says on career technical education (CTE): Updated*. Retrieved from <https://educationnorthwest.org/resources/what-research-says-career-technical-education-cte-updated>
- Fernandez, F., & Sun, J. (2015). *Transforming the American high school experience: NAF's four-year graduation rates from Broward county public schools, Florida*;

Miami-Dade public schools, Florida; and Porterville unified school district, California. Fairfax: ICF International.

Florida College Access Network. (2016). *Five takeaways from Florida can's recent webinar on Florida workforce trends and demands.* Retrieved from <http://floridacollegeaccess.org/events/five-takeaways-from-florida-cans-recent-webinar-on-understanding-credentials/>

Florida Department of Education. (2019). Retrieved from <http://www.fldoe.org/>

Foster, J., & Bloomfield, A. (2017). Four essential components of a quality CTE program. *Advanced CTE.* Retrieved from <http://blog.careertech.org/?p=13737>

Gardner-Clagett, M., & Nguyen, V. (2014). The importance of career and technical education for expanding opportunities. *Jobs for the Future.* Retrieved from <https://www.jff.org/points-of-view/importance-career-and-technical-education-expanding-opportunities/>

Geneva Business School. (2020). *The vote is in, Switzerland has the best education system in the world.* Retrieved from <https://gbsge.com/vote-swiss-best-education-system-world/>

Giffi, C., Dollar, B., Drew, M., McNelly, J., Carrick, G., & Gangula, B. (2015). *The skills gap in US manufacturing: 2015 and beyond.* Washington, D.C.: Deloitte Development LLC.

Global Learning. (2019). *Education Week.* Retrieved from http://blogs.edweek.org/edweek/global_learning/2019/07/

Grindal, T., Dougherty, S., & Hehir, T. (2013, October 19). For students with disabilities, career and technical education programs offer more than just a trade. *Huffington*

Post. Retrieved from http://www.huffingtonpost.com/todd-grindal/for-students-with-disabil_b_3767522.html

Groves, G. (2014). *America Works: Education and Training for Tomorrow's Jobs. Achieving Better Results for Individuals, Employers, and the Economy. An Action Guide for Governors. NGA Center for Best Practices*. Retrieved from <https://files.eric.ed.gov/fulltext/ED583262.pdf>

Hall, V. L. (2010). *Work readiness of career and technical education high school students* (Doctoral dissertation, University of Georgia).

Hanford, E. (Producer). (2014). Ready to work [Audio podcast]. *American Radio Works*. Retrieved from <http://www.americanradioworks.org/documentaries/ready-to-work/>

Hargis, K. B. (2011). *Career and technical education program alignment with local workforce needs* (Eastern Kentucky University). Retrieved from <https://encompass.eku.edu/cgi/viewcontent.cgi?article=1047&context=etd>

Haycock, K. (2016, April 13). 47% of high school grads aren't prepared for college. *Market Watch*. Retrieved from <https://www.marketwatch.com/story/how-high-schools-are-failing-those-who-earn-a-diploma-2016-04-13>

Herron, A. (2016). The changing face of career education. *Winston-Salem Journal*.

Jacob, B. A. (2017). *What we know about career and technical education in high school*. Washington, D.C.: Brookings Institution.

Josephson, A. (2018). *The average salary by education level*. Retrieved from <https://smartasset.com/retirement/the-average-salary-by-education-level>

- Junior Achievement USA. (2013). *Are students prepared for the workplace?*. Retrieved from <https://links.ja.org/documents/20009/0/Are+Students+Prepared+for+the+Workplace.pdf/c1b75524-016d-4bd1-b8aa-74395f51021a>
- Kemple, J. J., & Rock, J. L. (1996). *Career academies: Early implementation lessons from a 10-Site evaluation*. Retrieved from <https://files.eric.ed.gov/fulltext/ED398401.pdf>
- Kemple, J., & Willner, C. (2008). *Career academies: Long-term impacts on labor market outcomes, educational attainment, and transitions to adulthood*. New York: MDRC.
- Kitlowski, E. (2016). Diminishing the value of a high school diploma. *Baltimore Sun*. Retrieved from <https://www.baltimoresun.com/opinion/op-ed/bs-ed-graduation-rates-20160314-story.html>
- Kuykendall, S. (2015, November 27). Five reasons career technical education makes sense. *The Modesto Bee*. Retrieved from <https://www.modbee.com/news/local/education/eye-on-education/article46838450.html>
- Lamback, S. (2017). Florida jobs 2030: A cornerstone series report for the Florida 2030 initiative. *Florida Chamber Foundation*. Retrieved from http://www.flchamber.com/wp-content/uploads/2017/01/FINAL_Florida-Jobs-2030-Report-013117.pdf

- Martinez, M., & Klopott, S. (2005). *The link between high school reform and college access and success for low-income and minority youth*. Washington, D.C.: American Youth Policy Forum.
- McCage, R. (2017). International benchmarking in CTE. *Association for Career and Technical Education*.
- Moore, J. (2015, March 4). The importance and relevance of CTE. *Psychology Today*. Retrieved from <https://www.psychologytoday.com/us/blog/putting-america-work/201503/the-importance-and-relevance-cte>
- National Career Academy Coalition. (2019). *Academies: Career academies change lives every day*.
- National Center on Education and the Economy. (2018). *Building block 7: Create effective systems of career and technical education and training*.
- National Research Council. (2012). *Education for life and work: Developing transferable knowledge and skills in the 21st century*. Washington, D.C.: The National Academies Press.
- O'Brien, A. (2010, June 4). Bridging the gap: High school college prep and career/technical education. *Edutopia*. Retrieved from <https://www.edutopia.org/blog/career-technical-education-versus-college-prep>
- Paquette, D. (2018,). The United States is way behind other countries on robot 'readiness,' report says. *Washington Post*. Retrieved from <https://www.washingtonpost.com/news/wonk/wp/2018/04/23/the-united-states-is-way-behind-other-countries-on-robot-readiness-report-says/>

- Participant Media. (2013). Boom! U.S. falls again in global education rankings but could learn a lesson or two. *TakePart Magazine*.
- Passarella, A. (2018). *The necessary components of an effective career and technical (CTE) program* (Johns Hopkins University). Retrieved from <http://edpolicy.education.jhu.edu/wp-content/uploads/2018/02/cteAP.pdf>
- Pearlstein, M. (2017). *What's CTE? and it increased high school graduation rates by how much?*
- Polumbo, B. (2018, September 8). Up to 60 percent of college students need remedial classes. This needs to change now. *The Federalist*.
- Powell, A. G. (1985). The Shopping Mall High School. Winners and Losers in the Educational Marketplace. *NASSP Bulletin*, 69(483), 40-51.
- Rauseo, C. (2017, March 16). Graduation rates are on the rise, but are students prepared for life after high school? *Rennie Center Education Research and Policy*. Retrieved from <https://www.renniecenter.org/blog/graduation-rates-are-rise-are-students-prepared-life-after-high-school>
- Rauseo, C. (2017, November 21). College and career ready: How research-practice partnerships can help prepare students for tomorrow's workforce. *Rennie Center Education Research and Policy*. Retrieved from <https://www.renniecenter.org/blog/college-and-career-ready-how-research-practice-partnerships-can-help-prepare-students>
- Ready for college and ready for work: Same or different? (2006). American College Testing. Iowa City, IA: ACT Inc.

- Resnick, L. B. (1987). Learning in and out of school. *Educational Researcher*, 16(9), 13-20.
- Richmond, E. (2016). Study: Big benefits of career and technical education. *Education Writers Association*. Retrieved from <https://www.ewa.org/blog-educated-reporter/study-big-benefits-career-and-technical-education>
- Robert J. Elisberg. (2011, December 1). The war on education. *HuffPost*.
- Ross, A. (2012). High number of Florida high school grads needing remedial college classes costing state millions. *Palm Beach Post*.
- Santelises, S. B. (2016). Are High Schools Preparing Students to Be College-and Career-Ready?. *Tech Directions*, 76(1), 26.
- School Specialty Planning & Student Development. (2018). *Promoting student success in the 21st century School and workplace*.
- Smiley, D. (2014). South Florida's former 'dropout factories' churn out diplomas as graduation rates soar. *Miami Herald*.
- Smith, B. (2018). *Florida's high school graduation rates*.
- Southern Regional Education Board. (2010). *Reporting on college readiness: Information that connects colleges and schools*.
- State University. (2012). *Vocational and technical education - current trends*.
- Stern, D., Wu, C., Dayton, C., & Maul, A. (2007). Learning by doing career academies. *Improving school-to-work transitions*, 134-168.
- Stone, C. (2017, January 9). [Best practices] designing and implementing a CTE program in your district. Retrieved from <https://blog.edmentum.com/best-practices-designing-and-implementing-cte-program-your-district>

- Stone, J. R., & Lewis, M. V. (2012). *College and career ready in the 21st century: Making high school matter*. New York: Teachers College Press.
- Stratte Plasman, J. (2017). *As students near graduation, career and technical education provides a boost*.
- Straus, C., & Miller, T. (2016). Strategies to improve low-performing schools under the Every Student Succeeds Act: How 3 districts found success using evidence-based practices. *Center for American Progress*.
- TeGrotenhuis, B. (2015). Why CTE matters for all students. *SEEN Magazine*.
- Travis, S. (2016). Colleges see some success since slashing remedial classes. *Sun Sentinel*. Retrieved from <https://www.sun-sentinel.com/local/palm-beach/fl-state-college-remedial-classes-20161029-story.html>
- United States Department of Education. (2018). Retrieved from <https://www.ed.gov/>
- United States Department of Labor. (2018). Retrieved from <https://www.dol.gov>
- We Are Teachers. (2015, August 19). *13 things we wish people knew about career tech ed*.
- Weingarten, R. (2015). Vocational education is out; Career and technical education is in. *EdSurge News*.
- Weir, K. (2016). Inequality at school: What's behind the racial disparity in our education system? *American Psychological Association, 47*(10), 42. Retrieved from <https://www.apa.org/monitor/2016/11/cover-inequality-school>
- What Works Clearinghouse. (2013). What works clearinghouse procedures and standards handbook (version 3.0). *United States Department of Education: Institute of Education Sciences*. Retrieved from

https://ies.ed.gov/ncee/wwc/Docs/referenceresources/wwc_procedures_v3_0_standards_handbook.pdf

Wonacott, M. E. (2002). *Dropouts and career and technical education*. ERIC

Clearinghouse on Adult, Career, and Vocational Education, Center on Education and Training for Employment, College of Education, the Ohio State University.

Yaluma, C. (2017). *The effects of racial and ethnic teacher bias on student achievement*.

Thomas B. Fordham Institute.

APPENDIX A: EMAILS TO GAIN STUDY/PARTICIPANT ENTRY

The following is the participation request letter that will be used to solicit participants for focus group study on Instagram.

Participation Invitation Request

Dear Invitee,

My name is Christopher Gilchrist. I am a doctoral candidate at Lynn University. I am kindly requesting your participation in a doctoral research focus group (small discussion) study that I am conducting titled: The Future of Career and Technical Education (CTE). The purpose of this study is to remodel the current Southeast School District's CTE curriculum to allow all students access and availability to a full high-quality CTE menu to maximize its potential to benefit and meet the needs of all students along with meeting the future demands of Florida's future economy. The focus group will last no longer than one hour (60 minutes).

The focus group will provide an opportunity for all participants and researcher to identify and validate an appropriate solution strategy to increase accessibility and availability of a full CTE menu for all students. Those who wish to participate can confirm by emailing conformation to ([REDACTED]). More background information along with time and date will be sent to those confirming participation before the focus group via email. The study is completely voluntary and anonymous there for it does not require to provide your name or any other identifying information. Participant may withdraw form study or decline to answer a particular question at any time during the study. Participants' real names or personal information will not be used in the study. Participants name will be replaced with pseudonyms and numbers (Participant-1) to ensure confidentiality.

The focus group will be audio-recorded in order to accurately capture what is said. If you participate in the study, you may request that the recording be paused at any time. You may choose how much or little you want to speak during the study.

Your participation in the research will be a great importance to assist in identifying and validating an appropriate solution strategy to increase accessibility and availability of a full CTE menu for all students. If you would like to participate in the study please email Christopher Gilchrist at ([REDACTED]).

Thank you for your time and participation.

Sincerely,

Christopher Gilchrist Education Doctoral candidate at Lynn University.

APPENDIX B: CONSENT FORMS

The following is the informed consent form participants who choose to participate in study will read and sign before focus group study begins.

Informed Consent

Principal Researcher: Christopher L. Gilchrist

Email: [REDACTED]

Purpose

The purpose of this focus group study is to identify and validate an appropriate solution strategy to increase accessibility and availability of a full Career and Technical Education (CTE) menu to meet the needs of all students in the Southeast Public School District along with meeting the demands of Florida's future work demands. As part of this study you will be asked to participate in a focus group and answer structured and open-ended questions. This study will take approximately no longer than 60 minutes.

Consent to Participate

I acknowledge that I am at least eighteen years old, and that I understand my rights as a research participant as outlined above. I acknowledge that my participation is fully voluntary.

Participants' Rights

I understand that my responses will be kept in the strictest of confidence and will be available only to the researcher. No one will be able to identify me when the results are reported and my name will not appear anywhere in the written report. Please do not share other people's identities or responses from the focus group with others to maintain the anonymity of the participants outside of the focus group. I also understand that I may skip any questions or tasks that I do not wish to answer or complete. I understand that the consent form will be kept separate from the data records to ensure confidentiality. I may choose not to participate or withdraw at any time during the study without penalty. I agree to have my verbal responses tape-recorded and transcribed for further analysis with the understanding that my responses will not be linked to me personally in any way. After the transcription is completed, the tape recordings will be destroyed after two years.

I understand that upon completion, I will be given full explanation of the study. If I am uncomfortable with any part of this study, I may contact Dr. Joseph Melita, Chairperson Committee at Lynn University at [REDACTED]

I understand that I am participating in a study of my own free will.

Print Name: _____

Signature: _____

Date: _____

APPENDIX C: SURVEY PROTOCOLS - INTERVIEW QUESTIONS

The following are the six open-ended questions used in the focus group

Focus Group Questions

- 1). What methods can school personnel utilize to identify students' interest or goals after high school?
- 2). In what way would the student population be affected if more students had access to participate in the CTE program of their choice?
- 3). What effect, if any, should the state's future job growth projections have on the CTE programs availability?
- 4). How can the current CTE curriculum be remodeled so that all students have full access to high-quality CTE program menu?
- 5). How can the current CTE curriculum be revised to meet the demands of the future workforce and student interest?
- 6). What would be the effects of the implementation of a youth apprenticeship program?

APPENDIX D1: IRB APPROVAL(S)



Institutional Review Board

3601 North Military Trail

Boca Raton, FL 33433

561-237-7000 | lynn.edu

Patrick Cooper, PhD, Chair

DATE: 9/30/2019

TO: Christopher Gilchrist

FROM: Patrick Cooper

PROJECT NUMBER: 19.05

PROTOCOL TITLE: The future of career and technical education

PROJECT TYPE: New Project

REVIEW TYPE: Expedited

ACTION: Approved

APPROVAL DATE: 9/30/2019

EXPIRATION DATE: 9/30/2020

Thank you for your submission for this research study. The Lynn University IRB has APPROVED your New Project. This approval is in accordance with 45 CFR §46.111 Criteria for IRB approval of research. All research must be conducted in accordance with this approved submission.

It is important that you retain this letter for your records and present upon request to necessary parties.

- This approval is valid for one year. **IRB Form 4: Application to Continue (Renew) a Previously Approved Project** will be required prior to the expiration date if this project will continue beyond one year.
- Please note that any revision to previously approved materials or procedures must be approved by the IRB before it is initiated. Please submit **IRB Form 5 Application for Procedural Revisions of or Changes in Research Protocol and/or Informed Consent Form 1 of a Previously Approved Project** for this procedure.
- All serious and unexpected adverse events must be reported to the IRB. Please use **IRB Form 6 Report of Unexpected Adverse Event, Serious Injury or Death** for this procedure.
- At the completion of your data collection, please submit **IRB Form 8 IRB Report of Termination of Project**.

If you have any questions or comments about this correspondence, please contact the chair of the Lynn University IRB, Patrick Cooper [REDACTED]

Institutional Review Board

Lynn University

3601 North Military Trail

Boca Raton, FL 33433

561-237-7000 | lynn.edu

APPENDIX D2: IRB APPROVAL(S)

FORM 1, Part C. Continue Application with Completion of Research Protocol

Principal Investigator: Christopher Gilchrist
Project Title: The future of career and technical education

DO NOT WRITE BELOW THIS LINE: FOR IRB USE ONLY

APPLICATION AND PROTOCOL FOR REVIEW OF RESEARCH INVOLVING HUMAN SUBJECTS OF A NEW PROJECT
IRB Project Number 19.05
Request for Exempt Status <input type="checkbox"/> Expedited Review <input checked="" type="checkbox"/> Convened Full-Board <input type="checkbox"/>
IRB ACTION BY IRB CHAIR OR ANOTHER MEMBER OR MEMBERS DESIGNATED BY THE CHAIR
Exemption Status (See FORM 2): Approved <input type="checkbox"/> Approved w/provision(s) <input type="checkbox"/>
Expedited Review (See FORM 3): Approved <input checked="" type="checkbox"/> Approved w/provision(s) <input type="checkbox"/>
Complete FORM 2 (Exempt Status, including categories for exempt status) and Resubmit <input type="checkbox"/>
Complete FORM 3 (Expedited Review, including categories for expedited review) and Resubmit <input type="checkbox"/>
Referred For Convened Full-Board Review <input type="checkbox"/>
Comments:
Consent Required: No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Written <input type="checkbox"/> Signed <input type="checkbox"/>
Consent forms must bear the research protocol expiration date of <u>9/30/2020</u> .
Application to Continue/Renew is due:
(1) For an Expedited IRB Review, one month prior to the due date for renewal <input checked="" type="checkbox"/>
(2) For review of research with exempt status, by a College or School Annual Review of Research Committee <input checked="" type="checkbox"/>
Other Comments:
IRB Reviewer: <u>Patrick Cooper</u> Title <u>IRB Chair</u> Date <u>9/30</u>
IRB Reviewer: <u>Bell Cooper</u> Title <u>IRB Member</u> Date <u>9/30</u>
IRB Reviewer: _____ Title _____ Date _____
IRB Reviewer: _____ Title _____ Date _____
IRB Reviewer: _____ Title _____ Date _____

Name of IRB Chair (Print) Patrick Cooper

Signature of IRB Chair _____ Date: 9/30/2020

IRB ACTION by the CONVENED FULL BOARD <i>If Applicable</i>
Date of IRB Review of Application and Research Protocol _____
IRB ACTION: Approved <input type="checkbox"/> Approved w/provision(s) <input type="checkbox"/> Not Approved <input type="checkbox"/> Other <input type="checkbox"/>
Comments:
Consent Required: No <input type="checkbox"/> Yes <input type="checkbox"/> Not Applicable <input type="checkbox"/> Written <input type="checkbox"/> Signed <input type="checkbox"/>
Consent forms must bear the research protocol expiration date of _____.
Application to Continue/Renew including an updated consent, is due:
(1) For a Convened Full-Board Review, two months prior to the due date for renewal _____
(2) For an Expedited IRB Review, one month prior to the due date for renewal _____
(3) For review of research with exempt status, one month prior to the due date for renewal _____
Other Comments:

Name of IRB Chair (Print) Patrick Cooper

Signature of IRB Chair _____ Date: _____